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Alfred W Lawson

Editor

AIRCRAFT

Vol. 2 MARCH, 1911 No. 1

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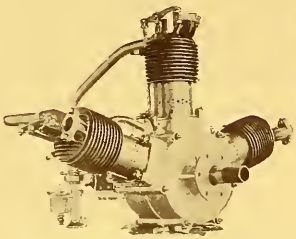
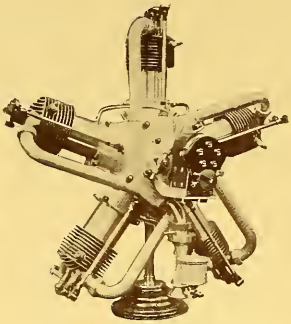
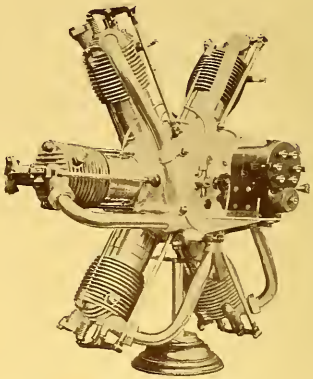


3 Cylinder, 1911 Type, 30 H. P.



5 Cylinder, 1911 Type, 50 H. P.



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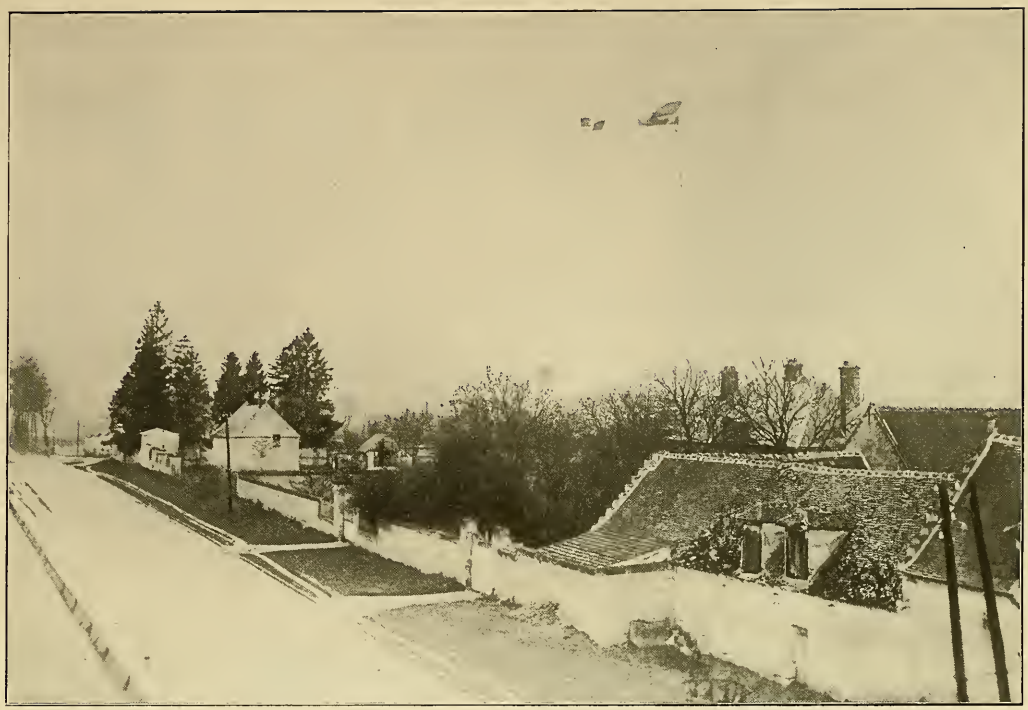

CAPTAIN GEORGES MARIE BELLENGER FLIES FROM PARIS TO BORDEAUX ON HIS GNÔME-DRIVEN BLÉRIOT IN A SINGLE DAY: 325 MILES IN 8 HOURS 22 MINUTES, INCLUDING TWO STOPS FOR GASOLENE AND MEALS; NET TIME: 5 HOURS 11 MINUTES. THIS LATEST TRIUMPH OF AVIATION CREATED A SENSATION THROUGHOUT FRANCE.

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AIRCRAFT

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AIRCRAFT

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CONTINUOUS FLIGHT

By Henry A. Wise Wood

THE healthiest influence at present at work on behalf of the development of useful flying is probably exerted by the Michelin Cup, and such cross-country prizes as are offered from time to time. Speed and height have their respective worths, from sporting and scientific standpoints, but its ability to fly continuously over long distances in safety we must regard as the attribute which shall give to the airplane its greatest eventual value, whether as an instrument of utility, in war or peace, or of recreation. To the touring airplane of the future the amateur will undoubtedly look for his own and his family's pleasure, while in the work of transporting informative matter—the mails and newspapers—and such goods and passengers as the celerity of the airways will attract, staying-power, upon which the efficient touring machine must depend, will be a prime requisite. Safety, staying-power and speed—this, it seems to the writer, must always be the correct order of precedence. While the three are desirable the first and second are indispensible. With structural safety assured, and a dependable power-plant, the difficulty will ever increase of carrying a sufficient supply of fuel and lubricant to enable the airplane to attain the continually lengthening distances which will be demanded of it. And upon the extent of its ability to carry consumables, and its frugality in their consumption, will depend its degree of efficiency as a far traveller. It goes without the saying that, as compared with a wasteful motor, an economical one of the same power will cover a greater distance with a given amount of supplies aboard; while greater speed—which furnishes the ability to be further along on one's journey—is to be gained with every reduction in the number of mile-pounds of load carried. All of which is obvious—but is here stated to direct attention to the great educational value, upon the engineering side of flight, which attaches, at this stage in the developement of the airplane, to long-distance flying. Indeed, so predominant is the importance of cross-country work that the major prizes of aeronautics, the writer believes, should be set aside for its especial encouragement.

As an illustration of the burdens under which continuous flying now labors, the attempt of Henry Farman, on December 18th last, to win the Michelin Trophy may be mentioned. With sixty gallons of gasoline and twenty-one of castor oil—weighing approximately 465 pounds—he went aloft prepared for a twelve-hour flight, which, however, he did not complete. This was a superb exhibition of carrying-power and endurance, but it strikes the mind of the engineer as having been undertaken at the prospective cost of a wanton waste of supplies. How such a huge weighting down, as was made necessary in this case by the characteristically wasteful airplane motor, handicaps the machine may be seen from this statement by McCurdy, after his splendid try at the Florida Strait:

> "As my supply of gasoline and oil decreased as the result of consumption by the motor of the airplane I began to realize that I had started on the flight very heavily laden. While apparently an insignificant weight, this reduction of the gasoline and oil supplies accelerated the speed of the machine to an appreciable degree and made it more easily controlled."

The liberal endowment of such contests as shall particularly foster the development of economical and dependable motive power is undoubtedly, as has been stated, one of the most pressing present needs of aviation.

There is another phase of continuous flight that should be given attention—the replenishment of the supplies of machines in air, the recharging of their tanks, for instance, without their having to return to ground. This brings up a new subject, bristling with interest, the discussion of which may be opened by the question, Why not?—and a statement of the law that two bodies moving in the same direction at the same speed are stationary with relation to one another. Why, therefore, may not one two-passenger machine lower fresh tanks of fuel and oil (to say nothing of a full dinner basket) to another two-passenger machine with ease and safety? The answer is that with properly constructed airplanes, suitable apparatus, and sufficient practice upon the part of the men, the feat is wholly feasible—and, the writer ventures to predict, will be accomplished before the art is another year older. From this to the exchange of objects and supplies between singly-manned machines is but a short step, while that greatest of all feats, the transfer of a man from one to another of two airplanes in flight, will follow as a matter of course. Who shall say that the Michelin prize of 1911 may not be won by a machine whose stores are replenished in mid-air? And for naval and military purposes what could more startlingly advance the prestige of the airplane than a display of its adaptibility to the ready transfer from one machine to another, aloft, of ammunition, dispatches, photographic films, charts, sketches, etc.?

There is still another aspect of long-distance flight that should be given immediate attention—its dependence upon the adaptation of terrestrial cartography to its needs. The mariner has his charts, the motorist his road-maps, while the airman—well, he must travel "by guess and by God," and rely on his homing-instinct to get him back again. It was this lack of established aids to the ascertainment of position and direction that cost poor Grace his life. He was as truly lost in the wilderness of the air as ever was Livingston in the heart of unmapped Africa. There no longer can be two opinions of the necessity for suitable birds-eye charts of the countries of Europe and America, and for the adoption, and comprehension of its use, of

the compass by all licensed aerial pilots. The only things to be determined are, should not the work of preparing charts properly fall upon the various governments, instead of awaiting the slow and inaccurate results to be obtained through the enlistment of private enterprise? And should not nautical methods and measurements be used? It needs but little imagination to realize the similarity of the requirements of nautical and aeronautical navigation. In both position and direction must at all times be accurately known; and it would seem that the air had best borrow so much of the practices of the sea as is especially adapted to its needs. This, obviously, is true of the use of the compass, and would seem to be no less true of the use of charts prepared upon the Mercator projection, with measurements given in degrees and minutes of latitude and longitude. What, in addition, such aeronautical charts should show will form the subject of a subsequent paper, but the matter is broached at this time in order that the idea of promptly enlarging the means and duties of our Coast and Geodetic Survey, to enable it to engage in this most important work, shall be given immediate attention by those who are charged with the development of the scientific side of flying. Meanwhile, it is suggested that all aeronautical writers, working in English, should prepare the way by using exclusively the geographical (nautical or sea) mile, of 6,080 feet, or 1,853 meters, which equals one minute of latitude.

RECORDS AND STATISTICS

By G. F. Campbell Wood

Duration Records

Although duration records have become nowadays almost solely dependent upon the endurance of the motor, the progression of these records gives a pretty clear idea of the progression of Aviation itself. In the tables given below the figures in thick type indicate the World's Record of the moment and it can be seen the tremendous lead obtained in the earlier years of the century by America and the subsequent leap forward of Europe.

The first flight mentioned is the famous 852 foot flight against a 20 mile wind, of Wilbur Wright, above the sands of Kitty Hawk. On the same day three previous attempts had been made by the Wright brothers, (the first and third by Orville and the second by Wilbur) in which they were off the ground from 12 to 20 seconds, but which did not demonstrate that they had power or control for continuous flight. They are not mentioned in this table, on this account; for a similar reason the short jump of two or three seconds made by Wilbur Wright three days previously is also omitted, as are likewise the early attempts at flight of Clément Ader (1890, 1891, 1897), Sir Hiram Maxim (1894), A. M. Herring (Oct. 1898) (?), Ellehammer of Denmark (1906) and Santos-Dumont (Aug., Sept. and Oct. 1906).

As regards the flights made in Europe, it should be noted that although it was not until the afternoon of October 26, 1908, that Farman officially beat Santos-Dumont's record, he had already made unofficial flights, (one on October 15, 1908, and two on the morning of October 26th), exceeding the Brazilian's best by several seconds.

November 9, 1908, is given as the date on which a turn was for the first time made in Europe: it might be pointed out, however, that on October 26th and 27th of that year, R. Esnault-Pelterie had succeeded in making some partial turns at Buc, on his R. E. P. No. 1.

The flight of January 13, 1908, is the famous circular kilometre which won Farman the 50,000 francs of the Deutsch-Archdeacon prize; two days before this, January 11, 1908, Farman is reported to have made a flight of 1 min. 45 sec., but owing to the few witnesses of it and the fact that it was timed by the maker of the machine, with an ordinary watch, the writer does not feel justified in having it figure in these tables.

In several of his flights of 1908, Delagrange missed making considerably better records than he did through the fact that he flew so low that the wheels of his Voisin sometimes touched when making a turn. Thus, on April 11, 1908, he made a flight of 9 mins. 15 secs. and only got official recognition for 6 mins. 30 secs., through touching the ground 2 mins. 45 secs. after starting. Again, at Milan on June 23, 1908, he flew for nearly 18 mins., but only got credit for 14' 27 1/5", for the same reason. The same thing happened on September 7, 1908, when in a 31 minute flight, he was continuously off the ground for only 28 mins. 1 sec.

A correspondent of AIRCRAFT asks what were the first non-stop cross-country flights ever made; as it may be of interest to other readers, a list of the first twelve is here given:

Distance in Miles	Approximate Time in Minutes	Aviator	Date	Course
16.8	20	H. Farman	Oct. 30, 1908	From the Camp de Chalons, near Bouy, to the outskirts of Rheims, France.
8.7	11	L. Blériot	Oct. 31, 1908	From Toury to Artenay, France.
9.2	16⅔	L. Blériot	July 13, 1909	From Chicheny, near Etampes, to Arbouville, France.
17.	28¼	L. Blériot	July 13, 1909	From Arbouville to la Croix Briquet-Chevilly, near Artenay, France.
12.4	22	L. Paulhan	July 19, 1909	From the outskirts of Douai to St. Nicolas, near Arras, France.
7.5	10	H. Latham	July 19, 1909	From Sangatte, France, over the Straits of Dover.
25.	37	L. Blériot	July 25, 1909	From Les Baraques, near Calais, France, to Dover Castle, England.
22.	30	H. Latham	July 27, 1909	From Sangatte, France, to within less than two miles of the Admiralty pier, Dover, Engl'd.
10.3	14⅔	O. Wright	July 30, 1909	From Fort Myer, Va., U. S. A., to Alexandria and back to Fort Myer.
8.7	10	R. Sommer	Aug. 2, 1909	From Bouy to Suippes, France.
12.4	18⅓	L. Paulhan	Aug. 6, 1909	From Mâlo-les-Bains to Bray-Dunes and back to Mâlo-les-Bains, France.
12.	19½	C. L. Willard	Aug. 13, 1909	On Long Island, N. Y., U. S. A.

Progression of American Duration Record.

Dec. 17, 1903	**59″**	W. Wright,	Kitty Hawk, N. C.
Aug. 1904	**About 1′**	W. Wright,	Near Dayton, Ohio.
Sept. 15, 1904	**1st turn**	O. Wright,	Near Dayton, Ohio.
Sept. 20, 1904	**1st circle**	O. Wright,	Near Dayton, Ohio.
Nov. 9, 1904	**5′ 04″**	W. Wright,	Near Dayton, Ohio.
Sept. 1905	**5′ to 15′**	W. or O. Wright,	Near Dayton, Ohio.
Sept. 26, 1905	**18′ 09″**	W. Wright,	Near Dayton, Ohio.
Sept. 29, 1905	**19′ 55″**	O. Wright,	Near Dayton, Ohio.
Oct. 3, 1905	**25′ 05″**	O. Wright,	Near Dayton, Ohio.
Oct. 4, 1905	**33′ 17″**	O. Wright,	Near Dayton, Ohio.
Oct. 5, 1905	**38′ 03″**	W. Wright,	Near Dayton, Ohio.
Sept. 9, 1908	**57′ 31″**	O. Wright,	Fort Myer, Va.
Sept. 9, 1908	**1 hr. 02′ 15″**	O. Wright,	Fort Myer, Va.
Sept. 10, 1908	**1 hr. 05′ 52″**	O. Wright,	Fort Myer, Va.
Sept. 11, 1908	**1 hr. 10′ 24″**	O. Wright,	Fort Myer, Va.
Sept. 12, 1908	**1 hr. 14′ 20″**	O. Wright,	Fort Myer, Va.
July 20, 1909	1 hr. 20′ 45″	O. Wright,	Fort Myer, Va.
Jan. 17, 1910	1 hr. 58′ 32″*	L. Paulhan,	Los Angeles, Cal.
July 2, 1910	2 hrs. 03′ 30″*	C. B. Harmon,	Mineola, N. Y.
Sept. 12, 1910	3 hrs. 05′ 40″*	R. Johnstone,	Boston, Mass.
Oct. 11, 1910	3 hrs. 11′ 55″*	A. L. Welsh,	St. Louis, Mo.
Dec. 30, 1910	3 hrs. 16′ 50″*	A. Hoxsey,	Los Angeles, Cal.
Jan. 22, 1911	3 hrs. 39′ 48″*	P. O. Parmelee,	San Francisco, Cal.

Progression of European Duration Record.

Nov. 12, 1906	21 1/5″*	A. Santos-Dumont,	Bagatelle, near Paris.
Oct. 26, 1907	27″ *	H. Farman,	Issy-les-Moulineaux, Fr.
Oct. 26, 1907	31 3/5″*	H. Farman,	Issy-les-Moulineaux, Fr.
Oct. 26, 1907	52 3/5″*	H. Farman,	Issy-les-Moulineaux, Fr.
Nov. 9, 1907 1st turn	1′ 14″	H. Farman,	Issy-les-Moulineaux, Fr.
Jan. 13, 1908	1′ 28″ *	H. Farman,	Issy-les-Moulineaux, Fr.
Jan. 15, 1908	1′ 33″	H. Farman,	Issy-les-Moulineaux, Fr.
Mar. 21, 1908 1st circle	3′ 39″ *	H. Farman,	Issy-les-Moulineaux, Fr.
April 11, 1908	6′ 30″ *	L. Delagrange,	Issy-les-Moulineaux, Fr.
May 27, 1908	9′ 30″	L. Delagrange,	Rome, Italy.
May 30, 1908	15′ 26 4/5″*	L. Delagrange,	Rome, Italy.
June 22, 1908	16′ 30″	L. Delagrange,	Milan, Italy.
July 6, 1908	20′ 19 3/5″*	H. Farman,	Issy-les-Moulineaux, Fr.
Sept. 6, 1908	29′ 53 3/5″*	L. Delagrange,	Issy-les-Moulineaux, Fr.
Sept. 16, 1908	39′ 18 3/5″	W. Wright,	Near Le Mans, France.
Sept. 21, 1908	**1 hr. 31′ 25 4/5″***	W. Wright,	Near Le Mans, France.
Dec. 18, 1908	**1 hr. 54′ 53 2/5″***	W. Wright,	Near Le Mans, France.
Dec. 31, 1908	**2 hrs. 20′ 23 1/5″***	W. Wright,	Near Le Mans, France.
Aug. 7, 1909	**2 hrs. 27′ 15″**	R. Sommer,	Mourmelon, France.
Aug. 25, 1909	**2 hrs. 43′ 24 4/5″***	L. Paulhan,	Near Rheims, France.
Aug. 27, 1909	**3 hrs. 15′** †	H. Farman,	Near Rheims, France.
Nov. 3, 1909	**4 hrs. 17′ 53 2/5″***	H. Farman,	Mourmelon, France.
July 9, 1910	**4 hrs. 37′ 00 2/5″***	R. Labouchère,	Near Rheims, France.
July 10, 1910	**5 hrs. 03′ 05 1/5″***	J. Olieslaegers,	Near Rheims, France.
Oct. 28, 1910	**6 hrs. 01′ 35″** ‡	M. Tahuteau,	Buc, France.
Dec. 18, 1910	**8 hrs. 12′ 47 2/5″***	H. Farman,	Etampes, France.

* Officially timed.
† Officially timed up to 3 hrs. 04′ 56 2/5″; flight ended in darkness.
‡ Landing not officially timed; duration allowed officially: 6 hours.

THE editor of the Boston Journal recently wrote to the Editor of Aircraft for his opinion as to whether the problem of automatic stability would ever be satisfactorily solved, which brought forth the following reply:

"About three years ago, when I established my first aeronautical magazine, my views upon the future of the heavier-than-air machine were generally considered far too radical for even the most advanced flying machine builder or aviator to even consider, let alone the general public. For instance, it was generally accepted as a self evident truth by the most successful builders of flying machines, that the heavier-than-air type could never be utilized for travel in the higher strata of the atmosphere, the high altitude being left entirely for the lighter-than-air craft.

"In those days, articles written by the leading exponents of the art usually claimed that the aeroplane would just skim upon the surface of the earth in the heavy layers of air, so that when I announced that it would be the heavier-than-air type which would eventually climb to the highest points to be reached by man, my statements were usually ridiculed. However, as time passes by, I enjoy the satisfaction of noticing the aeroplane gradually climb up, up, up, until it is now able to go over two miles high, and this is only the beginning.

"Here are a few predictions made after years of the most careful study of the subject, as to what I believe will come to pass within the next ten years:

"THE FLYING MACHINE WILL BE ABLE TO ASCEND TO A DISTANCE OF OVER TEN MILES; THE FLYING MACHINE WILL BE ABLE TO STAY IN THE AIR FOR MORE THAN FIVE DAYS AT A STRETCH; THE FLYING MACHINE WILL BE CONSTRUCTED TO CARRY MORE THAN FIFTY PEOPLE; THE FLYING MACHINE WILL BE MADE CAPABLE OF CROSSING EITHER THE ATLANTIC OR PACIFIC OCEAN; THE FLYING MACHINE WILL HAVE ACQUIRED A SPEED OF MORE THAN 200 MILES PER HOUR.

"These feats will all be accomplished by the flying machine within ten years. I could tell you some far more wonderful things to be looked forward to in flying within a hundred or two hundred or a thousand years hence,—but I am afraid I might be taking too many liberties with some of your readers.

"However, the above statements will probably be sufficient to answer your question, as far as I am concerned,—'Will the problem of automatic stability ever be satisfactorily solved, for these things could not happen unless automatic stability is a factor in flying?'

"I might add here, that a flying machine will eventually be constructed that will be unable to descend to the earth unless it is steered in that direction.

"This is not an article, but merely a five minutes talk to my secretary."

* * *

ONCE upon a time during the foggy past, some human brain with more monkey humor than reason, created the following oracular expression:

"If you travel on a railroad train on land, and there is a smash-up, why, there you are. But if you travel on a steamship in the water, and there is a smash-up, well, where are you?"

Since water travel has been made actually safer than land travel, owing to greater precautions being taken to safeguard travelers in that branch of transportation, no doubt ORDINARY MORTAL with loud snorts, will again utilize the expression with variations, when referring to Air travel.

Bright fellow is ORDINARY MORTAL.

* * *

A DISPATCH from Jefferson City, Mo., under date of January 20th, stated that Representative Warren introduced a bill in the House to prohibit aeroplanes making ascensions higher than one thousand feet, and requiring aviators to give a ten thousand dollar bond as a guarantee against violation of the law.

At the present writing we cannot appreciate this joke in its fullest sense, not knowing whether IT is on the Representative, or whether HE is IT.

* * *

A CABLE message from Berlin states that the airship Suchard is completed and ready for trial flights preparatory to an attempt to cross the Atlantic Ocean from St. Vincent, Cape Verde Islands, to some point in America that can be most easily reached with the aid of the Trade Winds.

The inventor, Joseph Brucker, has some startling innovations to offer on Trans-Atlantic expeditions, not the least of which is that he intends to try out his airship before starting on his long journey.

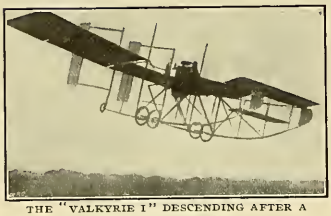
* * *

WE advise our friends who are anxious for the healthy development of aviation upon good substantial lines, not to be too hasty in suggesting laws against flying men or their machines. You may rest assured that some of these antidiluvian legislators will enact stringent enough laws for even the most exacting adherent of the movement without being asked for them, and once a law is on the books it may take years to get it off again, thereby retarding American progress indefinitely.

SUCCESSFUL FLYERS DESCRIBED

THE "VALKYRIE I"

By W. H. Phipps



THE "VALKYRIE I" DESCENDING AFTER A SUCCESSFUL FLIGHT.

A successful machine which differs from accepted designs is the "Valkyrie I" monoplane—a product of the Aeronautical Syndicate, of Scotland. Its peculiar characteristic is that it flies tail first. As a type, however, it somewhat resembles an old-time Wright biplane, with the upper main plane removed, the only difference being that a stationary supporting surface is placed in the front, and an elevator just below and a little to the rear of it.

It is interesting to point out in describing this machine that most of the successful model aeroplanes now flown in competitions are of the "tail-first" type, the "Valkyrie I" being really a development of this type of model.

In looking at the accompanying illustrations it is important to bear in mind that the large leading front plane is a stationary supporting surface, fulfilling the same purpose as a lifting tail on a monoplane.

The elevator is used solely for ascending or descending, and in normal flight is held perfectly flat. A Farman-type lever operates the elevator and the ailerons, while the rear rudders are operated by a pivoted foot control. These rudders were formerly situated close up to the main planes, but in practise it was found that their action was not quick enough, and the machine had a tendency to skid. In order to increase the action of these rudders it was found necessary to place them four feet to the rear of the main planes, while, to prevent skidding, two small fixed vertical planes were fitted to the front of the skids, as on the Wright machines.

Regarding dimensions, it should be noted that the "Valkyrie I" is much broader than it is long. The machine weighs 520 pounds for 140 square feet of surface. This weight is approximately that of the Blériot, a monoplane of much less spread and surface. The lightness is due to detail design, for the machine carries a 30 h. p. Green engine. A departure from the usual monoplane practise is the use of a single-surface main plane instead of the customary double surface.

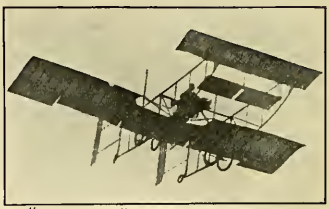
The ribs are attached to the main spars by special aluminum sockets, which are illustrated in one of the accompanying drawings. The ribs themselves have a slightly triangular section.

The main plane is built in three sections, the rear spars fitting into special sockets, which arrangement permits the adjustment of the angle of attack of the main planes. The central plane-section is of a smaller chord than the two end sections, and is adjusted to a smaller angle because of its presence in the draught of the propeller.

The method of guying the main planes is shown in one of the accompanying illustrations. The wires are of larger gauge than usual, cut to the approximate length and then threaded so as to take an ordinary nut. The wires pass through special aluminum lugs, here illustrated, and are tightened up by turning the nuts.

Turning to the details of construction, some of which are illustrated in the accompanying drawings, these are all carried out in a most thorough manner, and it is evident that great care and thought have been expended in this line. There is, perhaps, no other machine which uses such a variety of special castings and fittings.

The Valkyrie shock absorber is of a simplified Farman type. In place of the steel tube radius rods used on the Farman make, the Valkyrie employs two flexible steel cables, as shown in the illustration.



THE "VALKYRIE I" AS SEEN FROM BELOW. NOTE LEADING FRONT PLANE AND ELEVATOR BELOW IT

The rear castor wheel and its special aluminum mounting is shown in an accompanying drawing. It should be noted that the upturned skids can act as a very effective brake. By stopping the engine and depressing the elevator the pilot can cause all the weight of the machine to be thrown on the upturned skids, thus quickly bringing the machine to rest.

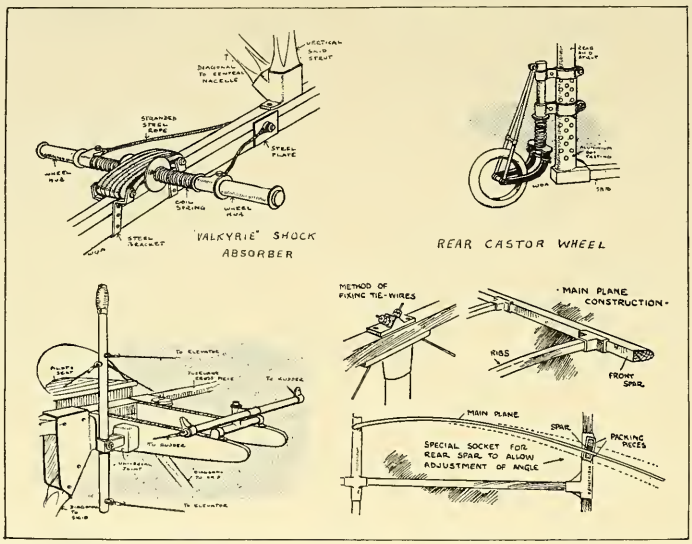
As a beginner's machine the "Valkyrie I" has found favor, owing to its strong construction and the long skids which have prevented many a bad accident.

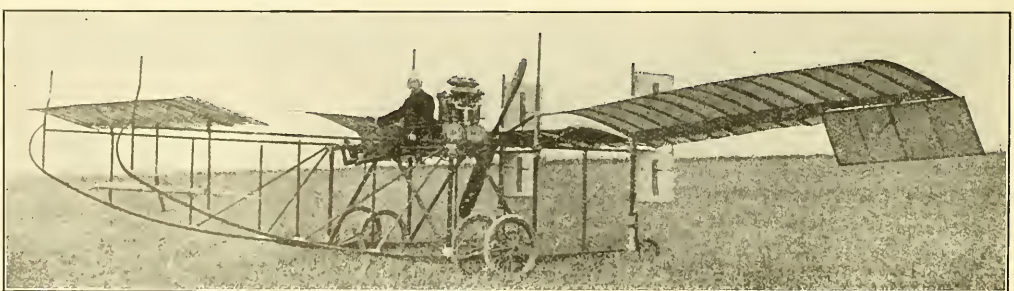
In conclusion, it may perhaps be of interest to summarize a few of the detail weights and dimensions:

Weights. — Main planes, 50 lbs.; front planes, 23 lbs.; chassis frame, 105 lbs.; wheels, 50 lbs.; engine, 155 lbs.; magneto, 10 lbs.; dual ignition, 15 lbs.; propeller, 22 lbs.

Dimensions. — Propeller, diameter, 7 ft. 3 in.; pitch, 4 ft. 1½ in.; angle of incidence of the main planes with the propeller-shaft, 9 degrees; maximum camber, 5 in., situated one-third of chord from leading edge; main fore and aft booms of chassis frame, 1¼ in. square section. Skid-members are of the same size, but strengthened by extra pieces, which double the depth in the vicinity of the axle; main plane spars, 2 in. by 1 in. (front), 1⅝ in. by 1 in. (rear).

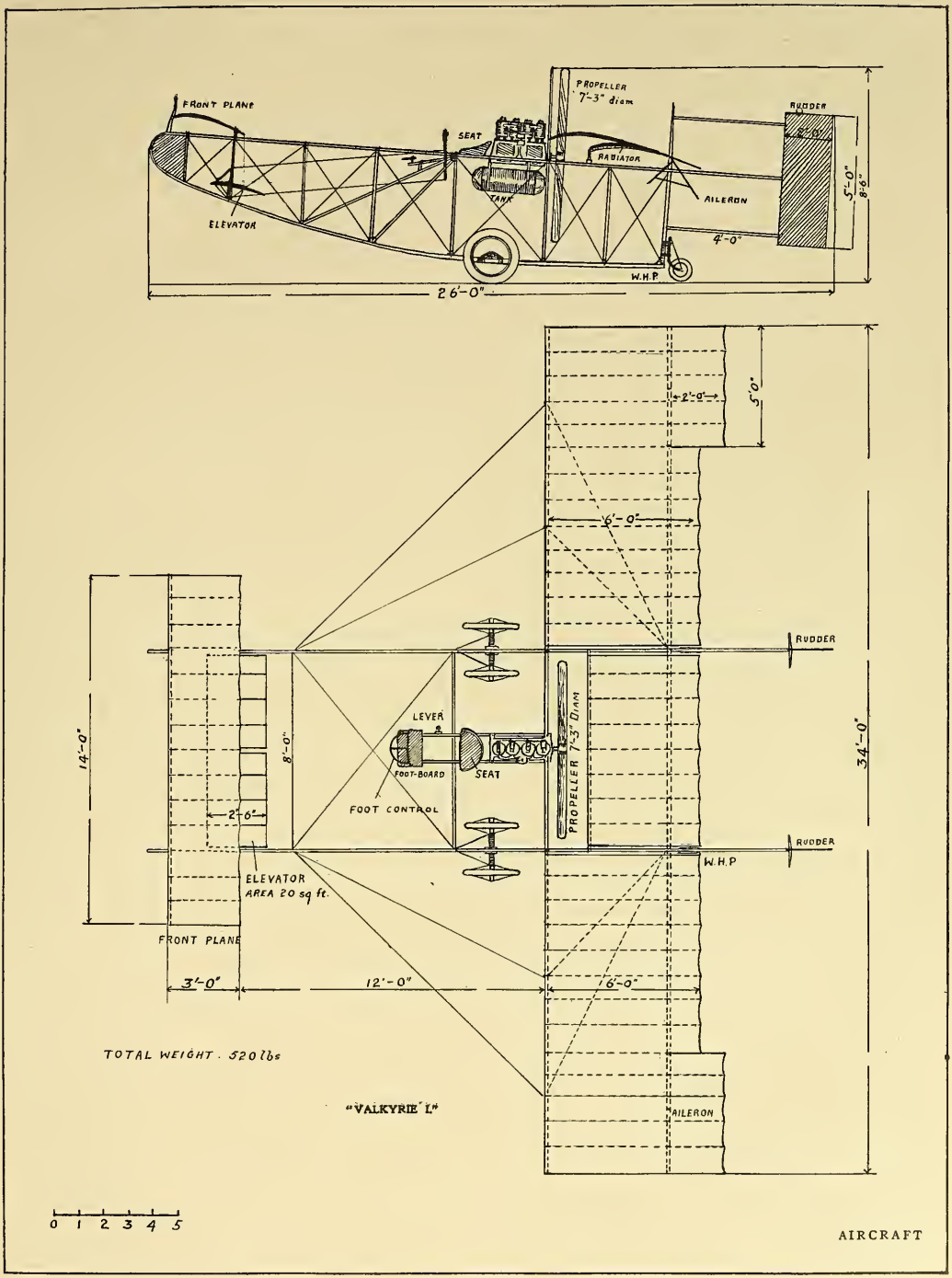
Materials.—Honduras mahogany is used almost exclusively throughout the machine. The surfacing of the planes is made with unproofed Egyptian cotton fabric. The back edge of the plane is stretched by a cord. Soft steel wires of large gauge are used for all bracing. The joints and fittings are of aluminum.





"VALKYRIE I"—GENERAL VIEW OF THE MACHINE BEFORE CHANGE IN THE POSITION OF THE VERTICAL RUDDERS WAS MADE.

SCALE DRAWINGS OF THE "VALKYRIE I" MONOPLANE



Aeroplanes and Dirigibles: Their Respective Spheres

By T. R. MacMechen

FEW people believe nowadays that the dirigible has as great a future as the aeroplane. In the mind of the writer this is a radical mistake; both dirigible and aeroplane have their respective functions to perform, and the ultimate air-craft will probably embody a combination of both principles. During the stages of their respective developments they will perform different missions of a practical nature.

The mission of the aeroplane will be two-fold: that of a war auxiliary and that of a passenger-carrier. The auxiliary aeroplane and the passenger-carrying aeroplane will be two quite different machines. The auxiliary type will very soon be used as a means of communication for warships at sea: it will establish rapid communication between the various units of a fleet and will also make over-sea excursions of fifty to a hundred miles for the purpose of observing hostile squadrons, but its radius of action can hardly be ever more than that because it is no more than a warship tender and must needs go and return on a small fuel supply.

The auxiliary aeroplane will not carry more than two or three men but it will never be in control of a single individual. It has already been demonstrated that it is not safe to leave the handling of any type of air-craft to one man for the simple reason that if he meets with very contrary weather conditions he is unable alone to attend to the many and diverse duties called for in managing his craft: this is the very thing responsible for so many accidents to aeroplanes in charge of one man, several of which have been fatal; the single operator of to-day has to fill the rôle of three or four men: he has to control the fore-and-aft equilibrium and also the side balance; besides this he has to act the part of motorman and above all this he is the navigator of his craft and the lone aviator has to depend entirely upon his own resources to cope with all the disturbances and changes met with in the air and the resultant surprises and dangers. A crew of two or three will therefore be necessary as well as sufficient for the auxiliary aeroplane.

The passenger aeroplane is quite a different proposition: here human life is entrusted to the care of those who are directing the craft: the crew of a passenger aeroplane is in exactly the same position in relation to the aviator as passengers on a train are to the engine-driver and transatlantic voyagers to the captain of their ocean liner. Legal requirements will most certainly place upon those operating passenger aeroplanes the necessity of employing navigators, pilots and engineers of proven skill, capacity and prowess, just as similar requirements are made of those in charge of present great transportation systems.

Now what will constitute a safe passenger aeroplane?

Certainly it will be a very much larger structure than the pioneer aeroplanes of to-day. Certainly it will *not* be trussed and held together with sticks. From indications which the present affords us it is more than probable that its wings or carrying surfaces will be of light sheet metal; it will have a very simple and powerful landing-gear which will serve to absorb any shock, however rough may be the ground chosen for alighting; the almost-safe landing gear of the present big Farman machines is an indication that this will before long be accomplished.

To meet with popular favor the passenger aeroplane must be capable of journeys, not only of an hour or two but covering two or three hundred miles; the very first requirement for this is of course the capacity to carry sufficient fuel; the question of engine power is not so important. recent experiments showing that an aeroplane of very moderate power can carry six or eight men for short distances. To carry both the passenger and the fuel necessary to transport them several hundred miles, it is evident that aeroplanes will have to be built much larger.

There is another and really more important reason why aeroplanes will have to be built larger: to increase their safety. It is well known that the eddies and swirls of the air near the surface of the earth correspond to the surf of the sea near a rocky coast; in these no passenger-carrying air-craft should venture, especially in a storm, but on rising from the earth or returning to it they sometimes have to be met. The present method of coping with these surprises of the air is by the instinct of the pilot alone. This will never do for a passenger machine; it will have to carry a dozen different kinds of instruments to acquaint the pilot instantly with conditions, both those which are to be met and those which are being met at that moment. Such a thing as guessing at what height above the ground the aeroplane is travelling will not be tolerated legally or otherwise on a common carrier of the air. At present the pilot has no way of determining how high he is above the ground and owing to the constantly shifting points of view the appreciation of his altitude is no easy matter. Many accidents are due to the fact that when going fast and near the ground aviators miscalculate their distance from the earth.

Other instruments necessary on an aeroplane are a compass. a barograph, instruments to give the speed of the plane as measured over the ground and its actual speed through the air, regardless of the motion of that air: they will enable the flyer to navigate in fog and in storm. when read and interpreted by a navigator and an assistant pilot. The engineer will have nothing to do with this feature of the work;—he is supposed to attend to the engines alone in the same way that a pilot is supposed to attend to steering the craft and nothing else.

The passenger aeroplane will have to be run on these lines before it is permitted to carry passengers: division of labor will be carried out in the control itself, one pilot handling the fore-and-aft control and another taking the side control.

Another point which will be deemed necessary by law will be the presence of a reserve motor ever ready to help or replace the regular motor. Aeroplanes will also be supplied with decline gauges which by a magnetic register will detect and record gusts on the wings, rudders and balancing tips a fraction of a second before they actually contract the surfaces.

To sum up. to insure the absolute safety of the traveller it is natural that the most extraordinary precautions ever provided on any conveyance devised by man should be brought into play and it is the weight of all these appliances which will call for a much larger aeroplane than those of to-day. for this extra weight calls for more strength and there are no known metals out of which you can get strength at the expense of weight.

As regards the protection and comfort of air-travellers it is well to point out that little or no provision has so far been made in this line. In some present-day aeroplanes, aviators and passengers travel with their heels dangling over space!

As to how the passengers will be carried, there is and can be no mystery: there is only one way in the world in which to carry a number of people through the air, whether by aeroplane or dirigible. Science confirms the experimental fact that huge tubes cannot be pushed through the air unless they are in the shape of a lengthy cylinder with pointed ends: the travellers on a passenger-aeroplane will be carried in a torpedo-shaped shell extending from front to rear across the wings. This gives the aeroplane a centralized body about

which to build it, making it stronger than it has ever been before without increasing its weight.

Both to the technician and to the constructor the probability of an aeroplane shortly carrying twenty to thirty passengers seems great, but beyond this carrying-capacity the aeroplane appears to become prohibitive, on account of the enormous energy required to lift it and propel it.

These passenger-aeroplanes will not travel fast; this fact was appreciated long ago by Wilbur and Orville Wright; it is what has kept them from building racing machines. The big Farman and Wright machines which carry forty-five and thirty H.P. respectively do not make over forty to forty-five miles and hour: large planes cannot be pushed through the air as rapidly as small ones and to sustain the weight of engines and passengers they are made to fly at a very positive angle.

As regards balancing the big machine has all the best of it for the simple reason—apparent to any mind—that the swing of its oscillations in the wind is slower than on the small machine; this can be seen when a Farman and a Blériot are flying together. Build the Blériot larger and it will go slower; on the other hand take a large machine, trim down its wings and make them quite flat and it will go faster, but the moment this is done down goes the carrying-capacity and as a result, the radius of action. The popular mind has not begun to understand that the size of the machine does not change its principles: a giant Blériot with giant planes of ninety feet would need a thousand H.P. to carry three men a hundred and twenty miles and then it would only carry them half an hour longer than Alfred Leblanc flew at Belmont Park.

This is not theory but fact—fact of which any one can satisfy himself by taking Blériot's own scale and figuring out the machine.

Concerning the relative efficiency of the biplane and monoplane it may here be said that it has not as yet been generally understood that the biplane through its construction has almost double the lifting effect of a monoplane. The monoplane having only one pair of wings is heavier in the air and must be built almost one-half as small as the biplane to rise at all off the ground. This is the reason that military experts, both here and abroad, were unanimous in representing to their respective governments that the two-plane machine was by all odds the most effective for carrying crew, ammunition and fuel, and even for mileage.

The craze for speed is a foolish dream: like the idea of racing automobiles, the desire to fly at great speed is the resultant of man's wild desire to bore nature. Forty to fifty miles an hour is fast enough for an air-craft because it is travelling in a free air-way and in a far more direct line than a train or an automobile; buildings, fences, towns, forests and other things which impede transportation on the earth's surface do not stop it and an aeroplane travelling at this speed has the advantage over any form of land travel going twice as fast and will arrive sooner at its destination.

The desirability of comparatively moderate speed for air-craft being established the writer is naturally brought to a consideration of the rôle of dirigibles.

The Zeppelins have already reached a speed of forty-two miles an hour and there is every reason to believe that for carrying small groups of people between points not too far distant the dirigible has a future as a useful instrument of civilization. In warfare the problem is different; it can afford to waste power for it is then an instrument of punishment and destruction pure and simple and performs its function as do armies and gunpowder. When the abolishment of war started by the Hague Tribunal becomes a fact, air-craft will assume their true position in the world but at present their possibilities as instruments of offence and defence are receiving the consideration of the whole world.

Of the relative merits of the dirigible and the aeroplane Nicola Tesla said: "The dirigible is all the better the larger; the aeroplane gains nothing with size."

It has been conclusively demonstrated by Zeppelin that the larger the dirigible the more practical and the more easily handled it is. We base all our power on machinery and the larger dirigible will carry the greater engine power, the one which will enable it to be under the best control in a storm. The dirigible as understood by Zeppelin is a true ship of the air, a "Mauretania" of the air growing stronger as the size is increased and the various gas-containing compartments of which are isolated in separate flotation-chambers inside the hull. This is very different from the non-rigid type: a great gas-bag containing all its flotation power within it and which, if punctured, gives a vent for the immediate escape of its entire supply of gas. The Zeppelins have lost the contents of one gas-chamber or one-seventeenth of their lifting power without being obliged to land.

Another point in favor of the rigid airship is that its aeroplane-rudders and guiding planes are fastened to a solid structure where in other dirigibles they are attached to the car; the car in this case is the ship and the ship is sailing under a gas-bag but with the Zeppelin the gas-filled cylinder is the hull of the ship. Beneath this solid hull and rigidly attached to it is the passenger-cabin which runs along its entire length; it is thus one rigid entity which pierces the air like a spear.

Such a craft can be built very large and it is not too much to say that in the near future it will be built to transport two hundred passengers. It must be borne in mind that the "Deutschland" has already carried thirty-two passengers in addition to its crew of eight; she was but 482 feet long.—a canoe in comparison with the airships of the future.

Already laid down on paper in the engineering offices of the Zeppelin Construction Company are the design and drawings for an airship a thousand feet in length. There is no immediate prospect of this ship being built but one of six hundred feet in length is positively known to be projected for service within two years: such a craft could carry twice the power of the "Deutschland."

Now as to the policy pursued for the security of these great craft: the "Deutschland" was designed to be always equipped with twenty hours' fuel so as to be capable of riding out great storms, the length of which rarely exceed this period. Of course in a storm an airship should no more land than a ship on the sea approach a coast and with twenty hours' fuel on board there is no conceivable reason why it should land: as long as it is free in its own element it is safe. There is nothing to prevent it moving with the storm until either by rising or falling it passes into a stratum of calmer air and thus allows the storm to pass on its way.

There is no guess-work about finding this calmer stratum. What is wireless for? The upper air has already been sounded, its movements must be noted and recorded and this branch of air-science developed for air-navigation in a broad sense such as has not yet been understood.

To return to the "Deutschland" the loss of which created such a stir. the purchasers of the ship decided to run it with nine and a half hours' fuel instead of twenty, in order that the weight saved could be replaced by that of passengers at fifty dollars per head. Zeppelin dirigibles have safely performed a laid-out programme not once but fifty times; in this instance the "Deutschland" was caught in a storm of fifty and more miles an hour; it went back and forth in this hurricane seeking a safe landing-place over swampy ground; it was turned about four times in the midst of the tempest, its rudders working perfectly either going against or with the wind. but the storm outlived the "Deutschland's" nine and a half-hour supply of fuel with the result known.

These facts speak for themselves: was this really a dirigible or not? Zeppelin thought it was and was so satisfied that

he decided to proceed to build larger craft with greater engine power and a larger supply of fuel.

The average American mind has but a superficial knowledge of aeronautics. This is perfectly natural; it has only been within the last few years that the busy American has had his attention turned from that world of business that generally occupies his life.

In Europe it is otherwise; in Germany one million marks are involved in the recently established Zeppelin supply station and aero-park at Pottsdam, near Berlin. The establishment of this station at this spot received the sanction of the emperor himself. A hotel and café are to be opened there by the well-known Esplanade Company of Berlin; a branch railway line will be extended there from the town of Pottsdam and in 1912 this aero-station will be the headquarters of a six hundred-foot Zeppelin. This Spring the new and larger Zeppelin replacing the "Deutschland" will go into commission at Düsseldorf; in July another Zeppelin is due to take the place of No. VI which was burnt up at Baden-Baden and before the end of 1912 two more collossal craft will be occupying the great steel air-harbour now being built at Hamburg.

Although the rigid airship has here been referred to exclusively, this is not to say that the semi- and non-rigid types of dirigibles have not their practical function to perform. Such an airship as the "Clément-Bayard II" (which went from Paris to London in six hours) and especially the "Morning Post," (the semi-rigid which drove across the English Channel at by no means its narrowest point with a strong cross wind tending to deflect it from its course but in no way succeeding), has shown what they can do.

In fact these ships have their advantages when it comes to landing and deflation. This can especially be said of the Parsevals which are especially built with the idea of being easily deflated. They cannot however, in any way come near the Zeppelins for endurance. The gas contained in these great bags is affected by the changes of temperature (the small hourly changes of sunshine and shade and the greater diurnal changes of night and day) just as that in spherical balloons; in fact there is little difference between the spherical and the elongated gas-bags, outside their shape and the system of balloonets or air-bladders which keep the dirigibles taut and maintain their shape.

With the Zeppelins the atmospheric changes do not immediately affect the gas, as the seventeen or eighteen gas-chambers are ventilated by air and not in direct contact with the sun's rays or with the outside air. This is with the idea of maintaining an even temperature around the gas; if it is hot outside cold air is pumped into the hull; if it is cold outside hot air is introduced into the hull from the motor exhaust. The less changes in the temperature of the gas the longer the ship will stay up.

Reference was made in the preceding pages to the instrumentation which will be necessary for future heavier-than-air machines. It is interesting to note that the latest lighter-than-air craft carry as many as twenty-eight different kinds of navigating instruments, among them a powerful wireless equipment and special compasses somewhat after the ingenious ideas of Marcus.

A "Flying Fish" from Detroit

The hydro-aeroplane here shown is expected to skim over the surface of the water at from sixty-five to seventy miles an hour; the builders have named it the Flying Fish.

The first working model was taken out a few weeks ago, and skimmed over the ice, scarcely touching it, at a speed of sixty-five miles an hour. This, too, was with a less powerful engine than that with which the Flying Fish is equipped.

The hull of the Flying Fish is a water-tight steel and aluminum tank, 5 feet 7 inches wide, 7 feet 2 inches long and 2 feet deep. The bow end is slanted, but all other angles are ninety degrees. Above the hull is the plane, twenty-six feet from tip to tip and six and one-half feet wide. The convex frame is covered with khaki oil-soaked canvas.

Extending behind the hull, not unlike the handles of a baby buggy, except that the arms are steel and the wooden crosspiece is a foot wide, is the "tail." On this flat board, five feet seven inches long, a foot wide and a half an inch thick, about ten feet back of the hull, the craft is expected to fly—that is, when the boat attains a sufficient speed forward, the plane is expected to lift the hull out of the water entirely, only the "tail" touching at intervals and steadying the flight.

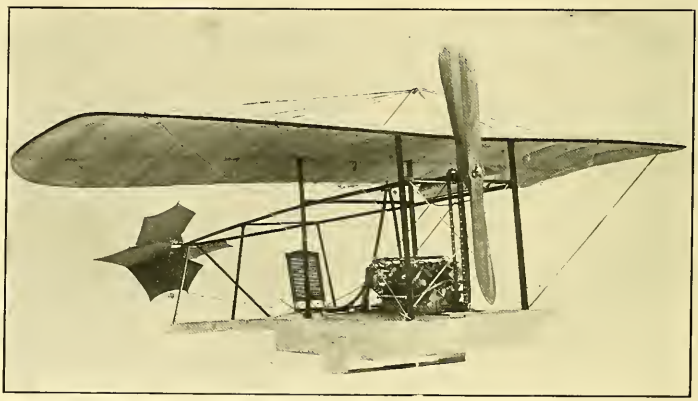
Also behind the hull is the rudder, four-vaned, the blades being covered with canvas. At the front of the hull is the propeller, which is a double blade of wood more than six feet from tip to tip.

In the rear of the hull is the cockpit, into which the feet of the skipper extend as he sits on the cane backed chair balanced on the stern rail. Immediately in front of him are the engines and two levers, one controlling the rudder, the other the single plane. Complete the craft weighs only 750 pounds.

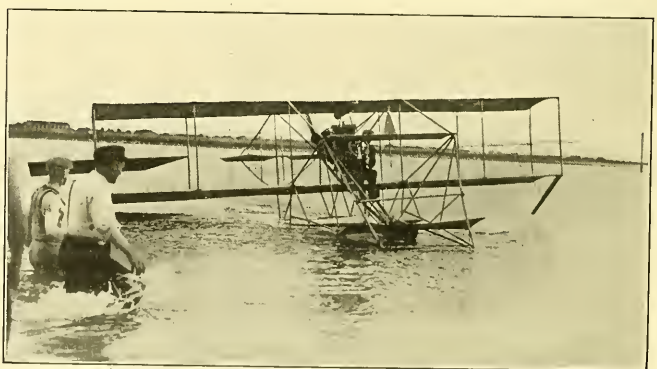
"The Flying Fish will float perfectly on the water," says Fred Wadsworth, secretary and treasurer of the Michigan Steel Boat Company. "There is less danger of its tipping than an ordinary boat on account of the plane. Even should the boat be entirely out of the water and the engine fail there would be merely a drop of a few feet in a non-sinkable, perfectly balanced and safe hull.

"Our boat is not expected to fly any great distance or at any great height. The rush of air may catch the plane and lift her up eight or ten feet for a short distance. The tail piece will always be in the water, sustaining her in a steady flight. With our first machine we made sixty-five miles an hour over the ice."

The Michigan Steel Boat Co.'s speed-product is thus intended to remain in close proximity to the surface of the water; it is a hydrophane with wings. The machine on which Curtiss recently rose from the water is an aeroplane filled with hydrophans and bears no relation to water-travel except when rising or alighting.



"THE FLYING FISH," AN AERIAL MOTORBOAT BUILT BY THE MICHIGAN STEEL BOAT CO. OF DETROIT.



GLENN H. CURTISS' HYDROPLANE-SUPPORTED BIPLANE ON THE SURFACE OF SAN DIEGO BAY: THE ONLY AEROPLANE IN AMERICA TO HAVE RISEN FROM WATER.

WALTER FAIRCHILD'S MONOPLANE.

Winter Scene at the A. C. A. Grounds at Mineola.

CLUB NEWS

By G. A. Haviland

Aero Club of America

BULLETIN OF FEBRUARY 1, 1911.

Eight names were submitted for resident membership and five for non-resident membership.

THE GORDON BENNETT BALLOON CUP.

Last year, the Aero Club of America won a second consecutive victory in the Gordon Bennett Balloon Cup race, with a third victory this year, the Cup would, according to the rules of the contest, become the property of the Club.

The occasion is accordingly taken to urge upon all pilots of the Club and of all Affiliated Clubs to make early preparation for this year's contest by which, it is earnestly hoped, America will retain the Cup forever.

At a meeting of the Executive Committee on January 31st, a motion to this effect was unanimously carried.

Although no official date has been decided on as yet, the race will probably take place on or about October 7th.

THE GORDON BENNETT AVIATION CUP.

The Aero Club is unofficially informed that the date for the Coupe Internationale d'Aviation Gordon Bennett Cup, has been set by the Royal Aero Club of the United Kingdom—the present holder—for the last days of June. (Coronation Week); the exact day will be announced shortly.

The Committee in charge of arrangements to select and to send over the Challenging team of the Aero Club of America has already made inquiries as to representative men and machines; a a thorough and early preparedness being recognized as the greatest factor for success in the club's effort to regain the Cup, the method of selection and the full plan of action to carry the Challenge to a successful issue will be decided on at an early date.

RECORDS OF PILOTS OF THE CLUB IN JANUARY.

Although considered the worst season of the year for flying in most parts of the world, January, this year, showed the same steady advance in aviation as the months which preceded it.

Nearly all the record-breaking feats of the new year were achieved by pilots of the Club. On January 17th, in France, Henry Weymann (A. C. A. pilot-license No. 14), flew from Bouy to Reims and back (37 miles), carrying two passengers; he made two stops on the way. A few days later, Mr. Weymann made the same flight with *three* passengers—both performances being World's Records for passenger-carrying across country.

On January 18th, Eugene Ely (A. C. A. pilot-license No. 17), flew out to sea from Selfridge Aviation Field, near San Francisco, and landed on a platform built on the stern of the U. S. cruiser "Pennsylvania," this being the first time that an aeroplane has ever alighted on a vessel at sea. The difficulty of the feat was increased by the fact that the "Pennsylvania" was at anchor. Leaving the cruiser by air presented comparatively no difficulty after the successful performance of the historical feat, although the get-away was also made with the vessel at anchor.

This flight was made during the successful meet held at San Francisco, under sanction of the Club's National Council, from January 7th to January 22nd.

On the last day of the meet, Philip C. Parmelee (A. C. A. pilot-license No. 25), made a flight 3 hrs. 39' 48" in duration—a new American record. This record has previously been held, either officially or unofficially, by the following members of the Club: Wilbur Wright, Orville Wright, Louis Paulhan, C. B. Harmon, the late Ralph Johnstone, A. M. Welsh and the late Arch. Hoxsey.

On January 26th, Glenn Curtiss, winner of the first Gordon Bennett Aviation Cup-race and holder of the Club's first aviation pilot-license, succeeded in rising from the surface of San Diego Bay, California, in an aeroplane fitted with hydroplanes. This is the first time such a feat has been accomplished in America. A similar one was performed in France some months ago, by Fabre, of Marseilles, but he did not meet with quite the same measure of success as Curtiss.

On January 30th, J. A. D. McCurdy, the president of the Aero Club of Canada (A. C. A. pilot-license No. 18), rose from the ground near the Terminal station at Key West, Florida, at 7.42 A. M., and steered S. S. W. across the Straits of Florida, with Havana as his destination. A leaking oil-tank compelled him to descend to the sea, two hours and seven minutes later, when within plain sight of the Cuban capital.

In this flight of about ninety miles, Mr. McCurdy broke all records for over-sea flights by twenty-five miles, and approximately equalled the American over-land straightaway record (89⅝ miles.) This is the first time a man has flown out of sight of land on a clear day; it is also a record duration and distance flight for a Curtiss biplane, and the first time one has flown for two hours.

G. F. CAMPBELL WOOD, Secretary.

On February 7th, Monday, October 9th, was selected as the date of the 1911 Gordon Bennett Balloon Cup race.

The Board of Governors of the Aero Club of America and the Executive Committee of the National Council held separate meetings on February 7th to consider the change of plans and scope of the work of the two organizations.

A committee of five was appointed by each body to outline policies to be considered by the two organizations at a joint conference to be held not later than February 25th. Representatives from the National Council include Robert J. Collier, chairman; James King Duffy, secretary; Jerome H. Joyce, Baltimore; Arthur Atherholt, Philadelphia; and Dr. John Eberhardt, Dayton, Ohio, and those from the Aero Club are Allan A. Ryan, Cortlandt F. Bishop, W. W. Miller, Major Samuel Reber, U. S. Army, and Lyttleton Fox.

The Harvard Aeronautical Society

BY EOWIN C. BROWN, SECRETARY.

The Harvard Aeronautical Society is to hold the first Intercollegiate Glider Meet on the Harvard Aviation Field, Atlantic, Mass., on May 4, 5, and 6, 1911. Entries have already been received from Columbia, Williams, Pennsylvania, Tufts, Technology, Dartmouth, and Harvard, and others are expected from colleges now constructing machines. There is in construction a gliding slope on the field, and from this machines may be launched at various heights, thus testing thoroughly the efficiency of the different machines. The events will be distance, duration, height, and accuracy, and suitable cups are to be offered by enthusiasts of Boston.

At the present time there is on the field a permanent hangar to hold two large machines, and other temporary hangars will be erected for the meet. Entries should be sent to the Society at 34 Dana Chambers, Cambridge, Mass.

Aero Club of San Diego

Glenn H. Curtiss has signed a three years' lease of the island from the Aero Club of San Diego and arranged to establish permanent headquarters there.

The Aero Club of San Diego will erect several buildings for him, including quarters for a large force of mechanicians and other workmen, new hangars, an assembling plant and machine shop, and will supply electric power from the city. The entire plant and outfit for the Curtiss government aviation school will be similar to that at Mr. Curtiss' headquarters at Hammondsport, N. Y., and Curtiss aeroplanes will be built there.

Tampa Aero Club

February 19, 20, 21 and 22 have been selected for the aviation meet at Tampa, Florida, during the Census Celebration. J. A. D. McCurdy, accompanied by Beachey, Post and Ward, will probably enter in the hundred mile race over water.

Springfield Aviation Association

Arrangements are being made to hold an aviation meet in Springfield, Mass., directly following the Boston meeting and preceding the New York meet. It is intended to offer a suitable prize to the aviators who will fly from Boston to Springfield and from Springfield to New York.

Aero Club of Connecticut

BY S. H. PATTERSON.

Mr. C. J. Lake of Bridgeport, Conn., father of Simon Lake, inventor of the Lake Submarine Torpedo Boat, has been working on an entirely new type of aircraft for a number of years, and has already obtained patents in this country; he is taking out patent rights in nearly every country where patents can be had. He states he has made arrangements to turn Nutmeg Park of Bridgeport, into an Aviation field, and that when his patents are protected in foreign countries he will be prepared to exhibit his machine when we get suitable weather in hte spring.

He claims that he has produced an aeroplane with inherent stability, which, while not capable of the speed of present biplanes and monoplanes, will be incapable of alighting at a dangerous angle, and will, at all times and without manoeuvering by the operator, remain on even keel.

Frank Payne, a Bridgeport boy who has built a Curtis type biplane which he is now flying at Mineola, N. Y., expects to fly from Seaside Park in Bridgeport to Steeplechase Island and back, a distance of about five miles, on February 22nd. A purse is being made up in Bridgeport by business men to be presented to Mr. Payne in the event of his making this flight successfully.

W. C. Beers, of New Haven, Conn., vice president of the club, has ordered a Wright flyer to be delivered in May. Mr. Beers is one of the incorporators of the United States Aeronautical Company, for the manufacture of air-craft, which has been formed at Hartford with a capial of $100,000. The other incorporaors are, Clarence R. Hooker of New Haven; Charles E. Griffing, William H. Green, John W. Green, of Danbury, and John S. Curtis, of Erie, Pa.

The club will hold a meeting and a banquet at the Hotel Stratfield, on April 20th, and has extended an invitation to attend them to all inventors of air-craft or anything pertaining thereto, residing in the Sate. Should their invitations be considered practical by the club and the inventors be in need of financial assistance to perfect and develop their inventions, the club will be ready and willing to give them assistance.

It is expected by Spring, that several members of the club will have machines where with to popularize the sport of flying throughout the State.

Aeronautic League of New Jersey

BY WILLIAM A. KRAUS, SECRETARY.

The annual meeting of the Aeronautical League of New Jersey, was held on February 7th in Cathmann's Hall, Union Hill, when the following officers were elected: Cornelius De Bernardi, President; Charles Remond, Vice-President; W. A. Kraus, Secretary; L. Liverani, Financial Secretary and John E. Ring, Treasurer. The above officers were also appointed as a Technical Committee.

Models of various kinds of flying machines were exhibited and their good and bad points discussed at considerable length. Most of the officers and many of the members have had practical experience as hird-men, and at the present time three of the members have almost completed the construction of machines of their own. Two of them stated that just as soon as the weather permits they expect to be ready to fly.

The next meeting of the League is scheduled for February 21st, when the special feature will be a review of the history of aviation from the inception of the science up to the present time.

It was explained by the president that the meetings are open to all who are interested in aviation, and that they need not be men of practical experience in the way of navigating the air.

MILITARY NEWS OF THE MONTH

AS RECORDED BY

BRIGADIER GENERAL JAMES A. ALLEN
Chief Signal Officer of the Army

WAR DEPARTMENT,
OFFICE OF THE CHIEF SIGNAL OFFICER.
WASHINGTON.

My dear Mr. Lawson: February 11, 1911.

In the Army appropriation bill, which has passed both the Senate and House and which is now in conference, there is an item of $25,000 which is made immediately available for the purchase of aeroplanes, so that in a very short time we expect to buy such a number as this amount of money will pay for, obtaining well known, efficient machines of American make. An additional sum of $100,000 will be available on the first day of July, and some time previous to that date, probably in March or April, we will undertake to purchase additional machines.

The Government has accepted from Mr. Robert J. Collier for temporary use his new Wright machine, which is to be at once shipped from New York to San Antonio, and at the same time Mr. Collier is sending Mr. Phillip O. Parmelee to that point to report to Lieutenant Foulois to instruct him, and perhaps do some flying on the frontier.

Inclosed is a copy of a telegram from Mr. D. C. Collier President of the Aero Club of San Diego. The Department has expressed its appreciation of the service of Mr. Harkness in carrying the message, and has directed that he be given all proper assistance in connection with military work in the vicinity of San Diego.

Very sincerely yours,

Mr. Alfred W. Lawson,
Editor Aircraft,

San Diego, Calif.,
February 7, 1911.

General Allen,
Chief Signal Officer, U. S. A.,
Washington, D. C.

I have the honor to inform you that Harry S. Harkness, today flew from Aviation Camp on North Island opposite Fort Rosecrans, to the encampment of the U. S. troops on Mexican border near Tialfuana, carrying message from Major McManus, Commanding Fort Rosecrans, to his subordinate Lieut. Ruhlin, the flight was eminently successful entire distance covered 45 miles was in the air 56 minutes encampment of regulars 21 miles from Fort Rosecrans message was in hands of officer 25 minutes after delivery to Harkness roads between points practically impassible through recent rains.

D. C. Collier,
President Aero Club,
San Diego.

4:37 p. m.

J. A. D. MCCURDY WHO RECENTLY FLEW FROM KEY WEST, FLORIDA, TO WITHIN A FEW MILES OF HAVANA, CUBA, MAKING A WORLD'S RECORD FOR OVER-WATER FLIGHT.

CLAUDE GRAHAME-WHITE, THE WINNER OF THE GORDON BENNETT CUP, NOW DEFENDANT AGAINST THE WRIGHT COMPANY IN A SUIT FOR INFRINGEMENT.

SAM A. TICKELL OF NEW YORK IN A CURTISS TYPE BIPLANE OF HIS OWN CONSTRUCTION.

GENERAL NEWS

Harvey Crawford of Tacoma, Washington, has been making some successful flights lately in a biplane of his own construction in which he uses a 50 H. P. Call aviation motor.

The Detroit Aeronautic Construction Company, the builders of "The Aeromotor," have just entered into a three years' advertising contract for space in AIRCRAFT. Wise company this, and what is more, it shows stability.

Andrew Smith and Charles Augustine are the prime movers towards the organization of a company at Travers City, Mich., for the purpose of manufacturing aeroplanes and aero engines in that growing western town.

For tenacity of purpose and unique methods in introducing himself and ideas to the aeronautical fraternity, we must call attention to the advertisements of Joseph E. Bissell, of Pittsburg, Pa.

Charles Hilliard, who built a Curtiss-Burgess biplane at Mineola recently, made his first flight with it there on January 22. The machine rose to a height of 50 ft., circling the field three times. The following day ten trips were made about the field by the same aviator, several of them with Leo Stevens as passenger.

The Wright training school, in charge of Frank Coffyn, was opened on January 23rd, at Augusta, Ga. Two pupils reported for lessons, W. Starling Burgess, of Boston, and Geo. H. Manner, of Baltimore. It is expected that Robt. J. Collier of New York, will also become a pupil in this school.

From a practical standpoint, the San Francisco aviation meeting accomplished much. It has been proven that the aeroplane can be used by the army and navy with the utmost success, both in an informative and aggressive manner. Facts show that an officer can go aloft and with pencil, pad and field glasses, make accurate observations and that photographs can be taken at an altitude of 1,000 ft. In addition flights from shore to ship have been effected and it has been demonstrated that loaded bombs can be dropped accurately from a height of 2,000 ft.

Senator Spellacy of Hartford, Conn., has offered a resolution requiring owners of flying machines to file annual reports with the Secretary of State.

No flying machine shall be operated unless in charge of a person whose qualifications have been approved by the Superintendent of the State Police. This bill was referred to the Judiciary Committee.

On January 26th, Glenn H. Curtiss made a successful ascent from the water and after a flight of two miles over the bay alighted on the water at the point of starting.

The following day Mr. Curtiss made a second and longer flight, rising from the water to a height of 200 ft. and soaring over the bay for four miles, returning to his starting point on the water and alighting without even a splash.

These trips from the water are the result of experiments being carried on at San Diego by Curtiss and several others with a Curtiss machine equipped with hydroplanes.

At San Diego, a short but successful trip was made by Lieutenant Theodore G. Ellison of the United States navy. This, we believe, is the first trip made by an American naval officer.

Although the altitude of over 11,000 feet reached by the late Arch Hoxsey, was previously accepted as a world's record facts that have now come to light, prove these figures unreliable, owing to the fact that the barograph used in that flight had not been previously calibrated. Regrettable as it is, Hoxsey's brilliant flight counted for naught.

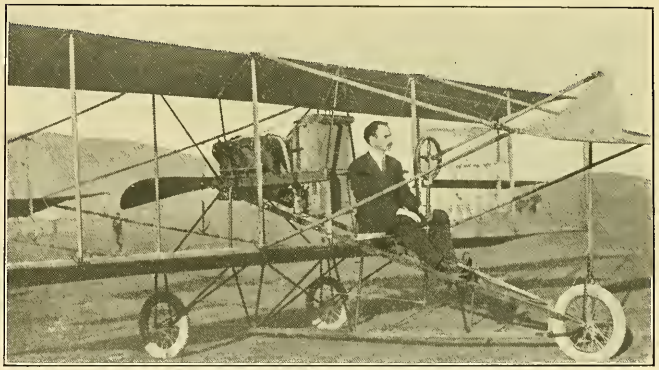
Experiments with a combination aeroplane and dirigible are being made at San Antonio by Lieut. H. E. Honeywell, with some degree of success. Trips of from 8 to 30 minutes have been sufficient to demonstrate the "non-capsizable" qualities of this new type of flyer, which by the way is named "Diriplane."

Lieut. John Rodgers was lifted 400 ft. from the deck of the cruiser Pennsylvania on February 1st, by a train of eleven man-lifting kites. Whilst suspended Lieutenant Rodgers made observations and signalled results to officers aboard the ship.

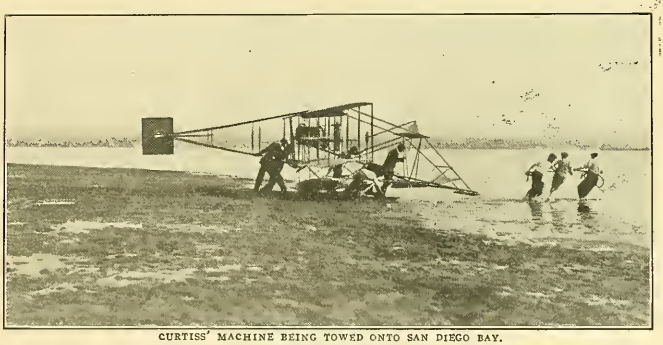
A small group of aeronautical enthusiasts, with Frisbie and Purnes as aviators, are expected to arrive at Baton Rouge, La., the latter part of February to give exhibition flights.

REPORTING ON THE STRENGTH AND POSITION OF FIELD ARTILLERY AS SEEN FROM AN AEROPLANE DURING THE SCOUTING TESTS AT SAN ANTONIO RECENTLY.

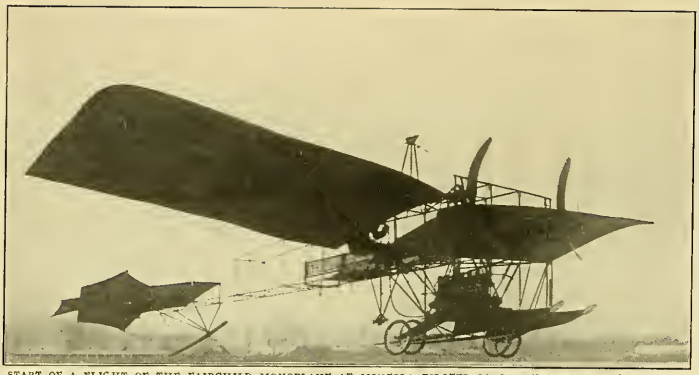
Reading from right to left Roland Garros, Réné Simon, Réné Barrier, Lieut. Foulois, U. S. Army, P. L. Young, General Manager International Aviators and Edward J. McCormack, press representative, International Aviators.



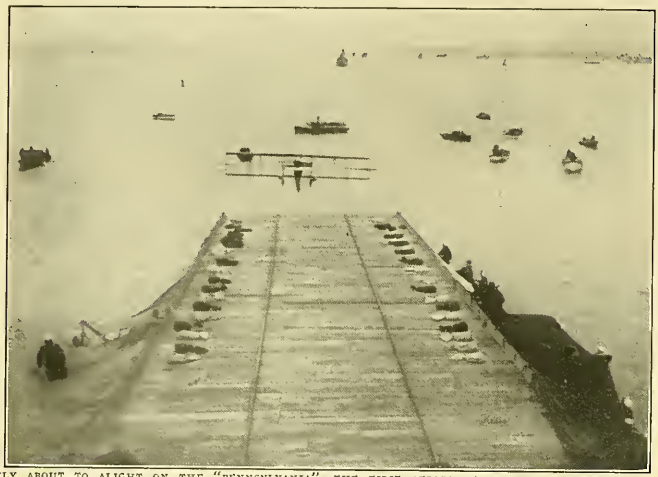
GLENN H. CURTISS AT THE WHEEL OF HIS LATEST BIPLANE.



CURTISS' MACHINE BEING TOWED ONTO SAN DIEGO BAY.



START OF A FLIGHT OF THE FAIRCHILD MONOPLANE AT MINEOLA PILOTED BY FRANK SCHUMACHER. THE MACHINE IS DRIVEN BY A 6-CYLINDER, 100 H. P. EMERSON ENGINE.



ELY ABOUT TO ALIGHT ON THE "PENNSYLVANIA"—THE FIRST AEROPLANE-LANDING EVER MADE ON A VESSEL AT SEA.

WALTER LOWE FAIRCHILD AT THE WHEEL OF HIS TWIN-PROPELLER MONOPLANE. THE PICTURE SHOWS CLEARLY THE POSITION OF THE EMERSON ENGINE, WHICH IS PLACED LOW WITH THE IDEA OF OBTAINING STABILITY. A DESCRIPTION AND DRAWING OF THIS MACHINE FIGURE ON PAGE 154, VOL. I.

An original monoplane is being built at Long Beach, Cal., by H. J. French. It will embody some hitherto untried methods of balancing and guiding. A 35 H. P. Holbrook motor has already been installed and tried out.

Men who have taken the Aeronautic Course at the West Side Y. M. C. A. have organized themselves into the Aeronautical Alumni Association. These men are making experiments, each carrying out his own ideas as to the proper method of airship construction.

Mr. A. G. Marquis, of Rochester, N. Y., is the inventor of a new stationary and vertical dial indicating compass, for use on aeroplanes, which will prove a very valuable acquisition in aerial navigation.

Henry J. Winter and Francis J. C. Ferris, of New York, have organized the International Aeroplane Manufacturing Co., and intend starting in the manufacture of aeroplanes shortly.

Washington will have its first national aeronautical exposition from March 5 to 12, inclusive. The exhibit will be held in Exposition Hall, one of the largest buildings in the country, which has just been completed at M and North Capitol streets.

The answer of Claude Grahame-White, defendant in an infringement suit instituted by the Wright Company, was filed February 6th in the United States Circuit Court. Grahame-White denies that Wilbur Wright or Orville Wright was the original inventor of a new and useful invention in flying machines.

The answer also asserts that the patent issued to the Wright brothers is void, because the alleged invention or discovery, owing to the state of the art of flying at the time that application was made, and for a long time prior thereto involved nothing more than the exercise of mere mechanical skill, and for this reason was not a patentable novelty.

For these and other reasons Grahame-White asks the Federal Court to dismiss the complaint.

Announcement is made that the War Department will soon advertise for bids for twelve aeroplanes to be used by the new corps of military air navigators which the Government expects soon to organize. Brigadier-General James Allen, chief signal officer, gave out the news after he appeared before the Senate Committee on Military Affairs and made a plea for the item of $125,000 for aviation experiments carried in the army appropriation bill.

"It is my intention," General Allen said, "to establish a number of aerodromes or hangars. One is to be near Washington, probably at College Park. We already have one at San Antonio, Tex., and we shall establish one at Fort Leavenworth, Kan., and one in Southern California.

"The latest bid we had from the Wrights was one of $5,000 for each aeroplane. We have never had a bid from the Curtiss concern, and the report that Curtiss is coming to Washington to organize air scouts for the War Department is not true. I expect that the Signal Corps will do that, and pretty soon.

"It is likely that we shall soon ask for more officers for aeroplane work. We now have two men detailed with Curtiss in California."

The Goodyear Tire and Rubber Company have put upon the market a new rubber coated fabric for aeroplanes which they claim is stronger than silk and will not stretch or shrink.

The Goodyear Co., have apparently come into aeronautical trade to stay as they also manufacture a high grade detachable aeroplane tire and are going after business in a most energetic and convincing manner.

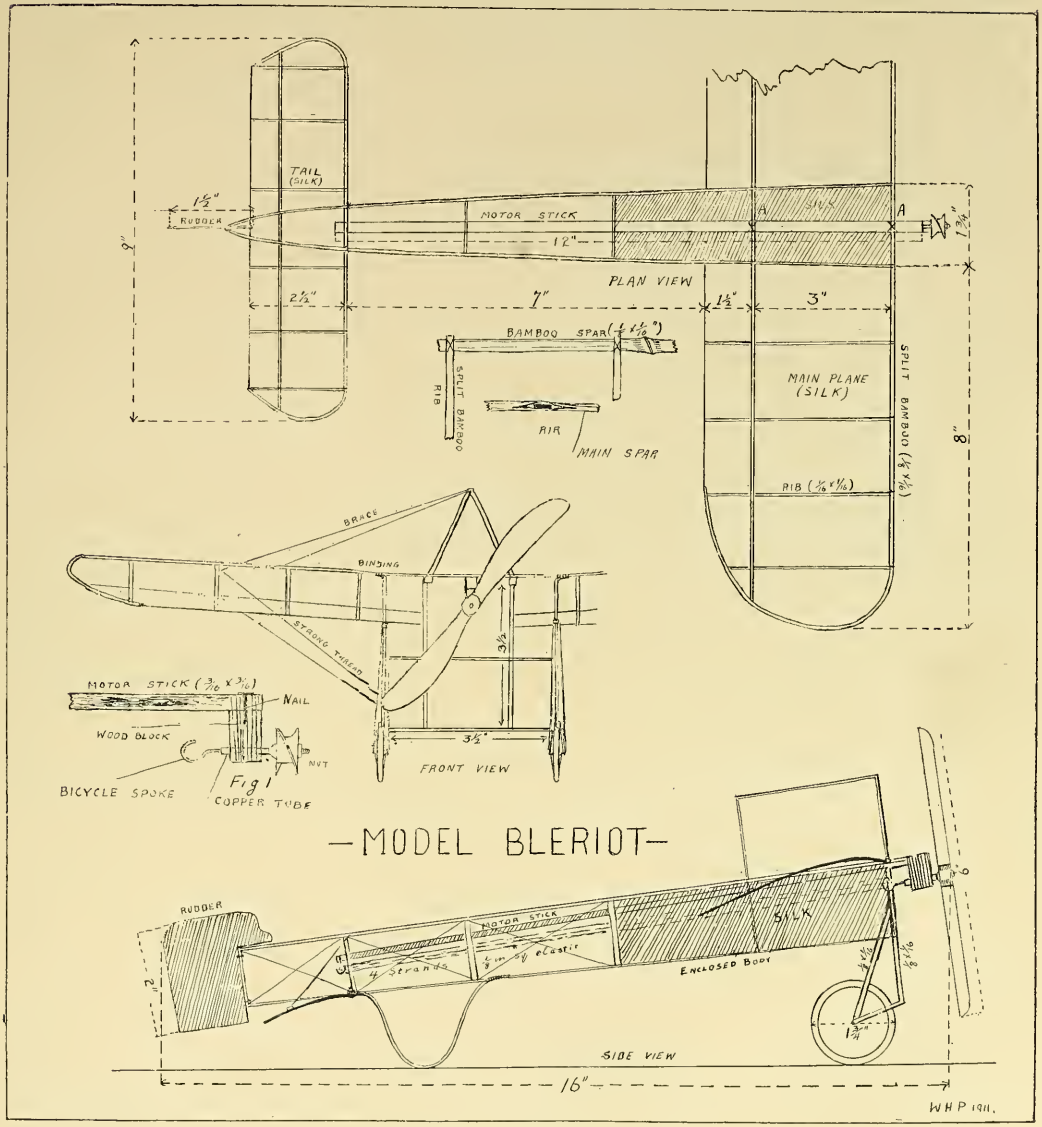
The Wright Company announces that the Burgess Company and Curtis of Marblehead, Mass., have entered into an arrangement with them whereby they secured a license for the use of the Wright patent in all of the aeroplanes which they produce. These machines may be used for sporting purposes only, under the same sales arrangement on which the Wright Company sell their own machines. The license for profit may be secured on the same terms as purchasers of their own machines.

On February 16th an attempt was made to fly across the Hudson River from Guttenberg, N. J., to New York. It was the intention of the aviator to alight in Central Park near Columbus Circle; his engine failed, however, while he was over the river. He was up high enough to glide to land on the Jersey side, but preferred to come down on the water; he was picked up by a passing tug, escaping with nothing worse than a frigid drenching; the machine sank, but will, it is expected, be salved.

It is hard to see what there is to gain by such a feat as this; one can afford to disregard as harmless the craving for notoriety of a certain class of showmen-aviators as long as it does not endanger the rest of humanity, but such is not the case in the attempt to get into the public eye referred to above. A flight over New York might possibly be attempted at a great height at this period of the art by an experienced flyer, the capabilities of whose machine were known to be such as to accomplish the feat successfully, but even in such a case an attempt to land in the city could only be looked upon as a piece of reckless and criminal folly. As it is, the attempts being made in this direction should certainly be stopped before they hurt the cause of aviation.

CONSTRUCTION DRAWINGS OF A BLÉRIOT MODEL

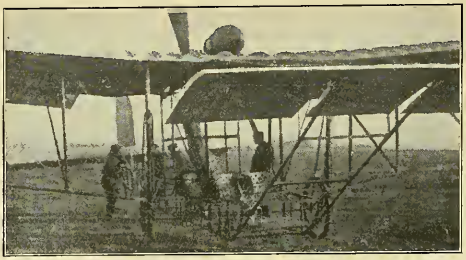
By W. H. Phipps



A SUCCESSFUL BLÉRIOT MODEL

To construct the model illustrated in the above drawings procure the following materials: Several strips of small split bamboo about ⅛ inch thick and three feet long. These can be split up to the desired sizes and lengths given in the drawings. For the motor get a small stick ⅜ inches square and 1 foot long, a small wood block and some copper tubing for making the bearing shown in fig. 1. The motor-stick is fastened in the frame only at the two points marked A in the upper drawing, and the elastic is to be stretched between the bearing hook and the rear hook as shown.

The other materials necessary are: One yard of light China silk, some fine wire, a spool of thread, a small pot of glue and two small wheels.



A FRONT VIEW OF THE NEW FOUR-SEATER BLÉRIOT, WHICH RECENTLY CARRIED EIGHT PEOPLE.

FOREIGN NEWS

By D. E. Ball

Cuba

Cubans who previously had only witnessed the flights by André Bellot, are nowadays seeing a great deal of flying. The Curtiss aviators, McCurdy, Ward, Beachey and Russell, gave a series of exhibitions at Camp Columbia, near Havana, from January 28th to February 7th, at which McCurdy proved to be the star, but where several good flights by Ward were also made.

McCurdy's great flight from Key West over the Straights of Florida occurred on January 30th. Its place in aeronautic history as a record-breaking feat is shown in the Aero Club of America's Bulletin of February 1st, published elsewhere.

The newly formed Aero Club of Cuba is planning a meet on a large scale for the first fortnight in March. The Moisant aviators (Simon, Barrier, Garros, Audemars, Hamilton, Frisbie and Seymour) will be there, and it is hoped that several Wright and Curtiss flyers will also attend. A prize was offered for a flight from Columbia Field to Havana Harbor and back, including two circuits of Morro Castle, to be tried for any time during February; the feat has already been successfully accomplished by McCurdy.

England

At the annual banquet of the Royal Aero Club of the United Kingdom, which took place on the last day of January, several important prizes were presented, including the $5,000 cash prize which goes to the winner of the Gordon Bennett Aviation Cup, won last year by Grahame-White, and the Baron de Forest prize of $20,000 for the longest straightaway flight (including the crossing from England to the Continent) on an all-British machine in 1910, which was won by Sopwith (with 169 miles), and the British Michelin Trophy and $2,000 prize won by Cody.

On the day after the banquet, Sopwith flew from Brooklands Track to Windsor at the invitation of the King. He stopped at Datchet on the way and before landing on the Castle grounds in the presence of King George, circled the historic tower. The machine used was a 60 H. P. Howard-Wright biplane, similar to that in which he won the DeForest Prize.

France

Perhaps the most notable feat to occur in France during the first month of 1911, was Roger Sommer's 20 minute cross-country flight at Douzy on January 28th, carrying five passengers besides himself. The lightest passenger weighed 106 lbs., and there seems no doubt that in this instance a heavier-than-air machine carried in flight a load greater than its own weight.

A few days before, Henry Farman had broken Bréguet's weight-carrying record of 923¾ lbs. by carrying five passengers weighing 929 lbs., but all these feats were overshadowed on February 2nd, when Théodore Lemartin the Blériot driver, took up seven passengers besides himself on the new 100 H. P. four-seater now at Pau. The load carried was about 1,100 lbs. Because of the larger engine used his performance is no doubt not as meritorious as Bréguet's; it is certainly impressive, however, seeing that very few self-propelled *road*-vehicles carry more than seven all told.

This new machine is different from anything hitherto constructed by M. Blériot, inasmuch as it is fitted with a *front* elevator and a *rear* propeller. The 100 H. P. Gnôme motor is situated on top and at the rear of the main planes, while the passengers sit below as on the old Blériot XII.

Bathiat, who formerly drove a Bréguet biplane, is now piloting a Sommer monoplane. On January 15th he made a remarkable straightaway flight of 68 miles in 52 minutes. He had, of course, a strong wind to help him; its exact velocity is not stated but in any case the excellence of the machine was proven either for speed or for stability, according to whether the wind was light or strong.

Another new monoplane which is beginning to make history is the two-seater Déperdussin. On January 11th, Vidart left Mourmelon on one of these machines with his friend Galliard and flew to Rheims. This pilot and this machine held at that time the world's record for speed for a two-man flight (50¾ miles per hour).

On February 13th Busson flew on one of these swift monoplanes, with a passenger 100 kil. in 1 hr. 1′—the same time as that in which Grahame-White won the Gordon Bennett Cup on his 100 H. P. single-seater!

Emile Aubrun has been continuing his work with the Morane monoplane. On January 18th, he was flying for about an hour and a half and the following day for a further half hour. He expects to shortly make an onslaught on existing speed records.

Henry Weymann's passenger-carrying feats across country on January 17th and 22nd, are referred to under Club News in the Aero Club of America's Bulletin of February 1st.

At the Hanriot School on January 23rd, Lieut. de Grailly, at his fifth lesson, flew for 30 kiloms. across country, passing over Bétheny and Vitry. The builder M. Hanriot, father of Marcel Hanriot, was also flying, and in the course of one of his long trips made use of the clock tower at Bétheny as a mark-post.

At Juvisy on January 26th, Védrine made a flight on a Goupy of 2 hrs. 24′,—a record for this interesting biplane, a picture of which occurs on page 253 of Volume I of AIRCRAFT.

On January 5th, the aviation pilot licenses issued by the Aero Club of France numbered 354, of which 327 were granted in 1910; 188 licenses were obtained on biplanes and 166 on monoplanes. Of these 354 aviators, fourteen, or slightly less than four per cent, met their death as a result of aeroplane accidents; nine of these were French and five of other nationalities. Of the 340 now flying 263 are French and 77 of other nationalities; these 77 include Peruvian, Brazilian, Chilean, Uruguayan, Rumanian, Turkish, Australian and Japanese aviators. A large number of men of other nationalities also passed their tests in France, obtaining licenses from their home clubs.

The 1911 rules for the Coupe Michelin have just been published in Paris. *Distance* remains the standard whereby the trophy will be awarded, but otherwise the rules are radically changed.

The Cup will be competed for *across country*, two points, 50 or 100 kilometres apart, being selected as turning points—only complete circuits to count—and *stops* will be allowed, the minimum average speed to be maintained being placed at 50 kilometres an hour for each and every circuit made. The flights may not extend over twenty-four hours.

The speed of the aeroplane and the endurance of the aviators thus become the prime factors for success in this competition.

On December 21st, Legagneux covered over 500 kilometres under six hours. In the thirty-two hours intervening between 7.30 a. m., December 29th and 3.30 p. m., December 30th, Tabuteau was flying for a total of over thirteen hours in two flights. These two feats show the possibilities of the 1911 Michelin Cup Competition. Searchlights will no doubt be carried on the aeroplanes for the circuits which will be made at night.

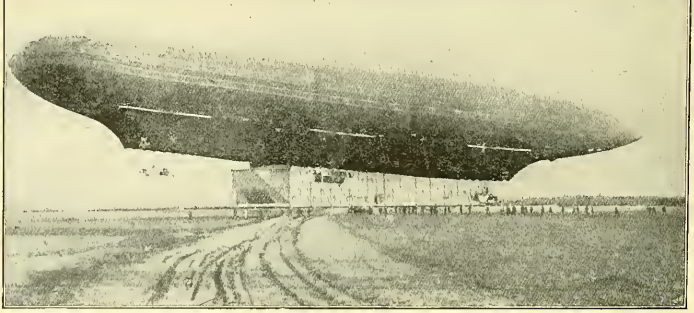
A competitor is not allowed to change his motor, his propeller or the cloth of his planes; seals will be affixed to these parts to identify them.

Realizing that the tests imposed by the Aero Club of France upon applicants for pilot-aviator's certificates are not very severe, General Roques, the head of the French Military Aviation Department, has drawn up a list of four tests, which will be required of those officers seeking to qualify for aviation duties. They are:

1 A flight of more than 100 kiloms. across country.
2 A flight of more than two hours' duration.
3 A flight at a height exceeding 300 metres.
4 A flight in a wind blowing at a rate exceeding 10 metres per second.

At the present time 14 military and two naval officers have fulfilled these conditions. They are as follows: Captains Bellenger, Sido, Marconnet, and Marie; Lieutenants Cammerman, Féquant, Rémy, Aquaviva, Crosnier, Chevreau, Maillols, Maillort and Letheux; Adjutant Ménard and Naval Lieutenants Biasson and Delage.

The first days of February saw the first of the great cross-country raids for which the year will no doubt be notable. Capt. G. M. Bellenger of the Aviation Corps, left the military aerodrome at Vincennes on the outskirts of Paris, at 8.45 a. m., February 1st; eight hours and twenty-two minutes later he landed at one of the Bordeaux aerodromes having made two stops en route for gasoline. On the next day he went from Bordeaux to Pau in a



THE LATEST DIRIGIBLE—THE GERMAN SEMI-RIGID SIEMENS-SCHUKERT WHICH IS NOW UNDERGOING TRIALS NEAR BERLIN. THE LARGEST DIRIGIBLE OF ITS TYPE IN THE WORLD.

single two-hour flight. The distance from Paris to Bordeaux by air is around 330 miles; Pau is 140 miles further.

The first fatal accident to occur in France this year happened at Douai on February 9th. The victims were André Noël, pilot, and Delatorre, passenger.

The wings of their monoplane collapsed when planing down at the end of a test-flight made before military authorities.

Germany

A large number of German aeronautical designers have joined together to form a society of aeroplane dealers and contractors and have petitioned the German Government to establish an official aeroplane department in connection with the Imperial Patent Office.

Lieutenant Stein of the German military aviation service, was killed on February 6th, while making a flight at Doeberitz. When at an altitude of about sixty feet the motor of his Wright biplane stopped and he was unable to negotiate a successful glide to earth.

On January 23rd, Grade attempted to fly one of his monoplanes from his works at Bork, near Berlin, to Madgeburg. When, however, he reached Belzig, about 30 miles from Berlin, he experienced trouble with his motor and planed down slowly from a height of 2,000 feet. An investigation showed that the oil had frozen in the pipes owing to the extreme cold.

India

At Calcutta, Baron Pierre de Caters and Jules Tyck have been making flights on Farman and Blériot machines respectively, while at Allahabad, Pecquet and Keith Davies have been giving exhibitions on their Humber machines, Pecquet using a biplane of this make and Davies a monoplane.

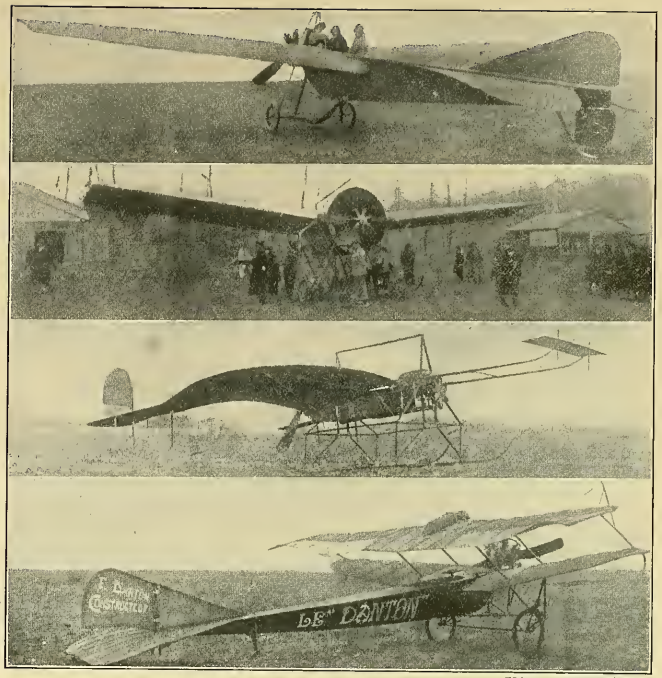
Italy

The new Italian dirigible "Ansonia II," built by Signor Picoli, accomplished a very satisfactory trial trip on January 20th, cruising from its shed near Verona across the Lake of Garda to Monticchiari.

Peru

The first flights to be made in this republic were undertaken recently by Jean Biélovucic, the Peruvian who has so successfully piloted Voisin biplanes in France.

On January 22nd, he flew from Lima to Callao at a height of 200 ft. and on January 23rd, passed over Lima at a height of 1,800 feet, creating much excitement among the people. His fame is now but little inferior in Peru to that of his immortal countryman, Georges Chavèz.



FROM LONDON AERO.

(A) The new R. E. P. two-seater, in which the passenger sits behind the pilot. (B) The Jourdan monoplane. The pilot sits below the cylindrical centre, which is open, but tapers slightly towards the stern. (C) The Schraeck monoplane, with backward extending wings like an exaggerated Weiss. On each wing tip is an elevator and rudder, and there is an elevator forward, but no tail. The "Bread and Butter-fly." (D) The Danton biplane, a kind of biplane Antoinette.

CLASSIFIED ADVERTISING

10 CENTS A LINE ✦ SEVEN WORDS TO LINE ✦ CASH WITH ORDER

FOR SALE

FOR SALE—50 ft. P. Harriman motor complete, Sheblar carburetor $100. High tension magneto, everything new, has been run only once. This motor is being sold by the Harriman people for $1,675; my price $900 cash. Address "Harriman," care AIRCRAFT.

AEROPLANES AND MOTORS bought and sold. Best terms offered. Aero Clearing House, 299 Broadway, New York City.

AEROPLANE—My Curtiss improved type biplane with which I have made many very successful flights, 1,000 feet high and 20 miles cross country. Equipped with famous Elbridge feather-weight engine. Packing boxes and extra parts included. Will set up and teach buyer to fly—anywhere. Perfect flyer guaranteed. Immediate delivery. Sickness in family compels sacrifice. Price $2,000. Worth double. Address Henry Charles Cooke, 128 West 65th St., New York City.

THE INGENIOUS YANKEE EAGLE HELICOPTER—Most novel and scientific flying toy ever made, very educating, best experimental Flyer for children, gives everybody a good idea of aerial motion. Sent anywhere for 15c postpaid; stamps accepted. Write Lorentzen, 161 East 128th St., New York.

A BEAUTIFUL four-colored postcard of the late John B. Moisant flying at New Orleans, December 27, 1910. 2 for 5c; 25c per doz. Geo. Wallace, 103 Royal St., New Orleans, La.

JUNIOR FLYER model aeroplane, 25c. Efficient wooden propellers, 5 to 8 inch, 25c. Cambridge Specialty Co., 29 Ware St., Cambridge, Mass.

BLERIOT, genuine French manufacture, latest cross Channel type, condition as new; $500 worth of spare parts, must sell, bargain. "Blériot," 75 Union Ave., Montreal.

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THE SCIENTIFIC AMERICAN TROPHY commemorates Prof. S. P. Langley's aeroplane—the first successful machine in America and the precursor of the modern monoplane.

The Scientific American Aeroplane Trophy

After being thrice won by Glenn H. Curtiss in the past three years, THE SCIENTIFIC AMERICAN TROPHY will soon be presented to him by the Aero Club of America, in accordance with the rules. Mr. Curtiss has acknowledged the inspiration this Trophy has been to him in giving him something new and harder to accomplish each year, so that we are gratified to know that our purpose in giving the Trophy has been fulfilled, and that it has been instrumental in promoting the progress of aviation in the United States.

For 1911 we call the attention of the aeronautic world to the $15,000 prize offered by Mr. Edwin Gould through THE SCIENTIFIC AMERICAN for the best aeroplane having two complete power plants that can be run together or separately.

This generous offer of Mr. Gould, will make it well worth the while of American inventors to still further improve the aeroplane.

The date of the contest is July 4th. We will gladly send further particulars upon request.

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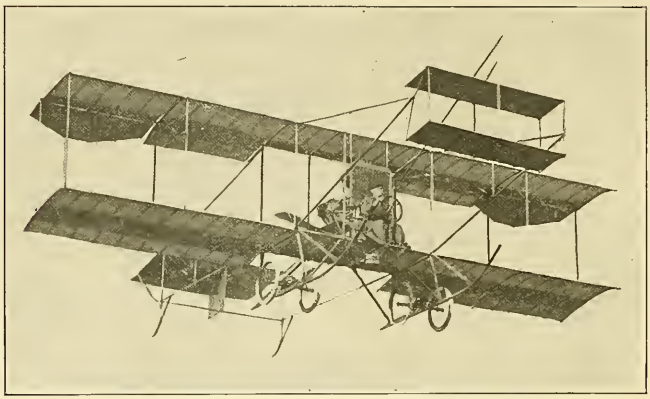

FRED E. WISEMANN IN FLIGHT, SAN FRANCISCO MEET

RADLEY PLANS RECORD FLIGHT

English Aviator Will Attempt to Make Trip to San Jose in 39 Minutes

Frederick Wiseman of Santa Rosa to Join in Garden City Performances

San Jose and San Francisco are to be linked in a record aeroplane flight next Saturday, if James Radley, the English aviator, finds the weather at all agreeable. The British birdman and his Blériot mooplane will remain at Selfridge field until Saturday, and at 1 30 o'clock start for San Jose. After his arrival there Radley, assisted by Frederick J. Wiseman, the Santa Rosa aviator, in his original biplane, will give exhibition flights Saturday and Sunday afternoon.

The San Jose rose carnival committee, the San Jose chamber of commerce and the Santa Clara Valley area club are financing the flying. Radley has taken Wiseman under his wing as "the most promising amateur he ever saw," and the young Californian will take a prominent part in the meet at San Jose. Indeed Wiseman will be the sole attraction Saturday afternoon until Radley comes buzzing on the scene. Then both aviators will do fancy flying together during that and the following afternoon.

The Englishman has set his heart on making the 40 miles between Selfridge field and San Jose in 39 minutes, which would be a record even for the swift flying Blériot. As Radley flew a straight mile at Lanark, Scotland, at the rate of 77.6 miles an hour, he believes he can make the record here.

Wiseman has a biplane of California make and idea. It is said that his craft bears most resemblance to a Farnam biplane, but it is original in control and equipment. The California lad has made many successful flights with his machine in Sonoma county and two very good flights at the meet now in progress. He is pronounced to be an expert in aviating and eligible, so far as skill goes, to the professional class.

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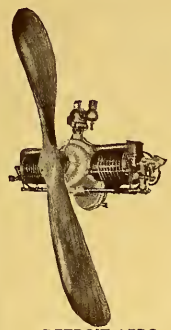

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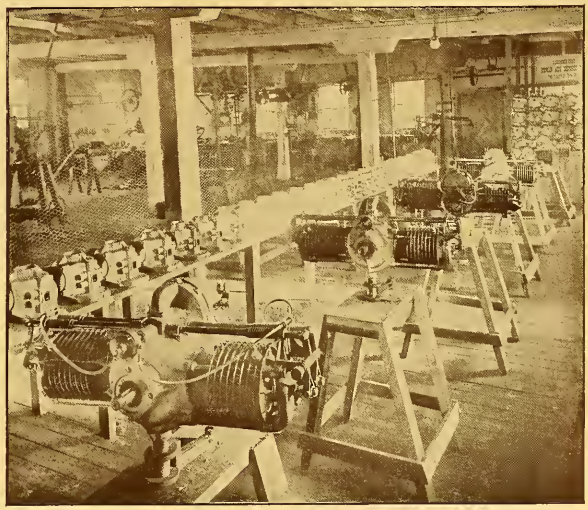

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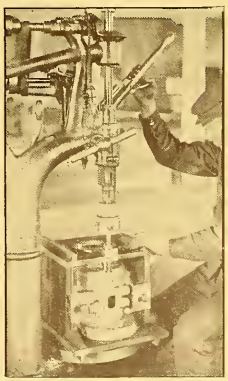

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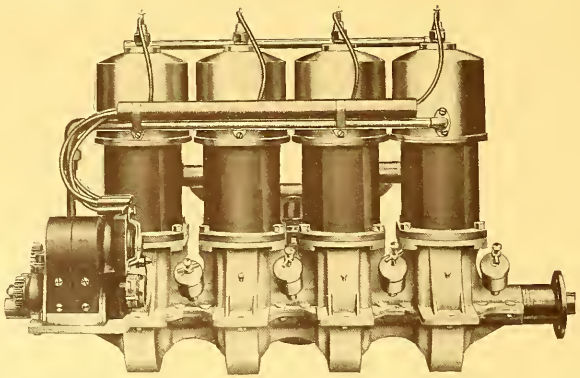

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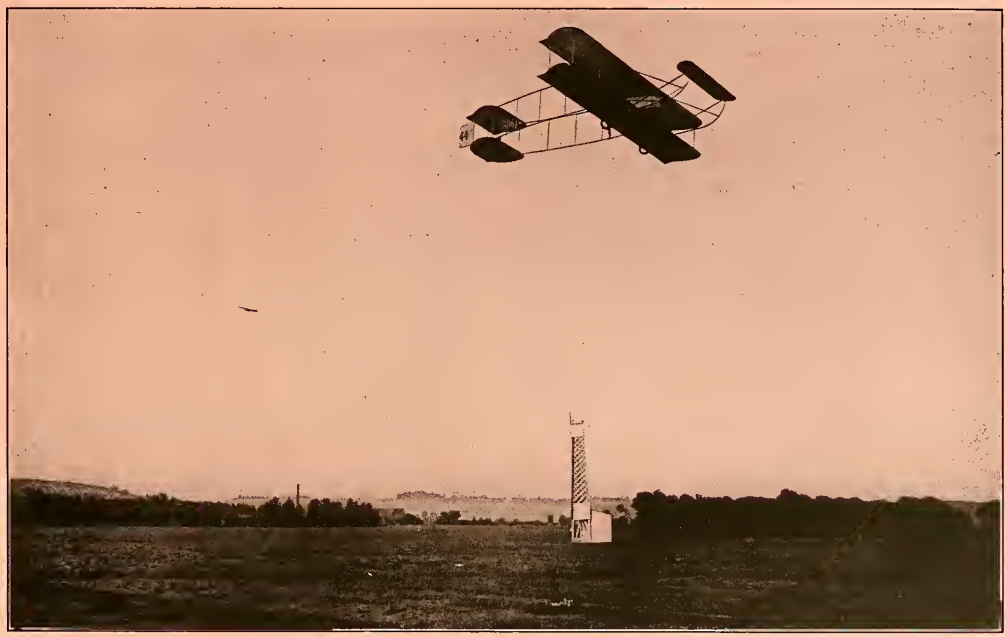
AIRCRAFT

Vol. 2 APRIL, 1911 No. 2



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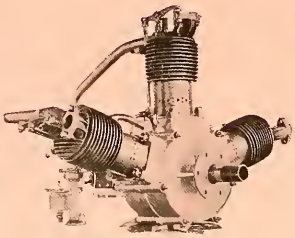
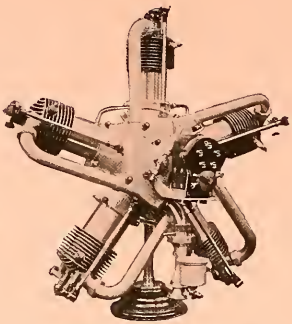
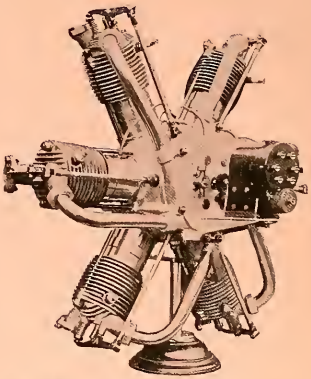


3 Cylinder, 1911 Type, 30 H. P.



5 Cylinder, 1911 Type, 50 H. P.



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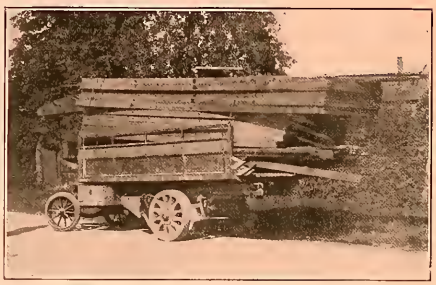

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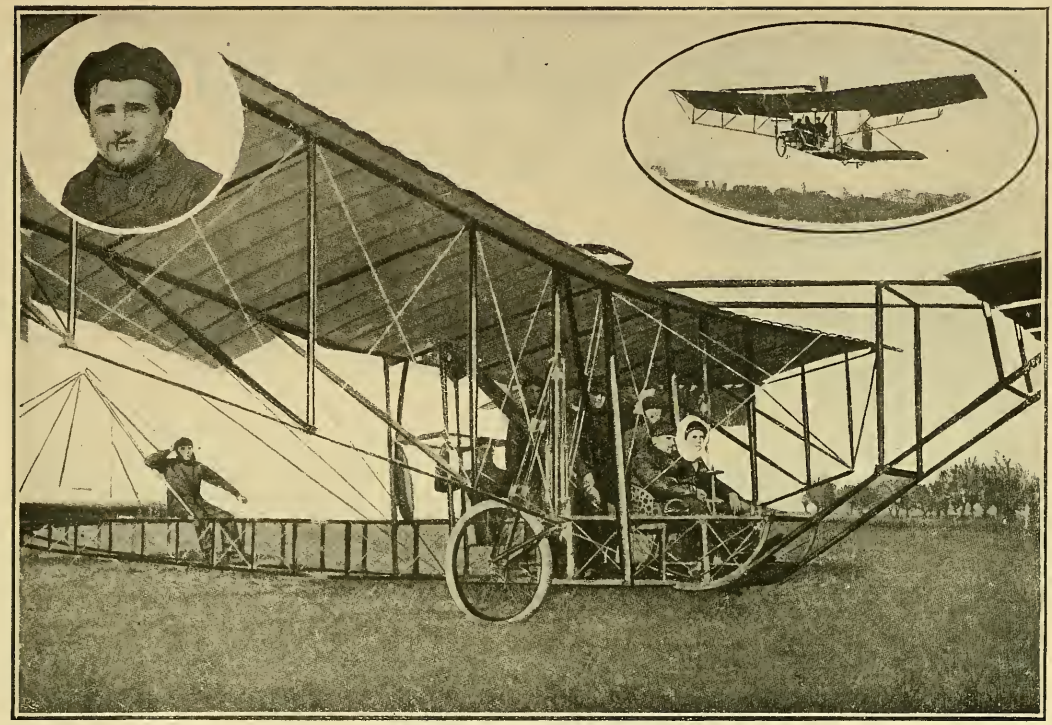

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AIRCRAFT

Published Monthly by The Lawson Publishing Company

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Entered as "second-class matter" February 18, 1910, at the Post Office, at New York, N. Y., under Act of March 3, 1879.

AIRCRAFT

Vol. 2. No. 2 NEW YORK, APRIL, 1911 15 CENTS A COPY $1.50 A YEAR

AIR-COURAGE vs. HEIGHT FEAR

By Henry A. Wise Wood

ONE of the strange, and hardly-to-have-been-looked-for developments in the sport of flying is the fearlessness with which the average individual seats himself for the first time in an airplane and unconcernedly sails away. This is noticeably true of women, who will rush in alarm from the minor perils of life to cast themselves at the skids of the first airman they meet, and beg to be taken aloft. Fearful of a mouse, they attempt the moon, as it were, without hesitation. So universal, indeed, is the interest of women in flight that it may be said to represent an actively favorable and hopefully expectant attitude on the part of the whole sex—which is a decidedly helpful influence of great value. Against this generalization, however, there stands the testimony of a body of solid and respectable citizens—men who, averring that they have been compelled by their wives to promise to forego the pleasures of flying, stay safely aground. Still, the testimony of these wife-anchored, but otherwise possible enthusiasts, does not seem to bear upon the point at issue, because it fails to prove that their wives are, themselves, afraid to fly. Besides, we suspect that this "The woman, she held me" attitude will quickly yield as the sport advances; and the veriest earth-clinger be released from the clod-in obedience to the law that reluctance varies inversely as the square of the safety with which a temptation may be embraced.

But, to return seriously to the subject in hand, it may broadly be said, the writer believes, that we unexpectedly find ourselves not afraid to fly. This seems a surprising discovery, for we none of us, save only the few who by nature or training possess the knack, can comfortably stand on the edge of a cliff, or contentedly peer down from the cornice of a modern sky-scraper. Of all who admiringly watch him from the street, who would change places with the swaying steeplejack aloft in his bos'on chair! Still, hardly one of the very same throng would refuse the hurried "Jump aboard!" of a Wilbur Wright, to view the very same steeplejack from on high. Drexel, for instance, who fetched 9,897 feet at Philadelphia, and has flown after the height record as often, perhaps, as any other man now flying, told the writer that inside the railed balcony of the Singer building, but five hundred feet up—where he had gone to watch the Belmont flyers round the Statue of Liberty—he grew so timid that he had to take hold of the ballustrade to feel himself safe. He said, on the other hand, that from his first moment in an airplane he had never experienced fear, and than but one of the many passengers he had carried seemed at all afraid, and that this one, after three-quarters of an hour in the air, grew so comfortable he declined to come down. Ely, it is said, after his flight to the "Pennsylvania," in San Francisco Bay, refused to go to the dome of a tall building to see the course he had flown, saying that never had he been able to look from the top of a three-story building without "going wobbly kneed," and having to hold on. When told the height was only 225 feet, and that he had often flown from ten to twenty times as high, he replied:

"But you are confusing biplanes and domes. The kind of support you have while up in the air has a great deal—I mean has everything to do with your sensations while up. In an aeroplane in the air you are in a boat afloat in its natural element. There is no fixety, and that explains why I grow dizzy looking out of a second-story window and feel no ill physical effect, unless a trifling consciousness of breathing, when thousands of feet above the ground."

The foregoing indicates that with flying a new branch has sprouted from the tree of the science of psychology, and is awaiting investigation. Paradoxical as it may seem, the same individual may be possessed of height-fear and what may be called air-courage; and the latter, a new and unsuspected quality of mind, seems to be so widespread as to warrant the assumption that it is a universally prevalent racial characteristic. While it is, perhaps, too early to attempt more than a superficial analysis of air-courage—and this article is written not for that purpose, but merely to suggest its existence, and to point out the tremendous driving power which such a force must contribute to the movement—an examination of the subject may be of interest, nevertheless. Concerning the cause of height-fear Professor Woodworth, of Columbia University, says:

"There is, of course, an absence of the usual visible objects which serve to steady one; and there may easily occur an obsession with the thought of the novel and dangerous position. The absence of steadying influences and the presence of disturbing thoughts of course tend to make motor-control uncertain."

This seems to be an entirely reasonable explanation of the panic which seizes most of us when we look down from a great height—but why is the detached man in the air not subject to the same obsession? He, also, is without the assistance of the usual visible objects, and no less should he be concious of the novelty and danger of his position. Still, why is he, who is afraid to climb, not afraid to fly? It would almost seem that the airplane has arisen to confute the Darwinian theory of racial descent, and that man is in reality a defeathered bird—and not an untailed simian! But to return: Is there not the germ of a possible explanation in the fact that the boy who will shin up a tall tree without hesitation, often falls to praying when he looks down from its top? Might not this phenomenon be expressed thus: That which seems from the ground to be but a little way aloft will appear, when reached, to be many times its previous apparent height further away. This, together with the fact that the sensation of height, with its attendant state of panic, cannot be realized when upon the ground, leads the boy fearlessly to start climbing. Being busy with his exertions, his face turned

upwardly, he reaches the top without nervousness; when, turning, he sees the ground far beneath him, realizes that his safety depends upon his ability to hold on, suddenly suspects that he may not be able to do so, becomes panic-stricken, and hugs his tree for dear life. His fright would seem to be due to a, perhaps unconscious, fear that his muscles will fail him; that they cannot be relied upon to get him down again. On the ground he has grown to rely on them through habit, and in the knowledge that a tumble there is of little consequence; but at the unaccustomed height it occurs to him that their failure will result disastrously. Then their function ceases to be instinctive and involuntary, and the boy becomes muscle-conscious and distrustful of his power to control and support himself. This, in turn, suggests the possibility of his letting go, a panic follows—and the boy has become the victim of height-fear. The case of an adult on a roof's edge would seem to be analogous, except that there often is present the belief that one has the wish to throw one's self off. Here the possibility of an accidental fall through loss of motor-control, undoubtedly suggests a deliberate performance of the act. In both instances it would appear that a suspicion of the possible failure of the muscles of support is the basis of height-fear; and is also the cause that impels us to lie flat, if we can. Mountaineers, sailors, house-smiths and steeple-workers have rid themselves of height-fear merely by accustoming themselves to rely on their motor-control under hazardous conditions, until it becomes wholly an involuntary, and therefore a trustworthy, function.

Now, the situation of a person in an airplane seems to be distinctly different. During the first flight he is a passenger. Seated comfortably in a structure which directly supports his trunk, his limbs are relieved of the responsibility of having to get him either up or down. Not requiring them for his safety, he need not fear their failure—so there is absent the suggestion, which seems to be the root-idea of height-fear, that the loss of his muscle-control will cause disaster. Two other factors assist the novice: Like the climbing boy he starts from the ground, and his attention is directed upwardly till, the airplane being in motion and its machinery in action, his thoughts are drawn away from himself and become objectively engaged. In this detachment of mind evidently lies the remedy for height-fear. From this state the novice passes into one of exhiliration and enjoyment, wherein, having grown used to his surroundings, he developes a fully-fledged case of air-courage—and becomes an enthusiast.

The foregoing, which the writer cheerfully admits is a tedious exposition, would seem to offer a valid explanation of the freedom from fright, and the pleasure, enjoyed by those who fly even for the first time. That we have an innate confidence in the security of flight can no longer be gainsaid; but for the stimulation of those who still doubt that we take to air, like the proverbial fish to water, a perusal of the following news items—prophetic of what is to come—is recommended:

"On Saturday last at Bétheny, Marcel Hanriot, sixteen years of age, took up a photographer on his machine, who secured pictures of Rheims and Vitry. Afterwards his father was flying and took as passengers his two little daughters, Germaine and Lili, and subsequently Madame Hanriot went for a trip of 25 kilometres with Louis Lenfant, the chief instructor at the Hanriot School." —London *Flight.*

"Charles F. Walsh, a Los Angeles aviator, to-day took his wife and two children, Kenneth and Juanita, for an afternoon outing in his California-built biplane. Two canvas seats had been placed, one on each side of the driver, and into these climbed Mrs. Walsh and little Kenneth, aged six. Mrs. Walsh carried her four-year-old daughter, Juanita, in her lap. None of the party seemed to be the least bit nervous."—*New York Herald.*

RECORDS AND STATISTICS

By G. F. Campbell Wood

The appended tables of officially recognized World's Records were published at the end of February by the Fédération Aéronautique Internationale. They do not include any performance subsequent to December 31st, 1910.

I have made no changes in these tables except in three instances where obvious mistakes were made in compiling it: the 100 kilometre record which was in error credited to Leblanc instead of to Grahame-White, the Greatest Speed record which probably through some slight mistake in figuring, was given as 109 kil. 756 per hour instead of 109.356, and the "Distance in a given time" records for ½, ½ and 1 hour, which were quoted as 20, 40 and 90 kilometres respectively, the first two being credited to Leblanc last July and the hour record to Morane in September, but all three being below Leblanc's figures at Belmont Park: the balance of the list is just as received from the Federation.

I have been asked to comment on these tables and to bring out the points about them which may be of interest to the statistician and to the close follower of the sport of flying: these are certainly not lacking.

Take the first table, that of "Time over a Given distance—Aviator alone": it will be noticed that the times taken at Belmont Park which were given out with the fraction of seconds expressed in hundredths (having been taken with the Warner timing-machine) are here given with the fractions expressed in fifths.

In automobile races where the wheels of the cars passing over the line act on the timing-machine, the quotation of a time in hundredths of seconds is absolutely justified as the human error or personal equation does not enter into the matter, but where the timing depends entirely on the movements of a man's fingers, a time expressed in hundredths of a second gives, (in my mind), a fallacious idea of the approximation and accuracy with which the time is recorded; the timing of athletic events has shown that the best timers in the world are apt to vary a tenth of a second, and very often more, in their results, so that with a machine giving the hundredths of seconds, the error may be ten or fifteen units instead of one unit as it would be if expressed in tenths of seconds,—which, taken in all, is the logical approximation to consider in hand-timed events.

It is with this idea in mind and also that of using a uniform standard for all records, that the Federation reduced the times to the larger fractions.

In the December, 1910, number of this magazine, a list of Leblanc's times expressed to the nearest tenth of a second was published however, which is considerably more accurate than that now declared official by the Federation, not so much because it was expressed in tenths instead of fifths of seconds but because in transferring the hundredths of seconds into fifths the curious mistake was made in Paris of giving in every case (except the 40 kilometre record) a time faster by one-fifth than it should be: for instance 2′ 44″,78 was expressed as 2′ 44″3/5; whereas of course 2′ 44″4/5 is its obvious equivalent, and so on down the line.

As regards the 100 kilometre record given as 1 hr. 00′ 47″3/5 for 1 hr. 00′ 47″.73 a further point comes up in that it was by mistake that, last November, the record was reported to the Federation as being 1 hr. 00′ 47″,73; Grahame-White actually covered 100 kilometres in 1 hr. 00′ 41″,69 (as shown in the tables published on page 359 of Vol. I); this time he made between the end of the second lap and the end of the twenty-second lap of his great Gordon-Bennett flight; the time quoted as his best, (but actually six seconds slower) was made between the end of the first lap and the end of the twenty-first.

This brings one naturally to consider another point of interest: Leblanc's and Grahame-White's records made during the Gordon Bennett Cup race do not coincide with the "times" of that race, as successively recorded lap by lap: they are the fastest times made over the specific distance mentioned *at any time during the race.* For instance, Leblanc's time for his first 20 kilometres was 11′ 05″ but his *record* for the distance is 11′ 04″4/5, for he covered the 11th, 12th, 13th and 14 laps (the lap being 5 kilometres) in this time.

In the same way, Grahame-White won the Cup in 1 hr. 01′ 04″,74, but he flew two extra laps which were timed officially and as these were 23 seconds faster than his first two he flew his *last* hundred kilometres (from the end of the second lap to the end of the twenty-second) in 1 hr. 00′ 41″,69.

It seems only logical to credit records in this manner, but it is interesting to note that in no case has this been followed out in records made abroad: Bournique's 250 kilometre record is given as 3 hrs. 04′ 28″1/5, whereas it is perfectly obvious that he has covered the distance in 3 hrs. 02′ 39″3/5, seeing that 6 hrs. 07′ 07″4/5 was the time he made for double the distance (500 kilometres) during this same flight, (as shown on the record list).

Why the starting point of a record should coincide with the start of a flight it is hard to see; in other sports, such as running, swimming, walking, cycling, rowing and motoring, the start is usually a "standing" one and the starting point of the record must, because of this, coincide with the start of the race or trial, but there has never been any question of timing flying records from a standing start; the very expression "flying start" was in fact coined many years before flying was ever dreamt of as feasible, to denote the crossing of a starting line at full speed.

To make the point clearer, suppose a man has arranged to attempt a record at a given hour and for some reason the official time-keeper does not show up until several hours later; the aviator having got tired of waiting has started off anyway with one of his friends holding a watch on him: the official gets his timepiece going just before the flyer completes, let us suppose, 250 kilometres; the unofficial timer announces 3 hrs. 06′, Bournique's record being missed by a minute and a half; from this moment on the flight is being officially controlled; when it has extended over 500 kilometres, the flyer's friend finds he has taken 6 hrs. 08′ or just one minute more than the record and laments his hard luck; but the official turns to him and annonnces a world's record for 250 kilometres: the 250 kilometres *he* has timed (from 250 to 500 kil.) and a very simple subtraction confirms the fact to the unofficial timer that they have been covered in 3 hrs. 02′—which beats Bournique's record by over two minutes.

In other words, (according to the way records are being at present passed on abroad) the aviator owes his possession of a world's record to the fact that he did not wait, to get started, for his official timekeeper to turn up!

Of course the fact that a man goes faster as he nears the end of a flight than at its start is no coincidence, for his consumption of fuel is steadily lightening his load, furthermore he may be

handling the turns better as he gets accustomed to the course.

Judging from the interest shown in the past in the statistical and record tables published here, letters will no doubt be received by AIRCRAFT from observant students of these figures, enquiring how Aubrun is credited with a three hour record of 252,5 kilometres, when the record for 250 kilometres, is 3 hrs. 04′ 28″ 1/5 (Bournique). It can only be said that no explanation has been received from abroad on the matter; it would certainly seem that even if there was some hitch in timing Aubrun when he passed the 250 kilometre mark, the fact of his having an official record of 252,5 kil. for 3 hours should enable him to claim the 250 kil. record with the figures "3 hrs.", until some one had covered the distance in less than this time.

For the two hour record, Aubrun's distance of Sept. 16th, 167,5 kils., is the one officially recognized; it is, however, perfectly certain from his times for 150 kil. and 200 kil. on September 14th, that his two-hour distance on this day was considerably greater; in fact it was at least sixty-nine laps (172,5 kils). It is also certain that in his flight of September 16th, Aubrun covered 300 kil. in much faster time than 3 hrs. 40′ 55″2/5, the record recognized, for he was officially credited with more than 315 kil. in 3 hrs. 45′ 30″ (the actual figures being about 317 kils.) temporarily taking precedence in the Michelin Cup competition with this distance.

Legagneux's times and distances at Pau on December 21st, do not figure on these lists because they were not timed officially: they were approximately as follows:

300 kil. 3 hrs. 28′	3 hrs.	258,5 kils.
400 kil. 4 hrs. 38′	4 hrs.	345,5 kils.
500 kils. 5 hrs. 48′	5 hrs.	432,2 kils.
	5 hrs. 59′	515,9 kils.

Just why Tabuteau's time for 550 kil. on December 30th (7 hrs. 19′ 41″1/5) does not figure is not apparent as at the October Conference of the Federation, it was decided to recognize records over given distances, every fifty kilometres after the first fifty.

Perhaps the feature of the lists which will puzzle people most, however, is the fact of an 8 hour record being recognized when the distance covered is far inferior to that of the 7 and even 6 hour records.

In no other sport does this occur and were flying records gauged in just the same way as automobile and cycling records the 7 hour record would be credited to Bournique, who covered 530 kil. in his great six and a half hour flight, instead of to Tabuteau who flew 522 kil. 935 in seven hours, and the eight hour record would in turn belong to Tabuteau, who covered 584 kil. 745, in 7 hrs. 48′ 31″3/5, instead of to Farman who flew 451 kil. in eight hours.

It is certain that the regulation of records in flying is far more complicated than in other sports: in this case the Federation appears to have taken the stand that a seven or an eight hour record does not imply the greatest distance covered within these periods, but only the greatest distance covered in flights *extending over these full periods*, the element of "duration" being considered and no flight in which a landing is made prior to the end of an hour-period, being eligible for a record of this period.

The rules are still somewhat vague on these points and should be finally settled at the next Federation Conference at Rome.

According to the ruling made above, the one hour record is the property of Grahame-White, and not of Leblanc, (the reason both names are given in the tables, is because this is how they figure on the list of American records, sent to the Federation by the Aero Club of America).

It will be remembered that in the Gordon-Bennett Cup race, Leblanc ran out of gasoline just after passing the 95 kil. mark (in 52′ 49″,7), and that Grahame-White won the race in 1 hr. 01′ 04″,74 and made a record of 1 hr. 00′ 41″,69 for 100 kilometres. The times were only taken at the end of each lap, or every 5 kilometres, thus the greatest distance officially creditable to both men under the hour was the same: 95 kil. (for in records for "distance in a given time" the greatest distance officially timed as being covered in less than the "given time" is alone considered).

This is why, in the absence of specific rules on the question, both men were credited with the record. For Leblanc it might be said that he was "the first to cover 95 kilometres in an hour" and also that he covered these 95 kilometres at a much greater speed than Grahame-White, while for the Gordon-Bennett winner it might be argued that although he can only get credit for 95 kilometres in the hour, he very obviously covered a much greater distance before the sixty minutes were up than Leblanc did, (as the latter came down at 95 kil., 800), and that Leblanc did not fly for a full hour—which is the point which brought up the question here.

As mentioned at the beginning of this article, the original tables of the Federation have 109 kil. 756 per hour as the Greatest Speed record instead of 109 kil. 356; to be strictly accurate 109 kil. 237 was the speed recorded at Belmont Park (5 kil. in 02′ 44″,78) but as this 5 kil. record is now recognized as 02′ 44″3/5 it is only consistent to quote 109 kil. 356 which is the speed this time represents.

Continued on Page 47

Aviation World's Records

IN CLOSED CIRCUIT, WITHOUT STOPS

Checked to December 31st, 1910, as recognized by the "Fédération Aéronautique Internationale."

A. *SPEED.*

1. Time over a given distance.

(a) AVIATOR ALONE.

DISTANCE (Kilom.)	HOLDER	PLACE	DATE 1910	MACHINE	TIME
5	A. Leblanc	Belmont Park,	Oct. 29	Blériot	2′ 44″3/5
10	"	"	"	"	5′ 30″1/5
20	"	"	"	"	11′ 04″3/5
30	"	"	"	"	16′ 38″1/5
40	"	"	"	"	22′ 12″3/5
50	"	"	"	"	27′ 48″3/5
100	C. Grahame-White	"	"	"	1 hr. 00′ 47″3/5
150	E. Aubrun	Bordeaux	Sept. 14	"	1 hr. 43′ 19″3/5
200	"	"	"	"	2 hrs. 18′ 30″3/5
250	P. M. Bournique	Buc	Dec. 31	R. E. P.	3 hrs. 04′ 28″1/5
300	"	"	"	"	3 hrs. 40′ 55″2/5
350	"	"	"	"	4 hrs. 17′ 26″1/5
400	"	"	"	"	4 hrs. 54′ 06″3/5
450	"	"	"	"	5 hrs. 30′ 35″3/5
500	"	"	"	"	6 hrs. 07′ 07″4/5

(b) AVIATOR AND ONE PASSENGER.

10	E. Laurens	Buc	1910 Dec. 21	R. E. P.	7′ 31″1/5
20	"	"	"	"	15′ 14″2/5
30	"	"	"	"	22′ 56″2/5
40	R. Vidart	Mourmelon	" 31	Déperdussin	29′ 40″
50	E. Laurens	Buc	" 21	R. E. P.	38′ 19″2/5
100	"	"	"	"	1 hr. 16′ 51″

(c) AVIATOR AND TWO PASSENGERS.

10	J. Mamet	Rheims	1910 July 9	Blériot	10′ 18″4/5
20	"	"	"	"	21′ 14″
30	"	"	"	"	31′ 53″1/5
40	"	"	"	"	42′ 32″3/5
50	"	"	"	"	52′ 56″1/5

2. Distance in a given time.

(a) AVIATOR ALONE.

25	A. Leblanc	Belmont Park,	1910 Oct. 29	Blériot	1/4 hour
50	"	"	"	"	1/2 "
95	" / C. Grahame-White	"	"	" / "	1 "
167,5	E. Aubrun	Bordeaux	Sept. 16	"	2 hours
252,5	"	"	"	"	3 "
325,905	P. M. Bournique	Buc	Dec. 31	R. E. P	4 "
407,675	"	"	"	"	5 "
490	"	"	"	"	6 "
522,936	M. Tabuteau	"	" 30	M. Farman	7 "
451	H. Farman	Etampes	" 18	H. Farman	8 "

3. Greatest speed obtained, whatever the length of the flight.

(a) AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	SPEED PER HOUR—KIL.
A. Leblanc	Belmont Park	Oct. 29, 1910	Blériot	109,346 on a flight of 5 kil.

(b) AVIATOR AND ONE PASSENGER.

R. Vidart	Mourmelon	Dec. 31, 1910	Déperdussin	80,898 on a flight of 10 kil.

(c) AVIATOR AND TWO PASSENGERS.

J. Mamet	Rheims	July 9, 1910	Blériot	58,177 on a flight of 10 kil.

B. *DISTANCE.*

(a) AVIATOR ALONE.

				DISTANCE
M. Tabuteau	Buc	Dec. 30, 1910	M. Farman	584,745

(b) AVIATOR AND ONE PASSENGER.

E. Aubrun	Rheims	July 9, 1910	Blériot	137,125

(c) AVIATOR AND TWO PASSENGERS.

J. Mamet	Rheims	July 9, 1910	Blériot	92,75

(e) AVIATOR AND FOUR PASSENGERS.

S. Brunnhüber Johannisthal		Dec. 7, 1910	Albatross	5,

C. *DURATION.*

(a) AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	DURATION OF FLIGHT
H. Farman	Etampes	Dec. 18, 1910	H. Farman	8 hrs. 12′ 47″2/5

(b) AVIATOR AND ONE PASSENGER.

Amerigo	Mülhausen	Dec. 11, 1910	Aviatik	3 hrs. 19′ 39″1/5

(c) AVIATOR AND TWO PASSENGERS.

J. Mamet	Rheims	July 9, 1910	Blériot	1 hr. 38′ 40″

D. *ALTITUDE.*

(a) AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	ALTITUDE REACHED
G. Legagneux	Pau	Dec. 9, 1910	Blériot	3,100 metres

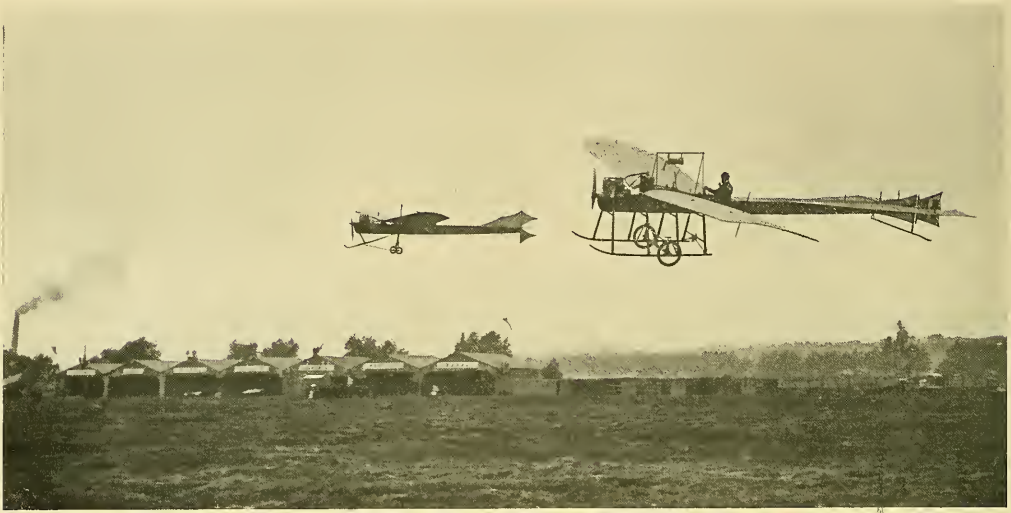
(b) AVIATOR AND ONE PASSENGER.

Lanser	Brussels	July 31, 1910	H. Farman	355 metres

SUCCESSFUL FLYERS DESCRIBED

THE HANRIOT MONOPLANE

By W. H. Phipps



A RACE BETWEEN THE HANROIT AND ANTOINETTE MONOPLANES. THE MACHINE ON THE RIGHT IS THE HANROIT. NOTE THE BOAT-SHAPED HULL, FLAT TAIL, A TYPE CHASSIS AND COMBINATION WHEELS AND SKID LANDING GEAR.

Those of our readers who have followed the progress of aviation with more than casual interest are well aware of the splendid record of the Hanriot monoplane; it is therefore not necessary to give a detailed account of it; suffice it to say that the Hanriot monoplane, at its debut at the Budapest Meet, carried off all the important events.

There are many original points embodied in the construction of this machine, the most important of which is the wooden boat-shaped hull that naturally adds to its beauty as well as to its strength. Another distinctive feature is the A type frame that supports the body on the wheel and skid chassis. The chief advantage of the boat-shaped body lies in the fact that it dispenses with the use of innumerable wires.

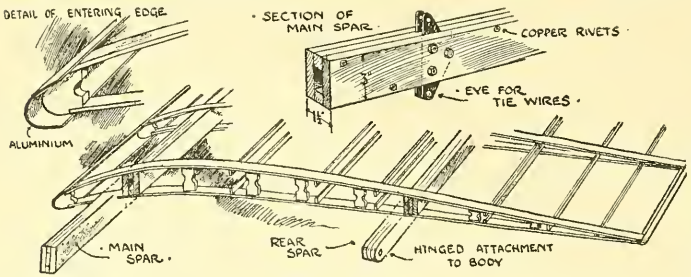
The body of the Hanriot monoplane is constructed on the lines of a racing skiff and is in most cases made of wood, but when desired it can be built of wood and canvas as shown in the accompanying drawings. The top of the body is entirely covered, except for a little cockpit containing the pilot's seat. Just behind the seat the deck is strengthened, permitting the pilot to stand thereon when mounting or dismounting Steel strips form a sort of cradle for the support of the body on the A type chassis. Steel strips are also used for lashing the main spars of the wings to body mounting. The spars are not horizontal, but are set at an angle to one another, the "dihedral" being 7 ins., that is to say, the extremities of the wings rise 7 ins. above the shoulders. The spars are 3 ins. deep and 1½ in. wide, and they are constructed in the form of a tube as illustrated in an accompanying drawing, instead of being cut from one piece of wood. This is a departure from common practice.

In the Hanriot monoplane it is worthy of note that the rear spars of the main wings are individually trussed by a diamond bracing, each spar being fitted with a vertical cross strut in the centre and the four extremities being braced by diagonal wires. The rear spars are hinged to the frame so that they can rock for wing warping, and the hinge pins are fastened together by a steel tube so as to relieve the body of undue strain.

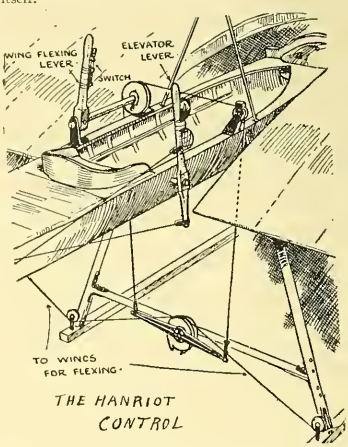
The control of the Hanriot monoplane is mainly interesting on account of the use of two levers, one under the control of the pilot's left hand and the other under the control of his right hand. That on the left moves sideways and operates the wing warping, that on the right moves to and fro and controls the elevator that forms a hinged extension of the tail plane. In front of the pilot's seat is a pivoted cross-bar that controls the rear rudder.

The fixed tail-plane on the Hanriot monoplane is quite flat, and consists of a sheet of fabric tightly stretched by the aid of a couple of transverse spars. The rear portion of the tail-plane is deflected a little below the line of the leading portion, to which it has a relative, although small, angle of incidence.

Well forward of the main planes is the engine, which is a 4-cyl. Clerget 30-40 H.P. This is mounted in the bows of the boat body, and is also partly supported by the struts of the "A" frame, a pair of which are situated immediately beneath the motor. The tractor-screw, which is direct-driven by the engine, is 2,1 metres in diameter, and 1,2 metres in pitch. When at rest on the ground, the machine is carried by a pair of pneumatic tired wheels in front and by a light trailing skid behind. The wheels are mounted on a steel axle that is reinforced by a wood spar and mounted in vertical guides, so that it has a considerable upward travel. Suspension is effected by elastic springs anchored to the main skids and attached to the upper end of a column that rests upon the axle itself.



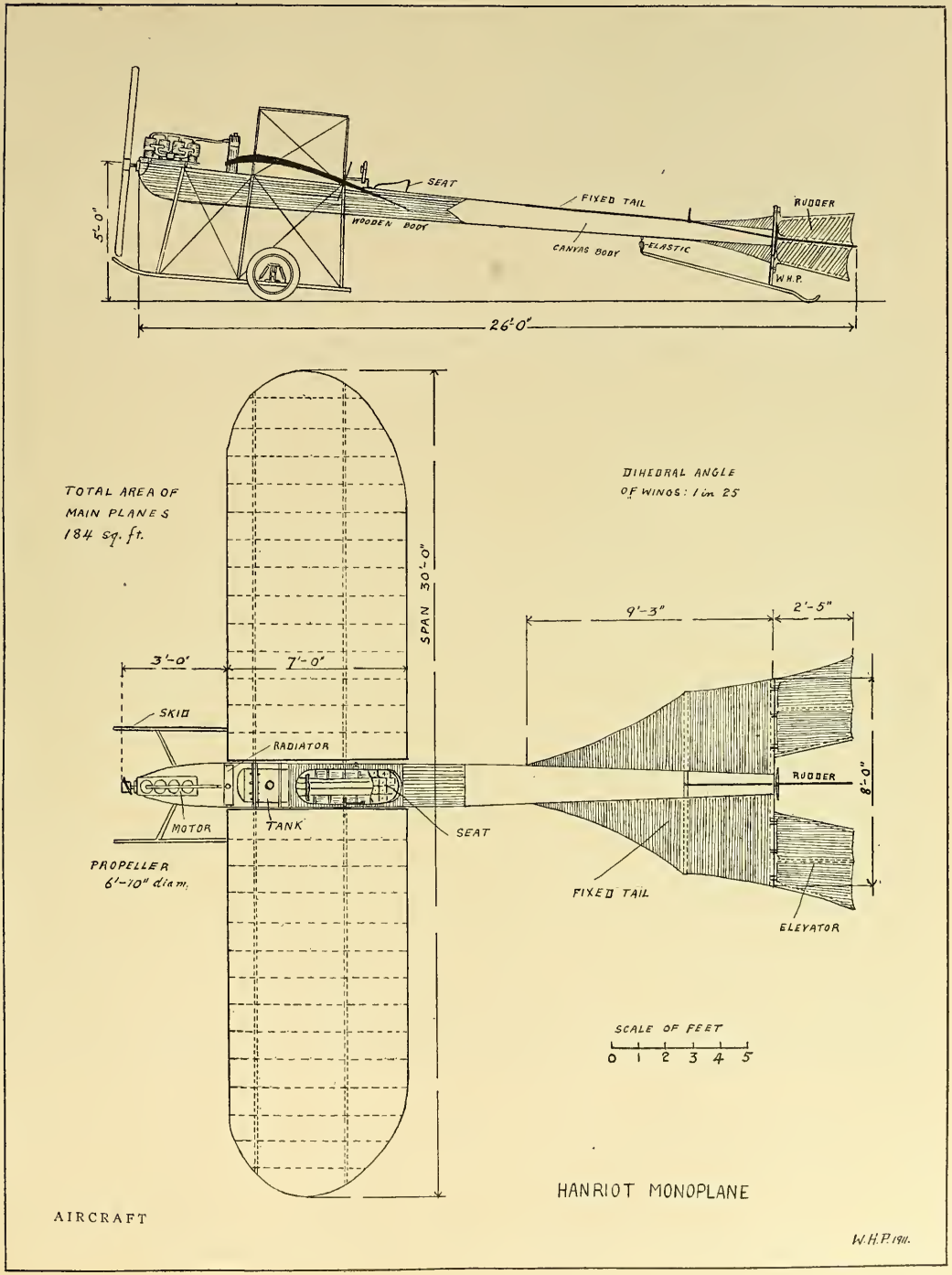
CONSTRUCTION DETAILS OF THE HANROIT WING. THE MAIN SPARS ARE BUILT UP IN THE FORM OF A BOX GIRDER.

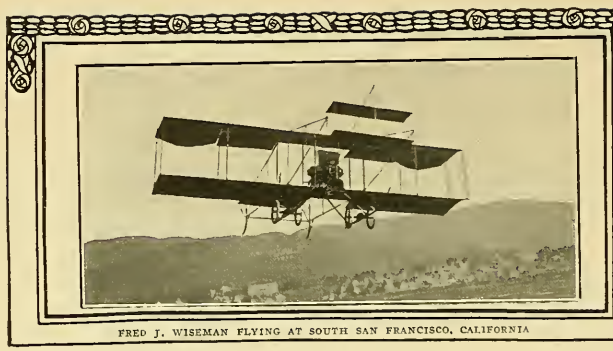


THE HANRIOT CONTROL

The construction of the axle is shown very clearly in one of the photographs, in which it will be observed that the system represents a very strong but rather rigid form of construction; rigid, that is to say, so far as lateral stiffness is concerned, for the vertical play permitted by the guides is considerably in excess of that usually obtained with the ordinary rubber attachment of the axle to the skids. The clearance is enough, in fact, to enable the wheels to rise up so high as to enable the weight to be taken directly on the skids in the event of a very severe bump. We are indebted to "Flight" of London for the originals of the two drawings shown above.

SCALE DRAWINGS OF THE HANRIOT MONOPLANE





FRED J. WISEMAN FLYING AT SOUTH SAN FRANCISCO, CALIFORNIA

CLUB NEWS

By G. A. Haviland

Aero Club of America

At the meeting of the Board of Governors of March 7th, fifteen resident and eight non-resident applicants were elected to membership.

Mr. Alan R. Hawley, who last year won the Gordon Bennett Balloon Cup for the Club, was unanimously offered a position on this year's defending team.

The rules applying to all Aviation Contests and records established under the control of the Club were changed as follows:

All contests for prizes and trials for records which are under the control of the Aero Club of America, shall be held under the supervision of its Contest Committee, or a properly appointed representative. All such tests and trials which take place over an aerodrome, shall be held during the period, between one-half hour before sunrise, and one-half hour after sunset, of the day of trial.

The acceptance of entries for any contest or trial for record is discretionary with the Board of Governors of the Club, and is based on the condition, that the applicant, his representative or agent, is bound to accept without appeal, any decision of the Board of Governors on any matter arising from his entry, and the applicant pledges himself, his representative or agent, not to carry any matter arising out of his entry into the courts for review or adjustment.

The Aero Club of America is not responsible for any accident of any nature, whatsoever, to persons or property, that may occur during any event, or trial for record under its control, sanction, or supervision.

The filing of any entry is ipso facto an acceptance by the entrant of the above conditions.

Persons desiring to enter for contests or establish records at times other than at regularly organized licensed meets, shall make application in writing to the Secretary of the Aero Club of America, for a representative or representatives, to supervise the events or trials and, in making the application, shall allow ample time for the journey of the representative or representatives to the place designated for the trial.

If the trials are to be made within twenty-five miles of New York City Hall, the club will furnish a representative free of charge. If the distance is greater than twenty-five miles from the New York City Hall, the representative of the Club shall be entitled to his fare for the round trip and his expenses at the rate of five dollars per day for the time that he is necessarily absent from his place of residence. When it is considered necessary to send more than one representative, the expenses of but one representative shall be paid by the applicant.

The following rules governing the issue of aeronautical and aviation pilots licenses were accepted:

The Aero Club of America may grant aeronautical and aviation pilots licenses to persons who are over eighteen years of age, citizens of the United States, or citizens of a country represented in the F. A. I., or citizens of a country represented in the F. A. I., with the permission of the representative organization of the applicant's nationality.

All applications for pilots licenses must be made in writing to the Secretary of the Aero Club of America.

Each application must set forth the applicant's full name, date and place of birth, and if the applicant is a naturalized citizen of the United States, proof of naturalization.

Applicants must furnish, on request, such further evidence or proof of facts as may be deemed necessary to establish their qualifications.

Each application must be accompanied by two photographs of the applicant and the sum of five dollars.

Applicants for each class of license must pass to the satisfaction of the properly designated representatives of the Aero Club, the tests prescribed by the F. A. I. These were published on page 432, Vol. I, AIRCRAFT.

The National Council

At the last annual conference of the International Aeronautic Federation it was decided not to adopt an International Aviation Calendar for the year 1911, but to allow the clubs of each country in the Federation to arrange an Aviation Calendar, irrespective of what the other countries proposed to do.

With the approach of the ont of door season, it is necessary for the Aero Clubs throughout the United States to immediately arrange a series of aviation meets. The experience of the Aero Clubs of Europe has shown that there is no more effective way of popularizing the art of aviation and stirring up public interest than by holding a series of well arranged and closely contested competitions at different points. In this country, where the interest in aviation is far less than it is on the other side of the Atlantic, it is the more necessary that an extended series of aviation meets should be held. Every Aero Club in the National Council should hold at least one meet during this season, and no time should be lost in making the necessary arrangements. Suitable grounds should be secured and an organization of the business men of the locality should be formed in order to secure the offer of prizes and the details of the financial side of the undertaking. The National Council will endeavor to arrange dates to suit the convenience of all, and special attention will be given to the geographical location of the various clubs. In order to increase interest it would be well, if possible, to arrange for the participants in these meetings to fly from one city to another in the interval between successive aviation meets. Prizes can be offered for cross country races of this character.

The acting chairman has already received requests from many of the prominent aviators in Europe for information concerning the organization of aviation meets in the United States, and there is no donbt that some of the foreign air men will visit this country if a series of aviation meets can be arranged. The Aero Club of France has already granted 400 licenses to aviators. In other European countries there has been a proportionate increase in the number of airmen, and it is, therefore, certain that the foreign aviators will require much less in the way of money guarantees than was the case in 1910.

Secretaries kindly communicate with me immediately and state what dates you would prefer to have reserved for your club, and the amount of prizes offered and any other inducements for holding a successful meet. This information would assist in communicating with the foreign aviators and in making the preliminary arrangements for a successful aviation season in the United States. The two or three meets that were held in 1910 furnish evidence that there is sufficient public interest in the subject to bring about a financial success of contests organized on a larger scale this year.

Under the existing arrangements with the Aero Club of America, all records made at meets held by the affiliated clubs and sanctioned by the National Council will be received by the International Aeronautic Federation and classified as world's records. Very truly yours,

CORTLANDT F. BISHOP,
Acting Chairman.

Aero Club of St. Louis

Editor AIRCRAFT:

I take this opportunity of calling your attention to the condition of the balloon situation in this country. Up to date, February 21, no announcement has been made regarding condition and location of the International Balloon Race, and I believe this has something to do with the lack of entries from Europe.

We of the West deplore this condition: naturally, we are interested in the sport of balloons, and we will hardly let this sport die a natural death; however, unless the National Council or the Aero Club of America do not act quick and arrange a program for 1911, they will eliminate one branch of aeronautics, and decrease the interest of the pilots of this country.

The Aero Club of St. Louis is now investigating the subject of hydrogen gas, with an idea of installing a plant on our aviation field. We can make the gas at a cost of not more than 45 cents per thousand feet, and the pleasures of ballooning will be doubled—on account of the small balloons.

At present an 80,000 ft. balloon is hard to handle, especially after landing and hanling to the station, etc.

This letter is not for publication, but you can use its contents if you see fit. Yours truly,

A. B. LAMBERT,
President.

Harvard Aeronautical Society

Boston is to have a second aeroplane meeting under the auspices of the Harvard Aeronautical Society, which gained much valuable experience last year.

The meeting will be opened Aug. 24 and run through Sept. 4, and these dates will be submitted to the national council of aero clubs for that organization's approval. The meeting will be held at Atlantic, as last year's meet was.

These dates have been selected in the hope of having the meet favored with more sunshine than the first one.

Already considerable correspondence has been carried on with noted flyers in America, England and France. Claude Grahame-White, the English flyer, who proved a favorite here and at Belmont Park, N. Y., last fall, has definitely agreed to take part. Negotiations are in progress with the Wrights for several of their machines and flyers to come to the meet. Glenn H. Curtiss, Charles F. Willard and several others of this country's flyers who are making names for themselves will be requested to come.

It is definitely asserted that besides Grahame-White other Englishmen and two or three Frenchmen are almost sure to attend. In other words, it will be a meet of international significance.

Events will be definitely scheduled to take place at certain times, and it is the belief of Adams D. Claflin, business manager, that a definite schedule will be possible this time.

Another change will be in line with having real contests rather than exhibition feats, although the latter probably will have great prominence.

To accommodate the people better, the committee now is considering the building of a temporary bridge across the Neponset River. The pontoon type is under consideration, and it is believed that it might be so constructed as to take care of both New York, New Haven & Hartford trains and trolley cars.

Extensive changes in the automobile accommodations are contemplated.

The roadway leading from the entrance to the field will be resurfaced and the field and course put in better shape during the summer. In place of the main grand stand of last year, which with the stand near the river was torn down last fall, there will be built a large permanent stand of wood. This new structure probably will be of about the same seating capacity as that of the one which it will replace, 10,000.

Aero Club of New England

At the College Night Dinner of the Aero Club of New England, held at the Boston City Club, Boston, Mass., February 25th, six new cups for ballooning records in New England for 1911 were offered.

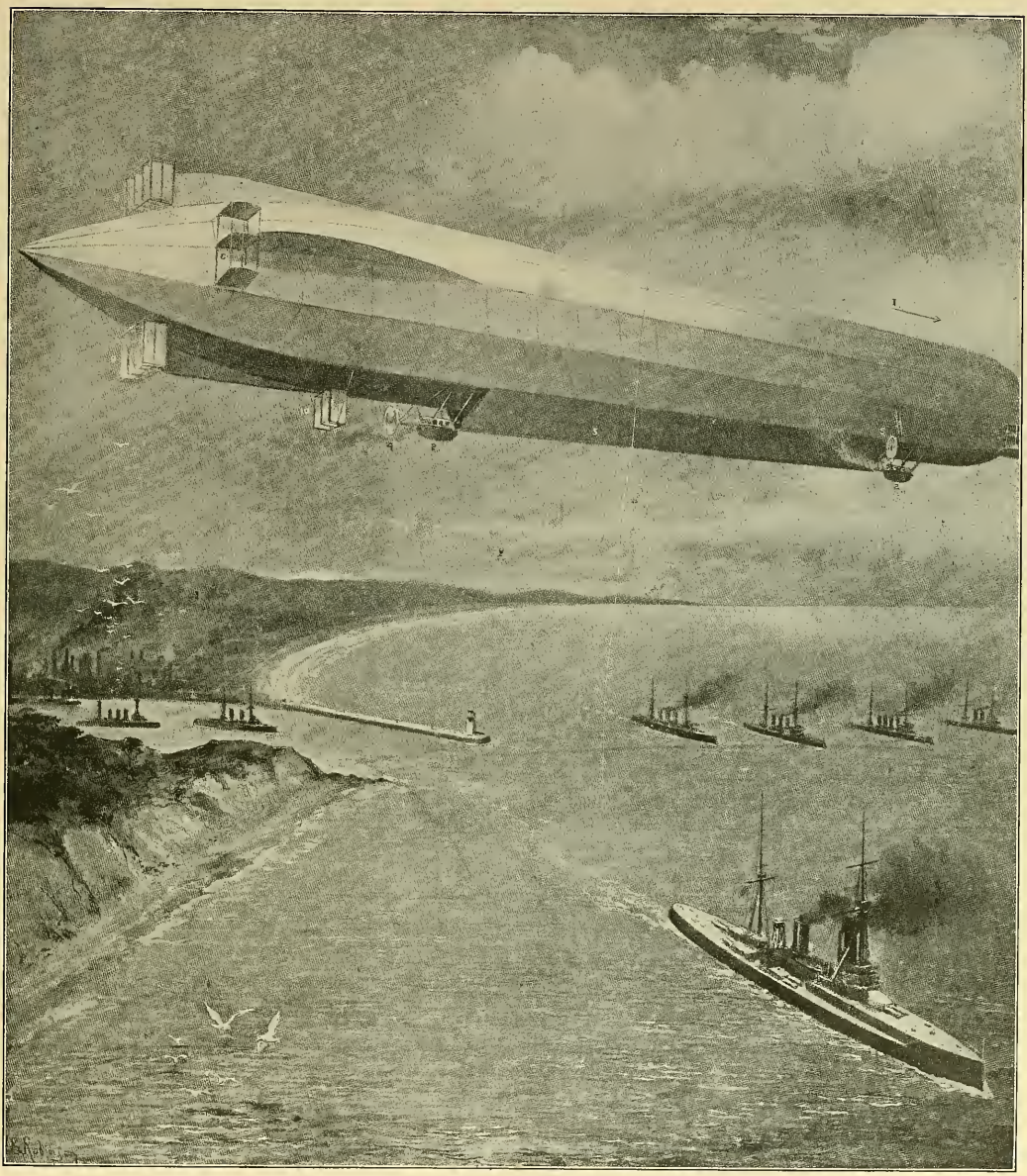
Mr. Danduran, as vice-president of the Automobile Club of Canada, offered a cup to the balloon pilot landing nearest Montreal this year, while Mr. Tarte offered a similar cup on bebalf of his paper.

The other cups were offered by the Boston Herald, A. Leo Stevens, Chas. J. Glidden and Colonel Everett C. Benton, of Boston.

Two cups were presented as having been won during 1910. A. Leo Stevens received the Cortland F. Bishop Cup for the longest flight from New England, 265 miles to Montreal, and Chas. J. Glidden received the Boston Herald Cup for landing nearest Boston Common.

THE FIRST DIRIGIBLE BUILT FOR THE BRITISH NAVY

From a Sketch by Charles E. Eldred, R. N. in The London Illustrated News.



The first airship built for the British Navy underwent certain trials recently in the presence of the Government's Advisory Committee on Aeronautics. It was then understood that trial flights would be made so soon as the weather was comparatively calm, it not being desired to take unnecessary risks. The craft is rigid, of large capacity and great radius of action. The first idea was to make the framework of aluminum, but, instead, duralimin, one of the magnesium alloys of aluminum, which is stronger and lighter than aluminum, was preferred. The structure in which the ballons are contained has a length of 512 feet and a diameter of 48 feet, and the top long and narrow. The balloons referred to, which, of course, give the lifting power, number from eighteen to twenty. The covering of the structure is of a fire-resisting silk, specially coated with a proofing; the upper half of it is coated with aluminum dust to reflect the sun's rays; the lower half keeps the yellow shade of the silk. Similar material encloses the gangway, in which twenty hammocks can be slung. The cars are of wood, and will float on the water. The engine in the forward car drives two wooden two-bladed propellers. The engine in the aft car drives one two-bladed propeller. To raise and lower the ship there are three parellel horizontal planes on both port and starboard sides forward and aft. Lateral movement is attained by three groups of vertical aeroplanes or rudders. The figures on the drawing refer to the following: 1. Arrow showing direction of flight; 2. Car and engine; 2. Car and engine; 3. The gangway; 4. Single propeller, aft; 5. Forward propeller, one of two worked by engine in forward car; 6. Horizontal planes, aft; 7. Horizontal planes, forward; 8, 9, and 10. Vertical planes. This airship was built for offensive purposes and will be able to cruise for days over water. On a peace footing, it will carry 40 passengers. According to T. R. MacMechen, and Carl Dienstbach, the American apostles of dirigibles, the above drawing is accurate, except that it does not show the officers' ward and mess room which is situated at the centre of the long gangway, and is somewhat similar to the cabin of the German air-cruiser, "Deutchland."

RECENT PATENTED INVENTIONS

By Gustave R. Thompson

976,582—Monoplane having a double concave supporting plane in transverse section, vertically controlled by sliding of seat.

977,517—Helicopter having adjustable blades. Helicopter acts as parachute upon decent.

976,876—Multiplane aeroplane.

976,873— Helicopter. Direction controlled by shifting weight of car with relation to helicopter.

976,161— Combined Helicopter and Aeroplane. Blades of propeller adjustable to vary lifting effect.

976,765—Aeroplane having front and rear supporting planes and a single device for determining altitude and horizontal stability.

976,896—Airship amusement apparatus and plan of a spiral railway.

977,528—An Aeroplane having a control assimilated to that of a bicycle.

978,375—Helicopter having adjustable aeroplane surfaces.

977,555—An Airship adapted for journeys over seas, capable of traveling in the water and sustained by gasfields, lifting propellers and aeroplanes.

978,732—Aeroplane having its greatest dimensions in length for purpose of importing greater stability. Altitude determined by varying angle of supporting surface at right angles to line of flight.

978,263—Aeroplane for amusement or instruction purposes on an aerial cable.

976,709—An Aeroplane having a front vertical curtain for determining the action of the air on the aeroplane surface.

981,367—Air craft comprising a frame, carrying supporting surfaces, made up of a plurality of hollow cones.

980,489—Flying machine of Ornithopter type; valvular arrangements on wings to permit passage of air on up-stroke.

980,753—Airsbip of dirigible type.

980,840—Airship of ornithopter type, gas-bag attachment.

980,935—Propeller for air craft.

981,068—Dirigible aerial torpedo.

981,185—Aeroplane having enclosed torpedo-shaped car, automatic stability apparatus and a parachute attachment.

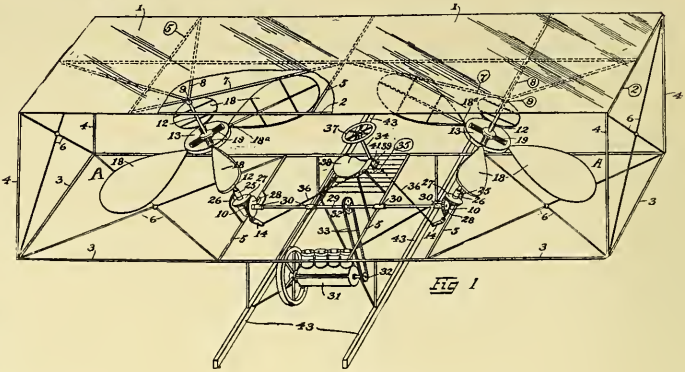
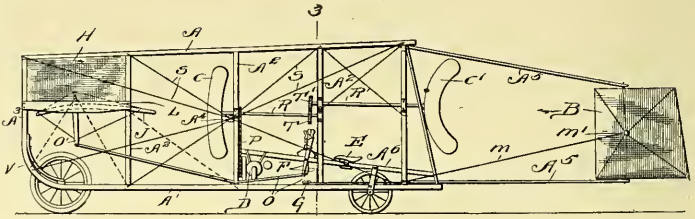
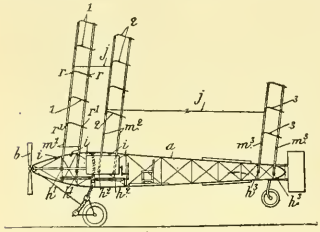


FIG 1

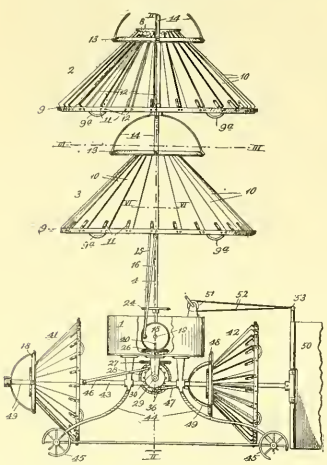
U. S. PATENT 976,161.



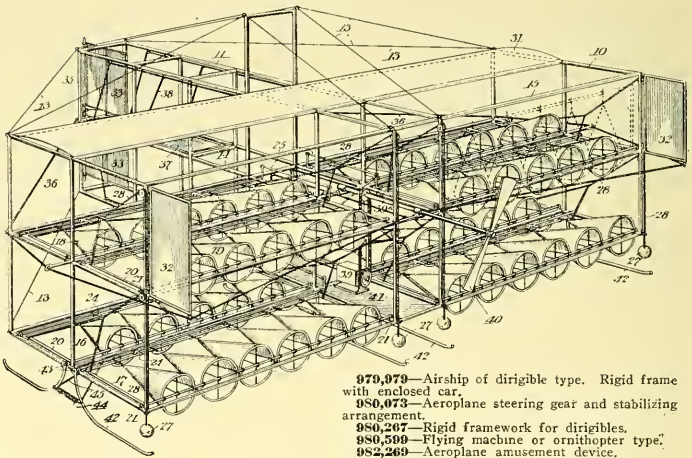
U. S. PATENT 976,765.



U. S. PATENT 976,876.



U. S. PATENT 977,517.



U. S. PATENT 981,367.

981,367—Aeroplane having conical cells in combination therewith acting as aeroplanes, parachutes and stabilizers.

981,655—Dirigible having a convertible aeroplane and parachute attachment.

981,714—Collapsible or knock-down aeroplane. Bat-wing planes.

981,778—Helicopter with parachute attachment.

981,410—An aeroplane arranged for automatic stability. Also improvements in details of the controls.

981,462—Amusement device. Coaster type car in shape of airship.

979,286—Flying machine of ornithopter type.

979,341—Aeroplane with induced current from upper to lower sides of planes.

979,472—Flying machine sustained by feathering paddle-wheels.

979,979—Airship of dirigible type. Rigid frame with enclosed car.

980,073—Aeroplane steering gear and stabilizing arrangement.

980,267—Rigid framework for dirigibles.

980,590—Flying machine or ornithopter type.

982,269—Aeroplane amusement device.

982,290—A "knockdown" Aeroplane.

982,356—Dirigible.

982,561—Dirigible of rigid type.

982,647—Propelling mechanism for Airships.

982,653—Toy flying machine, (Helicopter).

982,700—Helicopter.

982,907—Parachute. Worn by aviator when folded as a cap and adapted to open at proper time.

983,049—Balloon amusement device.

983,147—Toy, (Helicopter).

983,192—Combined Aeroplane and Helicopter.

983,233—Ornithopter flying machine.

982,243—Biplane.

982,244—Biplane.

983,459—Dirigible with Aeroplane attachment.

983,697—Aeroplane of bird-like contour.

983,707—Aeroplane with lifting propeller attachment for quick rising.

983,750—Monoplane.

983,826—Aeroplane.

983,868—Monoplane with triangular plane.

THE NEW FRONT RUDDER VOISIN BIPLANE IN FLIGHT.

FOREIGN NEWS

Belgium

On February 10th Lanser on his Henry Farman biplane made a flight across Brussels to visit King Albert. Taking with him as passenger M. Vleminscky, President of the Belgian Aviation Chambre Syndicate, he left Etterbeck at 3:30, and after flying over the capital landed, circled the palace at Laeken three times and landed on the lawn of the Royal Park, where he was greeted by the Royal family.

China

The first flights to take place in Shanghai occurred on February 21st; they were made by M. Valon on a Sommer biplane.

The *China Mail* of Hongkong, under date of February 2nd, contains the information that Captain Thomas Baldwin, J. C. Mars and Tod Shriver had arrived safely in that port and after giving flying exhibitions at Taipo on February 10-11-12, would proceed to the Philippine Islands. It also contained the following information:

"One interesting feature of the recent flying week at Saigon with Van den Born as chief figure, was the amount of subscriptions which enabled the demonstrations to be held, the total exceeding $7,200. The Governor General gave $2,000, and the Governor of Cochin-China $1,000. The city of Saigon contributed a like amount. The Colonial Council gave $500, and the Chamber of Commerce $200. The hotel keepers raised $370, and the Tramway Company aod Messageries Maritimes gave $100 each."

Cuba

An international aviation tournament is to be held in Havana, Cuba, from March 18 to March 27, both dates inclusive. This is the first competitive meet to be held in any country in the western hemisphere outside of the United States. Among those airmen already entered are Roland G. Garros, Réné Simon, and Réné Barrier, all of France; Edmond Audemars of Switzerland; St. Croix Johnstone and M. J. Seymour of the United States, and John J. Frisbie of Ireland.

The prize list as put up by the newly formed Aero Club of Cuba already aggregates $30,000 in cash and a number of valuable cups and trophies. Among the most important prizes is the $3,000 in gold offered by the Havana City Council for the fastest flight made from Camp Columbia to and around El Morro and return before March 31. McCurdy competed for this prize when he was in Cuba in February, as it was then thought that competition for the prize would close on March 1. But the City Council of Havana determined, in view of the forthcoming open tournament, to extend the time in which the prize might be tried for to March 31. Garros, Simon, Barrier and Johnstone have already entered the El Morro competition.

Another valuable prize in the Havana meet is for the $3,000 in cash offered by Alfred J. Moisant while he was in Havana after the death of his brother John on December 31 last. This second $3,000 prize is for the fastest flight from the Limones aviation field, where the Havana tournament will be staged, to and around Cabañas fortress and return. Mr. Moisant is an honorary member of the Aero Club of Cuba and one of its founders.

The Aero Club of America is sending two representatives to Havana in order that due cognizance may be taken of the new speed and altitude records that it is hoped will be established during the meet there. Three officially calibrated barographs will be taken. The Aero Club of Cuba, under whose auspices the Havana meet is held, was formally organized on Jan. 20 last, but it already has 150 active members and is growing rapidly. Its honorary president is President Gomez of Cuba. Speaker Ferarra of the House of Representatives is the actual head of the club.

England

A special army order was issued Feb. 28 creating an aerial battalion.

The eligibles must be under thirty years of age, possess aviation pilots' licenses, be good sailors, with an aptitude for mechanics, a knowledge of foreign languages and not weigh more than one hundred and sixty pounds.

Mr. O. C. Morison flew on February 9th from Brooklands to Brighton. Starting about 4 P. M. on his Gnôme-Blériot, he made one circuit of the aerodrome, and rsiing to a height of 3,000 feet, steered direct for Brighton, where he landed on the beach a little before five o'clock.

Mr. Claude Grahame-White has been testing his new "Baby" Farman, built by the Burgess Company and Curtis, at his school at Hendon; he has on several occasions made extended flights in it.

The Grahame-White school at Hendon is not the only successful one in operation; the Valkyrie and Blériot schools, also located at Hendon, the Bristol school at Salisbury Plain, the Drexel school and various private schools located at Brooklands are flourishing.

THE LATEST SINGLE-SEATER BLERIOT. NOTE THE TAPERING FRAME, FLAT TAIL AND TRIANGLE-SHAPED RUDDERS.

France

One of the most noteworthy feats so far accomplished in aviation, and one which stirred all France, was the wonderful flight of Capt. Bellenger of the French Army, on his Blériot, from Paris to Pau; he made the distance of 680 kilometres with only three stops.

Leaving the military aviation grounds at Vincennes-Maison-Blanc on February 1st at 8.35 a.m., he landed at the Croix d'Hins aerodrome, just southwest of Bordeaux, at 4.45 p.m., after making only two stops, the first at the Pontlevoy aerodrome (Loir-et-Cher) and the second at Poitiers.

Continuing the next day, he left Croix d'Hins at 2.52 in the afternoon and flew straight to Pau, which he reached at 4.45, escorted by several aviators from the Blériot school who had come out to meet him.

The much coveted Michelin Prize of $20,000 for a flight with a passenger from Paris to the Summit of the Puy-de-Dôme, a distance of 217 miles, was won on March 7th by Eugène Renaux.

The aviator and his passenger, M. Senouque, left St. Cloud on their Maurice Farman biplane, twelve minutes after nine in the morning, and landed on the summit of the Puy-de-Dôme five hours and eight minutes later. A stop of seventeen minutes was made at Nevers.

Fulfilling the conditions of the prize, Renéaux first passed over the Aero Club of France grounds near Paris and then steered for Clermont-Ferrand, where, in accordance with the rules he circled the cathedral before alighting on the nearby summit. It was in an attempt for this prize that the brothers Morane met with a serious accident in October. In the month preceding Henry Weymann made an attempt which promised success until he was compelled to stop by a fog when only a few miles from his goal. (For the origin of this prize see Mr. Campbell Wood's article "The Michelin Cup," AIRCRAFT, Vol. I, No. 12..)

The Aero Club of France has now definitely decided to organize two big flying contests this year. One of these is to be the cross-country flight from Paris to Bordeaux and return. It is proposed that the competitors start from Paris at 2 minute intervals, the only compulsory landing to be at Bordeaux. The event will probably be held in May.

The second big event will take the form of a distance competition over a closed circuit, under similar rules to those which have hitherto governed the yearly Michelin Prize; that is to say, the prize will be awarded to the aviator who, at the close of the year, has covered the greatest distance in a closed circuit without touching the ground, the minimum distance to be completed is 600 kilometres and the prize, $2,000.

Leaving the Blériot School at Pau, the aviator, Bague, on Feb. 7th, accomplished a flight of 150 kiloms., flying across country to Mont de Marsan and back in 1 hr. 40 mins., a height of 600 metres.

The constant work in Progress at Pau, especially at the Blériot School, where alone there are over fifty machines in almost continuous use, renders flying in every direction of the surrounding country quite a matter of course with the inhabitants. First one and then another aviator takes the air, and in all directions they are seen flitting about first on one type of machine and then on another. On Feb. 7th inst., Wyss, on his Gnôme-Blériot, was carrying out some flights over Pau at about 1,000 metres up, planing down in fine style to *terra firma*. Wyss in the meantime was executing an altitude flight, rising to 1,800 metres followed by a fine landing.

Bague on Feb. 9th indulged in a trip across country for about 100 kiloms. Starting from the aerodrome, he alighted at Sanguis, between Manléon and Tardets. Bague, having remained at Sanguis for the night, flew back to Pau the next day. It appears that on his way out, having no compass to guide him, he took a southerly direction by error and thereby lost himself, passing during this period over the balloon "Limousin." When alighting to ascertain his whereabouts at Sanguis, on the highway, he broke a wheel, which prevented him restarting from the roadway until repairs were effected. Altogether his outing totalled to a distance of about 250 kiloms. During the afternoon Morin and Bague both attained a height of about 1,200 metres and Lieut. de Rose carried some military passengers for cross-country flights.

Sunday, Feb. 11th, being somewhat of a holiday for M. Blériot, he thought he would visit his family, who are at Bagnères-de-Bigorre, and without fuss, but simply selecting the air as the most convenient and quickest method of travel, and in spite

of a steady rain which had started to come down, he started off on his two-seated tandem machine, although unaccompanied by a passenger. Having spent a few hours with his children, he returned to his mount in the field in which it had been resting and was soon away on his journey back to Pau. This gives a practical illustration of one of the advantages of the aeroplane. By rail at least three hours would be occupied in travelling to Bagnères, and by motor car it would take not less than 1½ hours.

On March 5th, Lieut. Bague accomplished a sensational flight over the Mediterranean. He left Antibes, near Nice on his Blériot, with the daring idea of reaching Corsica (with a view to ultimately reaching Africa, via Sardinia). The clouds about the Corsican peaks deceived him, however, and he found himself lost at sea, out of sight of all land. For several hours he searched the horizon for land and at last perceived a rock or islet pointing above it. He steered for it and notwithstanding the precipitous and rocky shore contrived to make a landing, smashing the monoplane, however. He found he was on Gorgona, an Italian islet beyond Corsica and to the northeast of the island—birthplace of Napoleon. Elba, where Napoleon was in exile can be seen on clear days from Gorgona while another and similar islet nearby is Monte-Cristo, immortalized by Dumas. Gorgona is only visited by fishing smacks but it happens to have a telegraph station, so Bague was able, after ascertaining what spot of dry land he had dropped on, to acquaint the outside world with his whereabouts and his safety. The feeling of the few fisher folk and goatsherds who inhabit the rock can better be imagined than described, at seeing the great bird literally fall out of the sky on their lonely little island.

Bague must have flown 150 miles over the sea.

Capt. Lévêque recently visited Douai for the purpose of witnessing the tests made with three two-seated Bréguet military aeroplanes before they were handed over to the French Army. He was taken for a trial trip in each one by M. Bréguet and afterwards rose to a height of 400 metres in 4½ mins., then making a cross-country trip from La Brayelle to Quiery, Lens and Douai. Capt. Lévêque was also taken for short trips by two of the military pupils at the Bréguet School.

On February 9th, Vedrines, a new Goupy pilot, having missed his train, determined to fly to Issy, on the outskirts of Paris, to make his entry at the Aero Club of France for the Prix des Amendes. Rising from Juvisy, he flew to Issy in 12 minutes, made his entry at the Aero Club in Paris, and then flew back to Juvisy.

It is reported that both Henry Farman and Roger Sommer have built racing biplanes of about the same dimensions as the "Baby" Wrights and have succeeded in making some very fast flights with them.

On February 10th, Kimmerling, starting on his Gnôme-engined Sommer biplane left the Brou aerodrome at 9.35 a.m. and flew to Monceau in 47 minutes, a distance of 28 miles. Later in the day he returned to his starting point by air.

On the same day Gaubert started for Tours on a 28 horsepower Astra-Wright biplane. Getting off at 7.40, he reached Châteauduin 50 minutes later; there he was confused by the railway fork and followed the Brest line until he found himself over Nogent; here he made a half turn and continued to Droue where he was greeted by Mr. Max Richard, who had followed him by road in his car.

It is with regret that one more fatal accident resulting in two deaths has to be recorded, and it is all the more regrettable as the deaths of Noël and La Torre, like many others, is the result of reckless flying. Noël accompanied by his companion La Torre had made a splendid flight of one hour on his Sommer biplane, when he decided to plane down. Owing to the tremendous speed of his descent he evidently miscalculated his height from the ground and crashed head on, before having a chance to recover.

On February 15th, Vidart, accompanied by Busson, made a trip on the Deperdussin monoplane from the school grounds at Betheny near Rheims, to Mourmelon in 14 minutes. After resting there about an hour, Vidart flew back to Rheims alone.

Very complete arrangements are being made by the Association Générale Aéronautique in connection with the trip which Pierre Marie Bournique proposes to make on his R. E. P. monoplane from Paris to London without a stop. He will leave Buc and, passing over Beauvais and Amiens, make his way to Boulogne, where he will leave the French coast, and, escorted by torepdo boats, proceed across the Channel to the English shore and so on to London.

Further trials are being made with the interesting front propeller Caudron biplane; on February 15th, with Cei aboard, it made a flight of one hour, four minutes.

In connection with the suit brought by the French owners of the Wright Brothers' aeroplane patents against Farman, Blériot and others in the civil court on January 26 last, the court on Feb. 22 at Paris, went to the Arts and Crafts Museum and inspected the Ader machine Avion, constructed in 1897, which, the defence asserts, embodies the features which the Wrights claim as theirs alone. The aged inventor personally explained the apparatus to the judges.

During the last few weeks great activity has been noted at the Hanriot and Déperdussin schools at Rheims. On February 8th Chassagne with Captain Morel as a passenger was testing one of the big Hanriot monoplanes and was flying for two hours 5 mins.

CAPTAIN BELLANGER OF THE FRENCH ARMY AVIATION CORPS WHO RECENTLY FLEW FROM PARIS TO PAU.

Vidart was also out trying a Gnôme-engined Déperdussin; he executed several fine cross-country flights over the surrounding district and on one occasion circled the Rheims Cathedral.

Some splendid records were put up at the Déperdussin Aerodrome, Rheims, on February 11th, by M. Busson, who, on a Gnôme-engined Déperdussin military type monoplane—carrying a passenger, covered 48 kiloms. in 30 mins. 36 secs., and on February 13th, 100 kiloms. in 1 hr. 1 min. 32 secs., the distance for the hour being 97.508 kiloms. During his flight of February 11th, Busson put up new records for intermediate distance times as follows: 10 kiloms. in 6 mins. 50 secs. (old record, Laurens, 15 mins. 14 secs.); 30 kiloms. in 19 mins. 15 secs. (old record, Laurens, 22 mins. 56 secs.), and 40 kiloms. in 25 mins. 30 4/5 secs. (old record, Vidart, 29 mins. 40 secs.). After covering 50 kiloms. he was compelled to shut down owing to a thickening fog, which rendered it unsafe to continue.

Busson, thus foiled in his intention of flying for the hour record, made a second attempt on February 13th, and was splendidly successful, beating his own records of February 11th with considerable ease. As already mentioned above, he covered 100 kiloms. in 1 hr. 1 min. 32 secs., and in the hour his distance was 97.508 kiloms. The quickest 10 kiloms. circuit was 6 min. 4 3/5 secs., a speed of 98.739 kiloms. per hour. After completing the 100 kiloms. he descended and, taking up three passengers, including Lieut. Mailfert, made a further circuit of the aerodrome. The following are the intermediate times for the new records:

BUSSON.		OLD RECORDS.	
kils.		Busson..	6′ 50″
10	6′ 5″	" ..	12′ 51″
20	12′ 13″ 3/5	" ..	19′ 15″
30	18′ 20″	" ..	25′ 30″ 4/5
40	24′ 24″ 3/5	Laurens.	38′ 19″ 2/5
50	30′ 32″ 2/5	" ..	45′ 51″ 4/5
60	36′ 39″ 1/5	" ..	53′ 29″ 2/5
70	42′ 52″ 4/5	" ..1h.	1′ 8″ 4/5
80	49′ 7″ 4/5	" ..1h.	8′ 51″ 4/5
90	55′ 18″	" ..1h.	16′ 51″
100 ....1h.	1′ 32″		

Germany

Emperor William personally invited Joseph Brucker to talk over his proposed voyage across the Atlantic in the dirigible balloon Suchard, which Princess Henry christened at Kiel recently. The Emperor also looked over the plans on which the Suchard is built and the meterological charts showing the movements of the trade winds on which Brucker depends partly to carry him westward from the canary Islands, his starting place.

The Emperor has honored Brucker further by bidding him attend the court ball Feb. 28. These honors are the result of Prince Henry's report to his brother that the preparations for the Suchard's voyage are being made with scientific care and thoroughness, and that the prospect for Brucker's success is excellent.

Joseph Brucker, amateur aeronaut, has studied meteorology for many years. He was formerly editor of the Illinois Staats-Zeitung of Chicago and Commissioner to Germany for the St. Louis World's Fair. He is known in New York. He named his dirigible Suchard in honor of Herr Russ, head of a Swiss chocolate firm of that name, who is backing his undertaking and who has aided many scientific enterprises.

Not less than eleven German universities and technical schools will institute lectures on aeronautics during the summer half year. Special attention will be given to technical problems connected with the flying machine, its structural principles and practical management.

Lectures will be given at Berlin, Breslau, Giessen, Goettingen and Strassburg universities and at the technical institutes in Charlottenburg, Aachen, Brunswick, Danzic, Stuttgart and Munich. The professors will deliver such courses of lectures at Charlottenburg and Dantzic and three at Munich.

Lieutenant Stein must be added to the list of dead aviators. The young officer whilst experimenting at Doeberitz, was endeavoring to accomplish a vol plané but his machine driving too fast, he fell heavily to the ground and died before he could be pulled out from under the machine.

Metz is now the home of the Gross army dirigible M III, which took up its quarters there on February 7, after having travelled from Berlin to Gotha and then on from Gotha to Metz. It took the big ship a little over twelve hours to accomplish the latter half of the journey,—380 kilometres.

A Zeppelin has been ordered by the German War Office, the arrangements having been perfected early in February. As far as can be learned it will be of the new shortened type, about 100 metres, as compared to the "Deutschland's" 148 metres, and will have sharply pointed ends.

The airship mentioned before this in our columns as being in course of preparation for a trans-Atlantic journey has now been completed at Kiel, where H. R. H. Princess Henry of Prussia performed the baptismal ceremony on February 15, giving the new dirigible the name of "Suchard." The whole venture is due to the enterprise of Dr. Gans-Fabrice, whose remarkable mushroom airship was a feature of the Frankfort Aeronautical Exposition in 1909.

India

H. M. Jullerot on February 16th made a cross-country flight of 15 miles at a height of 1,200 feet over the jungle country on his Bristol biplane.

Many letters in the Indian mail lately bear the postmark:—"aerial post, Allahabad, 1911."

Special mail was carried by aeroplane from the United Provinces Exhibition, on the outskirts of Allahabad, to the general post office in that city and then forwarded in the usual way.

Japan

J. C. Mars and Captain T. S. Baldwin, the American aviators, made three successful flights at Osaki on March 12. The spectators were estimated at 400,000.

Prince Kuniyoshi Kuni, grandson of the Emperor, was present and complimented the airmen on the success of their feats.

The Asahi, a newspaper, offered the aviators a purse of $5,000 for a series of flights covering three days, after which Messrs. Mars and Baldwin went to Tokio.

During the latter part of February Messrs. J. C. Mars, T. S. Baldwin and Tod Shriver have been giving exhibition flights here and also instructing the officers in the handling of their Farman machines which were recently purchased in France.

Mexico

The Moisant international aviators met with considerable success in their various trips throughout Mexico during the past month. A letter on page 48 from Mr. A. S. Levino gives details of their altitude flights.

Philippine Islands

The first aviation flight in the Philippines was made in Manila Feb. 21, in connection with the opening of the annual carnival. J. C. (Bud) Mars, the American aeronaut, made a circling flight over the city, thrilling thousands of spectators and throwing many natives into a panic of fear at the strange sight. "Captain" Baldwin in his biplane, also made a flight.

Spain

Hélène Dutrieu paid a visit to Barcelona in February; on the 16th she made a flight with two passengers over the neighboring country—the first flight, we believe, in which an aeroplane with a woman at the helm has carried up three people.

Victoria

On February 20th, Joseph Hammond made the longest flight as yet achieved above Australian soil, when he succeeded in flying from Melbourne to Geelong—40 miles across country; he stopped over night at Geelong and returned to Melbourne on the next day in the same way he came: *par la voie de l'air*.

RECORDS AND STATISTICS

(*Continued from Page 39*)

Another interesting interpretation by the Federation is the distinction apparently made by it beween a flight made *in closed circuit* without stops and an *out-and-home* cross-country flight without stops.

On December 21st last, Lieutenant Cammerman flew with a passenger from Bouy to Montigny-sur-Aube and return without stopping: his distance and duration (232 kil. and 4 hrs. 3′ 3″) were officially recorded and he was declared the winner of the Coupe Lazare Weiller, yet the "Aviator and one passenger" recognized distance and duration records "in closed circuit with no stops" are 137 kil. 125 and 3 hrs. 19′ 39″4/5.

There is no rule as to how large the circuit is to be or whether it is to be an aerodrome, but the distinction may well be made that in a closed circuit, the line is crossed in the same direction at the start and at the finish, while in an out-and-home flight it is not. This is another point which should be definitely cleared up.

When Amerigo made his passenger-flight of 3 hrs. 19′ 39″4/5, he was credited with a distance of 228,3 kil. but, whereas, the duration record was accepted, the distance one was not, no doubt because not officially checked by scorers and pylon-observers. This distance record as it stands is certainly the least difficult of all the records on the list to break.

Another performance which failed to obtain a place in the official lists is Henry Farman's flight of August 1st, with three passengers besides himself: the flight was unofficially timed as 1 hr. 4′.

No records for "Climbing Speed" have been allowed as yet, although the Federation is prepared to recognize any bearing sufficient guarantees.

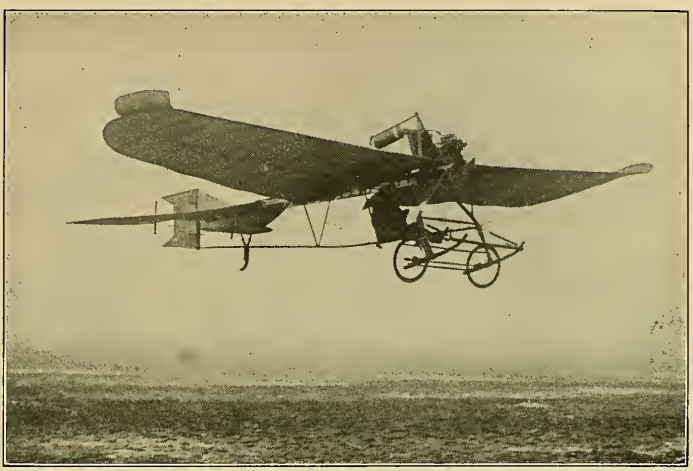
Any barograph shows the speed of ascent, but faster clock motion will be necessary to be able to gauge it in seconds.

The altitude record of Legagneux', it is noted, after being quoted as 3,200 and 3,180 metres receives official recognition as 3,100 metres (10,170 feet).

None of all these records have been broken since December 31st, except the passenger-carrying ones.

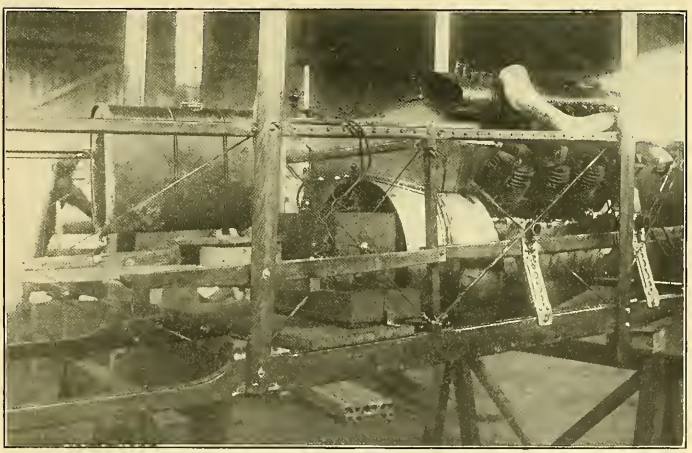
Bréguet, Busson and Nieuport have in turn shattered these until the one hour records for a "two-man" flight and—according to the latest cables—a "three-man" flight, are actually better than that for an aviator alone!

This remarkable result has been brought about by the military demand for speedy passenger-carriers; when it comes to turning out single-seaters for the Gordon-Bennett, a speed of ninety miles an hour can be reasonably expected.



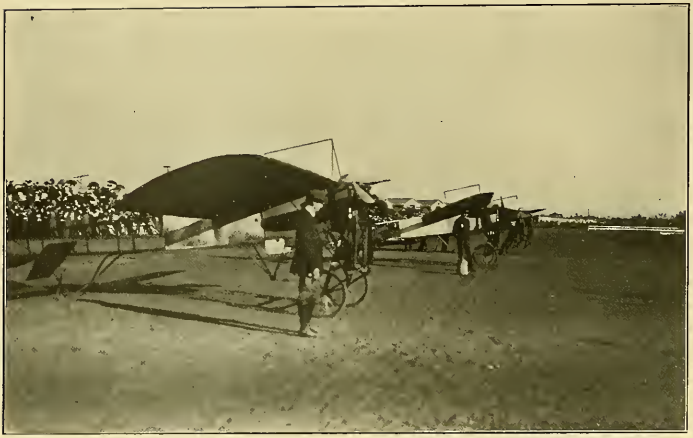
THE VINET MONOPLANE IN FLIGHT. THIS MACHINE IS OF AN IMPROVED DEMOISELLE TYPE AND HAS BEEN QUITE SUCCESSFUL IN RECENT TRIALS. IT SHOULD BE A VERY EASY MACHINE TO CONSTRUCT.

THE SUCCESSFUL GOUPY BIPLANE. NOTE THE BLERIOT FRAME WITH SHORT SKIDS IN FRONT, THE STAGGERED BIPLANE WINGS, THE REAR TAIL AND NOVEL AILERONS.



A WIRELESS INSTRUMENT INSTALLED ON A MAURICE FARMAN BIPLANE. IN TRIALS AT THE BUC AERODROME MESSAGES WERE SENT FROM THE BIPLANE WHILE IN FLIGHT AND WERE SUCCESSFULLY CAUGHT BY THE RECEIVING APPARATUS LOCATED IN THE SCHOOL WORKSHOP. THE PHOTOGRAPH ALSO SHOWS THE INSTALLATION OF THE RENAULT MOTOR.

GENERAL NEWS



THREE MOISANT BLERIOT MONOPLANES LINED UP IN MILITARY ORDER AT SAN ANTONIO, TEXAS, READY FOR SCOUTING MANOUVERS.

The Moisant International Aviators

BY A. S. LE VINO.

Editor AIRCRAFT.

We should like to call to your attention as a matter of some passing interest the remarkable flying of Roland G. Garros, Réné Simon, and Réné Barrier in Mexico City, during the seven days beginning February 24th last. Despite an altitude of 7,861 feet above sea level, all of our men were able to make flights at this high altitude, with the three individuals mentioned deserving special comment.

On February 24th, the opening day of the Mexico City Meet. Réné Simon, using a 50 H. P. monoplane, flew for 29 minutes 41 seconds, during which time he reached an altitude of 3,600 feet above the Aviation Field.

Garros the same afternoon flew four times around Chapultapec Castle, remaining in the air 48 minutes 10 seconds, during which time he reached an altitude of 4,250 feet above Mexico City. Barrier, while Garros was in the air, flew 25 miles across country around a stake, which had been placed 12½ miles from the starting line of the aviation course, in 26 minutes 18 seconds. If the thin air adds to the flyer's speed, it must be remembered that the motor-power is much reduced through the scarcity of oxygen.

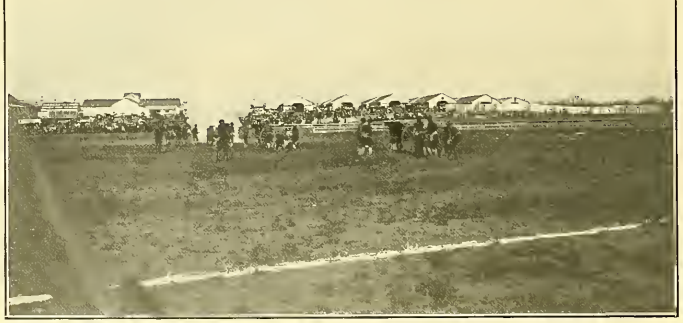
Maintaining this high standard every day during the tournament, but gradually increasing the remarkability and praiseworthiness of the flights, Garros on March 2nd managed to get 4,550 feet above the field in a flight of 46 minutes. At that altitude his carburetor froze and he was forced to glide down.

These facts are brought to your attention in order that they may be of some aid in working out the problem of flying high. As will be noted, our men have had no trouble in reaching tremendous altitudes. Garros, Simon and Barrier have all of them been above the 12,000 feet mark, and they have proved the contention long made by Mr. Alfred Moisant, and demonstrated very completely by John Moisant, that altitude work was simply a question of a motor. Quite the opposite of believing that more rather than less wing surface is necessary for flying in high altitudes, it has been demonstrated that small wing surface and high engine power are the things most to be desired. It would seem, therefore, that the biplane is not as well adapted as the monoplane for flying at high altitudes, because of its greater wing surface and weight, and therefore the greater strain imposed upon the motor.

John Moisant found that after reaching an altitude of 6,000 feet with a 50 H. P. Gnome motor (the temperature on the ground at the time being 24 degrees above zero Fahr.), he lost about 30% of his power; climbing steadily then to an altitude of over 9,000 feet, he found that at 9,000 feet elevation his 50 H. P. motor was delivering only about 25 H. P., and that the temperature had very seriously affected the working qualities of his engine. It was computed by the official in charge of the United States Weather Bureau at Memphis that at the time the temperature was 24 degrees on the ground, it was 15 degrees below zero 9,000 feet in the air, and this cold was rendered more intense by the movement of the machine.

We have not yet received from Garros, Simon and Barrier the data of their high altitude flights in Mexico City. As soon as they are received they will be turned over to you for such comment as you care to make for the purpose of helping along investigation in these channels. As all three of these men have now been from 1,000 to 1,500 feet higher than the world's altitude record made by Legagneux, and as they are the first men ever to have been 12,000 feet above sea level in an aeroplane, their reports as to wind and mechanical conditions at that altitude, and the effects of the rarified air on their motors, will be very interesting.

We have a large amount of data of this sort, which will undoubtedly prove of great value to scientific investigators of aviation and to those who are earnestly desirous of making scientific experiments with the flying machine. If we can be of any aid to you in working out such problems as may occur to you, please let us know and we shall be very glad, indeed, to request our aviators to try to solve some of the problems which you desire worked out.



ARMY PRACTICE IN TEXAS. ARTILLERY FIRING AT AN AEROPLANE 4,000 FEET AWAY.

Notes

Earle Remington, who bought the Blériot monoplane which James Radley, the English aviator, had at Belmont Park, has made several successful flights in the machine at the Dominguez field where the recent aviation meet was held. He has established a camp at the field for himself and his mechanicians, and has two aeroplanes under construction.

Thomas Benoist, who has an aviation school at St. Louis, received a letter the other day from K. Shoji, of Nagasaki, Japan, a young naval officer, inclosing amount of the tuition fee in the aviation course.

Lincoln Beachey made two flights after darkness had fallen at Tampa, Fla., March 1st. With acetylene searchlights attached to his machine he made the first flight of twelve minutes, circling the Tampa Bay Hotel. The second flight was made without lights, and he drove into a post when alighting.

In an attempt to capture the Lahm trophy, which was won last year by Alan R. Hawley, in the America II., when he covered a distance of 1,173 miles, Wm. F. Assman, pilot, and J. H. O'Reilly, aid, in the balloon "Sofia," left San Antonio, Texas, at 6:47 P. M. Feb. 25th, and landed at 5:15 P. M. Feb. 26th, having covered a distance of about 800 miles.

The cup thus remains accredited to Mr. Hawley.

California News

BY ERNEST OHRT.

Fred. J. Wiseman made a successful sixteen mile flight on February 18th from Petaluma to Santa Rosa. The flight was made in a machine of his own design.

M. Tong Guey, a young Chinese, whose recent work as an aviator has startled Fruitvale and East Oaklands, sailed for China on February 24th, accompanied by three mechanicians and two biplanes of the Curtiss type.

Mr. Chas. F. Walsh, of Los Angeles, made history on February 19th by taking his wife and two children aloft in his Californian built biplane, which is fitted with a 50 horse power McComber rotary engine, it being perhaps the first time any aviator had with him as passengers all the members of his own family. Their aerial trip lasted half an hour.

It is Mr. Walsh's intention to establish regular aeroplane service in that section, charging each passenger a nominal fee.

From water to land and from land to water in the course of a flight of five miles, was the successful experiment accomplished by Glenn H. Curtiss on his latest hydro-aeroplane, at San Diego, on February 27th, when he flew from North Island to the Hotel Del Coronado, landing upon the beach immediately fronting it.

Indiana News

BY M. FER DON.

The latest debutant in the aeronautical world is Earl Slaick, of Indianapolis, Indiana. Mr. Slaick has had nine years' previous experience with gas engines, and is a master mechanic and auto driver, formerly employed by the National Motor Car Co. as final inspector of engines.

The other member of the team is B. R. Shaw, Jr., and though younger in age, he is more experienced in the art of aerial navigation. Shaw has been making many successful short flights in and around the Speedway here, but has never attempted any duration or altitude flights on the account of motor troubles. Shaw is known as the youngest successful aviator making flights.

Messrs. Shaw and Slaick have just finished two new Curtiss machines with all the latest improvements. The planes are covered with No. 2 Naiad cloth and laced to the spars through eyelets in the cloth. The uprights, ribs and spars are all polished with a mahogany finish, making the machines pleasing to the eye as well as flyers. The ailerons are controlled by the fork, the same as in the original Curtiss. The chassis is somewhat different, and is constructed so as to enable one to make an easier landing. The wheels are so mounted on springs as to absorb the usual landing shocks and allowing the central skid to take the rest.

Shaw has installed a Boulevard 35 in his new machine, while Slaick has made a choice of a Fox 24-36. Slaick announces that although the Fox engine is unknown, it is a wonderful engine, and he expects to do some remarkable work with it.

Messrs. Shaw and Slaick start the middle of April on a tour of exhibitions covering the Central States and working westward, with California for their goal. B. L. Shaw, Sr., is acting as manager for the youthful aviators, and is booking them and making contracts.

Mineola

During the past month activity has continued at the Mineola aviation grounds, in spite of the severe weather. Frank Paine, in his Curtiss-type biplane, made several successful trial flights with his machine preparatory to his departure for Bridgeport, Conn., where he was subsequently injured. Another machine which has been out on every favorable occasion is the Ragot monoplane a tail-first type similar in design to the Valkyrie I. monoplane described and illustrated in the last number of AIRCRAFT, page 8.

We append below a list of the machines now at Mineola:

AERONAUTICAL SOCIETY SHEDS.

Talmage, Curtiss type, (Boulevard).
Talmage, small Curtiss type.
Ragot monoplane (Detroit 2-cyl. Aero).
Rosenbaum monoplane (Rosenbaum).
Dr. Walden, monoplane (Anzoni).

AERO CLUB.

Dr. Greene, Curtiss type, (Rosenberger).
Fairchild monoplane, (Emerson).

Aero Club of Connecticut

BY S. H. PATTERSON.

Frank Paine, of Bridgeport, is now in the hospital recovering from an accident with which he met while flying his biplane at Seaside Park on March 3rd in a practice flight preparatory to an exhibition flight he expected to make over the harbor on the following day. On account of the many trees in the park it is a poor place from which to make a start, but Paine succeeded in making a good get-away and got about 50 feet in the air when his running gear struck the tree tops, throwing his flyer around and down to the ground, where it was badly wrecked, and he severely shaken up and cut over the eye, but was not seriously injured.

Paine had expected to give his exhibition on Washington's Birthday for a purse, which had been made up by business men in Bridgeport, but was prevented from doing so on account of the enormous crowd which gathered to witness the flight. It is estimated that 60,000 people were at the Park, and as no preparation for controlling such a large crowd had been made, the small police force present were unable to clear a space in which he could make a get-away. The ground and weather conditions were not favorable, but Paine was ready and willing to make the attempt if a space could have been cleared.

The 40 foot boulevard was finally cleared for about 50 feet, with crowds of people packed in on all four sides, but both Mr. Paine and his advisor, Leo Stevens, knew an attempt would have been murderous, and the flight was postponed until March 4th, at which time arrangements would have been made to handle the crowd.

Mr. Buckingham, Mayor of Bridgeport, was one of the members on the committee in charge of this flight, and publicly criticised Paine for not making the attempt, which would indicate that legislation to govern the selection of a committee to act at aviation meets or exhibition flights is as necessary as for legislation to control aviators.

Paine's biplane is of the Curtiss type, the parts were made by Witteman and assembled by himself. It is equipped with a 40 H. P. Elbridge engine, with 7 foot propellor.

A. Holland Forbes, of the Aero Club of Connecticut, has presented a bill to the State Legislature at Hartford, to become active January 1, 1912, at which time he believes legislation to control aviation in this State will be necessary. Mr. Forbes' bill is as follows:

The Forbes Bill

An act concerning the registration, numbering and use of airships and the licensing of operators of such airships.

Section 1. The term "airship" in this act includes every kind of vehicle or structure intended for use as a means of transporting passengers or goods or both in the air. The term "aeronaut" in this Act includes everyone who, being in or upon such vehicle or structure or anything attached thereto, undertakes to direct its ascent or course or descent in the air, or the ascent or course or descent in the air of anything attached to such vehicle or structure. The verb "fly" and the word "voyage," as used in this Act, include every kind of locomotion by an airship.

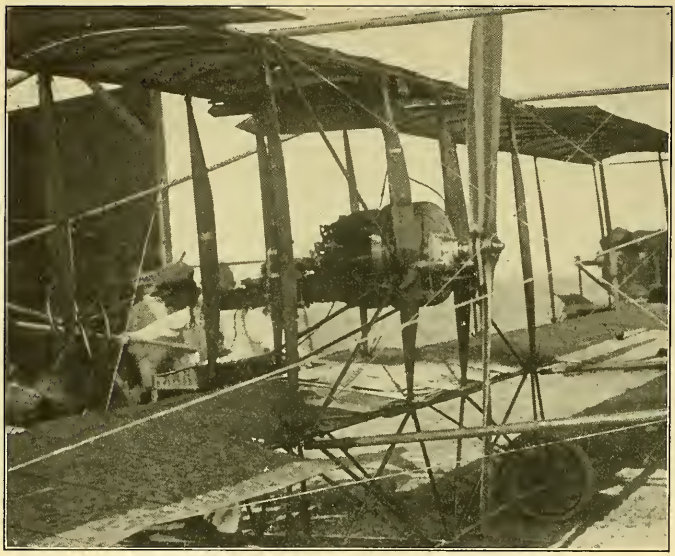
THE NEW FAN-TAILED SINGLE-ELEVATOR CURTISS FLYING IN CALIFORNIA.

Section 2. Every owner of one or more airships kept in this State, shall file annually in the office of the Secretary of State a blank furnished by the secretary; a statement of his name, residence, post office address, and a description of each airship owned or controlled by him, and shall give such other information required by the secretary, and said secretary shall register such airship, assigning to it a distinguishing number, and shall thereupon issue to such owner a certificate of registration, which shall contain the name, place of residence and post office address of such owner and the number or mark assigned to such airship and shall in form contain such further information as said secretary may determine. Such certificate shall at all times be carried upon such airship and shall be subject to examination, upon demand, by any proper officer. An application for the registration of an airship by an owner who does not file his application until after the first day in June in any year, shall be entitled to a pro rata reduction in fee for such registration, calculated to the first day of the month in which said application is made. Upon the transfer of ownership of any airship, its registration shall expire and the person in whose name such airship is registered shall return forthwith the certificate of registration to the secretary, with a written notice containing the date of such transfer or ownership and the name, place of residence and post office address of the new owner. The registration of every airship shall expire at midnight on the thirty-first day of December in each year.

Section 3. Every airship, while in use or operation, shall display, in a conspicuous place, as designated by the secretary, duplicate numbers in characters not less than three feet in height, so as to be visible to those who may be beneath it; said numbers to be displayed in such manner as the secretary may direct.

Section 4. A person may fly over land or water owned or leased by him, or over land or water the owner of which has given written permission to him to so fly, but no other person shall direct or operate an airship, or act as aeronaut of any airship, until he shall have obtained from the secretary a license for that purpose, and such license shall be issued until the said secretary has examined said applicant or caused him to be examined by one or more competent persons in such manner as said secretary may deem advisable and said secretary is satisfied that the applicant is a proper person to receive it. Nothing herein contained shall prevent the operating of an airship by an unlicensed person over the age of twenty-one years or more, other than a person whose application has been refused, or where a license has been sus-

THE AVIATOR OF THE FUTURE. A NEPHEW OF INVENTOR A. O. PAULSON HOLDING AN EXPERIMENTAL MODEL WHICH HAS MADE SEVERAL SUCCESSFUL FLIGHTS.



THE MACOMBER ROTARY ENGINE INSTALLED IN C. F. WALSH'S BIPLANE.

pended or revoked, if accompanied by a licensed aeronaut, which said licensed aeronaut shall be personally liable for any violation of the provisions of this act. Licenses for directing or operating an airship shall be issued by said secretary, but no license shall be issued to any person under the age of twenty-one years. Licenses shall be divided into three separate and distinct classes; license to operate spherical balloons; license to operate dirigible balloons; license to operate aeroplanes or heavier than air machines. Applications for licenses shall be made upon blank furnished by said secretary and such application blanks shall be in such form and contain such provisions, not inconsistent with this act, as said secretary may determine. A number shall be assigned to each license and a proper record of all applications for licenses and licenses issued shall be kept by said secretary at his office and shall be open to public inspection. Each license shall state the name, place of residence and postoffice address of the licensee and the number assigned to him and such provisions not inconsistent with this act as such secretary may determine. Such licenses shall expire at midnight on the last day of February in each year. Such a license shall, at all times, be carried by the licensee when he is directing or operating an airship in this state and shall be subject to examination, upon demand, by any proper officer.

Section 5. The secretary shall collect fees as follows: For the registration of every airship five dollars; for examination and tests of applicant for license to direct and operate airships, as provided in this act, such sum as he may demand, in any instance not exceeding twenty-five dollars; for license to operate and direct airships two dollars; for every additional copy of certificate of registration or license, fifty cents.

Section 6. The secretary may suspend or revoke any certificate of registration or any license issued to any person under the provisions of this act, after due hearing, for any cause he may deem sufficient and may suspend the license of the operator.

Section 7. No airship shall be flown from any point in this state or to any point in this state, except the same is registered as set forth in Section 2 of this act and except said airship is under control and direction of one licensed to direct and operate as set forth in Section 4 of this act.

Section 8. The airship must carry throughout any trip a copy of the certificate of registry and of the certificate of competency of the aeronaut.

Section 9. Any non-resident of this state who has complied with the laws of the state within which he resides, relative to airships and the direction and operation thereof, may fly said airship in this state not exceeding ten days in any one year, without complying with the provisions of this act relative to the registration of the airships and the licensing of directors and operators, subject, however, that the said non-resident must have been of a state requiring the registration of airships and licenses to direct and operate the same and must have been so licensed to operate and said airship must have been so registered in that state.

Section 10. The secretary of state may issue, without examination, a license to any aeronaut holding a license from any association of individuals or societies, formed for the purpose of promoting the science of aeronautics or aviation, the standing and character of which is such that the secretary is satisfied the said license has been issued on due examination and deliberation.

Section 11. Any person flying an airship in this state who fails to comply with any of the foregoing provisions of this act, shall be fined not more than one hundred dollars or imprisoned not more than six months, or both.

Section 12. Every aeronaut shall be responsible for all damages suffered in this state by any person or persons from injuries caused by any voyage in an airship directed by such aeronaut; and if he be the agent or employee of another, in making such voyage, his principal or employer shall be likewise responsible for the same.

Section 13. This act shall take effect on January 1, 1912.

The Macomber Rotary Aeroplane Engine

A new type of gasoline engine is being built by the Macomber Rotary Engine Company of Los Angeles, California, for aeroplane use. This motor is radically different from all others in theory, design and operation, there being no crank shaft, and yet having a similar cylinder and piston construction to the ordinary vertical engine, but a mechanically variable piston stroke.

The attached photograph shows the Model "A" 50-60 horse-power motor. It has seven cylinders, placed around and parallel to a central straight shaft. The standard valve in the head four cycle action is used, all valves being operated from one four-point cam placed on the central shaft and running in the same direction. In operation the entire motor revolves with the exception of a small case at either end. From these cases the supports are run, the one at the head also forming the holder for the magneto and carburetor.

Inside of the large case at the propeller end is placed a "stroke-plate," which is attached to the shaft in such a manner that while it must rotate in the direction of the engine it is perfectly free to be tipped to any desired angle. To this is attached the connecting rods, and by tipping the stroke-plate at various angles the traveling distance of the piston can be varied. This allows the use of a very high compression for operating, which can be reduced to any desired point for cranking purposes. Several different forms of levers are supplied to operate the change of stroke, any of which can be operated both when the engine is at rest or running.

The motor is air-cooled, does all its own oiling by centrifugal force and runs on light wood supports one inch wide by three inches deep. All bearings are large diameter Hess-Bright and New Departure ball bearings, with the exception of the connecting rods, which have full ball and socket bearings.

The greatest diameter is nineteen inches and the length twenty-eight inches. The weight complete is two hundred and thirty pounds.

A magneto is operated by the cam gears directly connected, the current taken by six inches of wire to a stationary electrode on the top of the front bearing case. Spark plugs in the cylinder heads pass within a sixteenth inch of this electrode, to which the spark jumps.

Any standard carburetor can be used. The range of speed is from 150 to 1,500 revolutions per minute, although the average operating speed is about one thousand revolutions, at which it develops a full fifty horse power.

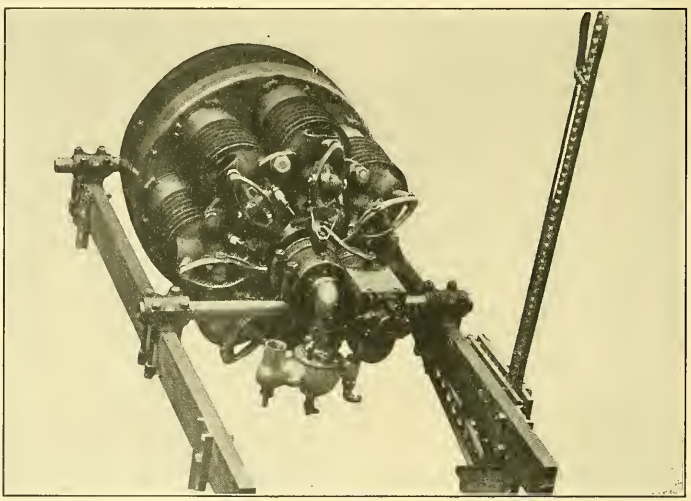
The Boston Aero Show

BY W. H. PHIPPS.

The Second National Exhibition of Aerial Craft of Boston was held in Mechanics Hall, from February 20th to 25th; it was by far the most pretentious one so far held in this country.

Twenty full sized machines were shown; twenty-four American and one foreign, while the extensive exhibit of motors, supplies and accessories attracted their share of attention, as did also the display of gliders and models in the basement.

Briefly described, the chief exhibits were as follows:



A DETAILED VIEW OF THE MACOMBER ENGINE SHOWING THE METHOD OF INSTALLATION.

THE BURGESS COMPANY AND CURTIS.

The largest and most impressive exhibit of machines was that of the Burgess Company and Curtis, of Marblehead, Mass., who showed no less than five completed tiiers.

The Grahame-White biplane, Model E, is a small modified copy of the Henry Farman machine with the following Burgess improvements: Detachable wing extensions to the upper surface for use when carrying passengers; Burgess gate control and Greely Curtis deflectors, (which were described in AIRCRAFT, Vol. 1, page 436).

The workmanship on this machine called forth the admiration of all who saw it. A new feature noticed was the unique positions of the gasoline tanks. Two are placed on the lower surface, one each side of the pilot's seat, while two more are situated on the lower side of the top surface. A seat for the passenger is provided behind the pilot and in front of the engine.

The main dimensions of this machine are:

Length, 31 feet, 8 inches; width, with surface extensions, 36 feet, 10 inches; without extensions, 27 feet; height, 7 feet, 10 inches. Stabilizers: Ailerons combined with Greely Curtis deflectors. Burgess gate control operating both front and rear elevators. Motor: seven-cylinder, 50-horsepower Gnôme.

In addition to the Grahame-White biplane, the Burgess Company exhibited two model B machines, a model D, a model C, and a genuine imported Blériot, fitted with a two-cylinder 30-horsepower Clement-Bayard motor.

Both the models D and C were described in AIRCRAFT, Vol. 1, page 436.

THE WRIGHT COMPANY.

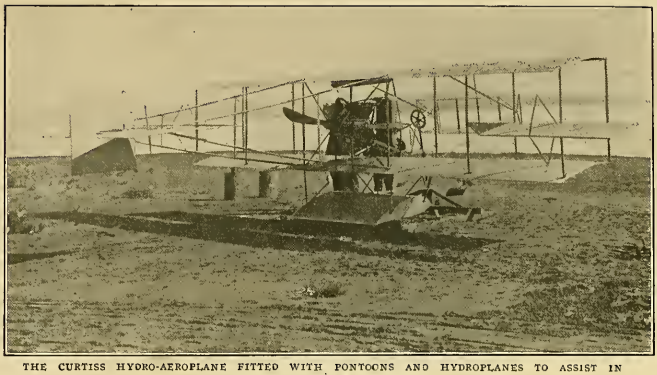
The Wrights showed a model B passenger-carrying machine. The machine is little altered from that used by Hoxsey at Belmont Park, but there are several important detail alterations. The two front skids have been shortened, and their points turned up at a sharp angle. The particular machine shown is an example of "show finish." All the steel parts are plated and the woodwork carefully varnished—a departure from the regular Wright practise—aluminum paint having previously been used on all their machines.

The machine has both a foot and hand magneto control, the magneto affording an exceedingly wide range of control. The control levers and their mountings have been materially strengthened by the use of special steel and aluminum fittings, which are necessary, owing to the complicated operation of the combination wing-warping and rear rudder control lever. The entire machine is governed by two levers, the first of which, when moved forward or backward, warps the wings and at the same time turns the rear vertical rudder with the idea of permitting the operator to maintain his balance without changing his course. The vertical rudder can also be operated independently by simply twisting the pivoted end of the lever with a wrist motion. The second lever works the rear horizontal rudder, up or down.

THE PIGEON MONOPLANE.

A new and unique machine which attracted considerable attention was the Pigeon monoplane, constructed by the Boston Aero Company, and fitted with the new six-cylinder Goblin rotary motor.

Lateral stability in this machine is obtained by rocking the wings, which are pivoted in the manner of Curtiss ailerons. Hollow spars are used throughout its construction, and the joints are made with brazed fittings.



THE CURTISS HYDRO-AEROPLANE FITTED WITH PONTOONS AND HYDROPLANES TO ASSIST IN RISING FROM THE WATER.

As a type it somewhat resembles the Blériot XII., with the important difference that a flat pigeon tail is fitted to it instead of the two curved tails on the old Blériot XII.

THE MINEOLA SPECIALTY COMPANY.

This firm exhibited a double surfaced Curtiss-type biplane constructed entirely of standard fittings, which the Mineola Specialty Company carry in stock.

THE LONGFELLOW MONOPLANE.

The Longfellow monoplane, with its blue covering and novel 30 horse power two-cylinder rotary motor, arrested the attention of many. The machine somewhat resembles the new pigeon-tail Blériot, with the exception of the wings, which are fitted with flexible rear extensions, as on the Grade and Etrich machines.

SAUNDERS AND BUTLER.

Messrs. Saunders and Butler exhibited a Blériot copy fitted with a Sommer landing chassis. The machine was of excellent construction and great care had been paid to details. The wire used for bracing the wings was of unusual thickness and fastened by special steel clamps.

THE HUBBARD MONOPLANE.

Mr. Gardiner G. Hubbard, of Boston, exhibited a large and substantially built monoplane of original design. The machine has a long square body with Farman type landing chassis and an Antoinette-type tail. The main wings are attached rigidly to the frame, and lateral stability is obtained by the use of ailerons, which are operated by a Blériot-type control. The machine exhibited at the Show was fitted with a four-cylinder 40-60 horse power Elbridge engine.

THE ROE TRIPLANE.

The Harvard Aeronautical Society exhibited the triplane used by Mr. A. V. Roe at the Boston meet. The machine has a triangular frame with a Green 30-40 horse power engine placed in front of the three leading main planes, while the pilot's seat is behind them, as in the Antoinette. A tri-plane tail is used for steering up or down, while a large rudder at the extreme rear steers the machine to the right or left. A Farman-type chassis is employed, as is also a Farman control. A picture of this machine in flight occurs on page 252 of Vol. 1, AIRCRAFT.

THE METZ COMPANY.

The Metz Company, of Waltham, Mass., exhibited a new biplane of the Curtiss-Farman type fitted with a 35 horse power motor. The control consisted of a Curtiss type wheel and pillar mounted on a universal joint in such a manner that pushing the pillar back and forth worked the front elevator whilst moving it from side to side worked the ailerons. Turning the wheel to the right of left operated the rear vertical rudder.

Besides the above machines, there was an unusually fine exhibit of motors, supplies and accessories. Particularly noticeable among the accessory exhibitors was the large display of the New York Aeronautical Supply Company, which included everything from a turn-buckle to a full sized machine. This excellent exhibit comprised a large number of special fittings, sockets, Farman, Curtiss and Demoiselle landing chassis and a four-cylinder "Aeromotor" engine built by the Detroit Aeronautic Construction Company.

Another well patronized booth was that of the American Aeroplane Supply House. Here was exhibited a large Blériot wing showing its internal construction, together with a full line of castings, parts and blue prints for constructing a Blériot machine.

Below is appended a list of the exhibitors.

ACCESSORY EXHIBITS.

Goodyear Tires.
New York Aeronautical Supply Company.
The Palmer Aeroplane Tires.
The Mea Magneto.
The Harriman Aeromobile Company.
Messrs. E. J. Willis.
The Metz Company.
Aero Club of New England.
The Post and Lester Company.
The Hendee Manufacturing Company.
Pan-o-Lite Oils.
The Elbridge Engine Company.
The International Airship Company.
The Aeronautical Society.
The Coward Auto Supply Company.
Boston Globe Models.
The Kinney Manufacturing Company.
The Scientific Aeroplane Company.
The Church Aeroplane Company.
De Forest-Symonds Model Aeroplane Co.
Helicopter Model exhibited by Al. De Dryver and Edward Huber.
Richard W. Sears (Photos).
Houtz and Henderson (Models).
A. J. Seaman (Post Card Gliders).
E. L. Lennon (Auto and Aero Supplies).
Marquis (Aerial Compass).
American Aeroplane Supply House.
Royal Aerial Manufacturing Company.
John M. Pierce (Models).
Cole and Company (Photos).
Harvard Aeronautical Society.
The White Aeroplane Company (Models).

GLIDERS.

1 Burgess Glider.
1 Tufts College Glider.
1 Pollingher Glider.
1 Sinnott and Winn Glider.
1 Harvard Aeronautical Society Glider.

EDMUND AUDEMARS AND ROLAND GARROS THE ONLY TWO MEN WHO HAVE SUCCESSFULLY FLOWN "DEMOISELLE" MONOPLANES IN THIS COUNTRY. THEY ARE NOW WITH THE MOISANT INTERNATIONAL AVIATORS.

Bleyer's Letter

MY DEAR MR. LAWSON:—

My interest in aerial navigation prompts me to write you on the subject of "Dare-Devilism vs. Aeronautics."

From my limited knowledge of this new sport, I am forced to the conviction that many of the unfortunate fatalities among the heroes of aerial navigation are due, to a great extent, to carelessness of the aviator, and not so much on account of

courage as lack of appreciating the danger in handling an aeroplane. On leaving the earth the aviator's mind should not for an instant be "off his job." He may be sailing along smoothly, feeling quite confident that all is well, and then his curiosity prompts him to look under or around, or to inspect his barograph, bending over too far, forgetting all else when something suddenly happens and frequently before he regains his equilibrium, it is all over.

A man with a clear mind and the necessary courage, who will be prudent enough to keep his eyes and ears open, and his mind constantly directed upon every detail of his aeroplane, ready upon the instant to combat unfavorable conditions, will remain in the business longer than he who feels over-confident and becomes the least bit careless. You, aviator, should bear in mind that you are responsible for 90% of the risk. You are learning something every trip that you make into the air, and you will find that the straight business flight will prove the most satisfactory in the end, and the fellow that takes his life into his hands by performing all sorts of fancy stunts will suffer in the end. These things can be dispensed with until you are more familiar with the game.

You men who have become great aviators and have so thoroughly aroused the interest of all the world and who have won the hearts of all who see you circling in the air, while many of them applaud the various risky aerial performances, none of them wish to witness the crash that occasionally follows. I am quite sure that aerial navigation has come to stay, but great sacrifice of life is unnecessary, and it might be a good plan for the Aero Clubs of the various cities to issue certain rules and regulations, prohibiting the indulging of performances that unnecessarily risk the lives of aviators and thereby creating public sentiment against the air craft.

At the present time, when a well-known aviator meets with serious accident, the cry is immediately raised, "This is horrible, and should be prohibited by law." Time alone will bring confidence as to the ultimate outcome of this means of transportation, but recklessness will do more harm and do more to seriously handicap the popularity of this great sport than anything else. As a source of amusement the aeroplane will necessarily be a rich man's pleasure for many years to come. It will be some time before the cost of aeroplanes can be reduced low enough to be within reach of the average person. Yours truly,

CHARLES E. BLEYER.

Chicago, Feb. 23.

Insurance for Aviators

By Gordon Case.

That there is some danger connected with the sport of aviation is not to be denied, that those who engage in it are now becoming very numerous is also a truism. A report to the effect that the Transylvania Casualty Company of Louisville, Kentucky, was to insure aviators against accidents caused that company to be deluged with inquiries as to rates and particulars. This shows that there is indeed a demand for such insurance. But let not the man who carries life or accident insurance despair for if his life insurance policy be unrestricted as to travel, residence, or occupation he is insured no matter what he does. And in the case of accident insurance the court of last resort of Colorado recently held in the case of a man who was killed in making a balloon ascension that as his regular occupation was the one mentioned in the policy and he only occasionally engaged in ballooning that his widow's claim for indemnity against the insurance company should be liqtidated in full.

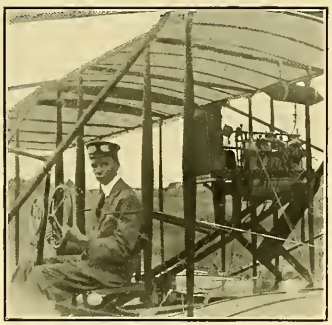
Of course professional aviators will find extreme difficulty in getting accident insurance but there should be no difficulty experienced on this score by the great majority who will in the future engage in aerial navigation as a sport. The main thing is to get as liberal as possible a policy.

Up to now no American company has undertaken aviation risks but in view of what appears to be an increasing demand of some magnitude and of the fact that an adequate experience is fast developing upon which rates may be safely based, such insurance is sure to be available ere long.

The Glasgow Insurance Corporation of Glasgow, Scotland, is already issuing a policy at a premium of £6.61 per quarter which pays £125 in the event of death by aerial accident, £150 for loss of both hands or both feet or the sight of both eyes, £100 for the loss of one hand or one foot or the sight of one eye. The indemnities for non-fatal injuries apply both to aerial and other accidents and the company is also prepared to furnish special rates on aviators and their machines while engaged in races and competitions.

This is a real step in the right direction and represents a tendency on the part of reputable companies to offer insurance on a sound scientific basis as opposed to the various Lloyds which have heretofore accepted such risks rather in the nature of bets than otherwise.

The rates as given are high, $122.00 per year for a $625 death benefit, $750 for loss of both hands, feet or the entire sight of both eyes or $500 for the loss of one hand, foot, or sight of one eye but this may be regarded as purely tentative and subject to appreciable reduction as the business grows and competition becomes general. Also a factor which neither insurers nor insured can ignore is that either as a sport or profession aviation is rapidly passing from its experimental stage and that the risk of serious accidents is constantly diminishing.



B. R. SHAW, JR. AT THE WHEEL OF HIS CURTISS TYPE BIPLANE WHICH IS DRIVEN BY A 30 H. P. MOTOR.

For the devotee of aviation as a sport then, insurance is now a fact and for the professional aviator it is a reality of the very near future and probably will be procurable in reliable companies at fair rates.

Glenn H. Curtiss, the first winner of the international aviation speed trophy, at Rheims in 1909, has announced that he will go to England to contest for the cup again this year in the international aviation meet. A special speed biplane is being built by him for the purpose.

The Grahame-White biplane, which was exhibited at the recent Boston Show by the Burgess Company and Curtis, has since been fitted with a canvas covered wooden framework to protect the aviator from the wind. It is an entirely novel shape, and is intended for exhibition at the Olympic Show, London, the latter part of March.

The Burgess Company and Curtis are enrolling a large number of pupils for instruction in their aviation school, which is to be opened shortly.

CLASSIFIED ADVERTISING

10 CENTS A LINE ✍ SEVEN WORDS TO LINE ✍ CASH WITH ORDER

FOR SALE

GENUINE GLENN H. CURTISS AEROPLANE, CAN BE USED FOR EXHIBITION FLIGHTS. EXTRA PARTS. IMMEDIATE DELIVERY. FREE TUITION. Geo. Russell, 1370 Broadway, Room 14, New York.

FOR SALE—First-class biplane glider, 152 sq. ft. surface. First $40.00 takes it. A. Werner, 819 21st Ave., Seattle, Wash.

FOR SALE—30-horsepower acro motor, 4-cylinder water cooled, Schebler carbureter, Bosch magneto. Weight 130 lbs., including propeller, 1,500 revolutions per minute. Nickel finish, good as new. Has raised 750 lb. biplane over 100 times. Paul H. Cartter, Cottonwood Falls, Kans.

FOR SALE—50 H. P. Harriman motor complete. Sheblar carburetor $100. High tension magneto, everything new, has been run only once. This motor is being sold by the Harriman people for $1,675; my price $900 cash. Address "Harriman," care AIRCRAFT.

FOR SALE—Three 78,000 cubic ft. racing balloons. One 40,000 equipped for captive if desired. Four Dirigibles, one Biplane, one Monoplane and manufacturer Balloons, Airships and Aeroplanes.
G. L. Bumbaugh, Indianapolis, Ind.

A BEAUTIFUL four-colored postcard of the late John B. Moisant flying at New Orleans, December 27, 1910. 2 for 5c; 25c per doz. Geo. Wallace, 103 Royal St., New Orleans, La.

FOR SALE—Blériot monoplane, 24 horse power Anzani motor, imported from Blériot factory this year. Will be sold big sacrifice by Aviation Company, closing up its business. Box 727 % Aircraft.

MODEL PROPELLERS: Single piece, hickory, 5c. per inch—laminated, 8c. Special attention to twin propellers of opposite pitch. Extra quality. Send money order. R. G. Robinson, Model Supplies, 25 Carl St., San Francisco, Cal.

IF you are interested in Aeroplanes call and see us; we make everything for the Model builder. Prices right. Goff Aeroplane Co., Suite 414-225 Dearborn St., Chicago, Ill.

PROPELLERS, Laminated Ash $6.50 a foot. Any size, any pitch. Guarantee exact workmanship. Early delivery. Rudolph Kubelka, 4 Ocean Parkway, Brooklyn, N. Y.

CO-OPERATION WANTED

I AM BUILDING a monoplane of a very simple and cheap construction. Operator will ride inside; great enterprise; will be a great attraction for the Government. Machine now partly finished. Would like to communicate with party or firm of money to finance the building of same. Address: C. B., % AIRCRAFT.

THIS is to certify that I have invented and constructed a small working model of the double power system for aeroplanes (which can be used also in automobiles and motor boats).
My invention comprises two separate motors and propellers which are entirely independent from one another.
The propelling thrust is always in one central locality when working one or both propellers. It does not require any more space to install than a single 8-cylinder motor of the present type.
No transmission chains or belts are used.
Wish to take partnership with party of good honest means to patent and construct same. Address Box 733.

DESIRE communication with one or more men, to incorporate with and take financial interest, aeronautic enterprise. About to build three story factory. All metal machine and line of supplies well covered by five patents. Box 731, care AIRCRAFT.

WELL known aviator seeks association with capital, fine machine. Will patent several aeronautical appliances, machine, propeller, etc. Give half interest in patents and business. Box 732, care AIRCRAFT.

CAPITAL wanted for the construction of a special type of tri-plane to try for the Hearst Prize: will divide if successful. Address J. Broderick, 59 Ridgewood Ave., Newark, N. J.

LEARN at home, in a few evenings, how to construct, operate and repair Flying Machines, Commercial Trucks, Automobiles, Motorcycles, Motor Boats, Gasoline Engines, Electric Motors. Big demand, with good pay for competent men. Thousands of positions open. Let us help you in place and pay. A postal card will do. Address Extension Department, The Charles C. Thompson Co., 549 Wabash Ave., Chicago.

MISCELLANEOUS

INSTRUCTION in practical flying desired by man, age 30. Want proposition from reliable party or aeroplane company. Address C. D., 1993 Pacific St., Brooklyn, N. Y.

BROKEN CYLINDERS AND CRANK CASES expertly repaired by autogenous welding. Highest references as to skill and responsibility. Waterbury Welding Works, Waterbury, Conn.

WANTED—35 to 50 H.P. aeroplane motor, used, light weight and good condition. State particulars. R. Carlson, Hobart, Ind.

FAME WITH RICHES, HIGH SALARY. WANTED—Six aviators, one road business manager, to train for early spring tour of world, OPERATE TAVAC AERO CAR, THE AMERICAN VACU AERO CAR COMPANY MAKERS; only capable men with $3,000.00, knowledge of engines and aeronautics considered. J. Fillmore Cox, Mechanical and Aeronautical Engineer, Manager, Bayonne, N. J.

MECHANIC, a young man at present employed by a well-known aeroplane company, would like to receive offers from private parties needing the services of an able man with a thorough knowledge of aeroplane and engine construction and operation. M. B., care AIRCRAFT.

DUMMY AEROPLANE with Motor and Propeller installed to rent per hour. Accomodation to build Aeroplanes; Large Sheds to Assemble Machines. Second-Hand Motors and Propellers. Rudolph Kubelka, 4 Ocean Parkway, Brooklyn, N. Y.

THE handsome trophy shown below was given by THE SCIENTIFIC AMERICAN for the purpose of stimulating aviation in the United States. It is fitting that the first and only noteworthy trophy of this sort should be offered by a journal which, for more than 66 years, has fostered the development of aeronautics and the mechanical arts, not only in America, but throughout the civilized world.

THE SCIENTIFIC AMERICAN TROPHY commemorates Prof. S. P. Langley's aeroplane—the first successful machine in America and the precursor of the modern monoplane.

The Scientific American Aeroplane Trophy

After being thrice won by Glenn H. Curtiss in the past three years, THE SCIENTIFIC AMERICAN TROPHY will soon be presented to him by the Aero Club of America, in accordance with the rules. Mr. Curtiss has acknowledged the inspiration this Trophy has been to him in giving him something new and harder to accomplish each year, so that we are gratified to know that our purpose in giving the Trophy has been fulfilled, and that it has been instrumental in promoting the progress of aviation in the United States.

For 1911 we call the attention of the aeronautic world to the $15,000 prize offered by Mr. Edwin Gould through THE SCIENTIFIC AMERICAN for the best aeroplane having two complete power plants that can be run together or separately.

This generous offer of Mr. Gould, will make it well worth the while of American inventors to still further improve the aeroplane.

The date of the contest is July 4th. We will gladly send further particulars upon request.

THE SCIENTIFIC AMERICAN, beginning with the New Year, has been noticeably enlarged and improved. Much interesting aeronautic matter appears in every issue. You should read it every week in order to keep posted.

Remit $3.00 for a year's subscription at once, mentioning "Aircraft", and we will send you the "Scientific American" from March 1st and include our big Automobile and Farm Magazine numbers for January and February.

MUNN & CO., Inc., 361 Broadway, NEW YORK

NOVICE WINGS WAY AT MILE A MINUTE

Wiseman Flies From Petaluma to Santa Rosa in About 16 Minutes

[*Special Dispatch to The Call*]

SANTA ROSA, Feb. 18.—Fred J. Wiseman, who was the only amateur to make a successful flight at the San Francisco aviation meet, flew from Petaluma to Santa Rosa today. He flew about 16 miles in almost the same number of minutes.

The flight included the delivery of a newspaper, which he threw off at farm houses. He also carried orders from Petaluma firms to Santa Rosa business houses and letters from Postmaster Olmstead of ePtaluma to Postmaster Tripp of Santa Rosa.

This morning at 8 o'clock Wiseman took his seat and was off like a bird. The engine ran like clockwork and the machine sailed swiftly and smoothly. With a long wide sweep eastward toward the foothills, where he would be protected from a rising north wind, Wiseman set his course, and then, making a letter S, followed the line of hills several miles northward over Penngrove and Cotati and again northward to the southern edge of town and landed in a field.

BOOKS

We have compiled a list of the very best aeronautical books written in the English language and offer them for sale to our readers. Earnest students of Aerial Flight should read every book in this list.

Make all Drafts, Express or Post Office Orders payable to

THE LAWSON PUBLISHING CO., 37-39 East 28th Street, New York, U. S. A.

Artificial and Natural Flight, by Sir Hiram S. Maxim. Being a description of his own experimental work and the development of flying machines generally..... $1.75

Pocketbook of Aeronautics, by H. W. L. Moedebeck. Containing many features of aerial travel; a splendid text-book for the beginner or the aeronautical engineer..... 3.25

Vehicles of the Air, by Victor Lougheed. One of the very latest aeronautical books, covering almost every detail of the science of aviation 2.50

Aerial Navigation, by A. F. Zahm. A book written by one of the world's great scientists who has made an extensive study of the aeronautical subject for the past 20 years..... 3.00

Airships in Peace and War, by R. P. Hearne, with an introduction by Sir Hiram Maxim. A popular account of the progress made by the different countries of the world in aircraft.. 3.50

Aerial Navigation To-day, by Chas. C. Turner. A finely illustrated work on the principles of Ballooning, Aviation, Aerial Law, Military Aeronautics, the aerial ocean and the industrial side of flight..... 1.50

The Problem of Flight, by Herbert Chatley. A most instructive work, written principally for aerial engineers 3.50

The Force of the Wind, by Herbert Chatley. A scientific treatise, dealing with the subject of wind pressure in relation to engineering.... 1.25

How to Build an Aeroplane, by Robert Petit. Translated from the French by T. O'B Hubhard and J. H. Ledeboer, 8vo. cloth, 131 pp., 93 illustrations 1.50
CCNTENTS: General Principles of Aeroplane Design. Theory and Calculation. Resistance, Lift, Power, Calculations for the Design of an Aeroplane. Application of Power, Design of Propeller, Arrangements of Surfaces, Stability, Center of Gravity, etc. Materials. Construction of Propellers. Arrangements for Starting and Landing. Controls. Placing Motor. The Planes. Curvatures. Motors.

Conquest of the Air, by Alphonse Berget. A book covering the history, theory and practise of the science of aeronautics, with explanatory diagrams and photographs..... 3.50

My Airships, by Santos-Dumont. The thrilling story of this intrepid Brazilian's wonderful success in aerial navigation, told in an entertaining way, free from technicality. With 55 full-page pictures from photographs. 12mo, 400 pages $1.50

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Airships Past and Present, by A. Hildebrandt. A general sketch of the past and present state of the art, together with its problems, presented in a way that can be understood by everybody 3.50

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Aerodonetics, by F. W. Lanchester. Constituting the second volume of a complete work on aerial flight, with appendices on the theory and application of the gyroscope, on the flight of projectiles, etc. 6.00

All the World's Airships, by Fred T. Jane. Being the first annual issue, containing photographs of almost every flying machine built up to 1909 ..... 5.00

"Born Again." A philosophic novel written by Alfred W. Lawson. Has nothing to do with the science of aerial flight. The ninth edition of cloth-bound copies being exhausted, a few paper cover books remaining in stock can be had for fifty cents each..... .50

How It Flies, by Richard Ferris, B. S., C. E. The story of man's endeavors to fly and of the inventions by which he has succeeded. Illustrated by over 150 half-tones and line drawings showing the stages of development from the earliest balloons to the latest aeroplanes 1.20

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January 4, 1911 191

ELBRIDGE ENGINE COMPANY,

ROCHESTER, N. Y.

MATHEWSON BIPLANE, VAN ARSDALE AVIATOR, FLEW TO-DAY

FOUR MILES IN FOUR MINUTES TWELVE SECONDS. FIRST ATTEMPT.

CONGRATULATIONS ON YOUR SUPERB NEW ENGINE.

(Signed) MATHEWSON AUTOMOBILE CO.

DENVER, COLO.

RESULTS TELL THE STORY

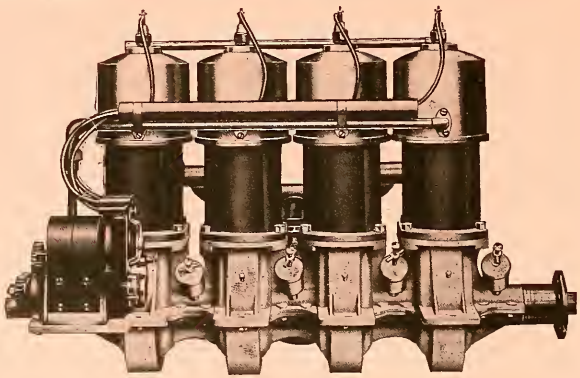
The flight mentioned in this telegram was the first successful novice flight at this high altitude. Even professionals have failed to fly at Denver.

At the Los Angeles Meet in December, 1910, Glen L. Martin, a novice, won more prize money than two of the best known professionals in America. No other California Aviator won any prize money at this big meet. The Elbridge Featherweight Engine delivered the power which made his success possible.

William Evans, on December 10, 1910, made a spectacular flight over the city of Kendale, Kansas. He flew at an altitude of about 1000 feet, crossed the Arkansas River, three railroads and numerous dangerous obstacles. He uses an Elbridge Featherweight Engine but has ordered a 1911 Model Elbridge "Aero Special".

The new "Aero Special" embodies such new features as have been suggested by a thorough, practical experience under all climatic conditions and by men in every walk of life. Its use with the right type of aeroplane insures successful flight.

"American Amateur Aviation" is a complete history of 1910 novice achievements. Sent together with our Aeronautic catalogue for the asking.



ELBRIDGE ENGINE CO. Aero Dept. ROCHESTER, N. Y.

THE ESSEX PRESS, PRINTERS
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AIRCRAFT

Vol. 2 MAY, 1911 No. 3

THE LATEST R. E. P. MONOPLANE IN FLIGHT

15 CENTS A COPY

EDITED BY ALFRED W. LAWSON

$1.50 A YEAR

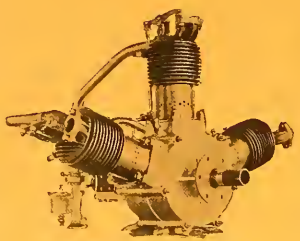
AERIAL EQUIPMENT CO.

1743 BROADWAY **NEW YORK** Tel. 7040 Columbus

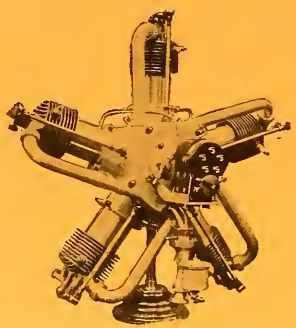
Agents Wanted in all Principal Cities of U. S. A., Canada and Mexico

SOLE AMERICAN AGENTS FOR
ANZANI AVIATION MOTORS

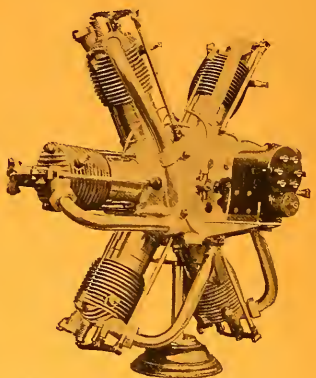
THE NEW ANZANI MOTORS



3 Cylinder, 1911 Type, 30 H. P.



5 Cylinder, 1911 Type, 50 H. P.



6 Cylinder, 1911 Type, 60 H. P.

NIEUPORT MONOPLANE, HOLDING THE "WORLD'S RECORD" FOR SPEED WITH PASSENGERS

BESSONNEAU DEMOUNTABLE HANGARS
WESTWOOD RIMS FOR AEROPLANES

SOCIÉTÉ INDUSTRIELLE DES TÉLÉPHONES, PARIS

AEROPLANE-CLOTHS
SHOCK-ABSORBER
SPECIAL TELEPHONE FOR AEROPLANES

GRENON Self-Adjusting Horizontal Watches for Aeroplanes
DE LELLO Caps for Aviators
And Everything Else in Aeronautical Supplies

IMMEDIATE DELIVERY GUARANTEED

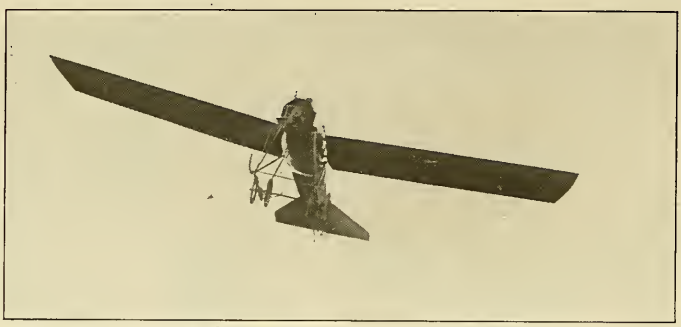
GNÔME MOTORS

ALL TYPES READY FOR IMMEDIATE DELIVERY

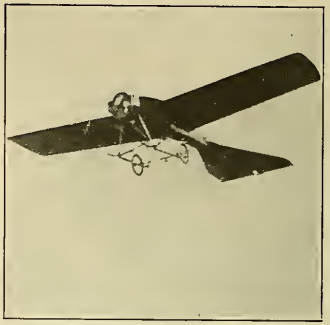
He: Come dearest this is our chance. In an aeroplane we can't be overtaken
She: Remember father's records
He: (proudly) But my aeroplane is a Nieuport equipped with an Anzani motor
She: "Is that so". Then you are right as I know this machine equipped with the "Anzani" motor holds the World Record for speed with passenger. I have always trusted you, I have confidence in your machine. I am ready.

31 MILES IN 31 MINUTES

WITH FOUR MEN UP



100 H. P. GNÔME-DÉPERDUSSIN WITH TWO SEATS SIDE BY SIDE



50 H. P. GNÔME-DÉPERDUSSIN

IS THE OFFICIAL WORLD'S PASSENGER-CARRYING SPEED RECORD MADE BY A

DÉPERDUSSIN

PRICE OF MONOPLANES

Type A
Single-seater; Clerget 40 H. P. motor - $6,600

Type B
Single-seater; Gnôme 50 H. P. motor - $7,200

Type C
2 seats; narrow fuselage: 18 inches.
Gnôme 50 H P. motor $7,800
Gnôme 70 H. P. motor $8,700

50 OR 70 H. P. DÉPERDUSSIN FOR ONE OR TWO PASSENGERS

PRICE OF MONOPLANES

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2 seats; Daimler 70 H. P. motor, fuselage: 27 inches wide - - - $8,400

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2 seats; Gnôme 70 H. P. motor, fuselage: 27 inches wide - - - $9,300
Gnôme 100 H. P. motor, fuselage: 27 inches wide, $11,400

Type F
2 or 3 seats; 70 H. P. Gnôme motor, wide fuselage: 36 inches - - $9,900
100 H. P. Gnôme motor, wide fuselage: 36 inches, $12,000

DÉPERDUSSIN SALES CO., Box 155 Madison Square P. O. New York, U.S.A.

FIFTH ANNUAL BANQUET OF THE AERO CLUB OF AMERICA, HELD AT THE ST. REGIS HOTEL, NEW YORK, MARCH 29TH, 1911

Those present were:—General James Allen, U. S. A.; Edmond Audemars, Col. John Jacob Astor, Guy E. Baker, Wm. H. Barnard, Herman B. Baruch, Stanley Y. Beach, Hart O. Berg, Alexander V. Blake, T. F. Bourne, Carlile Boyd, Fred K. Burnham, Lauren Caroll, Capt. W. I. Chambers, U. S. A.; Geo. A. H. Churchill, Alfred A. Cook, Frank R. Cordley, Cyril Crimmins, Benton W. Crisp, E. H. Crowhurst, Redmond W. Cross, F. Cunliffe-Owen, Herman F. Cuntz, Clarence J. Davies, Hon. John J. Delany, Charles de San Marzano, Carl Dienstbach, F. Ducasse, Clifford E. Dunn, Chas. Jerome Edwards, James Elverson, Jr., Alfred Ely, Harrington Emerson, Jos. H. Emery, Hon. Mitchell L. Erlanger, R. A. Fanciulli, William H. Fauber, Joel R. Fithian, J. Wall Flinn, A. H. Flint, H. A. Foote, Holland A. Forbes, George D. Foster, Lyttleton Fox, T. S. Fuller, T. C. Gales, W. D. Gash, Hugo C. Gibson, Howard W. Gill, Lawrence L. Gillespie, Charles J. Glidden, Geddes P. Grant, Hon. Samuel Greenbaum, Robert M. Guggenheim, Ernestnus Gulick, R. M. Haan, Mitchell Handy, Colonel George Harvey, Alan R. Hawley, William Hawley, Charles H. Heitman, Clifford R. Hendrix, A. M. Herring, Peter Cooper Hewitt, Colgate Hoyt, Hon. W. T. Jerome, E. L. Jones, Jerome H. Joyce, H. M. Kilborn, Wilbur R. Kimball, Charles E. Knoblauch, Charles H. Kohler, A. W. Lawson, Hon. Randall H. Le Boeus, Maj. F. T. Leigh, Julius A. Lewisohn, B. W. Loeb, Herbert Logendyke, Capt. T. T. Lovelace, Israel Ludlow, Preston P. Lynn, Harold F. McCormick, C. B. MacDonald, Stephen S. Mapes, James Marwick, Edgar J. Meyer, S. A. Miles, Charles R. Miller, J. N. Miller, John C. Montgomery, Alfred Morell, Robert Lee Morrell, Dave H. Morris, Charles A. Munn, Patrick Francis Murphy, W. W. Niles, De Lancey Nicoll, James W. Osborne, Chas. E. Otis, William H. Page, G. M. Payne, I. W. Peffler, Charles M. Place, Gaston Plantiff, Augustus Post, Frank D. Potter, John Quinn, Major Samuel Reber, U. S. A.; Alfred Reeves, Ira Richards, Jr., Samuel Robert, Jacob C. Rogers, C. L. Rosenberg, A. A. Ryan, J. B. Ryan, T. F. Ryan, Henry Sanderson, W. L. Saunders, Ernest G. Schmolck, E. E. Schwarzkopf, B. Seaman, Robert H. Sexton, David M. Shirk, John T. Simpson, J. Parker Sloane, R. A. C. Smith, Leo A. Stevens, Richard Sutro, M. P. Talmage, William F. Taylor, Edward S. Thatcher, K. M. Turner, Samuel H. Valentine, Hon. Augustus Van Wyck, Baron Paul Von Zglinitzki, J. H. Wade, Jr., Wm. B. Walker, Charles Walsh, Henry W. Warner, General Thomas L. Watson, Hicks A. Weatherbee, George D. Webber, Charles Werner, Philip Wakeman Wilcox, George T. Wilson, Major H. C. Wilson, G. F. Campbell Wood, A. E. Wuppermann, S. Marsh Young, L. F. Braine, Samuel Perkins, W. L. Fairchild.

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AIRCRAFT

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THE HAVANA MEET

By Henry A. Wise Wood

THE LAST FLIGHT OF AUDEMAR'S DEMOISELLE IN CUBA.

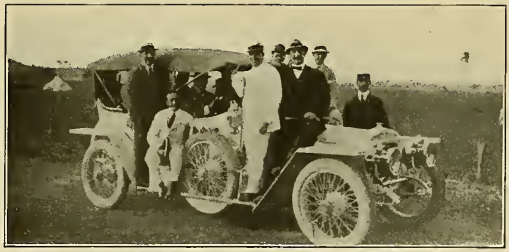
ON January, of this year, the Aero Club of Cuba was formed by the representative sportsmen of the Island Republic, and with an organization of but thirty-five members energetically went to work to provide Cuba with its first Meet. February was chosen for its opening, but for lack of sufficient time for preparation the Meet was finally set down to occur during the second half of March. The foremost flyers of Europe and America were communicated with by cable, but the month of March found Tabuteau, Barra, Hélène Dutrieu and others with full books, so that when the Meet opened on March 22nd, at La Coronela, near Havana, there were assembled not the large coterie hoped for, but such men, nevertheless, as Garros, Barrier, and Simon, flying 50 H. P. Gnôme-Blériots; Audemars, whose yellow Demoiselle was an interesting feature of the Belmont Meet; Frisbie, with Hamilton's black biplane, into which a 100 H. P. Gnôme had been put, and young St. Croix Johnstone, the American who had but recently taken his license at Hendon, England. Johnstone's equipment consisted of a 30 H. P. Anzani-Blériot and the 50 H. P. Gnôme-Blériot with which De Lesseps had flown the English Channel.

The morning of the Meet opened with an unannounced event, the first flight over the City of Havana, by Johnstone. Leaving La Coronela at 7:08 in his Gnôme-Blériot, which he had never before flown, he spiraled up 1,400 feet and turned straight for the heart of Havana, 6 miles away. Coming unannounced the hum of his motor startled the town, when an exodus to the streets, the parks, and the Malecon, or sea-walk, began. Zigzagging over their heads, for the first time the people of Havana saw a Blériot machine, and some of them grew so excited as to think it necessary to dodge the "dragon-fly," as many of them called the Blériot. The machine was right over their hats, in the very streets of the city, so several persons informed the writer. Nevertheless, practical Johnstone was well up, within safe gliding distance of the water should necessity compel him suddenly to come down. Passing over Morro Castle he took a shy at it with two oranges—and scored one. The other went into the water, but was brought ashore as a souvenir by an enthusiastic spectator. Even the remains of the successful yellow "bomb" were carefully preserved as a memento. The Latin races furnish enthusiastic audiences, notwithstanding that the gate receipts at La Coronela later testified to the inadvisability of conducting flying events in new and inaccessible suburban localities. In planning a meet it is a safe rule to locate it, if possible, wherever the masses are accustomed to go for their amusement. But to return to Havana: After giving all in the city a chance to see him, Johnstone reluctantly flew back to La Coronela, and there experienced his first difficulty of the day—in landing upon a rough and diminutive flying field. At the third attempt to pick a smooth spot a puff caught him, and he grounded unexpectedly in the midst of a crumpled machine. He had been in the air for 41 minutes, at least 20 of which he must have spent in "beating up" Havana, which in the vernacular of the press-stand was "Some flying!"

On the afternoon of the same day, at 4 o'clock, the first Meet of the Aero Club of Cuba was formally opened, by Garros and Simon, who gave magnificent exhibitions of airmanship. The prizes of the day were for altitude and duration. Garros obtained the first, of $300, by reaching 6,818 feet, while Simon's barograph registered 2,320 feet. In duration Simon surpassed Garros, having flown for 50m. 36s., while Garros was a close second, with 48m. 11s. to his credit; the prizes being, respectively, $150 and $100.

Seven and three-tenths miles W. S. W. of Morro Light is Camp Columbia, established by General Leonard Wood during the first American Occupation. It was from this field that J. A. D. McCurdy, in a Curtiss, made his flight to and around Morro

PRESIDENT GOMEZ, OF CUBA, (IN THE BLACK HAT), AND DR. ORESTES FERRARA, CHAIRMAN OF THE CUBAN HOUSE OF REPRESENTATIVES (IN THE FELT HAT), WATCHING A FLIGHT AT GARROS.



THE AERO CLUB OF CUBA ARRIVING AT THE FLYING GROUNDS.

Castle and return, for a prize of $3,000 which had been offered by the City of Havana. The conditions of the resolution of the City Council required that the course of the flight be over a given route, directly above the city, to and about Morro Castle and return, and that it should be won by the aviator making the best time, before February 28th, 1911. Thinking the purposed route over the city dangerous, the committee of citizens having the conduct of the contest in hand recommended that it be changed to the water-front. Before the City Council could act upon this recommendation, however, McCurdy flew from Columbia to Morro and back, but over the water-front route. On the following day, when the City Council met, McCurdy and the committee asked that the change be accepted by the Council and McCurdy's flight declared valid, and as having been made in conformity with the original resolution of the Council. This the Council granted, but in doing so added the condition that the contest be extended to include March 31st, 1911. Thus it happened that when, on the morning of the second day of the Meet, Barrier flew over from La Coronela to Camp Columbia and crossed the line on his flight over the McCurdy route, to Morro and back, there arose what has since become known as the McCurdy protest. The day was warm and the air motionless, and the position of the timers who sat in their motors, watches in hand, beneath a scorching sun, awaiting the return of Barrier, was hardly to be envied. Overhead huge crows were circling with never the beat of a wing, while now and then one would appear upon the horizon and send the watchers to their feet with cries of "Barrier!" "Barrier!" Finally, out of a distant speck came a bird, then out of the bird, Barrier. Leisurely swinging over the line he wheeled to the left, and struck inland for La Coronela. He had beaten McCurdy's time, but only by a minute and a half, approximately. Then an interesting experience happened to Barrier: On a windless day, over a field to which he had grown used and in a machine he had habitually flown, he was almost wholly unable to alight. He found himself tossing in a medley of conflicting vertical currents, similar to those reported by men who have flown over the Sahara—which illustrates what should become a maxim, that a drooping flag is no sign of the air at rest. But for Cuba it may be said that morning sports are not fashionable. Out-of-door events begin at 4 o'clock in the afternoon, when the most ideal climatic conditions prevail. Thus it was that the official gun sounded daily at that hour. And the 23rd was no exception, notwithstanding that Barrier had chosen its early morning for his flight after the Morro prize. The scheduled events of the afternoon were a speed contest, between Simon and Barrier, and flights by both for duration. The respective times over a 10-kilometer course were, Barrier, 7 min. 56 sec., and Simon, 7 min. 14 sec.; and the respective prizes, $250 to the first, and $100 to the second. In duration, however, Barrier came off with 15 min. 10 sec., and $200, and Simon with 8 min. 34 sec., and $100. The thrilling occurrence of the day, however, was the dive by Garros, in his new two-seated 50 H. P. Gnôme-Blériot, while trying it out without a passenger. After a couple of turns of the field he cut his motor for a moment and started a short glide to alight, when, his motor refusing to start and his elevator to lift the head of his machine, the latter struck at a sharp angle and lay in the wreckage of its landing carriage. From the wreck Garros calmly emerged, shrugged his shoulders and brushed himself off. Apparently neither his fall, nor the damage done his brand-new $6,000 Blériot seemed of the smallest consequence.

On the 24th there was another 10-kilometer race, between Simon and Barrier—slower than that of the day before—which was won by Simon in 8 min. 12 sec. Garros enjoyed his usual pastime of going aloft for altitude, but owing to the fact that flat racing wings had been fitted to his machine he was unable to rise above 5,971 feet. This was plainly a disappointment to him, as well as to the writer, who, as representative of the Aero Club of America, had fetched from New York accurately calibrated barographs especially for this event. Garros had but lately touched the highest point ever reached by an airplane—4,500 feet above the City of Mexico—and it was hoped that he might top the world's record of 3,100 meters above field-level, while in Cuba. This, however, it was plainly impossible to do with racing wings—and others were not at hand. An interesting personage particularly concerned with Garros' altitude flights was Padre Gutierrez Lanza, S. J., Assistant Director of the Belen College Observatory, of Havana, who acted throughout the Meet as technical adviser of the Aero Club of Cuba. A man of high standing in the scientific world, of charming personality and with a perfect command of English, Padre Gutierrez proved an asset of incalculable worth. Having specialized in meteorology the problems of flight were in his particular province, and his daily presence upon the judge's stand, stop watch in hand, lent a pleasing dignity to the Meet. There is much to be said for a sport in which science, the church, and the sportsman can stand side by side upon the same platform. The prizes of the 24th went to Garros, for altitude, $200, and for duration, $200; to Simon, for speed, $200; and to Barrier, for duration, $100.

On the 25th, owing to heavy showers, no flying could be done, but despite the wet officials and flyers gathered at the field in hopes of clearing, and for lack of other occupation swapped stories of the air, like seamen, those of the sea, after a long voyage. The difficulties attending a certain flight in Texas were recounted, where, wind or no wind, the populace insisted the airmen fly, or take the consequence on earth. The airmen flew. The rarified atmosphere of Mexico City furnished another topic for discussion. Some were uncomfortably affected by it while Garros, for instance, even at his greatest height, was scarcely inconvenienced. His Gnôme, he said, behaved beautifully, although both motor and wings suffered a perceptible loss in efficiency. Then methods of motor control were comparatively discussed. In his glides Barrier, for instance, throttles his mixture and leaves his engine at work, while Garros and Simon cut the spark and leave the throttle open, so as to pick up quickly for the act of grounding. Barrier considers his way the safer, while the others believe the danger less if the motor be kept ready to apply its full power in instant response to the spark. It is thought that this difference in method cost John Moisant his life. He

GARROS, SIMON, AND BARRIER SHARK FISHING, BY NIGHT, IN HAVANA HARBOR.

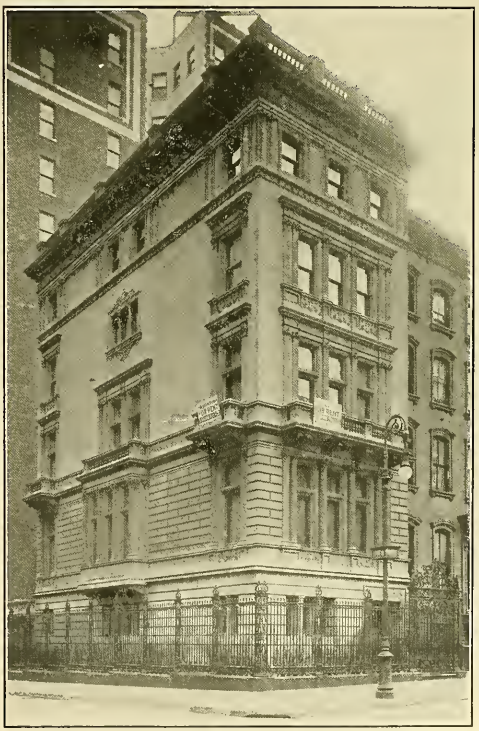
was in the habit of cutting his spark while preparing to alight, and kept his own machines adjusted to his fashion of driving. It was while attempting to land in a machine of Barrier's that Moisant was killed. The comparative dangers of over-land and over-water flying next came under review, and the consensus of opinion was that flights above water, even in strong winds, are "dead easy." From this to sharks in Havana Harbor, said to be lying in wait for injudicious aviators, was an obvious step, and, after Barrier had confessed his fear of them, it was decided to try them out that very night, from a small boat moored under Morro Castle. So it happened that the evening of the fourth day of the Meet closed with Simon, Garros and Barrier in the stern of a ticklish craft, each holding his nose with one hand and a huge shark-line with the other, while the writer stood in the bow, camera and flashlight in hand, ready to immortalize the group should an unfortunate shark join the party. After three hours spent thus, with nothing more tangible than two bites like the pull of a locomotive to boast of, the French blood of the flying fishermen came into action, and moorings were cast off for dinner—but not until the pilot had been converted to the idea that his shark bait, a huge hunk of decayed turtle meat, should not again become a fellow-passenger.

The next day, the 26th, opened gloriously, as is usual in Cuba. Being Sunday, a gala day, and the last of the Meet, a large attendance was expected. It came early, in motor cars, and lined the field-edge, two cars deep. The superb appearance of the Cuban women and the good form of their equipages made a stunning background for the events of the day. Over the judges' stand there flew the Star and Stripes of the Cuban Republic, while at one side was set the burgie of the Aero Club of America, and at the other that of the Aero Club of Cuba. Beyond the flying-field there rose a line of Royal Palms, to give the scene a touch of local color, and still beyond these the hospital of a religious order—a new white structure of graceful form, set upon a hill of brilliant green foliage—stood out in the sunlight, its tower the distant mark of the official 5-kilometer course. Garros was first in the air, and then Simon. Both were off on a 20-kilometer race for a prize of $500. On his last lap Simon was flagged to descend because of a broken wing, which was seen from the ground—and Garros won. Then, with a barograph, Garros went for altitude, but because of a slight mishap returned after having reached a height of but 2,385 feet. This netted him an additional $500, and as his machine was unfit for further flying, ended the events of the Meet. The other prizes for the day went, $400 to Garros, for duration, and $200 to Simon, for second in duration; while the grand prize of the meet, $1,500 for the highest altitude attained which should exceed 1,500 meters, was awarded to Garros for his flight on the 22d, of 6,818 feet. A further sum of $500 had been added to this prize to be awarded should the world's record be beaten.

An unfortunate circumstance had kept Audemars out of the meet. On the day before it opened his yellow Demoiselle, so attractively conspicuous at the Belmont meet, because of the sporting chances it offered those fond of wagering on uncertainties, had taken its final plunge and come an irreparable cropper. No occurrence of the meet caused more general regret, for the little man of vanadium steel is thoroughly admired and liked by all who are familiar with his remarkable career. Two surprisingly good turns of the field, at an unusual height for Audemars, brought him opposite the top of his tent, when his motor stopped and his machine fell like a dead bird. But a single further event needs to be recorded—the flight and fall of Garros, on the morning after the meet, with Dr. Orestes Ferrara, the President of the Cuban House of Representatives, as a passenger. Air-courage is usual, but the degree of it shown by Dr. Ferrara is not. Garros, having promised him the first flight in his two-seater, had managed to get it ready for use on the 27th, and prepared to try it out with a mechanician before inviting Dr. Ferrara aboard. But this the doctor would not for a moment permit; Garros had promised that he should be the first passenger carried in Cuba, and be the first passenger he would. Furthermore, Garros had promised the doctor should fly over Havana—and that, indeed, he should. Nothing remained for Garros but hospitable compliance, so together they started. A long run, a short flight, a loss of headway, a list to starboard, and the machine slid sidewise through 60 feet to the ground. For a full minute pilot and passenger sat amongst the ruins in surprised contemplation, then, the instincts of courtesy reasserting themselves, host said to guest: "Pardon me, are you hurt?" "No, thank you," replied the doctor, "Are you injured?" "Thanks, no," rejoined the pilot. Then they shook hands and crawled out.

Speaking generally of Cuba, from the viewpoint of one interested in the development of flying, it is to be said that the island possesses an ideal winter climate for the enjoyment of the sport, and the writer is convinced that it is destined to become an important cold-weather flying resort for the people of the Eastern and Middle States. An additional charm of inestimable value lies in the keen sports-loving character of the representative men of the island, who have enthusiastically taken aviation under their especial patronage and seem determined not only to provide the best facilities for the practice of the sport itself, but also for the development of the scientific side of flying as well.

Notices have been sent out to the various manufacturers of flying machines and their accessories throughout the United States, to attend a meeting to be held at the Hotel Cumberland, New York, Saturday, April 29th, at 8 o'clock p. m., for the purpose of organizing a national body under the name of "Aeronautical Manufacturers' Association."



THE AERO CLUB OF AMERICA'S NEW CLUB HOUSE LOCATED AT CORNER OF MADISON AVE. AND 41ST STREET, NEW YORK CITY, WHICH THE CLUB WILL TAKE POSSESSION OF ON MAY 1ST.

Tremendous Profits in the Flying Machine Industry

Balance sheets for 1910 of the Blériot and Gnôme Companies show net earnings that almost stagger belief

Aeroplanes and their accessories apparently a better commercial proposition today than automobiles a few years ago. Study the following figures carefully, they may be the means of getting you started ahead of the crowd that will eventually drift into this industry.

SOCIETÉ DES ESTABLISSEMENTS BLÉRIOT

Paid-up Capital.....$260,000

Net Profits..... 66,800

Legal Retainer 5%.....		$ 3,340
5% Regular Interest on Paid-up Capital.....		13,000
7% Supplementary Dividend on 13,000 Shares.....		18,200
Board of Directors.....		5,045
Special Sinking Fund.....		20,000
Bonds taken up.....		5,870
Balance carried forward.....		1,345
		$ 66,800

SOCIETÉ DES MOTEURS GNÔME

Paid-up Capital.....$240,000
Net Profits..... 459,358
(Or nearly twice the capital of the Company.)

Credit—		
Gross profits (instead of $44,218 in 1909).....		$601,129
Sundry Credits.....		1,319
		$602,448
Sundries.....	$ 104	
General Debit.....	142,985	
	143,089	
		$459,358
Paid off Net Loss of 1909.....	$ 56,022	
Other Obligations Met.....	38,404	
Bad Debts.....	7,000	
Rights of Transmission.....	2,108	
	103,534	
Net Balance.....		$355,824

It is proposed to declare a dividend of 25%, which will absorb $60,000, leaving $295,824 from which the legal retainer and the board of directors' percentage is to be paid, leaving a very large amount wherewith to take up bonds.

SUCCESSFUL FLYERS DESCRIBED

THE BURGESS BIPLANE

By W. H. Phipps

THE Burgess Model E biplane was designed and built by the Burgess Company of Marblehead, Mass., to the exacting requirements of Mr. C. Grahame-White of England.

The machine is practically a small scale copy of the Farman biplane with many detail and constructional improvements.

The most noticeable feature of the biplane is the shortening of the skid struts and the consequent lowering of the whole machine, so that when standing on the ground it is only 8 feet 6 inches to the edge of the upper plane.

In consequence of the lowering of the machine it was necessary to raise the position of the motor, which now occupies a place almost midway between the planes as on the Curtiss. A sloping frame supports the engine and seats and gives a very neat and racy appearance to the machine.

Turning to the constructional details, the most important feature is the use of special steel fittings throughout instead of the usual aluminium ones.

The steel socket into which the skid struts fit is of special interest, inasmuch as it is called upon to withstand severe strains. It is made from a wide piece of strip steel, which fits snugly around the skid and to which are brazed the two strut sockets.

The upright sockets are made from steel tubing brazed to a strip steel base and are held in place by eye bolts as on the Farman. Whenever possible, as on the rudder hinges and outrigger connections, strip steel has been used for making joints.

The control system on the Grahame-White biplane is the new Burgess gate control fitted to all their machines. It consists of two universally jointed levers situated one on each side of the pilot's seat, joined by a cross rod which passes in front of the operator and the whole so constructed as to enable the pilot to guide the machine with both hands—jointly or separately.

The gate control operates in the same manner as the Farman: pushing the levers to the right or left works the Farman type ailerons, while a fore and aft movement of the same levers operates the elevators. Steering to the right or left is accomplished by a foot lever.

A dimensioned description of the machine is appended:

MAIN PLANES.

The main planes have a total span of 27 feet and a chord of 4 feet 9 inches. The planes are single surfaced and are constructed so as to be readily demounted. The gap between the planes is 4 feet 10 inches.

THE TAIL.

The tail is of the biplane type, constructed on similar lines to the main planes, but fitted with a hinged elevator flap, which is interconnected with the front elevator. It is situated 11 feet behind the main planes, and is supported by a skid.

THE ELEVATOR.

The elevator is of the monoplane type and double surfaced. It is braced by steel uprights to which the control wires attach.

VERTICAL RUDDER.

The twin vertical rudders are situated at the rear of the biplane tail and are operated in the same manner as the Farman.

AILERONS.

The ailerons used to maintain lateral balance are double surfaced and flat and are operated like the Farman.

RUNNING GEAR.

The running gear consists of two skids and Farman type wheels and shock absorbers.

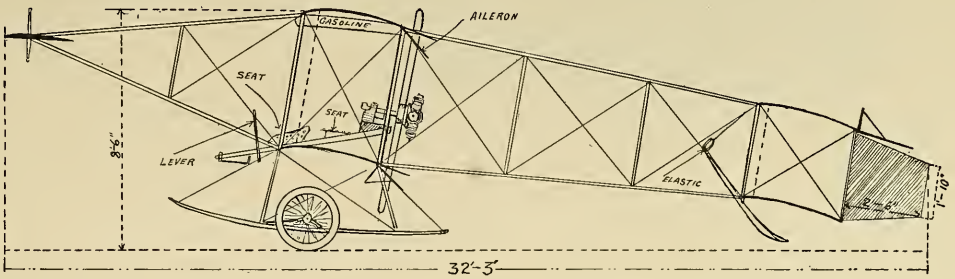
PROPULSION.

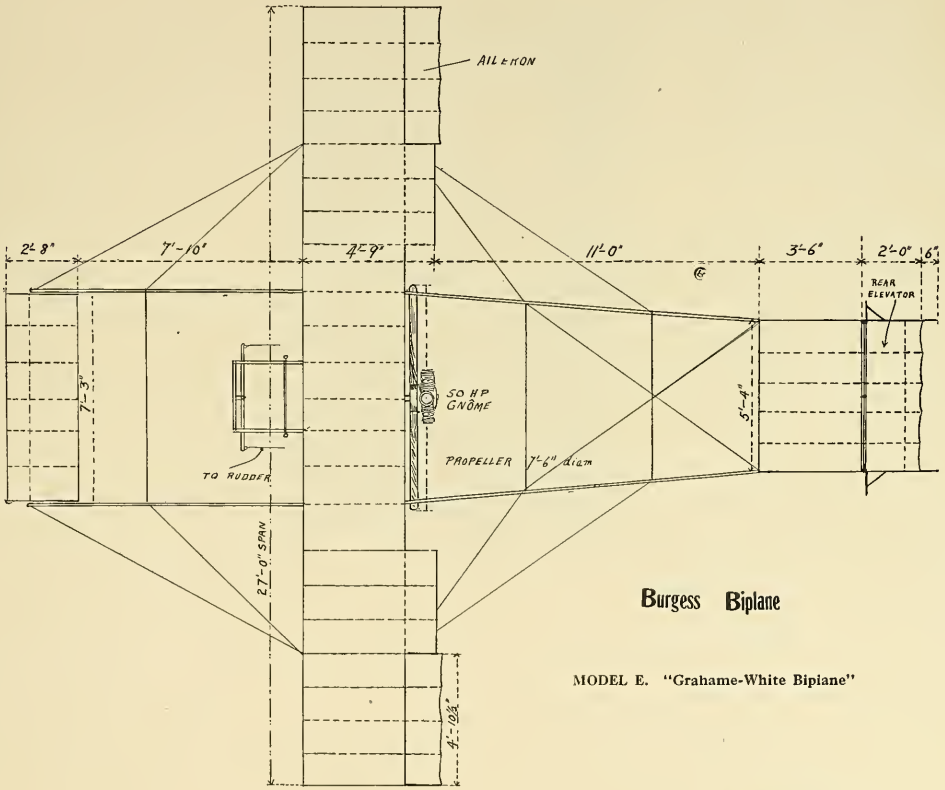
Propulsion is furnished by a 7-cylinder 50 H. P. Gnôme rotary motor driving direct a 7-foot 6-inch propeller.

The biplane was built at the Burgess factory at Marblehead, Mass., and sent to England, where it has already accomplished some notable flights under the pilotage of Messrs. Grahame-White and James V. Martin, of Harvard.

SCALE DRAWINGS OF THE BURGESS BIPLANE

(GRAHAME-WHITE TYPE)





Burgess Biplane

MODEL E. "Grahame-White Biplane"

0 1 2 3 4 5

W.H.P

SIGNALING THE ARMY WRIGHT AEROPLANE WHERE TO LAND IN TEXAS MANEUVERS.

CLUB NEWS

By G. A. Haviland

Aero Club of America

With practically a unanimous vote the Aero Club of America decided at a general meeting April 11th to have a club house of its own, adopting the report of the committee which had been appointed for the purpose of selecting a suitable home.

James A. Blair, Jr., chairman, reported that the committee was unanimously in favor of the Thompson residence, No. 297 Madison avenue, corner of Forty-first street, which could be leased through Messrs. Pease & Elliman for $5,000 a year.

This house, Mr. Blair explained, was built about seven years ago as a residence for Colonel R. M. Thompson and finished throughout in the finest style at a total cost of about two hundred thousand dollars. Indiana limestone forms the exterior, while the interior is finished in bronze, onyx and fine woods, hand carved.

There are bronze stairways, bronze and brass chandeliers and stained glass windows.

The house is in complete order, equipped with electric light and gas fixtures, and requires neither repairs nor remodelling to make it ready for the club. It was estimated that it could be completely furnished within three weeks and be ready for occupancy the first week in May.

Belmont Park being left open to other uses by the decision to have no horse racing there this season, steps have been taken to make it the aviation headquarters of the Aero Club of America. Just as soon as arrangements can be effected the club will take possession and throw the park open as an aerodrome. There is little or nothing to be done at the park to fit it for aviation.

Plans are already being discussed by the club for making good use of the grounds. In addition to putting them at the disposal of those seeking licenses as pilots or desiring to test machines, it is proposed to hold a tournament there, at which time it is expected to hold the elimination contest to determine who shall represent America in the race in England for the Coupe Internationale d'Aviation. A feature that will add to the interest of the contest is that a cup valued at $5,000 will be awarded the winner. It has been offered by Robert J. Collier. Other aerial events are also to be on the programme.

The National Council

The meeting of the National Council of the Aero Club of America was held in the Waldorf Astoria hotel, New York City, Tuesday, April 4th, at which the following representatives were present: Robert J. Collier, Aero Club of America, chairman; James King Duffy, Aero Club of New Jersey, secretary; W. W. Miller, Aero Club of America; Col. Jerome H. Joyce, Aero Club of Baltimore; Ernest L. Jones, Aero Club of California; Richard M. Allen, Harvard Aeronautical Society; James E. Plew, Aero Club of Illinois; G. A. Richardson, Intercollegiate Aeronautical Association; G. M. Myers, Aero Club of Kansas City; Alfred Morell, Aero Club of New Jersey; Israel Ludlow, Pacific Aero Club; Luke J. Minehan, Aero Club of Pittsfield; A. T. Atherholt and H. M. Neely, Aero Club of Pennsylvania; George C. Farnham, Aero Club of Saratoga Springs; Allan A. Ryan, Aero Club of St. Louis; Dr. N. P. Zahm and Dr. W. J. Bovee, Aero Club of Washington, and Paul B. Sweet and R. Emerson, Western Aero Association; Henry A. Wise Wood, Aero Club of Dayton.

About the most important feature of the meeting, was the selection of the site for the National Championship Balloon Race for 1911. Among the clubs applying for the contest were Kansas City, Cincinnati, Indianapolis, St. Louis, Chicago and Detroit. The event, however, was awarded to Kansas City, and the race will be held October the 9th. The Kansas City Aero Club has offered a cash prize of $3,000 to the winner of the race. An American elimination race will be held at Kansas City July 10th.

The Aeronautical Society

According to Hudson Maxim, president of the Aeronautical Society, the endowment and establishment of a permanent aeronautical laboratory at Washington, D. C., will be announced at the dinner to be given by the Aeronautical Society at the Hotel Astor, on Thursday, April 27. If President Taft is present at the dinner he will be asked to make the formal announcement of the details.

It is further announced that the laboratory will be endowed by one of the most conspicuous philanthropists in America.

A. HOLLAND FORBES,

The celebrated American balloonist who is now president of the Aero Club of Connecticut. This club gave a banquet to its members and other aeronautical men at the Stratfield Hotel, Bridgeport, Conn., on Thursday, April 20th.

The Harvard Aeronautical Society

The Harvard Aeronautical Society will hold a glider meet at the Harvard Aviation Field, Atlantic, Mass., for four days, beginning May 3rd. All the Eastern colleges and several aeronautical societies have been invited to compete.

The machines will be divided into two classes, those for machines with mechanical control and those with body control, and contests will be held for both classes. Cups will be awarded for the best records in duration, distance, speed, and accuracy of landing. There will be a special prize for the machine covering the greatest total distance during the four days of the meet.

Harvard graduates in Boston subscribed for the construction of an artificial glider slope about 40 feet high. From this the machines will be launched for flight. Besides two gliders, the Harvard society will send down the Roe triplane.

The entries received include Amherst, Columbia, Cornell, Dartmouth, Harvard, Massachusetts Institute of Technology, Nobel and Greenough, Tufts, University of Pennsylvania, Volkmann, Waltham Aeronautical Society, Williams, and Worcester Polytechnic Institute.

The Harvard Aeronautical Society will hold its second annual International Aviation meet at the Harvard Aviation Field, Atlantic, from August 26 to September 4. Plans are being drawn for a new grandstand, and the tent hangars will be replaced by wooden or corrugated iron ones. The parking spaces for automobiles will be permanently fenced in, and the starting place greatly improved over its condition of last year.

The committee plans to limit the number of amateur entries, and thus far flights have been definitely arranged for only by Clifford B. Harmon, of New York, and W. Starling Burgess, of Marblehead. It is also hoped to limit entries in the professional class to eight: four American, two British, and two French, but the rules of the International Federation may prevent any such discrimination in a competitive meet.

J. V. Martin, vice-president of the Harvard Aeronautical Society, is now on leave of absence and studying in Grahame-White's school, near London, where he has already gained his pilot's license.

The Aviation Club of Nebraska

The Aviation Club of Nebraska was organized at Omaha, Nebraska, on March 19th last by a number of Omahans interested in aerial navigation.

Clarence E. Adams, former sergeant of the Fort Omaha Signal Corps, was elected chief aviator, and J. J. Deright was chosen business director and manager.

The other officers are: Harry Sackett, assistant chief aviator; Roy Whitmore, president; Hugo Heyn, vice-president and photographer; Sigurd Sjoberg, recording secretary; Daniel McCarthy, treasurer; Arthur Prenzer, corespondent; Louise Wade, assistant corespondent; Fridolf Engstrom, inspector; Kenneth Norton, field officer; chairman patent bureau, Harold McConne, and Carroll Engstrom, librarian.

The club has two aeroplanes and six gliding machines in course of construction, and will be ready for operation in the near future.

The Michigan Agricultural Society

An aero club has been organized among a number of students of the Department of Engineering at the Michigan Agricultural College, Lansing, Michigan. The club has the use of a glider owned by one of the members and will probably undertake the construction of a Curtiss type biplane. The officers are as follows: Hon. T. Cortright, president; H. W. Schneider, vice-president; A. N. Hall, secretary; A. M. Lynn, treasurer.

The Y. M. C. A. Club

Two silver cups are to be competed for by amateur aeronauts in a series of model aeroplane contests under the auspices of the West Side Young Men's Christian Association, New York. A. Leo Stevens and Sydney B. Bowman are the donors. The Bowman cup is to go to the best constructed model aeroplane, and the Steven's cup is for the longest flight.

The contests are open to boys between the ages of 12 and 18 years, whether or not they are members of any Y. M. C. A. The only conditions are that the model aeroplanes must be made by the boys and must rise from the floor under their own power.

Beside the cups, Mr. F. Ragot offers a silver placque for the model aeroplane showing the greatest lifting power.

Saratoga Meet

An aviation meet for Saratoga Springs is being planned by the business men for the week of July 17, which will precede the annual meeting of the National Association of Amateur Oarsmen at Saratoga Lake.

EDITOR AIRCRAFT:—Thanks for your letter. I can only say in reply that I am of the same opinion still as when I subscribed for your magazine in April, 1910, and as far as I can see, you have kept your promises made, and in my judgment deserve success.

You may have to wait a little longer for the developments in air navigation, which are sure to come, perhaps not as fast as your sanguine and energetic disposition expected, but in good time it will be here.

This is not another automobile proposition, but an infinitely greater world change. What we have already had has been merely skirmishing, good and necessary, possibly, but the real battle with the air may be nearer than we realize. As I have watched and waited for it, perhaps, for a longer time than any one living, I think the real work time is rapidly approaching.

I get my AIRCRAFT regularly, and read it with pleasure, and profit by its good illustrations. An important and admirable one is the great airship for the British Admiralty, a reproduction of the unfortunate Zeppelin class. May they have better luck.

I hope the great revival meeting of the Aeronautical Society at the Astor Hotel, New York, April 27th, may bring better times for all who have energetically labored in the cause, and a greater advance be made, for they fully deserve it. Never despair or look back, for the great work is worth all it has already, or will in the future, cost.

Very truly,
THOMAS E. McNEILL.

Army News

The aeroplane was put to practical military use by the United States army during the recent trouble on the Mexican border. It was utilized to convey messages and orders between detachments at various stations, and also for wireless experiment. On one occasion Mr. Parmelee and Lieut. Foulois made a continuous flight from Laredo to Eagle Pass, a distance of 106 miles. The weight supported was 1,450 pounds, including a wireless set, which worked satisfactorily, and messages from the aeroplane were picked up by the wireles stations en route.

In order to form a corps of competent aviators for the navy, an aviation school probably will be established at Annapolis by the Navy Department this summer.

Lieutenant T. G. Ellyson, who for several months past has been receiving instruction in the operation of aeroplanes at San Diego, Cal., will be one of the instructors, according to present plans. Lieutenant Ellyson was ordered recently from San Diego to Washington for conference with the department. One or more aeroplanes probably will be purchased for school purposes.

Navy News

First steps toward the establishment of a separate aeronautical department in the navy were taken by Secretary Meyer April 11th when he assigned Captain W. I. Chambers from the General Board to special aeronautical duty under the Bureau of Navigation. Captain Chambers began his duties with the General Board immediately.

Up to the present Captain Chambers has been interesting himself in aeronautics while pursuing his duties as assistant to the aid for material to Secretary Meyer. Now he will devote his attention exclusively to aeronautics. As the aeronautical activities in the navy develop assistants will be given him, if need be. His work forms the nucleus for a special department in aeronautics, which the navy is expected to be in need of in the near future.

There is at present $25,000 available for experimentation in aeronautics appropriated by the last Congress, and preparations for the expenditure of this money have been made. The Navy Department will probably purchase one Wright and one Curtiss aeroplane.

Curtiss Doings

Glenn H. Curtiss gave a successful exhibition with his hydro-aeroplane on Great Salt Lake, at Salt Lake City, Utah, from April 6th to 10th. Mr. Curtiss made three flights a day during the meet which were successful, notwithstanding the density of the water and the rarity of the atmosphere—the altitude being 4,500 feet. Eugene Ely also took part in the meet at Salt Lake, after which he went to San Antonio to assemble and demonstrate the Curtiss war machine recently sold to the United States Government and shipped to San Antonio for the use of the army aviators. Lieutenants Paul W. Beck, John C. Walker, Jr., and G. E. M. Kelly, whom Mr. Curtiss instructed in aviation at San Diego during the winter, are now in San Antonio and will form the nucleus of the aviation corps which the army has in contemplation.

A successful flight in a snow storm and a gale of twenty-five miles an hour was made by Hugh R. Robinson, the new member of the Curtiss flying squad, at Rapid City, S. D., April 12th. Robinson wired that notwithstanding the blizzard he carried out the program, giving three flights, covering a period of forty minutes.

J. A. D. McCurdy and Lincoln Beachey, of the Curtiss team, gave exhibitions at Knoxville, Tenn., on April 13th, 14th and 15th, under the auspices of the Knoxville Journal and Tribune. A feature of the meet was the carrying of passengers, chosen in a voting contest conducted by the newspaper.

American Records

Compiled by G. F. Campbell Wood

AVIATION

(In Closed Circuit, Without Stops)

A. *SPEED.*

1. Time on a given distance.

(a) AVIATOR ALONE.

DISTANCE (Kilom.)	HOLDER	PLACE	DATE 1910	MACHINE	TIME
5	A. Leblanc	Belmont Park	Oct. 29	Blériot	2′44″,78
10	"	"	"	"	5′30″,92
20	"	"	"	"	11′04″,78
30	"	"	"	"	16′38″,31
40	"	"	"	"	22′12″,58
50	"	"	"	"	27′48″,70
100	C. Grahame-White	"	"	"	1 hr. 00′41″,69

(b) AVIATOR AND ONE PASSENGER.

5	J. de Lesseps	Belmont Park	Oct. 30	Blériot	5′12″,15

2. Distance in a given time.

AVIATOR ALONE.

25	A. Leblanc	Belmont Park	Oct. 29	Blériot	¼ hour
50	"	"	"	"	½ "
95	"	"	"	"	1 "
	C. Grahame-White	"	"	"	

3. Greatest speed obtained, whatever the length of the flight.

AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	SPEED PER HOUR—KILOM.
A. Leblanc	Belmont Park	Oct. 29, 1910	Blériot	109.237 on a flight of 5 kilom. (67.877 miles)

B. *DISTANCE.*

AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	DISTANCE—KILOM.
R. Johnstone	Boston	Sept. 12, 1910	Wright	162.659 (101 miles, 389 ft.)

C. *DURATION.*

(a) AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	DURATION OF FLIGHT
P. O. Parmelee	San Francisco	Jan. 22, 1911	Wright	3 hrs. 38′49″½

(b) AVIATOR AND ONE PASSENGER.

O. Wright	Fort Myer, Va.	July 27, 1909	Wright	*1 hr. 12′40″

(c) AVIATOR AND TWO PASSENGERS.

C. Grahame-White	Belmont Park	Oct. 30, 1910	H. Farman	2′51″

D. *ALTITUDE.*

AVIATOR ALONE.

HOLDER	PLACE	DATE	MACHINE	ALTITUDE REACHED
R. Johnstone	Belmont Park	Oct. 31, 1910	Wright	2988 metres (9714 ft.)

AIRSHIPS (Dirigible Balloons)

DURATION.

NAME OF DIRIGIBLE	PILOT	COURSE FOLLOWED	DATE	DURATION OF VOYAGE
U. S. Signal Corps No. 1	Thomas S. Baldwin	Fort Myer to Cherrydale and return	Aug. 15, 1908	2 hrs. 1′50″

SPEED.

				SPEED PER HOUR—KILOM.
U. S. Signal Corps No. 1	Thomas S. Baldwin	Fort Myer to Cherrydale and return	Aug. 14 1908	31.559 (19.61 miles)

AEROSTATS (Spherical Balloons)

DISTANCE.

HOLDER	VOYAGE	DATE	DISTANCE—KILOM.
Alan R. Hawley	St. Louis to Lake Tchotogama (Peribonka River), Quebec	Oct. 17-19, 1910	1887.6 (1172.9 miles)

DURATION.

			DURATION OF VOYAGE
C. B. Harmon	St. Louis to Edina, Mo.	Oct. 4, 1909	48 hrs. 26′

KITES

ALTITUDE.

PLACE	DATE	ALTITUDE ATTAINED
Mt. Weather Observatory, Wis.	May 6, 1910	7.205 metres (23.638 feet)

*The flight of 2 hrs. 7′ made on a Wright machine by P. O. Parmelee, with a passenger, March 4, 1911, was not made in a closed circuit: it, however, is an unofficial American duration record for a two-man flight.

1 kilometre = 0.6214 mile.

GYROSCOPIC FORCE

By Thomas Preston Brooke

GYROSCOPIC force, a kind of inertia, might be called a "by-product" of centrifugal force, as the former could not exist without the latter. Every revolving wheel contains an amount of gyroscopic force in proportion to its specific gravity and its rotational speed, but this force does not manifest itself unless the plane of rotation of the wheel is suddenly changed. Centrifugal force radiates from the centre of the revolving mass and exerts an influence to throw off everything in a direct line with the plane of rotation. Gyroscopic force, on the contrary, possesses a helical, or spiral, motion, and sets up a decided opposition to centrifugal force with a tendency to move the revolving mass in the direction of its screw-like motion. It is the most obstinate force and seems to be the least understood of all the known forces.

The presence of this force in the flywheels and clutches of automobile motors has been the direct cause of at least seventy-five per cent. of all automobile accidents. It is this force that lifts the rear wheels of a two-ton automobile clear of the pavement and causes it to slowly skid or revolve until very often the auto has turned a complete circle. Again it has caused the auto to skid around into the path of an oncoming train, causing loss of life and property, or again has smashed the wheels of the auto against the curbstone.

The most common accident as the result of this force is that of causing two autos to collide. The cars meet on a curve or short turn in the road; both drivers release their "clutches" to be ready to apply their brakes, and by this action allow their motors to jump to a high speed of revolution. This high speed, coupled with the revolving parts of the motors all turning in the same direction, immediately sets up a terrific centrifugal force, the sudden swerving of the autos awakens the slumbering gyroscopic force, causing the autos at once to begin to skid or float. "Float" is the proper word, for at least 80 per cent. of the entire weight of the auto is suspended in the air by this subtle and powerful agent, and while it is under this influence the brakes are useless, and disaster almost invariably follows.

If gyroscopic force is so dangerous and destructive in its action to the automobile motor, what great havoc must it create through the motor of the delicately constructed and poised aeroplane. The flying machine of all kinds is continually subjected to sudden shifts from its direct path of flight by side gusts of wind. What, then, must be the force exerted by the high speeds of aeronautic motors and particularly that of the revolving kind?

In the accounts of accidents to aeroplanes one almost invariably reads that "for some unknown reason the aeroplane seemed to swerve suddenly to one side, crumple up and crash to the earth a tangled mass." When one fully understands the erratic action of gyroscopic force there can remain no cause for wonder at these accidents, and the only marvel is that there are not more of them.

The peripheral speed of a certain well-known revolving cylinder motor is, approximately, 124 miles per hour at the normal speed of 1,200 revolutions per minute. This motor weighs 160 pounds and exerts a blow of about 1,750 or 1,800 pounds when its gyroscopic force is not in motion. This amounts to more than twice the weight of the aeroplane that sustains it. When a side gust of wind causes an abrupt change in the aeroplane's path of flight, even in the slightest degree, the full power of the gyroscopic force is instantly set in motion, not in opposition to the wind action, as many suppose, but in a twisting or spiral movement. Imagine, if you can, three tremendous forces battling for supremacy against each other through the fragile framework of the aeroplane, and wonder why disaster should follow. The forward or "arrow force," that which drives the aeroplane in a straight path, is exerting its strength to keep the aeroplane in its course, the lifting action of a strong wind from one side suddenly changes the flight path, and by this motion excites the spiral movement of gyroscopic force and instantly starts a terrific war of forces that almost invariably ends in the immediate destruction of the aeroplane.

Since Brennan employed the gyroscope to stabilize his monorail car, the idea has steadily grown that it would be a good thing to use this force in connection with flying machine stabilizing until it has become an almost universally accepted theory. The gyroscope as used by Brennan is a vastly different proposition to that of the revolving parts of our high speed of aeronautic motors. In the first place it is necessary to rigidly attach one pole of the gyroscope to the earth to produce the proper effect for stabilizing. This Brennan accomplishes by anchoring his gyroscope to the earth through the car wheels and rail so that the gyroscope can roll in but one direction. Now, that is just where the gyroscope sets up a strenuous objection; for its natural movement being in the nature of a spiral, and being restrained from describing a complete circle, it immediately assumes a position with plane of rotation at right angles to the earth.

About a half century ago a gyroscope was installed in the hull of a wooden ship, to prevent the rolling motion from rough seas, but at the first movement of the waves the gyroscope bored a hole in the bottom of the ship and sunk to the bed of the ocean, carrying the ship along with it. More recently we have had several shipbuilders try the same idea, and although these were placed in heavy steel ships and rigidly secured, they have not been successful.

We have another striking example of the destructive power of this gyroscopic force in the failure of the Wellman airship voyage. This ship was provided with a "stabilister," composed of wooden floats and gasoline tanks, that trailed in the water and was attached to the ship by cables. The rise and fall of this stabilizing device set up a rocking motion in the airship and created gyroscopic force in the revolving parts of the motors to such a degree that it became highly unsafe to operate them, and they were forced to stop the motors and drift at the mercy of the wind and waves until picked up by a passing steamer. Although the airship was equipped with ample motor power and supplied with sufficient fuel to have enabled it to have crossed the Atlantic ocean, they were unable to use any of this power, owing to the gyroscopic force, and had they persisted in operating the motors it would soon have torn to pieces the entire structure of the airship.

In the accident that caused the death of Chavez, and also in the more recent ones that killed Moisant and Hoxsey, the aviators had just finished a long glide, and while traveling at a terrific speed, suddenly changed their paths from an angle of 30 degrees to that of a horizontal one.

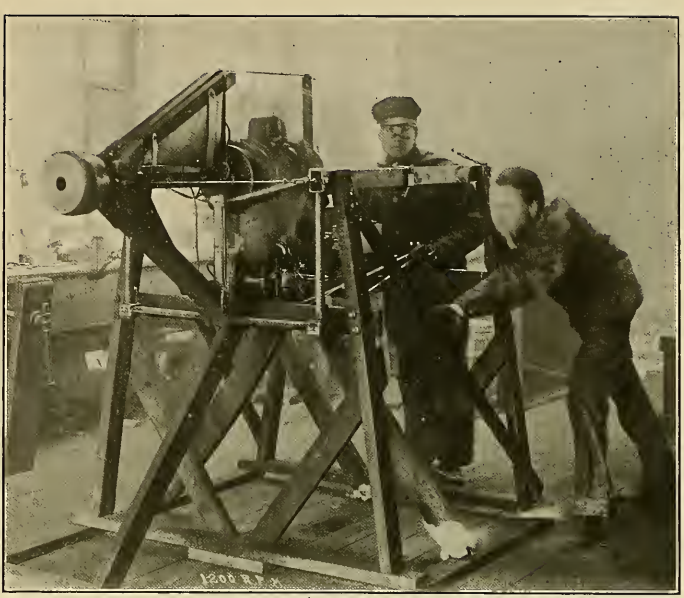
In each of the above cases the motors were running at highest speed and were all revolving anti-clockwise as viewed from the front.

All the published accounts of these accidents agree in that "at the point where the elevator was raised to alter the gliding angle the machine seemed to shudder for an instant, turn slightly to the *left* and plunge downwards."

This tallies exactly with dozens of my experiments, conducted to demonstrate the cause of these accidents, and in not one instance has my apparatus failed to act just as did these aeroplanes when subjected to the same conditions.

The cause of many "mysterious" and "unaccountable" accidents, aside from those connected with automobiles and flying machines and mentioned above, could undoubtedly be traced to this force, and the theories that have been advanced to explain why these accidents have occurred could be proven false.

THE BROOKE NON-GYRO ROTARY AERO MOTOR.



A TEST RUN OF THOMAS PRESTON BROOKE'S, OF CHICAGO, NON-GYRO ROTARY AERO MOTOR. NOTE ONLY THE HUB OF THE PROPELLER SHOWS WHEN THE ENGINE IS RUNNING AT FULL SPEED.

SOME CONSTRUCTION DETAILS

By W. H. Phipps

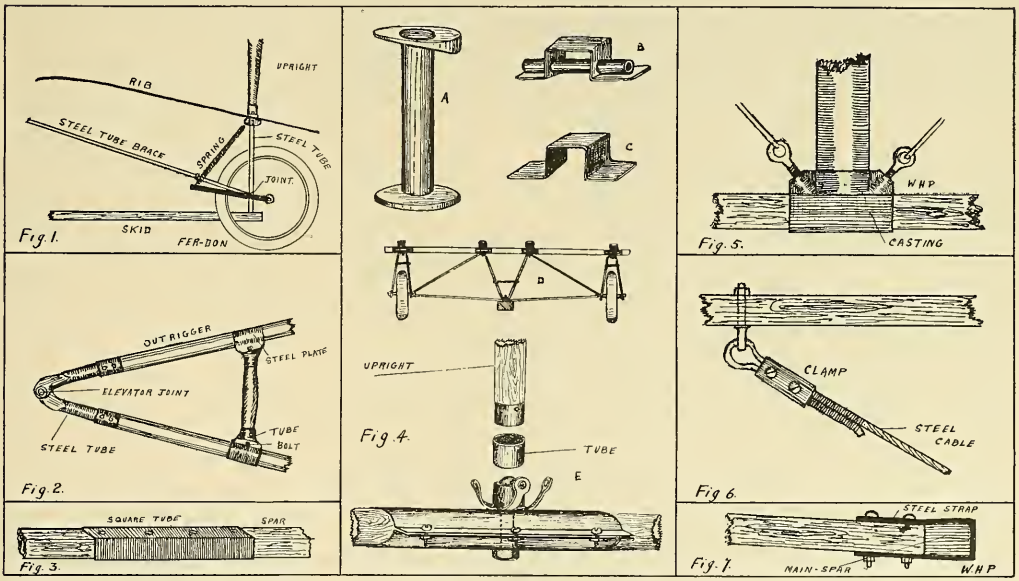


Fig. 1—Shows a spring landing gear fitted to a Curtiss-type machine designed by B. R. Shaw, Jr.

Fig. 2—Shows the outrigger construction used on the biplane built by the Mineola Specialty Co.

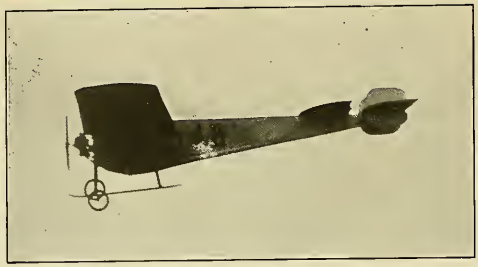
Fig. 3—Illustrates a spar joint used on the Burgess biplane.

Fig. 4—Shows several fittings made by the New York Aeronautical Supply Co. Fig. A is a bed rail Bushing, designed to allow a 5/16 inch bolt to pass through rib and main-spar, eliminating the crushing of ribs and spars. Fig. B represents a control wire guide. Fig. C is a rib brace and fastener. Fig. D shows a Curtiss-type running gear. Fig. E illustrates a slip post socket, designed to facilitate the dismantling of a Curtiss type machine.

Fig. 5—Shows an aluminum casting used on the Longfellow monoplane exhibited at the recent Boston show.

Fig. 6—Shows a wire clamp noticed on the Saunders and Butler monoplane.

Fig. 7—Illustrates the method of joining the outrigger spars to the main-beams as used on the new Burgess "Baby Grahame-White."



THE NIEUPORT MONOPLANE.
This machine has made over 66 miles an hour with a 30 H. P. engine.

FOREIGN NEWS

Australia

One of Australia's greatest enthusiasts and authority on aviation is Mr. George A. Taylor, of Sydney. He has worked for Australian Aerial Defence, established two free experimental schools, and has lectured throughout the country.

Belgium

M. Lescartes and a passenger left Hasselt, Belgium, on April 2 to fly to Aix-la-Chapelle, in Rhenish Prussia, but were compelled to land in an out of the way place en route, and were not heard of all the next day, causing great anxiety as to their safety. They completed their trip, however, and on April 4th they landed at Aix-la-Chapelle. During their flight they crossed two frontiers, the Belgium-Dutch and Dutch-German, although the distance traversed was only forty-four miles.

The Belgian aviators Baron P. De Caters and Tyck, returned recently from their journey to India and the East. Baron de Caters is paying a visit to Nice, but Tyck has proceeded to Antwerp, where he is resuming his business of teaching flying.

Cuba

A full account of the Havana meet, which began on March 22d, is given by Henry A. Wise Wood, the special representative of the Aero Club of America, in an article on page 71 of this issue.

China

What they thought of Captain Baldwin, Bud Mars and Tod Shriver in the Celestial Empire:

事領國各並于王各與家王是乃船飛之社會本者啟
在茲過滇經未畢本因也船飛之別特最是乃辦協所
至起號一十三月正英由滇開方地(禮通拍溫屈)於
點兩午下由行開曰每停日五拜禮號三止號六月式
見開以臨雅來到君請 請敬曰是止鐘點六至起鐘
開佈此特玉客勿拳請

選 羅 利 益 會 社 規 條

由歐洲月三十一號起至二月六號止

England

Announcement has been made by the Royal Aero Club of the United Kingdom that the date of the race for the Gordon Bennett Cup-race had been postponed from June 28th to July 1.

Interest in the recent Oxford-Cambridge boat race was added to by the arrival of several aviators, who had flown from London. Mr. Grahame-White with Mr. Patterson as a passenger came over in a biplane, as did likewise Mr. Hubert. Mr. Prier, C. Hamel and Mr. C. H. Greswell flew over on monoplanes. As the crews neared Barnes Bridge another biplane from Brooklands hove in sight and followed the oarsmen to the finish. After the race all the aviators flew back to their starting points.

Seventy aeroplanes are now the property of the French government, according to a report made to the House of Commons by Mr. Haldane, the British Secretary of War.

The German army has nine complete dirigibles. The French army has four dirigibles complete and eight in various stages of construction. The Russian army has nine dirigibles complete, one building and four on order. Russia has ten aeroplanes available for use and twenty on order.

MAP SHOWING ROUTE TO BE TAKEN BY CONTESTANTS FOR THE SECOND $50,000 PRIZE OFFERED BY THE LONDON "DAILY MAIL."

England has nine officers and 108 non-commissioned officers and men who are trained or are in course of training. These are officers of Royal Engineers, and men who have been trained in captive ballooning and kiting. The establishment of the air battalion consists of fourteen officers and 176 other ranks, and their pay and upkeep for the year 1911-1912 will amount to about $100,000.

The various Continental Powers have made this financial provision for aeronautical work:

Germany, 1909, expenditure, $270,000; 1910, estimate, $2,000,000 (including Zeppelin Subscription Fund, $1,525,000).

France, 1909, expenditure, $540,000; 1910, expenditure, $630,000. These figures include pay of personnel, etc., upkeep of laboratory, depots, etc.

Russia, 1909, estimate, $515,000; 1910, estimate, $920,000.

"Daily Mail" Second £10,000 Prize ($50,000)

(Under the Rules of the Royal Aero Club of Great Britain and the Federation Aeronautique Internationale.)

The proprietors of the *Daily Mail* have offered the sum of £10,000 to be awarded to the aviator who shall have completed a prescribed circuit of approximately 1,000 miles on an aeroplane in flight in the shortest time within the appointed dates, the award to be made by the Royal Aero Club in conjunction with the Directors of the *Daily Mail*.

REGULATIONS.

1. DATE OF CONTEST.—The contest will commence on Saturday, July 22nd, 1911, and will finish at latest, Saturday, August 5th, 1911, at 7.30 p. m.

2. QUALIFICATION OF COMPETITORS.—The contest is open to competitors of any nationality holding an aviator's certificate issued by the International Aeronautical Federation, and duly entered on the competition register of the Royal Aero Club.

3. ENTRIES.—The entrance fee is £100, and entries, which must be made by the competitor himself, will be received up to 12 noon, July 1st, 1911. The entrance fee of £100 is payable either in one sum or as follows:

£25 by 12 noon on June 1st.
£75 " " July 1st.

Late entries will be received up to 12 noon, July 1st, 1911, in which case the entry fee will be £200.

The entry form, which must be accompanied by the entrance fee, must be sent in to the Secretary, Royal Aero Club, 166, Piccadilly, London, W.

No part of the entrance fees is to be received by the *Daily Mail*, but all amounts received will be applied towards payment of the expenses of the Royal Aero Club in conducting the competition.

4. COURSE.—The course is divided into the following sections:

Section 1.—BROOKLANDS TO HENDON (CONTROL) 20 miles.

Section 2.—HENDON TO EDINBURGH.
Hendon to Harrogate (control).....182 miles
Harrogate to Newcastle (control)..... 68 miles
Newcastle to Edinburgh (control)..... 93 miles
Total for Section 2.....343 miles

This Section closes at 4.30 p. m. on Saturday, July 29th, 1911, by which time all competitors must have started in Section 3.

Section 3.—EDINBURGH TO BRISTOL.
Edinburgh to Stirling (control)..... 31 miles
Stirling to Glasgow (control)..... 22 miles
Glasgow to Carlisle (control)..... 86 miles
Carlisle to Manchester (control)..... 103 miles
Manchester to Bristol (control)..... 141 miles
Total for Section 3.....383 miles

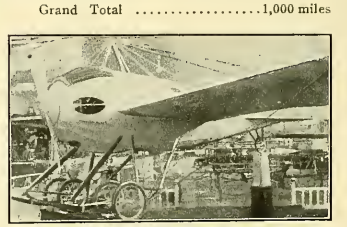
This section closes at 4.30 p. m. on Wednesday, August 2nd, 1911, by which time all competitors must have started in Section 4.

Section 4.—BRISTOL TO BRIGHTON.
Bristol to Exeter (control)..... 65 miles
Exeter to Brighton (control).....149 miles
Total for Section 4.....214 miles

This section closes at 12 noon Saturday, August 5th, 1911, by which time all competitors must have started in Section 5.

Section 5.—BRIGHTON TO BROOKLANDS (FINAL CONTROL)..... 40 miles

Grand Total .....1,000 miles



THE PIGGOT MONOPLANE EXHIBITED AT THE RECENT AERO SHOW AT OLYMPIA, LONDON.

A competitor who has not left the above sections before the specified dates and times will be automatically retired from the competition.

5. CONTROLS.—A control is situated in or near each of the towns mentioned in paragraph 4, and competitors must make a landing at each control. The time of arrival will be taken at the moment of landing within the boundary of the control, where the official timekeepers will be stationed.

6. COMPULSORY RESTING TIME.—Each competitor must expend a minimum aggregate of 12 hours while his machine is on the ground in the controls in each of the sections 2, 3 and 4. These three periods of 12 hours shall be called "resting time." No competitor shall be permitted to start in section 3, 4 or 5 until the 12 hours "resting time" shall have elapsed in sections 2, 3 and 4 respectively. A competitor may expend as much as he likes of his "resting time" at the starting control in Sections 2, 3 and 4, but after having been once officially started from any control, the whole time until he reaches the next control will be counted as flying time.

7. STARTING PLACE.—The start will be made from Brooklands on Saturday, July 22nd, 1911, at 3 o'clock p. m.

8. ORDER OF STARTING.—The order of starting from Brooklands will be drawn by lot and announced seven days prior to the start of the competition. Each aeroplane will be allotted a number which will correspond with the order of starting. This number must be displayed on the aeroplane in conspicuous places approved by the officials.

9. STARTING.—The aeroplanes must be on the starting place 15 minutes before the time of starting, and any competitor failing to start within 3 minutes of his official starting time must remove his aeroplane out of the way if and when so ordered, and shall only be allowed to restart with the sanction of the official starter, and his time shall be taken as from the original order to start.

10. START FROM HENDON.—The competitor who makes the fastest elapsed time from Brooklands to Hendon shall start first from Hendon at 4 a. m. on Monday, July 24th, 1911, the others following at intervals determined by the difference between the time of their respective flights and the time of the fastest flight.

11. TIME CARDS.—Each competitor before starting will be supplied with a time card on which will be entered his time of arrival and departure from each control. The competitor is alone responsible for the safe custody of his card and for its being produced and entered up at each control and for the production of same when duly called upon.

12. STOPPAGES.—Stoppages *en route* between the controls are not prohibited.

13. TIMING.—Competitors will only be timed from the departure from any one control to the arrival at the next control. The time taken to accomplish each section will be the times which have elapsed between the departures and arrivals at the various controls within the section, with the addition of any time spent in the controls in each of the sections 2, 3 and 4 over and above the 12 hours "resting time."

14. REPAIRS.—Individual replacements and repairs to the aeroplane and motor may be made, but neither may be changed as a whole. Five parts of the aeroplane and five parts of the motor will be stamped or otherwise marked, and at least two marked parts of each of these five must be in place on arrival at each control. Landing chassis and propellers will not be marked.

15. IDENTIFICATION OF AEROPLANES.—Competitors must have their aeroplanes completely erected at Brooklands not later than 10 a. m. on Thursday, July 20th, 1911, in order that they may be marked by the officials. Any competitor not having his aeroplane ready by the specified time will render himself liable to exclusion from the contest.

16. EXAMINATION AT FINAL CONTROL.—Each machine on arrival at the final control must remain on the ground for exhibition and examination for at least 24 hours from the time of arrival.

17. SHED ACCOMMODATION.—Accommodation for his aeroplane will be provided free to each competitor at Brooklands from 9 a. m. on Saturday, July 15th, 1911.

General

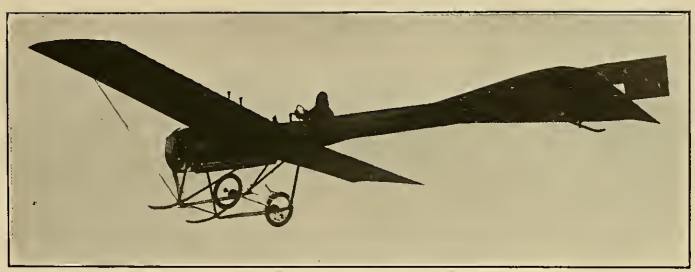
1. A competitor by entering thereby agrees that he is bound by the regulations herein contained or to be hereafter issued in connection with this competition.

2. The interpretation of these regulations or of any to be hereafter issued shall rest entirely with the Committee of the Royal Aero Club.

3. The competitor shall be solely responsible to the officials for the due observance of these regulations, and shall be the person with whom the officials will deal in respect thereof or of any other question arising out of this competition.

4. A competitor by entering waives any right of action against the Royal Aero Club or the proprietors of the *Daily Mail* for any damages sustained by him in consequence of any act or omission on the part of the officials of the Royal Aero Club or the Proprietors of the *Daily Mail* or their representatives or servants or any fellow competitor.

5. The aeroplane shall at all times be at the risk in all respects of the competitor, who shall be deemed by entry to agree to waive all claim for injury either to himself, or his aeroplane, or his employees or workmen, and to assume all liability for damage to third parties or their property, and



THE BEAUTIFUL DEPERDUSSIN MONOPLANE.

A VIEW SHOWING THE SEATING ARRANGEMENTS OF THE 100 H. P. DEPERDUSSIN MONOPLANE AND KINETOGRAPH IN POSITION READY TO TAKE PICTURES.

LOUIS BREGUET AT THE WHEEL OF HIS BIPLANE WITH ELEVEN PASSENGERS ABOARD JUST BEFORE STARTING ON HIS RECENT RECORD PASSENGER-CARRYING FLIGHT.

THE DELABROSSE MONOPLANE, FITTED WITH ADJUSTABLE FOLDING WINGS.

to indemnify the Royal Aero Club and the Proprietors of the *Daily Mail* in respect thereof.

6. The Committee of the Royal Aero Club reserves itself the right to add to, amend or omit any of these rules should it think fit.

France

Louis Bréguet established a record on March 23rd at Douai, when he carried eleven passengers, besides himself, in his biplane a distance of two miles.

The flight was made at a height of about sixty feet, and the combined weight of the machine and its occupants was about 2,602 pounds.

On March 24th, the very next day to that on which Bréguet had established his wonderful passenger-carrying record, Roger Sommer went him one better and succeeded in carrying twelve passengers, thus establishing a world's record.

Capt. Bellenger and Lieuts. de Rose, Malherbe, Conneau and Princeton, determined to fly over to Biarritz from Pau on March 19th. Princeteau and Malherbe did not get very far before deciding to turn back, whilst de Rose had to land at Orthez, but the others continued and landed safely at Biarritz, where they were entertained at dinner that evening by the local Aero Club.

During the recent Mi-Carème carnival in Paris Védrines and the new dirigible Torrès, built for the Spanish government, followed the procession and pelted the Queen and onlookers with flowers.

Captain de Chaunac was flying the "Oiseau rouge," the military R. E. P., for three-quarters of an hour on March 17th, during which time he flew over the surrounding country.

On March 18th at Douzy, Molla was testing two new Sommer biplanes for the French army and was in the air for 4¾ hours. The aeroplanes were accepted by the Military Authorities, and the builder was awarded a bonus of $560. Molla also made a half-hour flight with Lieut. Girard as a passenger. Robinet was also flying for an hour, while Bathiat made four trips on his new Sommer monoplane.

There was considerable activity at Issy on March 18th. Parent on his monoplane carried Henry Poulain as a passenger for 47 minutes. There were several other aviators practicing, including Anzani and Mlle. Trany.

On March 19th Lieut. Philippe Féquant, accompanied by Lieut. de Briey, flew on a Nieuport military monoplane from Mourmelon to Rheims, rising at times to a height of 2,000 feet.

On March 24th Wilbur Wright testified before the Tribunal in his suit to protect his aeroplane patents. At the conclusion of his testimony the Judge thanked him for his attendance in court, and expressed his pleasure at having had the honor of meeting and listening to the distinguished inventor.

The Wright hearing ended on March 30th and judgment will be delivered on April 29th.

Cei, the Italian flyer, was killed on March 28th while attempting to land on a small island in the Seine at Puteaux.

Mons. Pierre Prier arrived at Issy Les Moulineaux, near Paris, at thirty-three minutes after five o'clock, Wednesday, April 12, from London, having made the trip of about two hundred and fifty miles in a monoplane without a stop. His total time in the air was 236 minutes.

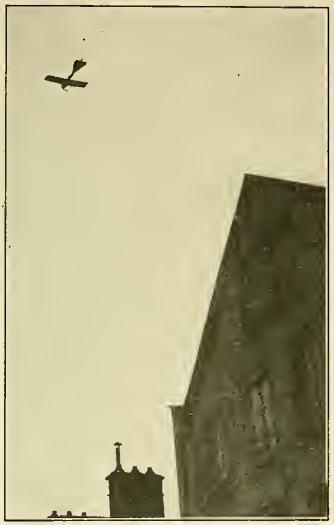
Mons. Prier left Hendon, near London, where he is an instructor in the Blériot school, at thirty-seven minutes after one o'clock the same day. Above the English soil the aviator found fog and squalls and, going higher and higher in an endeavor to obtain better weather, crossed the English Channel near Dover at a height of more than thirty-two hundred feet.

Leaving the Channel behind him, Mons. Prier encountered fine weather until he reached Beauvais, fifty-four miles from the French capital, and from that city the rest of his voyage was made through a haze.

Mons. Prier was wildly acclaimed by a dense throng as he stepped out of his machine after alighting on the Issy aviation field. The monoplane used by the aviator was the historic machine with which Mons. Alfred Le Blanc, the French aviator, won the $20,000 prize by finishing first in the great Circuit de l'Est cross-country race of 488 miles last summer.

Hendon is a town of Middlesex county, England, six miles from the centre of London. The approximate distance between Hendon and Paris is 250 miles. This flight of Mons. Prier is the first attempt of an aviator to fly from the British capital to Paris.

Mons. Prier is a newcomer in international aviation circles. This achievement, however, places him in the ranks of the world's foremost airmen.



THE DEPERDUSSIN MONOPLANE, HOLDER OF THE WORLD'S PASSENGER-CARRYING SPEED RECORD.

Work will be commenced shortly on the monument which the Aero Club of France is erecting at Calais in order that the record of the first flights across the Channel may not be without witness in future generations. The monument will consist of a pyramid four metres high, placed on a pedestal. On the principal face will be an escutcheon bearing an inscription recording Mons. Blériot's flight, and above it will be a representation of the machine. The sides will bear inscriptions making appropriate references to the subsequent attempts. The ground on which the monument is being erected has been given by Mme. Hochert-Deletres. It is expected that the monument will be ready for unveiling on July 13.

Germany

Lieut. Erler, the military aviator, and his passenger, Lieut. Mackenthun, returned to Doeberitz on April 2nd after a round trip in a biplane of over 421 miles. The trip started on March 28th and included stops at Hamburg, Bremen and Hanover.

On March 30th Count Zeppelin's latest airship made its maiden voyage.

The new craft replaces the wrecked Deutschland and developed the highest speed of any of the Count's dirigibles.

The projected international aviation race from Paris to Berlin, Brussels and London may be abandoned owing to the attitude of the Paris "Journal," one of the papers contributing to the prizes, which has yielded to the French agitation against flights in Germany. The Berliner Mittag Zeitung will in that event apply the $25,000 which it offered for the event to another contest.

On April 2nd the dirigible Parseval V made a perilous descent at Halberstadt during a storm. The crew were compelled to rip the envelope to save the airship.

The Parseval V has recently been making passenger trips from Berlin in place of the Parseval VI, which was badly damaged March 16th by a collision with the balloon shed at Johannisthal.

The investigation into the Weilburg catastrophe last year, which cost Germany a Zeppelin, has not brought a clear insight into the regrettable affair, which excepting to the commission is veiled in mystery. It would appear as though the pilot were hardly the experienced man he was said to be, as his seventy trips comprise all the aeronautic journeys he ever made in ordinary balloons as well as airships. It is also stated with certainty that Count Zeppelin declared that the dirigible was wrongly anchored, and it may be remembered that the observatory at Aix-la-Chapelle warned against undertaking a tour under such dangerous aerial conditions.

Germany has entered a full team for the Gordon Bennett Aviation Trophy. Lindpainter, Euler, Koenig, Wienczierz, Gorrissen, Jablonsky and several others not so well known have sent in their names as candidates for the team which will represent Germany.

The withdrawal of Lieutenant von Mossner from aviation is deeply regretted in Germany, as he was one of the most skilled and bold of the Wright pilots.

Jeannin alone was able to successfully carry out the Gotha-Erfurt-Weimar cross-country flight

FLYING IN INDIA. INTERESTED NATIVES WATCHING THE START OF THE BRISTOL BIPLANE.

which finally took place early in March. The other competitors were all pursued by ill luck, especially Poulain, who flew too far and eventually had to land near a village on the further side of Weimar. Jeannin used an Aviatik, Poulain his own design. Thelen and Caspar both had to give up owing to motor troubles. Thelen, making a further attempt on a following date, he smashed up his aeroplane at a village in the vicinity of Weimar, where he was forced to land. Jeannin and Poulain returned to Gotha in due course, and were followed by Thelen. The three prizes were awarded the men in the above order.

There will be no Aix-la-Chapelle to Berlin race this season, as the German War Office refuses to sanction the crossing of fortifications. It was resolved to keep the sums already subscribed and carry ont the event next year, when it is hoped that the existing regulations will have been modified.

On March 16th three German officers paid a visit to the Albatross works in order to take over the three Farman biplanes which have been built there to the order of the German Army. Each of the officers, Lients. Mackenthum, Dunar and Foester, made trial flights, the last-mentioned in landing damaging the chassis of his machine.

Greece

Charles Willard, the American aviator, has announced that he will leave next month for Greece, where he has been engaged to instruct the army officers of that country in the military uses of the aeroplane.

Holland

On March 17th Count d'Hespel and Lieut. Coblyn, of the Dutch Army, flew from Antwerp to Breda. They came down on the way at Dongen in order to make an adjustment to the motor, and in landing one of the skids was damaged. This, however, was repaired sufficiently to allow the machine to continue on its way.

Italy

In connection with the exhibition to be held at Rome it has been proposed to organize a race from Paris to Rome, the ronte suggested being via Paris, Lyons, Valence, Marseilles, Nice and Pisa.

Japan

The second trial of the Yamada Dirigible No. 2 was carried out recently, but the machinery was damaged in effecting a landing.

The trial began at Osaki, when a drag-rope was attached for purpose of safety. In the afternoon trial the drag-rope was removed, and the airship sailed for some distance amidst the cheers of many spectators, including Captain Tokugawa and other officers and experts interested in aviation. At the time a gentle breeze was blowing near the ground. but it was rather windy high up. Despite all efforts of the crew to stop it, the dirigible was carried toward Aoyama Parade Ground, where it descended, but not without mishap, the propeller being broken to pieces and one of the crew being injured.

This dirigible was equipped with an Aeromotor built by the Detroit Aeronautic Construction Company.

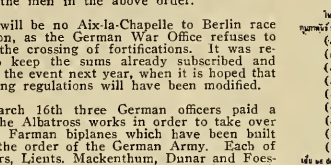
"Bud" Mars and Tod Shriver, who visited the Orient with Captain Baldwin, sailed from Japan April 15 for America. Before leaving Shriver flew from Tokio to a point eighteen miles distant.

Russia

An international aeronautical exposition took place in April at the Michaelovsky manège, St. Petersburg. An extensive exhibit of balloons, dirigibles, aeroplanes and accessories was shown.

Siam

The following is an account of a meet at Bankok:



Sweden

The only licensed Swedish aviator, Baron Cederstrom, has announced his intention of making a circular trip from Copenhagen across the Sound to Malmoe and then on to Landserona, Helsingborg, Elsinore, and back to the Danish capital. Baron Cederstrom has also arranged to give exhibition flights in Norway at Christiania, Bergen and Drontheim.

T. F. Scholander, the secretary-elect of the Aero Club of Sweden, is at present visiting the United States, to enquire into the status of aviation there.

Tunisia

On March 15th Bonvier was flying on his Goupy biplane at Tunis and passed over the town at a height of 2,000 feet. He was flying quite late in the afternoon, and when he returned to the aerodrome it was quite dark.

Appointment of a Commission to Study the Application of Aviation in Belgium Congo. Report to the King.

Sire—The Commission, the appointment of which we have the honor to propose, has for its object the study of the application of aviation in our own colony.

If aerial navigation is bound to render appreciable services in countries in which modern methods of locomotion already exist, its application appears to be much more useful in colonies where very great regions are absolutely without rapid means of communication. Highways exist in the air without being made, and the aeroplane, in attaining a speed up to 100 kilometers, will place in direct and speedy communication localities separated by weeks and sometimes months of march. New uses will appear every day, and the service to be expected from aviation cannot be estimated. It is already possible to foresee their use in the organization of rapid couriers for postal and military needs, and also in assuring in urgent cases, medical assistance. That which may appear premature or impossible to-day may become a reality to-morrow. The belief that a heavier than air apparatus could leave the ground by its own motive power was thought utopian in 1907, and yet three years later men flew for seven consecutive hours and aeroplanes carried eight passengers at a time.

Without believing in the possibility of establishing, from now on, regular aeroplane service in the Congo, we think, nevertheless, that the time has come to study the question. Other countries have outstripped us in this field. France, notably, is undertaking in several of her colonies, experiments in aviation with the object of determining the extent of the practicability of the new invention. It seemed to us absolutely necessary to seek from now on the places in the Congo which it would ultimately be useful to join by aeroplane service, to study the itineraries from the point of view of the nature of the lands, of alighting points, of emergency stations, of the temperature, of the hygrometric degree of the air, of the regions to be crossed, of the condition of winds, etc., etc. At the same time it would be interesting to note the experiences of foreign nations along the same line of ideas. It shall be the duty of the Commission to unite these elements and to make a synthesis of them, so that the Government may make, when the opportune time arrives, a decision based on knowledge of the situation.

I am, Sire, with the deepest respect, your Majesty's most faithful and devoted Minister.

J. RENKIN.

ALBERT, King of the Belgians,

To all those present and to come, GREETING.

On the proposal of our Minister of the Colonies, we have decreed and hereby decree:

ARTICLE I.

A commission is appointed and attached to the Minister of the Colonies with the study of the applications of aviation in Belgian Congo as its object.

This Commission will assist the Government by their advice and labors. They will make regular reports to the Government of the result of their studies and will submit to it all propositions tending to hasten the application of the new method of locomotion in the Colony.

ARTICLE II.

The following are named as members of the aforesaid Commission:

Messrs. C. Closset, member of the Board of Directors of the Aero Club of Belgium;

H. Droogmans, General Secretary of the Ministry of the Colonies;

F. Jacobs, President of the Aero Club of Belgium;

G. Le Marinel, Director in the Ministry of the Colonies;

Captain E. Mercier, 1st Regiment of the Guides, member of the Aviation Commission of the Aero Club of Belgium;

G. Olyff, Director in the Ministry of the Colonies;

Baron Guy van Zuylen de Neyevelt, member of the Board of Directors of the Aero Club of Belgium;

A. Vleminox, President of the Chamber of Syndics of aerial locomotion.

Mr. H. Droogmans will fulfill the duties of president, Mr. L. Closset will fulfill the duties of vice-president, and Baron Guy van Zuylen de Neyevelt will fulfill those of secretary of the Commission.

ARTICLE III.

Our Minister of the Colonies is charged with the execution of the present decree.

Given at Laeken, February 25, 1911.

ALBERT.

For the King:
J. RENKIN,
Minister of the Colonies.

GENERAL NEWS

New England News

By Denys P. Myers.

Followers of aviation news will recall the reports of wonderful and mysterious flights made by an aeroplane constructed by Wallace E. Tillinghast, of Worcester, Mass., and which constituted one of the best news "stories" about a year ago. Mr. Tillinghast at that time refused to give any details of his machine, and only reiterated that he had built apparatus that would fly, when pressed for an explanation. The machine is no longer a mystery. Charles J. Glidden, of Boston, has seen it and admired it, and A. J. Philpott, of the Boston Globe, a close student of aviation, has studied the aeroplane itself at close range.

The Tillinghast "composite" machine these men saw is the fourth he has built, and its construction differs widely from and is said to be far superior in strength and simplicity to that of any aircraft in existence. Mr. Tillinghast himself is a mechanical engineer, and every point in his machine shows the certainty of experienced work.

The War Department has notified Burgess Company & Curtiss, of Marblehead, that it will not take delivery of the two-passenger plane, which it ordered recently, until the first of July. This machine is to be of the Burgess-Wright type, Model F. The Government declined the offer of the concern's large passenger-carrying biplane for the Texas manoeuvres.

Three other Type F Burgess-Wright machines are being built at Marblehead, one for Mr. Burgess's own use and two for customers other than the Government, also two of the Grahame-White type, constructed upon the order of the English flyer, who now is successfully operating two of the biplanes in England. The British have overlooked the American designation for them and have dubbed them the "Grahame-White baby." Recently one of them flew for half an hour in a twenty-mile wind and acquitted itself most creditably.

Mr. Burgess plans to start his flying school on the Harvard Aeronautical Society's field at Atlantic on May 1.

Eight pupils have already been enrolled. There are to be two classes at the start, one in charge of William H. Hilliard and the other under the direction of W. Starling Burgess. Mr. Hilliard's class is made up of three persons and Mr. Burgess's of five. Other classes are being formed.

At the beginning the large Burgess Model D passenger-carrying plane and the Burgess-Wright plane will be used at Atlantic. The Model D has been rearranged so that the passenger sits alongside of the operator, as in the Wright machine, instead of behind him, as in the Farman. The control is arranged so that it can be handled both by the operator and the passenger.

Connecticut News

By S. H. Patterson.

The Aero Club of Connecticut has just distributed to its members a very neat little book containing the Certificate of Incorporation; List of Officers and Committees; Constitution and By-Laws; Articles of Affiliation; Rules for Pilots' Licenses, and List of Members, which now number 139.

Mr. A. Holland Forbes, president of the Club, is exerting every effort to make the first banquet, which will be held at the Stratheld Hotel, Bridgeport, Connecticut, on April 20th, a great success. He has arranged to have displayed accurate models of the best known air vehicles of both the heavier and lighter than air types, and also a moving picture exhibition of the Belmont Park meet. Among the invited guests who are expected to speak at the dinner are Allan A. Ryan, Alan R. Hawley, Augustus Post, Wilbur Wright, Col. Osborne and State Senator Bolles Judson.

W. C. Beers, of New Haven, Vice-President of the Aero Club of Connecticut, has recently returned from France, where he made several flights with Louis Blériot, in machines of his latest design. Mr. Beers will soon go to Dayton, Ohio, to receive instructions in handling his Wright flyer, which he has ordered for May delivery.

Mr. Gallaudet, of Norwich, Conn., is testing out a Hydro-Monoplane of his own construction. Harry Ford and Howard Wilson, of Bridgeport, have completed a biplane of the Curtis type in which they will install a 30 H. P. Anzani motor. Mr. Ford expects to fly this machine at Lordship Park this summer.

An aviation meet will be held in Bridgeport May 11, 12 and 13 at Nutmeg Park, which is owned by Christopher J. Lake, and has been fitted up by him as an Aerodrome, in which he expects to try out a machine of his own invention. This meet is being arranged by the Bridgeport Board of Trade; the Business Men's Association, and the Automobile Club.

Mr. T. R. Tuttle, of the Curtis Company, has promised that Glenn Curtiss will personally fly at this meet, as well as J. A. D. McCurdy, Lincoln Beachey and others. Mr. Tuttle has also promised to have present at this meet Lieut. J. E. Fickel, of the 29th U. S. Infantry, one of the crack shots of the country, who will conduct experiments in shooting, while traveling through the air, at targets on the ground, and also at kites, whose erratic motions are similar to those of an aeroplane in flight, demonstrating how efficient the aeroplane will be in warfare in destroying hostile aeroplanes, as well as objects on the ground.

The Remington Arms Company, of Ilion, N. Y., are making a special gun for Lieutenant Fickel, and it will be the first time such a gun has ever been used. It is expected that a number of local aviators will enter this meet, and it is hoped that Mr. Lake will have his airship ready to try out at this event.

On account of the enormous crowd that turned out on Washington's Birthday to see Frank Paine fly at Seaside Park, it is evident that there is an unusual amount of interest in aeronautics in and around Bridgeport, and it is therefore expected that the meet to be held here in May will draw a large attendance and be very successful.

California News

By Ernest Ohrt.

Eugene Ely and C. F. Willard gave exhibition flights at San José Driving Park on March 18 and 19. On the 19th Willard was carrying George Mangeson, manager of the meet, when he came to grief. He struck a hole in the ground after a quarter mile flight, and two ribs of the lower plane were broken.

Carl Erickson and Eugene Sullivan have built a Demoiselle type monoplane, in which they will use a 25 H. P. Darracq.

Fred Wiseman made two flights in his biplane at the Petaluma Fair on April 2nd.

Rex Young, Frank Case and Fred Sweney (all of S. F. O.), are now the owners of the historic "Curtiss Biplane" with which Hamilton participated at the first Los Angeles meet, and in which Ely learned to fly; it was also (once) the property of Whipple Hall, another Curtiss driver. On March 26 Frank Case made a trial, but encountered little damage in landing on rough ground. The day previous Young made five straight-aways.

Clarence Walker, the young millionaire aviator, has had considerable trouble in making successful flights at East San Mateo on account of obstacles. He has collided with barns, telegraph poles and fences.

On April 1st the Aeronautic Corps of the California National Guard received $1,000 from Eugene Ely as a donation to the fund of $10,000 that is being raised to conduct experiments in army aviation. They will purchase a "Curtiss Biplane."

Louisiana News

By George M. Casserleigh.

A new monoplane, designed by Mr. Rahm, has just been completed at New Orleans. It is equipped with a 40-60 H. P. Elbridge motor and a 7-foot Requa-Gibson propeller, and is to be flown by Mr. Sellers. Mr. Rahm takes great pride in the fact that it is the first monoplane so far as known to be constructed in the State.

The Arbogast Aero Company, a $10,000 corporation of Anderson, Ind., has purchased a 30-foot "Gray Eagle" biplane of R. O. Rubel, Jr., & Co., of Louisville, Ky. They will use it for exhibition purposes throughout the States of Indiana and Ohio and have contracts for forty engagements. This is the fourth aeroplane sold by the Rubel Company this year, and prospects look good for the sale of at least twenty more before the season closes.

Captain Thomas Scott Baldwin has arrivd back from his trip through Hawaii, the Philippines, China and Japan.

"Everywhere we went," said the captain, who was accompanied on his trip by Tod Shriver and C. J. Mars, "we were received with the greatest wonder. In China and Japan we gave exhibitions before the highest officers of the armies and they

CAPTAIN TOM BALDWIN.

were more than delighted. At one time in China, when we were showing, there were 400,000 Chinamen on hand to watch the flights."

"We sold all our machines to the Japanese and Chinamen, and managed to put two extra machines together for them from parts which we had on hand for repairs. Somehow or other they can build delicate machines there, but have no luck in flying them, and they break up as fast as they can be built."

EDMOND AUDEMARS.

Frank Coffyn, with Mrs. Coffyn as a passenger, flew from Augusta to Aiken on March 30th in the highest wind experienced in the locality in a year.

No woman in America, under weather conditions of any sort, has ever made a flight of this length.

It was found impossible to take a straight course because of the direction of the wind, which was so strong that it uprooted trees.

Dr. and Mrs. Henry C. Coe gave a reception on March 25th at the Colony Club for Mr. Alan R. Hawley and Mr. Augustus N. Post, the aeronauts. During the evening Messrs. Hawley and Post told of their trip in the balloon America II. last October, which won the Gordon Bennett Cup.

"Jack" Johnson, the prize fighter, intends to become the champion aviator of the world, so it is said, and will take up a course in flying at the Curtiss School in San Diego.

E. Audemars and R. Garros left for France recently and took with them two of the new Moisant Junior metal monoplanes for use in the various cross-country and track competitions that are scheduled for France and Great Britain during the next two months. They will enter the elimination trials for the selection of a French team for the Gordon Bennett Cup race.

The Moisant Junior is in size half way between the original Moisant metal monoplane and the Demoiselle. Except for the surfaces of the main wings, the vertical rudder and the tail plane, the Moisant Junior is of metal throughout. The ribs and main members of the supporting or stabilizing wings are of steel tubing, as is also the chassis. The pilot's seat is placed directly under the centre of the main wings.

The power plants for these machines will be 50 horse power Gnome engines. An exception will be made in the two machines that MM. Garros and Audemars will take abroad, which will be fitted with the new 70 horse power Gnome motors. It is estimated that the 70 horse power motor, which weighs approximately 160 pounds, will drive the Moisant Junior at from ninety to one hundred miles an hour with forty gallons of gasoline, ten gallons of lubricating oil and the pilot aboard.

The machine itself, without the engine, weighs 161 pounds. Forty gallons of gasoline add about 280 pounds, ten gallons of oil another 50 pounds, and then comes the weight of the pilot. Audemars is probably the lightest of all aeroplane pilots (106 to 110 pounds). Garros weighs 135 pounds. It is expected that forty gallons of gasoline will be sufficient to permit the new Moisant Junior seventy horse power machine to make a flight of 200 miles at eighty miles an hour without a stop. The provisions of this year's international race call for 150 kilometres, with as many stops as the pilot of each machine desires, the fastest elapsed time to win.

After the International Cup race in England Audemars and Garros will return to the United States and proceed immediately to rejoin the Moisant aviators, who will probably at that time be flying in Kansas City.

Joseph E. Anderson, of Greenwich, Conn., who is only nineteen years old, expects to be one of the competitors for the Gould prize of $15,000 for aeroplanes driven by a double motor system. Young Anderson's machine, a twelve-foot model, which is nearly completed, combines some of the best features of the Wright type of aeroplane, together with some of those of the Antoinette. The machine will have two engines and two propellers, either one of the propellers to be driven by either engine.

On March 7th Edward Wilson met with a mishap at Joplin while testing a new aluminum machine designed and built by E. M. De Chenne and W. O. Sowers. Wilson took the machine off the ground at too sharp an angle, rising quickly to a height of 50 feet. He became confused and jammed the elevator down, bringing the machine suddenly to the ground and wrecking it.

The first public flight in Detroit was accomplished recently by Donald Gregory, a resident of Michigan City, Ind. He made a complete circuit of the Athletic Field, which is about a mile in circumference, at a height of about 40 to 50 feet, and then attempted to rise. Apparently the machine rose at too steep an angle, and the aviator endeavored to check it by throwing his elevator down, with the result that the machine dove and was wrecked, but neither the aviator nor the "Aeromotor" were injured.

It is interesting to note that the Wright machine used by Philip O. Parmelee and Lieut. Benjamin Foulois in their long distance flight of 106 miles on March 4th was fitted with Goodyear aeroplane fabric. In speaking of this flight Mr. Parmelee credits much of his success to the excellence of this covering.

Requa-Gibson propellers, made to the design of Hugo C. Gibson by E. W. Bonson, are being used as standard equipment on Elbridge engines for the year 1911, according to the announcement made by both of these well known and successful concerns.

The American School of Aviation of Chicago announces that it has commenced its second year of practical instruction in aviation, and have secured the services of Mr. E. M. Harrison and Mr. Lynn to act as aviation instructors.

Mr. M. K. Kasmar, still as heretofore, supervises the theoretical and scientific portion of the course, and is on the eve of publishing another volume dealing with the aeronautical science up to date. It should prove to be a valuable addition to the theoretical and practical aviation enthusiast.

Dr. Franz Fullner, the eminent German electrician, is instructor and lecturer on electricity, and general motor propulsion. Lectures are being given at regular periods dealing with the theoretical and practical aspects of aerial navigation, under the auspices of the American Aeronautical Society for the benefit of the students of the school.

The Boston Aero Co. was recently organized for the purpose of manufacturing the Goblin rotary motor and the Pigeon monoplane, which were exhibited at the Boston show. The motor is made in five sizes, three, six and twelve cylinders four cycle, and three and six cylinders two cycle, the rating being 25, 50 and 100 h. p. and the two cycle 50 and 100. The cylinders and pistons are made of cast iron, while the crank case is constructed of manganese bronze. The crankshaft, supporting plates, connecting rods, and all parts made of steel are cut from a solid bar of steel. The valves are operated by a specially designed cam, no gears being used.

Articles of incorporation were filed in Albany on March 28th by the Hempstead Plains Aviation Company. The authorized capital is $50,000, and the directors named are Alfred J. Moisant, Adolph E. Wupperman, Gage E. Tarbell, Allen W. Evarts and Charles S. Butler.

As was announced some time ago, when the company was organized, the purposes are to operate and maintain on the Hempstead Plains an aviation school, flying grounds and a factory. Messrs. Moisant and Wupperman are connected with the Moisant International aviators. Work has already begun toward building hangars and putting the grounds in order for flying.

We are indebted to the Charles C. Thompson Company, publishers of Chicago, for a book entitled "Questions and Answers for Automobile Students and Mechanics." We feel sure that this work will prove most valuable to any one who takes up a study of the automobile.

The Chicago School of Aviation has enlarged its quarters, leasing another building adjoining the original premises. Students from all sections of the country are at work in the construction classes, and more are arriving daily. The school has now under construction both Curtiss type biplane and Blériot type monoplanes. Night classes have been instituted to provide for local students who are unable to attend the day classes.

Thos. F. Wiedmann, proprietor of the Kit Carson's Buffalo Ranch Wild West Show, visited Chicago March 25th and closed a contract with the Chicago Aeroplane Mfg. Co., Inc., for a biplane and crew, to make daily flights with his show. The Wiedmann show opens at Harrisburg, Ill., April 15th, and is routed through to the Pacific coast. The contract is for a continuous season of 42 weeks.

C. W. Miller, formerly a six-day bicycle racing star, has made a contract with the Chicago Aeroplane Mfg. Co., and will fly his Farman biplane under their colors in exhibition work throughout the coming season.

The Western Aeromobile Co., of Chicago, has been incorporated for the purpose of manufacturing the Lawrence convertible aeromobile, a photograph of which is reproduced upon this page.

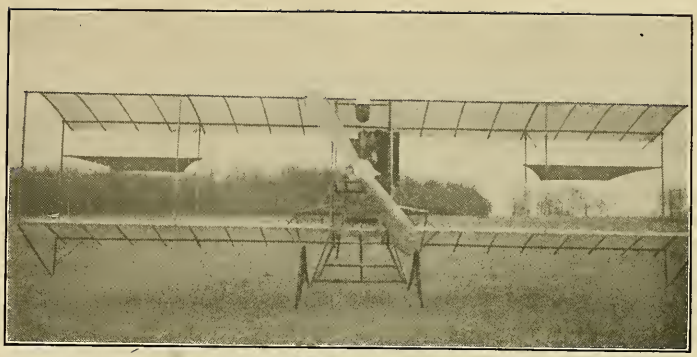
The Lawrence Aeromobile is comprised of a main frame or fuselage, a running gear containing four standard motorcycle wheels, attached to shock absorbers. The front pair of wheels being coupled to the axle with means for steering the machine on the ground. The main planes (or wings) are constructed in such a manner as to make them readily dissembled.

The tail is also made to fold up, and the small planes used for lateral and longitudinal balance can be removed, which leaves the machine somewhat longer but no wider than the automobile; the operator and controlling device is located in the basket or pit, which swings beneath the fuselage.

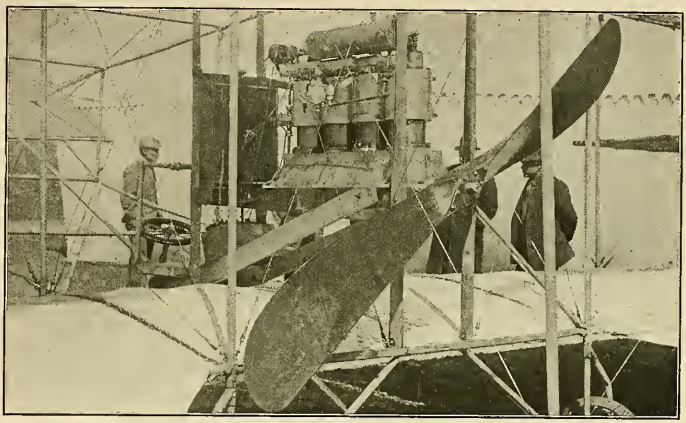
The centre of the radius or swing of this pit is found at the central longitudinal rib of the main planes. The small planes at the rear of the machine oscillate in connection with the basket or pit also, which compels the machine to rise and descend on an even keel.

The lateral balance planes (2), which are placed under the main planes (or wings), work in connection with the rudder and front wheels. The wheels may be replaced with pontoons which will enable this machine not only to rise and descend on the water, but also to run on the water, if the inventor's theories work out in practice.

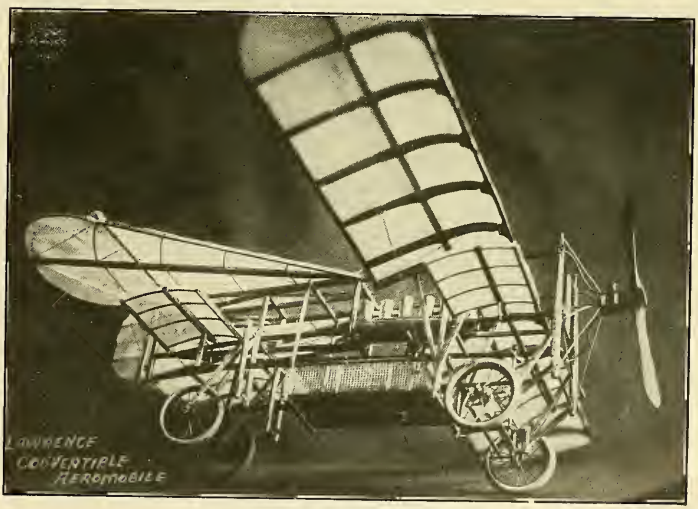
The Aeronautic School of Engineers of New York announces that they will fly their Demoiselle equipped with an Aeromotor and their Curtiss equipped with an Elbridge engine at Mineola in the course of the next few weeks.



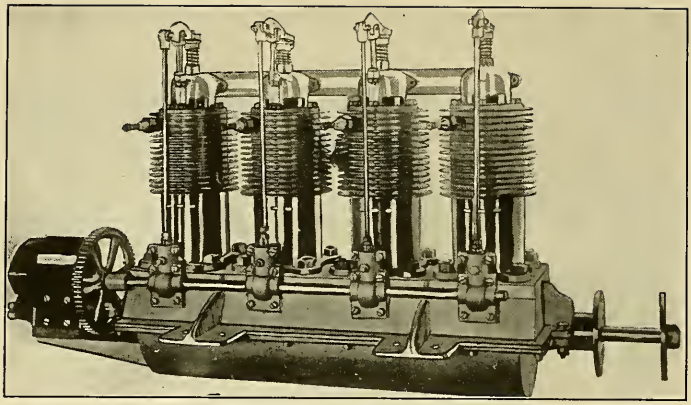
THE FRONT PROPELLER BIPLANE BUILT BY OONALD GREGORY OF MICHIGAN CITY, IND., WHICH WAS RECENTLY FLOWN WITH AN AEROMOTOR.



The De Chenne aluminum aeroplane constructed by the Holbrook Helicopter Aeroplane Co. of Monett, Mo., and which was recently damaged in a trial flight. The machine is of the Curtiss type, and is constructed almost entirely of aluminum, even the ribs being of this material.



THE LAWRENCE CONVERTIBLE MONOPLANE.



PHOTOGRAPH OF THE "GRAY EAGLE" AERO MOTOR BUILT BY R. O. RUBEL, JR., & CO., LOUISVILLE, KENTUCKY.

The New York Aeronautical Supply Company announces that they have recently sold one Blériot and one Curtiss type machine.

The Shneider Aeroplane Company has opened an aviation school at Belmont Park, and have made arrangements for establishing another at Chicago.

On Tuesday, April 4th, Miss Marie Elizabeth Hedge, daughter of the late Captain Homer W. Hedge, who was the organizer of the Aero Club of America, and for many years a celebrated balloonist of his day, was married in New York to Captain Thomas Turpin Lovelace, the well-known builder of monoplanes, who is now associated with Alfred J. Moisant.

Dr. Albert Bond Lambert, president of the Aero Club of St. Louis, has offered to Adjutant General Rumbold, of the aeronautic corps of the State militia, the use of the four balloons which the club owns. Dr. Lambert thought that in the event the soldiers are ordered to the front the aeronautic corps could go as active participants with this equipment.

Charles F. Willard, the aviator, has announced that he had perfect plans for an aeroplane that could be carried about in ordinary army wagons, assembled in ten minutes, started on land or water and "knocked down" in less than ten minutes.

All Pinehurst turned out on March 25th to witness a preliminary flight in a Curtiss biplane by Lincoln Beachey, who was located there as the head of an aviation school. The flight took place at the trap shooting grounds. Mr. Beachey circled the field, flew over the village and thence back to the starting point.

Mr. Beachey had as his first pupil Mr. R. B. Middleton, of New York.

Commander Shichigore Saito, one of the most distinguished officers of the Imperial Japanese Navy, and a hero of the siege of Port Arthur, on April 4th made his first aeroplane flight. The Commander was taken up as a passenger at Pinehurst, N. C., by Lincoln Beachey, one of the Curtiss aviators, in the latest type of Curtiss "war machine."

The flight lasted ten minutes, Beachey taking the Japanese officer over the town of Pinehurst, landing him at the golf links. The machine covered about eight miles, and notwithstanding the wind the flight was successful in every way. Commander Saito was enthusiastic over his experience, and expressed his faith in the aeroplane for naval purposes in time of war.

Wilbur Wright, in a letter to the Aero Club of America, expressing regret that the infringement suits in Paris required his presence there and prevented his attending the annual dinner of the club, took occasion to comment somewhat adversely upon the changes made by the Federation Aeronantique Internationale in the conditions of the 1911 race for the Coupe Internationale d'Aviation.

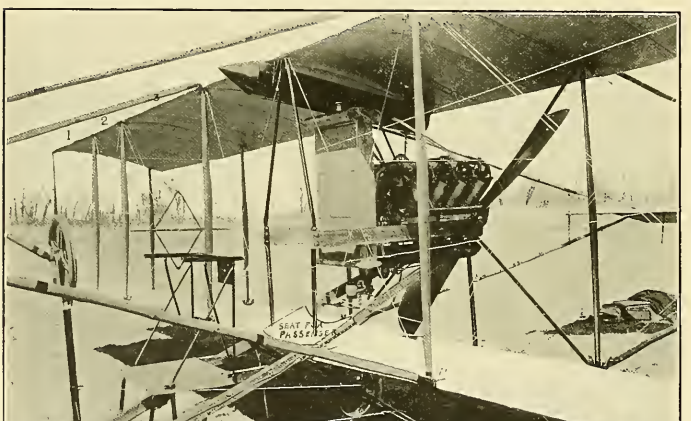
These changes, Mr. Wright holds, have made the race more dangerous instead of less dangerous. He writes:

"The limit of speed at the present time is chiefly determined by the recklessness of the builders and operators. It is possible to build a machine which will go more than a hundred miles an hour, but the starting and landing speed of such a machine makes it tremendously dangerous in case anything goes wrong.

"The Federation has merely increased the probability of something going wrong by increasing the duration of the race, and done nothing to reduce the danger. Under these conditions it is doubtful whether we will compete.

"On the one hand it would be foolish to build a machine slower than the best we know how to build, and there is the possibility that some one would be killed if it should be flown many times.

"I hoped the Federation would limit the size of the motors, so as to keep the speeds within reasonable limits, in which case the race would be determined more by the scientific and mechanical perfection of the machine and the skill of the operator and less by the brute strength of motor and rashness of the designers and operators."



The latest Curtiss biplane built for the United States Army. Note the forward position of the aviator's seat, the passenger seat immediately behind it, and the system of double trussing. This machine is constructed on the new Curtiss panel system, which permits sections to be added for passenger-carrying. In the above photograph a 30-inch panel, marked 2, has been inserted between the regular 5-foot sections marked 1 and 3. When it is desired to carry two passengers beside the pilot a 5-foot section is inserted in place of the 30-inch one. Other improvements are the placing of the ailerons in the rear, shortening of the front outriggers and lengthening the rear ones which support the fan-tail.

A Direct-Lift Machine

Letter from Achille Rochon

I have invented a helicopter in which I use centrifugal force with extraordinary results. I have a hand machine by means of which I lift 14 pounds with the strength of one hand, turning a crank horizontally. With such mechanism only about one-half of my exertion is effective. I think that the lift cannot be less than 100 pounds per horse power. Of course this would not mean that I can make a successful helicopter if my blades ought to augment in weight as the cube of the dimensions, as is the case with other helicopters. But the weight of my blades per square foot does not augment with the dimensions, and the possible dimensions are unbelievable without explanation.

Blades 15x75 feet are not only practicable, but can be made at a small cost and without any difficulty, and if made of aluminum, they need not weigh more than 1/6 of a pound per square foot. Made of aluminum or copper, they could be rotated safely at a peripheral speed of 200 meters per second. Made of vanadium steel, the speed could go to 400 meters per second. Such speed of rotation is practicable with aerial propellers for the reason that the shaft cannot vibrate without a shaking of the blades. The pressure of the air opposes the disturbance which would result from an imperfect equilibrium.

Now, a few words will explain the principle of my invention:

My blades are simply very thin sheets of metal, made heavier in front than in rear. They can easily be rolled up on drums 4 inches in diameter. By means of a simple mechanism, they will slowly unroll for flight at the same time that they revolve, and, after the flight, the same mechanism will roll them back before stopping the rotation. Thus they may be made of dimensions which cannot be dreamed of by any other means.

The blades are hinged both horizontally and vertically. When in rotation the air presses them upward and backward till the resistance of their centrifugal force equal the pressure. They take automatically a heliocoidal shape and curve from front to rear like the wings of birds. This flexible curve adapts itself automatically to the pressure of the air.

Probably some will think that the hinges are not the thing, but this is a mistake—they are an indispensable part of the combination and are not a defect. In my hand machine the equilibrium is as good as if the blades were made of a single piece. And I can demonstrate that, at high speed of rotation, neither the motion of the air nor the speed of the vehicle can alter the equilibrium more than imperceptibly.

I have now ready the most important parts of a helicopter made of two superposed pairs of blades to be rotated inversely to each other, the blades measuring 1 foot by 59 inches, a total of 28 square feet. Those blades are not rolled up on drums, they simply hang from their hinges as in my hand machine, but they are nevertheless sufficient for my purpose. I have no doubt that a ten horse power motor would easily lift the machine and a man.

I write to you to ask if some member of the Aero Club possessing any kind of a motor of more than 5 horse power would wish to try how much we can lift. There would be no risk of damaging the motor, for I do not intend to make a flight. For the first experiment, the frame will be tied to the ground or to a floor with ropes which will not allow the machine to rise more than a few inches.

I suppose that, among the men of means interested in aviation, few expect anything of the helicopter, and I should think, too, that there was nothing in it, had I not found the unique combination which I have summarily explained; but this combination has astonishing possibilities.

I dare say that a helicopter can be built which will lift several hundred thousand pounds.

It is possible, too, to give a machine of less power such proportions as will permit it to fall from any height, without a motor, with more security than a gliding aeroplane. When such a helicopter begins to fall, the air will press the rear of the blades higher than the front part, that is to say, the blades from a short distance from

their bases to their ends, will be automatically inverted and the fall of the mass will maintain the rotation. The proportions could be calculated so that the downward speed could never pass 5 or even 3 meters per second. Of course, the fall would be even slower if of the several motors used one or more should remain in action.

I think, too, that with the blades rotated without angle of incidency, soaring flight is possible.

The true explanation of soaring flight has never been given. I think that I have it. But this does not mater. The eagle bas found how to soar without knowing wby it can be done. We will do it too when we have a flexible surface equivalent to a wing, and a machine presenting no more resistance to motion, proportionally, than the body of an eagle. And I *know* that it will be a very simple thing with a machine which cannot be overturned.

I should be pleased to show how I lift 14 pounds to any one who would like to see it.

I hope that you will communicate this letter to those who might be interested, and, if any precise objections are made as to the practicability of my idea, I should like to consider and explain them. An important thing to understand (which will prevent some hasty objections), is that when the pressure of the air augments, while the centrifugal force remains the same, the angle of incidence diminishes, and it augments when the pressure diminishes.

So many inquiries have reached us lately as to the conditions of the William R. Hearst prize of $50,000 to the first aviator who flies across the American continent that we herewith print them as follows:

The conditions of the competition for the Hearst prize are simple. The flight must be made over the breadth of the continent in any self-propelled aeroplane. The contestant may start at Boston or New York and alight either at Los Angeles or San Francisco. The route must lead via Chicago. It is optional with the competitor to start either on the Pacific or Atlantic coast. He may fly as many miles daily as he elects; he may stop as often as he pleases, wherever he pleases. There is no limit to the number of stops that may be made, nor to the time the aviator may stop in any one place. The man who flies is the sole judge. He may repair and rebuild his craft so often that he is practically flying a new machine by the time he reaches his goal.

The only condition is that he make the entire flight within thirty consecutive days—720 consecutive hours—and start on the flight within one year from October 10, 1910: Notice of intention to start must be given the Aeronautic Editor, The New York American, William and Duane streets, New York City, fourteen days prior to the start.

Since Mr. Hearst offered the $50,000 prize for the flight across the continent, sums totaling $12,000 additional have been offered by clubs, organizations and individuals.

The Rotary Club, of San Francisco, Cal., offers $10,000 additional if the start or finish of the flight is made at San Francisco.

The Kansas City Post offers $1,000 to the winning aviator who passes Kansas City en route.

The Denver Post offers $1,000 to the winning aviator who passes Denver, Col., en route.

The Mayors of cities, Governors of States, railroad officials and automobile clubs, as well as civic bodies and individuals, have volunteered to look after the welfare of the aviators in various sections of the country.

J. C. Mars,

The popular American aviator who has been astonishing the natives of China, Japan and the Philippine Islands during the past few months. Mars is now returning home for an American tour during the Summer.

Apparently the Detroit Aeroplane Company, of Detroit, Michigan, builders of aeroplanes and motors, is not only already a concern of considerable size and importance, but is growing at a clip that, if kept up, must eventually put it in the big industry class.

The famous "June Bug," the first aeroplane to make an official flight in America, has been offered to the Smithsonian Institution at Washington by its designer and builder, Glenn H. Curtiss, in whose hangar, on the shores of Lake Keuka, Hammondsport, N. Y., it is stored.

CLASSIFIED ADVERTISING

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AERONAUTS! ATTENTION! I have discovered the only way to rubberize your balloon or airship. Will not crack in cool or warm weather. A correct bue print on how to set up your gas-generators and purifier. Also directions on how to make hydrogen gas fully explained, with blue print showing how to cut an airship bag cigar-shape. I will sell the formula on my rubberized coating, which contains pure rubber, and explain the drying process; pattern cutting, sewing the balloon, rubberizing seams; I explain everything from cutting the raw material to the inflation of your airship. Blue prints and neatly typewritten description of the above; $2.00. Best coating for Aeroplanes. I positively guarantee satisfaction. All orders filled same day they are received. Samples 5c. stamps. Jos. F. Bush, Aeronautical Engineer, Box 882, Schenectady, N. Y.

FOR SALE

GENUINE GLENN H. CURTISS AEROPLANE, CAN BE USED FOR EXHIBITION FLIGHTS. EXTRA PARTS. IMMEDIATE DELIVERY. FREE TUITION. Geo. Russell, 1370 Broadway, Room 14, New York.

FOR SALE—Three 78,000 cubic ft. racing balloons. One 40,000 equipped for captive if desired. Four Dirigibles, one Biplane, one Monoplane and manufacturer Balloons, Airships and Aeroplanes.
G. L. Bumbaugh, Indianapolis, Ind.

FOR SALE—Blériot monoplane, 24 horse power Anzani motor, imported from Blériot factory this year. Will be sold big sacrifice by Aviation Company, closing up its business. Box 727 % Aircraft.

FOR SALE—Elbridge water-cooled 22-30 H.P. motor, 98 lbs., new. Address: Elbridge, care AIRCRAFT.

PARABOLIC True Screw Model Propellers. Twice the thrust of the old-fashioned flat types. Solid poplar, extra fine finish, 6 cents per inch, laminated 10 cents. The Model Shop, 1932 Riverdale St., Chicopee, Mass.

AEROPLANE—Curtiss improved type, with which I made very successful flights 1000 feet high and 20 miles across country. Equipped with 40 horse power motor. Will set up and teach buyer to fly. $2,000 complete. Will build exact duplicate—NEW—complete, $2,500. Worth double. Perfect flyer guaranteed. Buy direct from Aviator who builds and flies his own aeroplanes. I KNOW HOW! 10 years' experience. Henry Chas. Cooke, 128 West 65th St., New York.

FOR SALE—A PROPELLER, 6-7 and 8 foot, high grade laminated. Best make known, New. Used for experiment only. High thrust. Reasonable to first purchaser. Henry Rehbein, 281 Avenue E, Bayonne, N. J.

RESULT OF 14 YEARS' CONSTANT EFFORT. TAVAC-AERO-CARS and COX METAL-MONOS. Cox Hydro-aeros, true screw laminated, or special propellers. Light weight. AVIATOR SEATS, any style. Hand steering wheels, mahogany, walnut, or ebony finish; 8 to 20 inch diameter. Aluminum Webs. Cox Shock absorbing chassis. COX SIX CYLINDER, water cooled, 4-cycle 50 and 100 horse power aeronautic engines; also 7 cylinder, 4-cycle actions. Cost price to first five purchasers. THE AMERICAN VACU-AERO-CAR COMPANY BUILDERS, Mechanical and Aeronautical Engineers, 26th St., Bayonne, N. J.

FOR SALE—BALDWIN'S FAMOUS "RED DEVIL" AEROPLANE; SECOND-HAND, BUT IN GOOD ORDER. GUARANTEED SPEED, 50 MILES PER HOUR; EQUIPPED WITH THE CELEBRATED NEW HALL SCOTT MOTOR. ADDRESS: CAPT. THOS. S. BALDWIN, BOX 78, MADISON SQUARE P. O., NEW YORK CITY.

MODELS and supplies; propellers 5c inch. Ball-bearing shafts eliminate friction. Compressed air motor for models. Send stamp for price list "E." EMPIRE AERO SUPPLY Co., 307 Cumberland Street, Brooklyn, N. Y.

PERFECT, light, wooden, model aeroplane propellers. True pitch. 8 ins. 35c.; each additional inch 8c.; postage 5c. O. W. Schmidt, 915 Kent Ave., Brooklyn, N. Y.

AVIATORS WANTED

WANTED—AN EXPERIENCED AVIATOR FOR THE BALDWIN AEROPLANE TOURS OF THE WORLD, LEAVING AMERICA ABOUT SEPTEMBER 15TH, 1911. LIBERAL INDUCEMENTS MADE TO A FIRST-CLASS, SOBER, RELIABLE MAN. ADDRESS: CAPT. THOS. S. BALDWIN, BOX 78, MADISON SQUARE P. O., NEW YORK CITY.

FAME WITH RICHES, HIGH SALARY. Wanted, six aviators, one to manage train for world tour, compete for Hearst prize, operate TAVAC-AERO-CARS and COX METAL-MONOS. The AMERICAN VACU-AERO-CAR COMPANY MAKERS, to capable men with $3,000, knowledge of aeronautics and engines, will furnish $6,000 machine, give liberal interest in business, defray expenses and high salary. Desire to make ours strongest company in world. Now making machines and full line of supplies. J. Fillmore Cox, Mechanical Engineer and Aeronautical Engineer, manager, Bayonne, N. J.

CO-OPERATION WANTED

I AM BUILDING a monoplane of a very simple and cheap construction. Operator will ride inside; great enterprise; will be a great attraction for the Government. Machine now partly finished. Would like to communicate with party or firm of money to finance the building of same. Address: C. B., % AIRCRAFT.

DESIRE communication with one or more men, to incorporate with and take financial interest, aeronautic enterprise. About to build three story factory. All metal machine and line of supplies well covered by five patents. Box 731, care AIRCRAFT.

WELL known aviator seeks association with capital, fine machine. Will patent several aeronautical appliances, machine, propeller, etc. Give half interest in patents and business. Box 732. care AIRCRAFT.

EXTRAORDINARY PROPOSITION for party with capital. Practical Monoplane (with parachute feature if desired), nine basic patent claims allowed. Also new "automatic stability" invention, and new engine idea. Machine is practical—no experimenting. Manufacturers should investigate. Liberal proposition. Write A. O. Paulson, Oakes, N. Dak.

WILL OWNER or manufacturer of machines furnish me machine and expenses? Will enter any competition or exhibition and divide earnings; 23 years of age; mechanic with aeronautical knowledge, experienced, energetic, courageous and well educated; weight 168 pounds. Address I. Buklenica, 514 S. Sacramento Bldg., Chicago, Ill.

HAVE INVENTED the most birdlike, simplest, self-balancing flying machine. Would like to communicate with some one willing to invest in construction. Address: Box 734, care AIRCRAFT.

MAN of ability, now taking course in practical flight, desires offer for subsequent engagement, preferably on shares. Specialty, long distance and cross-country. Address: A. R., care AIRCRAFT.

DESIRE communication with one or more men, to incorporate with and take financial interest, aeronautic enterprise. About to build three story factory. All metal machine and line of supplies well covered by five patents. Box 731, care AIRCRAFT.

WELL known aviator seeks association with capital, fine machine. Will patent several aeronautical appliances, machine, propeller, etc. Give half interest in patents and business. Box 732. care AIRCRAFT.

WOULD party interested in aeronautics take as security valuable antique for loan to help finish all-American monoplane to be entered for Gould Scientific prize? Address: J. B., care AIRCRAFT.

POSITIONS WANTED

YOUNG MECHANICAL ENGINEER WITH 10 YEARS OF PRACTICAL EXPERIENCE, WISHES POSITION AS MECHANICIAN. ADDRESS: BOX 735, AIRCRAFT.

MISCELLANEOUS

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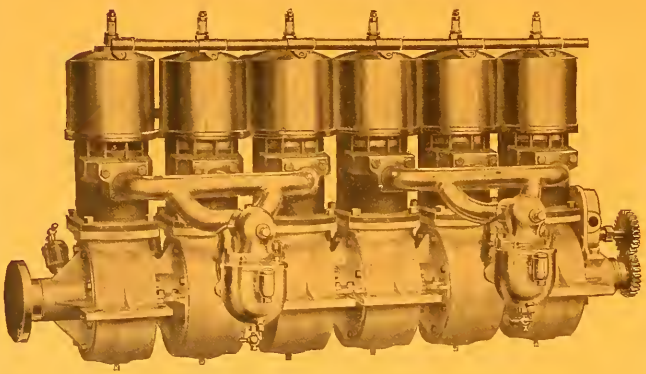

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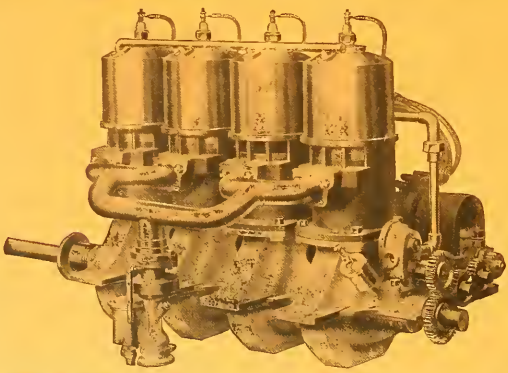

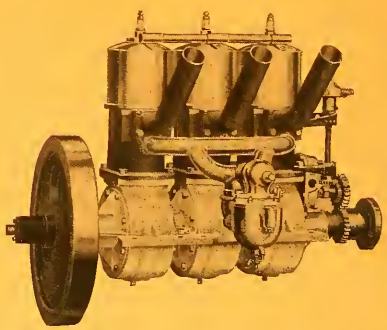

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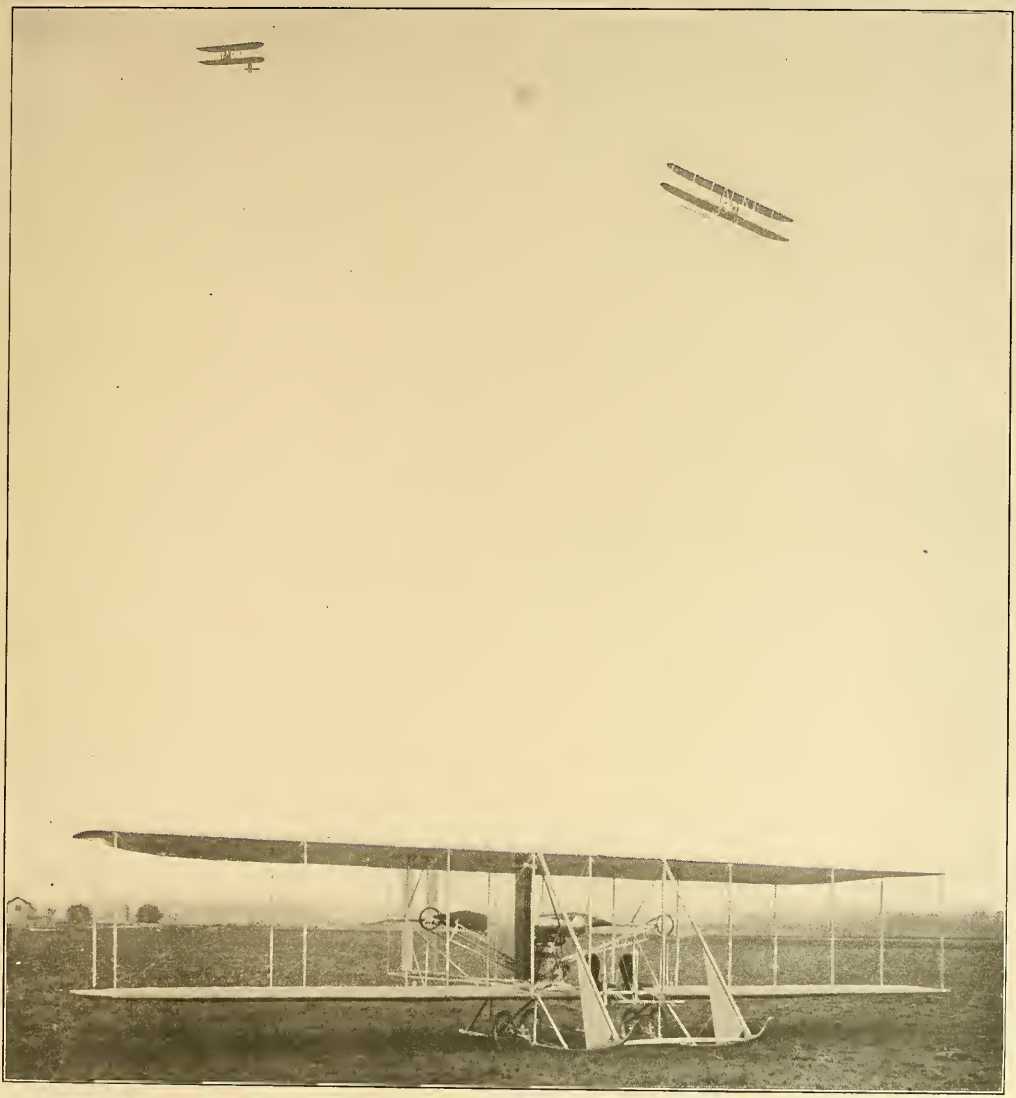

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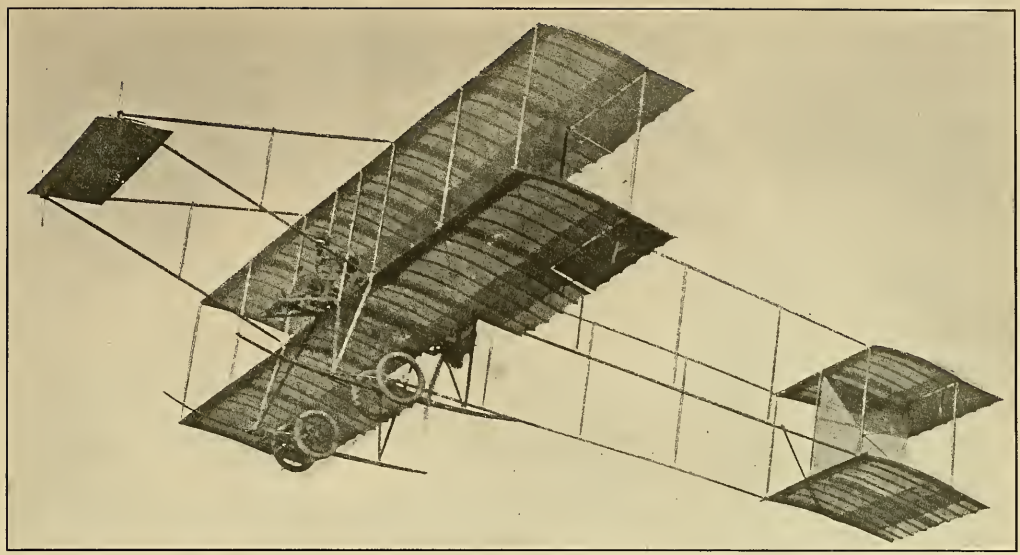

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This particular machine was flown by Louis Paulhan during his trip to the United States in 1910, and afterwards purchased by Clifford B. Harmon, the first man in this country to make a two hour flight.

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AIRCRAFT

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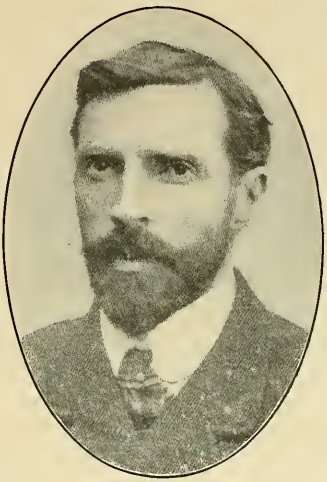
Henry Farman to Invade America

ALFRED W. LAWSON,
President of The Farman Company of America.



HENRY FARMAN,
Director of The Farman Company of America.

BARON LADISLAS d'ORCY,
Secretary of The Farman Company of America.

PERHAPS the biggest surprise of the year in aeronautical circles in this country was the announcement made on May 4th that Henry Farman, the famous builder of French aeroplanes, had decided to establish a manufacturing plant in America for the purpose of building American made Farman machines. It is generally conceded by those directly interested in the development of aviation in this country that this move on Farman's part will have a greater effect in stimulating progress in the industry in this country than any one thing that has taken place since its beginning, for it can be correctly stated that no one man in all the history of flying has done more toward the development of the movement than Henry Farman.

The Farman Company of America is the firm name under which the new company will do business, and it has been incorporated under the laws of the State of New York, and capitalized at $500,000.

The directors of the concern are: Henry Farman, Alfred W. Lawson and Baron Ladislas Emile d'Orcy.

Alfred W. Lawson, who was made president of the corporation, has been an active figure in the aeronautical movement during the past three years. Besides establishing and editing during that time two successful aeronautical magazines, "Fly" and "Aircraft," he also acted as president of the Aero Publishing Company, of Philadelphia, in 1908 and 1909, and the Lawson Publishing Company, from 1909 up to the present time. Mr. Lawson is a member of the Aero Club of America, and an honorary member of several aero clubs throughout the United States. He is also vice-president of the Aeronautical Manufacturers' Association.

Baron Ladislas Emile d'Orcy, the secretary of the Farman Company of America, is a young nobleman of French extraction. He was born in Gratz, Austria, 24 years ago, and after completing his education in Hungary and Italy spent several years in visiting Switzerland, England, France, the Balkan Peninsula, India and the Far East. In Turkey he took up journalism to some extent, and in this way became acquainted with many of the prominent European aviators, which whetted his appetite for a deeper study of the science of aviation, a leaning toward which he had had from his early boyhood; during the last two years Baron d'Orcy has devoted all of his time and attention to the study of aeronautics, until now there are few men who have a greater knowledge of the entire subject than he. Since coming to this country Baron d'Orcy has fallen in with the American spirit of doing things in a manner both energetic and substantial; he must now be reckoned as a strong factor in the actual development of the aeronautical movement in this country.

So much can be said of Henry Farman that we have requested G. F. Campbell Wood,—the well-known writer and authority on aeronautic history and statistics,—to write an article for "Aircraft" on the subject; it will be found on the next page.

What the Farmans Have Done

By G. F. Campbell Wood

WHAT have the Farmans done for aviation? It would require a good many pages to adequately answer the query but lack of space should not prevent some sort of summary of their rôle appearing here, at a time made appropriate by the announced probability of an early visit to America of Henry Farman in person.

Henry, Maurice and Dick Farman are three Englishmen, born in Paris, thirty-five to forty years ago. Their father is the well-known Parisian correspondent of a big London newspaper.

The Farmans have always been closely and professionally interested in the newer forms of locomotion and their connection with them extends over three distinct periods, in each of which they achieved both fame and prosperity.

When the pneumatic-tired bicycle first appeared some twenty years ago, the Anglo-French brothers were among the first to take up the novel pastime and sport.

Henry Farman's first great success in this line occurred in the Paris-Clermont road-race, where, although little more than a lad, he defeated the most famous professionals of the time; he then won the 100 kilometres track championship, and later formed, with his brother Maurice, the most renowned tandem bicycle team the world has ever known. The writer for one, well recalls the roar of welcome which swept around the Parisian vélodromes when the famous "équipe vierge"—the team unsullied by a single defeat—made its appearance at the hey-day of cycle racing.

When the motor-car first made its appearance, Henry and Maurice Farman were again to the fore; they will long be remembered as race-drivers, if their aeronautical successes do not too completely overshadow their performances on terrestrian vehicles.

In the great Paris-Vienna race of 1902, Henry Farman was first in the heavy-car class and the next year, came very near winning the Gordon Bennett Cup in Ireland—finishing a close third to Jenatzy and de Knyff.

In the eliminatory race to select the French team for the 1903 Cup race, he missed a turn, the car falling down a ravine, and Farman being kept from following it by the providential presence of a tree, the branches of which caught him as he went by. Farman looks upon his sudden swoop onto this aerial perch as his true début in aviation.

Henry was the first of the Farmans to become interested in flying machines. In 1907 he stayed out of the annual automobile Grand Prix race for the express purpose of giving his attention to the new sport of flying. In September of that year, at the wheel of the second successful Voisin biplane—the first one belonging to Delagrange—Farman made several short straightaway flights at Issy, outside of Paris, but did not attract universal attention in the latest sport of his selection until he unofficially broke the distance and duration records of Santos-Dumont which had stood for nearly a year.

A few days later, on October 27th, 1907, he made several official trials and beat the records three times in a single day, his final flight being nearly half a mile in 52"⅗. Farman was henceforth famous as an aviator; before the end of the year he had, for the first time in Europe, made flights exceeding a minute in duration and had also succeeded in making a turn. The greatest of his early aerial triumphs came however on January 13th, 1908, when he won the Deutsch-Archdeacon prize of $10,000 by flying one kilometre in a closed circuit; no subsequent feat of flying created such enthusiasm throughout France as this one; in fact the tremendous interest now manifested in aviation dates from this day.

A few weeks later he doubled this record and in May went to Belgium, where, at Ghent, he gave the first paid exhibition of flying. He here succeeded in carrying a passenger for over three-quarters of a mile thereby winning a wager made with several Parisian sportsmen, who claimed that the feat would not be accomplished prior to March, 1909.

Farman had already on March 2d, 1908, had the distinction of first carrying a passenger. At Ghent one of his passengers was a Belgian lady, the first woman to ever leave the ground in an aeroplane. On July 7th, 1908, Farman again broke all world's records by flying continuously for 20'19"3/5, thereby winning the Prix Armengaud for the first flight exceeding quarter of an hour in duration.

Farman then visited America where, sad to relate, his demonstrations of flying were neither understood nor appreciated by the general public: he returned to Europe much disgusted with his experience.

He found Wilbur Wright flying at Le Mans and was the only man who made any showing at all against him in his efforts to capture the Michelin Cup and the first Michelin yearly prize. In one of his trials he was up 44' 32", which constituted the record for European machines for over nine months.

On October 30th, 1908, Henry Farman again made history by accomplishing the first cross-country flight ever known: twelve miles in twenty minutes.

In the last two months of 1908 he made many experiments wih his Voisin using it at one time, with an added surface, as a triplane.

In 1909 Farman started building machines on his own account, and instructed several pupils, the first being Roger Sommer and Cockburn, the Englishman. Sommer early showed what could be done with a Henry Farman biplane by making a flight on August 7, 1909, of 2 hours, 27' 15", thereby being the first European to beat the Wright brothers world's duration records—an honor they have never recaptured.

The Gnôme motor had just come out at this time, having first been used early in June by Louis Paulhan on a Voisin machine. Farman quickly saw the possibilities of the new engine and at the historical Reims meet of 1909, he fitted one of these motors to his machine just in time, on August 27th, to compete in the Grand Prize for distance.

Directly the new engine was in place, Farman rose in the air and never alighted until after nightfall—3 hrs. 15 mins. after he started. He thereby broke all world's records for distance and duration and captured the biggest prize of the greatest meet ever held.

Farman had flown very close to the ground on this occasion so as to go the greatest distance possible by shaving the pylons. Many spectators after witnessing the monotonous and almost endless performance, thought that he would not or could not go higher; two days later he got second place to Latham for altitude, soaring 400 feet, a tremendous height in those days. He also captured first prize in passenger-carrying, with two passengers up, and generally was the most successful contestant of the Reims meet of 1909.

Later in the year he went to England and made some remarkable flights at Blackpool, where he broke the English duration record. This was the first meet at which Paulhan flew on a Farman biplane, a type of machine on which he was, later to achieve such success. On his return to France, Henry Farman went after the Michelin Cup and the distance and duration records. He succeeded in every point; won the Michelin Cup for 1909, broke the distance record with 144 miles and the duration record with 4 hrs. 17' 53"⅖. Notwithstanding many attempts made by his rivals in the last days of the year, these figures remained unequalled.

With the beginning of 1910 Farman started turning out pupils in earnest. The first was Van den Born, the Belgian, who learned to fly in three days and later broke the passenger-carrying duration record. The next was Efimoff, the Russian, after whom Frey, Kinet, Crochon, Christiaens, Duray, Rawlinson, Chavèz,

Grahame-White, Dickson, Camermnan, Edmond, etc., etc., started to drive Henry Farman biplanes. During the first months of 1910 every prize of importance at every meet held was won by Farman biplanes to say nothing of such great cross-country prizes as London-Manchester, in which only these machines apparently dared to compete. The dramatic struggle between Paulhan and Grahame-White for this prize is too recent history to dwell upon. Paulhan was the victor but Grahame-White's Farman carried him to many victories later to reward him for this defeat, and has never been replaced in his affections by his swifter and more sensitive mounts. At Los Angeles, Cannes, Nice, St. Petersburg, Verona, Lerona, Lyons, Angers, Tours, Rouen, Farman machines carried everything before them, while at Budapest and Reims they held their own against the newborn rivals, the speedy Blèriot and Hanriot monoplanes.

Louis Paulhan took his Farman throughout the United States and at Los Angeles broke the world's altitude record; he later sold it to C. B. Harmon, who broke Paulhan's American duration record with it, for the first time exceeding two hours.

At about this time Maurice Farman, who, for the previous year had been turning out experimental machines of great promise, revealed himself as a worthy rival for world-honors to his famous brother.

From Buc, near Versailles, where he had his school, came Tabuteau, Renaux, Barra and many others who were to bring fame to the younger brother's product.

It was thought that monoplanes would carry all before them in the final big events of the year but the Farman brothers who, up to now had been rivals, joined hands with the result that they captured all the big prizes in their final campaign of 1910. The great Paris-Brussels-Paris prize of 100,000 francs went to Wynmalen on a Henry Farman, with eight hours to spare, and notwithstanding many efforts made, no other contestant even succeeded in covering the course. The great Michelin prize of 100,000 francs, offered to the man who, with a passenger, would fly from Paris to the summit of the Puy-de-Dôme within six hours, was won by Eugène Renaux on a Maurice Farman after one of the most splendid flights of which the history of aeronautics has record. The only aviator to come near winning the prize outside Renaux was Chas. Weymann, the American, who drove a Henry Farman. Other prizes recently won by Farman machines are the military cross country prize in which the world's duration passenger carrying record of 4 hrs. 3 mins. was put up, the Coupe Femina won by Hélène Dutrieu, who as a woman, showed the extraordinary ease with which this machine could be driven by making a continuous flight, on a winter's, day of 2 hrs. 32′.

The Farman machine has also had its share of over-sea records, Mr. Loraine's feat by flying across the Irish Channel on a Farman remaining the record by several miles for many months.

If other machines can claim to hold their own against the Farman for speed and altitude there can be no question up to the present that the Farman machines have shown themselves superexcellent as regards endurance.

The *Daily Mail* Prize for the greatest distance flown across country was won by Paulhan on a Henry Farman; Grahame-White on a Farman was second. The Michelin Prize of 1910 in which a dozen aviators of world-wide prominence took part narrowed down to a struggle between Tabuteau on a Maurice Farman and Henry Farman himself on one of his own machines Tabuteau's machine was faster and he won the big prize with the astounding distance of 583 kilometres, which at this day is still the world's distance record, but Henry Farman achieved a feat in the way of consolation, which is even more marvellous: he succeeded in staying above the ground in a heavier-than-air machine for a continuous period of 8 hrs. 12′ 47″2/5 and would have continued longer had not the shortness of the winter's day compelled him to return to terra firma.

In altitude the Farman machine was the first one to exceed a height of one and a half miles above sea level. It also holds the world's altitude record for passenger-carrying with 4,700 feet.

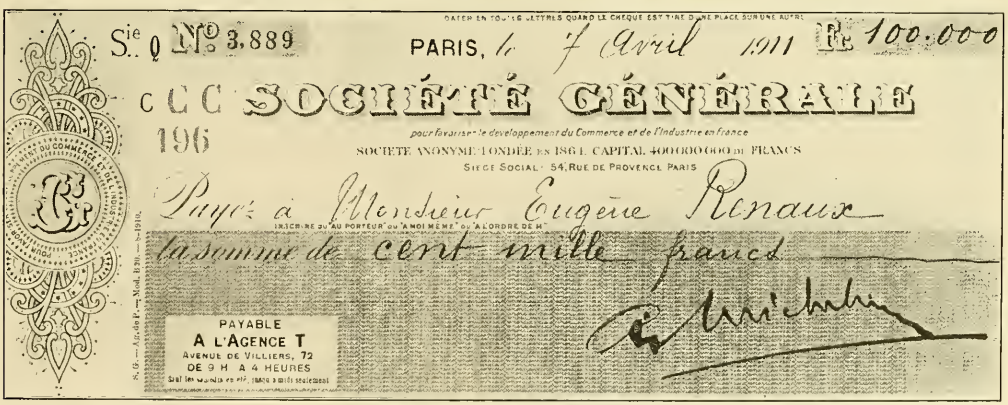
In the military manoeuvres held last year in France the Farman machines showed themselves to be about the best military machine as yet turned out, as much in reliability, stability and weight-carrying as in capability and speed of ascension.

The tremendous advantage to the pilot of being able to see immediately beneath him also makes them favored by the military authorities as compared to their single plane rivals.

This year the French Army will have at least sixty Farman biplanes at its disposal and the activity displayed at the military schools in France at the present time must be seen to be believed.

The Wright brothers were the first to fly: the Voisin brothers were the first to turn out practical European machines: but to the Farman brothers must belong the credit of contributing more to the speed of Aviation's progress in the last three years, than to any other individual or association.

One of the Numerous Big Checks Won by a Farman Biplane



Eugene Renaux the aviator who on March 7th won the Michelin Grand Prize of $20,000 in cash for his remarkable flight from Paris to the summit of the Puy-de-Dome at Clermont-Ferrand on a Farman biplane, received the above check for that amount from the Michelin Tire Company, on April 7th. Renaux received his pilots license only the day before his successful flight, prior to which he was practically unknown.

The New Sport of Water-Flying

By Henry A. Wise Wood

OUT of the airplane at last has come the universal vehicle—one that flies, trundles, and swims. No other contrivance of man is self-propulsive ashore, afloat, and aloft. No other, in fact, can utilize more than one of the mediums of locomotion; the hydraeroplane commands all three. The work of Curtiss at home, and of Fabre and others abroad, has made this possible. It is the most important advance in aeronautics since the Wrights' discovery and application of the principle of warping. Let us attempt to forecast its influence upon the sport of flying. One of the cleverest flyers of the treacherous Demoiselle has stated that in the beginning he invariably chose to fly over water, which, he says, proves a safer medium than ground in the event of a low fall, and affords less tumultuous atmospheric conditions. And his belief that it is safer and easier to fly over water than over land seems to be generally accepted. Here we have factors that immediately become assets of the hydraeroplane; its danger and difficulty are less, especially for the beginner. These are but minor advantages, however, for danger nowadays is a cheerfully accepted possibility of sport, while the difficulties of acquiring air-skill are exceedingly short-lived. Orville Wright recently astonished the writer by saying that any clever man whose flights have aggregated no more than two hours, should be ready for exhibition work. But the advantage which comes to the airplane with Curtiss' wheeled pontoon rests upon a very much broader foundation. Its most striking feature lies in the fact that a huge, hitherto unusable, area of the earth's surface has been added to the airplanes' normal range of action; while the looked-for trans-Atlantic passage assumes a saner aspect, and is at once brought appreciably nearer. To many it will seem that the hydraeroplane at best is but a smooth-water affair. Such need only be reminded that where three brief years ago the airplane was a bird of the still air, out only at evening when the wind is low, it is already assuming qualities of strength, power, and controllablity which will shortly make it more nearly akin to the stormy petrel. Man has a way of turning that which is possible—and worth while—into that which is easily practicable; so, given the hydraeroplane afloat on a smooth sea, we soon shall find it adapting itself to ever more difficult conditions, until it shall have become a safe and serviceable craft alow or aloft.

The place that such an aircraft shall take in sport, it seems to the writer, will largely determine the line and rapidity of its evolution into a useful vehicle. Therefore it is important to estimate its sporting value. Men are more lavishly extravagant in providing their pleasures than their necessaries,—which gave rise to the rapid advance of the automobile, with its phenomenal development of the high-powered light-weight propulsive machinery which has made flying possible. Thus the two recent revolutions in transportation, represented by the pleasure-car and the airplane, clearly were born of and promoted by the love of sport,—which, despite the lugubrious prophecies of those who consider as wasted the money spent on recreative appliances, is a healthy influence working to a serious and useful end.

In order to realize the extent of the airplane's new possibilities for pleasure, which have come with the over-water type, one need only picture what, in view of Curtiss' accomplishment, may be expected shortly to become a usual Sunday's scene, off any of our shore resorts: Hydraeroplanes—"triads," Curtiss calls them—are seen trundling under power from sheds ashore to the water; others, afloat at their moorings, their motors tarpaulined, are riding under bare spars; and others, with tarpaulins stowed and wing-cloths set, are being got ready for flight. Still others, a passenger or two aboard, their screws flashing in the sun, are scudding for open water; while awing and wheeling overhead, or off singly or in fleet, are to be seen still other glistening triads prepared for a morning's oversea cruise. To a lover of the sea such a picture would indeed seem a return to the spirit of the days of white canvas, ere the "puff boat" had eaten the heart of the sailorman. The words, *wind* and *leeway; spar-outrigger,* and *stay,* come again into use, and the compass with its new duties takes on new dignity. To alight on the sea; to arise from it; to be upon it or above it at will; to command equally the adjacent shore, and move hither or thither over both as the fancy listeth, is surely magnificent sport. And such indeed will be the new sport of Water-Flying,—a mere outline of the possibilities of which is sufficient to thrill those who love vast spaces, and yearn for the physical freedom which comes of the open sea.

The Aeronautical Manufacturers' Association

A PERMANENT organization of the Aeronautical Manufacturers' Association was formed at the Hotel Cumberland, New York, on April 29. A large and enthusiastic gathering of manufacturers got together during the evening and ratified the election of officers by the Board of Trustees earlier in the day.

The officers elected were: Ernest L. Jones, president; Alfred W. Lawson, vice-president; F. D. Wood, secretary, and A. J. Inderrieden, treasurer.

The membership committee appointed for the first year is: J. R. Westerfield, of the Emerson Engine Company; Jerome Fanciulli, of the Curtiss Aeroplane Company; Hugo C. Gibson, of the E. W. Bonson Company; Lyman J. Seely, of the Elbridge Engine Company, and S. E. White, of the White & Wood Company. This committee received twenty-three personal applications and several proxies at the meeting.

Those making application for membership were: The Emerson Engine Company, of Alexandria, Va.; P. Brauner & Co., of New York; The Volanaut Construction Company, of Long Island; Ellsworth Gaskell, of New York; C. G. Goddard, of New York; The E. J. Willis Company, of New York; The International Aero Construction Company, of Woodhaven, N. Y.; Messrs. C. and A. Wittemann, of Staten Island; The Curtiss Aeroplane Company, of New York; E. W. Bonson, of New York; F. P. Shneider, of New York; The Scientific Aeroplane Company, of New York; W. C. Durgan, of Syracuse, N. Y.; The Tiger Cycles and Aeroplane Company, of New York; Henry Walden, of New York; Aeronautics Press, of New York; The White and Wood Company, of New York; The Aeronautic Supply Company, of New York; R. O. Rubel, Jr., of Louisville, Ky.; The Lawson Publishing Company, of New York; The Aero Publishing Company, of Philadelphia, Pa.; The F. T. Sanford Automobile Company, of New York; The New York Aeronautical Supply Company; The Elbridge Engine Company, of Rochester, N. Y., and Aviation Publishing Company, of Los Angeles, Cal.

A committee consisting of Hugo C. Gibson and Dr. Walden was appointed to investigate the subject of insurance to aviators and all those directly interested in aviation.

The meeting was a success in every particular and the new organization begins life in a most promising manner. There is little doubt that with good management it will eventually grow to huge proportions and prove of inestimable service to the development of the aeronautical industry in this country.

Tests of the Resistance and Strength of the Wings of the Breguet Aeroplane

By Louis Breguet

ON Saturday, March 18th, 1911, the following tests were made at the Bréguet Works at Douai in the presence of Colonel Boutieaux, who came specially from Chalais-Meudon to witness them. The question was to test the strength of the wings and of the stays ordinarily used in the Bréguet aeroplane.

The adopted method for such a test was the one advocated by Mr. Gabriel Voisin, viz., a pair of wings are placed upside down with all their wires and stays, and then progressively loaded with sand in such a way that the repartition of that weight is similar to that of the vertical component of the air resistance in flight.

The patented wings of the Bréguet aeroplanes are of the "supple" or "flexible" type; their frame is formed by a very strong steel tube on which is attached the ash ribs which carry the fabric.

The ribs are fixed to the tube by the means of tubular springs, which give the wing its peculiar flexibility, since the ribs can oscillate around the tubes independently of the suppleness already due to the elasticity of the back parts of the rib.

The main tubes of the wings are fixed to the framework of the aeroplane by a patented form of coupling which allows the angle of indicence to be regulated and the wings to be folded alongside the fuselage (which design forms one of the chief patents of the Bréguet machine).

These couplings are strongly screwed on steel joints placed at each end of a vertical steel tube of 1 7-12 inches diameter, which is part of the main framework of the aeroplane itself.

THREE-QUARTER VIEW OF TWO-SEATER MILITARY TYPE BREGUET SHOWING POSITION AND MOUNTING OF THE R. E. P. MOTOR.

Scheme of the Tests.

For this test, a similar vertical tube was braced up to a wall of the works.

Moreover, two bolts (similar to those ordinarily used on the aeroplanes) were passed through the wall and were used for fixing, with the same stays and at the same angles, the several cables and wires which connect the wings to the framework.

To represent the resistance of the air on the wings when flying, two horizontal cables were bound to the main steel tubes of the wings at their connection with the vertical strut, and they were pulled back by counterweights.

To facilitate the regular distribution of the sand on the wings their length was divided in portions of 2 ft. 5 inches so that each portion had an area of 1 sq. meter (10.76 sq. ft.).

On each of these portions was poured a quantity of sand corresponding to the loads for which the wings had to be tested.

The sand was then carefully distributed in such a way that the centre of gravity came about one-third of the chord where the centre of pressure is when flying.

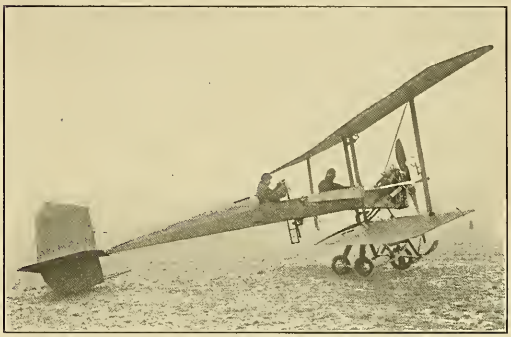
Determination of the Loads.

The tested wings were of the standard type as used on the 1910 models.

The area of the wings were respectively of:

83 sq. ft. for the upper wing.

67.8 sq. ft. for the lower wing.



SIDE VIEW OF THE TWO-SEATER BREGUET FITTED WITH R. E. P. MOTOR.

The total area of this pair of wings (one-half only of an aeroplane) was thus 150 sq. ft.

The dead weight of the aeroplane itself is 1,057 lbs., and the normal weight it carries is 530 lbs. (aviators, fuel and oil).

The total weight is thus 1,587 lbs.

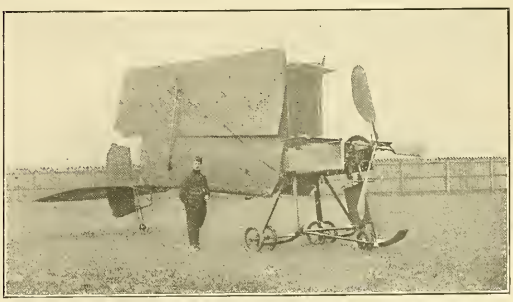
The tail of the aeroplane carries its own weight, viz: 77 lbs. and the small surface placed between the upper wings above the fuselage carries about 33 lbs.

The wings therefore carry only: 1,587—(77-33)=1,477.

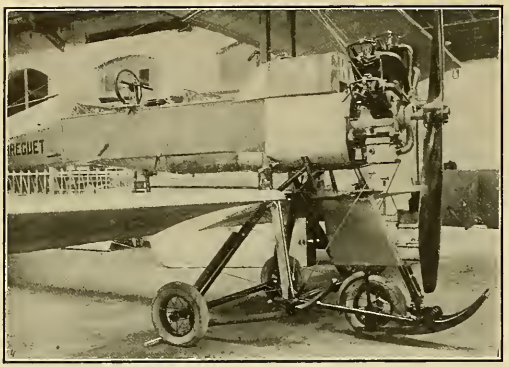
The tests being made on one-half of the wings only, the corresponding load is 738 lbs.

The weight of this pair of wings complete with wires, cables, stays and struts is 123.5 lbs. that is to say exactly 8.8 lbs. per sq. met. (0.818 lb. per sq. ft.).

For determining the load C carried by the wings according to the weight put into the fuselage, M. Bréguet used the formalué of the "Commission de Navigabilité Aérienne" which is:



THE BREGUET AEROPLANE WITH WINGS FOLDED FOR TRANSPORTATION OR STORAGE IN SMALL PLACES.



DETAILED VIEW OF THE UNIQUE LANDING-CHASSIS OF THE BREGUET AEROPLANE. THE FRONT WHEEL IS CONNECTED TO THE REAR RUDDER AND STEERS THE MACHINE WHEN ON THE GROUND.

$$C=n(P-p)-P$$

C representing the load supported by the wings;
n the number of times the normal load is put on;
P the normal total weight of the aeroplane;
p the weight of the wings.

One thus arrives at the following figures:

Number of normal loads used: "n"	Corresponding Weight of sand Kilogs per sq. met.	lbs. per sq. ft.
1 Normal	16	3.27
2	36	7.35
3	56	11.45
4	76	15.54
5	96	19.62
5.2	100	20.44

The tests were brought to an end when n=5.2 on account of lack of sand. On examining the wings, it was found that they had undergone no strain whatever.

Results.

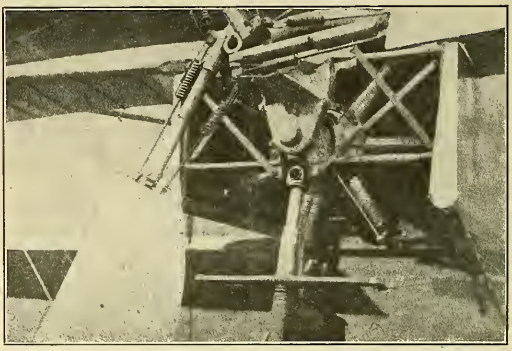
The height of several parts of the wings above the ground had been carefully noted before beginning the test, and the wings were set at their normal angle of incidence: 20%.

Under the load of 20.44 lbs. per sq. ft. no distortion nor flexing was observed.

Every stay was found to be perfect, and the angle of incidence had by reason of the flexibility of the wings, come down to 5%.

The cables representing the head resistance were pulling at 310 lbs. which is by far a bigger figure than would ever be reached in actual flight.

After having taken the sand away from the wings, the main tube of the upper wing was examined. It was found to have dropped 15 m/m (0.6 inches) at the point where it takes the strut, which is 10 ft. 4 in. away from the frame work of the aeroplane, and it seems certain that it was due to the fact that under such a big load, the steel ribbon which carries the whole load of the wing had moved into its normal position in its fastening.



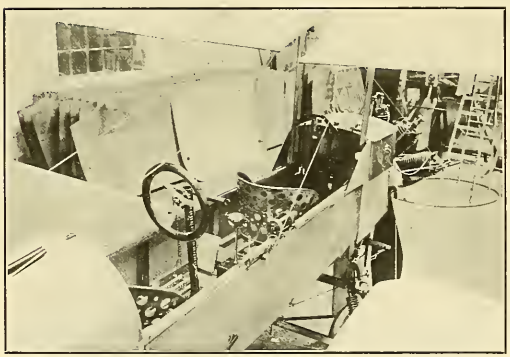
Detail view of the latest Breguet, showing how a Gnome rotary engine is used to drive a Breguet flexible propeller at reduced speed. The blades of the Breguet flexible propeller are hinged to the boss, and are anchored by springs so arranged as to allow the blades to fold back a little towards the engine under excessive pressure. The purpose of this mechanism is to diminish the stresses due to gyroscopic and centrifugal force resulting from sudden changes of the attitude of the machine in flights.

During the test, the tension of every wire cable was examined by a special process, and it was found that the work was normally distributed between them.

Conclusion.

In short: Neither the wings, stays, cables nor wires had sustained any strain.

After taking away the load, every part returned to its normal shape and the best proof of the strength of those wings is that this very pair has since been fitted on an aeroplane.



VIEW SHOWING THE SEATING ARRANGEMENTS, POSITION OF GASOLINE TANK AND R. E. P. MOTOR, CONTROLS, COMPASS AND OIL PUMP.

The Breguet Aeroplane

By W. H. Phipps

One of the most interesting and orginal aeroplanes ever constructed is the new machine designed and built by L. Breguet. Although commonly called a biplane, L. Breguet has termed it a double monoplane owing to the fact that the wings the attached and braced to the frame in the manner generally used on monoplanes. In fact, the machine combines the best principles of both types. It possesses several very interesting features; the wings, which are flexible and also capable of being folded back against the frame; the landing chassis and the universal tail.

The Breguet aeroplanes are mounted with either Gnôme, R. E. P. or Renault motors, but all are about the same type. Below we append a detailed description of this interesting machine.

DESCRIPTION.

Main Planes.—The spars consist of steel tubes of large diameter passing through the thickest part of the planes about one-third of the chord from the leading edge.

The ribs are elastically attached to these spars by a patented fastening, and it is to this "Supple Wing" construction that the Breguet Aeroplane owes its extraordinary steadiness and automatic stability. The planes are double surfaced and the leading edge is bound with sheet aluminum. The angle of incidence can be modified with unusual ease. There are only four steel tubular struts connecting the upper and lower planes, the two mid dle ones serving to carry the fuselage.

The steel frame being very strong in itself requires but little wire bracing, and every wire used is calculated to withstand ten times the strain it would normally he called upon to bear.

While getting thereby a tremendous margin of safety, the scarcity of wires and general neatness of design reduces resistance to a minimum.

The Tail.—The framework of the tail is of steel tubing; it is very large and of the cruciform type. It is hinged at the end of the fuselage by a universal joint and does duty of both rudder and elevator. It is held in its normal position by springs which allow it to act to a marked degree as an automatic balancer.

The Fuselage.—The fuselage is boat-shaped and is attached to the two centre struts about a foot above the lower planes. It is built of tubular steel,

pressed steel girders and ash, and its shape is such that it offers the least possible resistance..

The Control.—The patented control system consists of a wheel mounted on a pivoted lever. The backwards and forwards movement of the entire column operates the elevator; the sideways movement warps the rear edge of the upper planes, and the rotation of the wheel steers the machine. The latter operation also governs the front wheel of the landing Chassis so that when on the ground the machine can be steered like a motor car.

On the Military models, a supplementary control is fitted in front of the mechanic's seat, thus allowing the driving to be taken in turns.

Every controlling steel cable is doubled.

The Landing Chassis.—The landing gear consists of three stout wheels each protected by skids. The two main wheels, placed on either side of the centre of gravity, are fitted with patent "Oleopneumatic" shock absorbers. The steering wheel and front skid, whose chief duty is to protect the prow of the machine, have a spring suspension.

Engine and Propeller.—The engine is mounted on a bed in steel tubes formed by the front of the fuselage, and drives a specially designed two bladed wooden propeller, or a thee bladed metal one.

Portability.—By means of an ingenious device the main planes can be folded alongside of the fuselage so that the entire aeroplane occupies but a space of about 12 ft. by 30 ft. In this form, the machine can travel on any ordinary road and does not necessitate a special shed. as it can be housed in places such as farm buildings, stables, etc., since large doors which are essential to allow the passage of an ordinary type of aeroplane are not necessary. The folding or opening out of the wings can be done by two men in about 15 minutes, and this operation in no way disturbs the accurate setting of the planes.

During a trial recently made in the presence of a French Military Committee at the Aerodrome of La Brayelle, near Douai, the complete folding has been made in five minutes, and the complete opening out in eight minutes.

Wireless Telegraphy.—On account of its metal construction, the Breguet Aeroplane is specially adapted for wireless telegraphy, as it forms a far better earth than the ordinary wood constructed machines. On one of the Military Cruiser models (G2 type), special provision has been made for carrying the necessary receiving and transmitting instruments.

SPECIFICATIONS.

"Cruiser" type L-1. (Special Military model as supplied to French Ministry of War).

Seating Capacity.—3 including pilot.

Engine.—Renault 8-cylinder 60 h.p. turning at from 1,600 to 1,800 r.p.m., or Gnôme 70 h.p.

Propeller.—Two-bladed wooden, or three bladed metal indirect drive, turning at from 800 to 900 r.p.m.

Span.—Upper plane, 45 ft. 9 in. Lower plane, 28 ft. 8 in.

Chord.—5 ft.

Overall Length.—28 ft.

Height.—10 ft 6 in.

Total Supporting Surface.—365 sq. ft.

Area Occupied with Wings Folded.—11 ft. 9 in. by 28 ft.

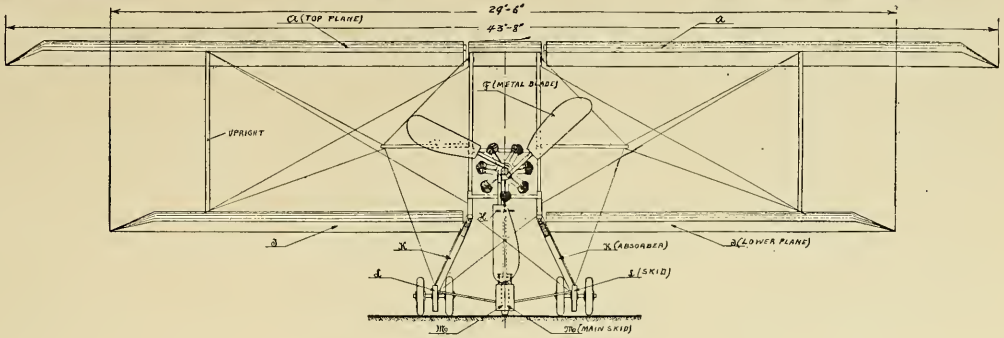
Weight of machine complete, without passengers nor fuel or oil, 1,200 lbs.

Speed.—53 miles per hour.

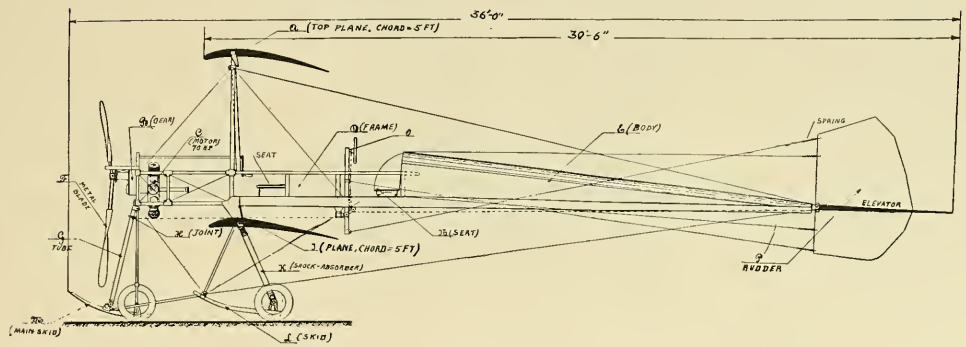
Fuel Carrying Capacity, with two people aboard, for 320 miles.

Height attainable in 15 minutes, with total weight aboard, 1,000 ft.

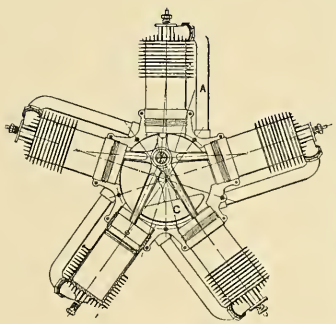
Weight Carrying Capacity, 660 lbs.



-FRONT VIEW-



-SIDE VIEW-



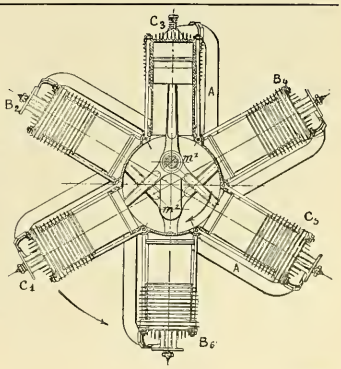
5 CYL. 1911 TYPE R. P. M. 1200; BORE 4 INCH; STROKE 5 IN.; WEIGHT 154 LBS.

The Anzani Motor

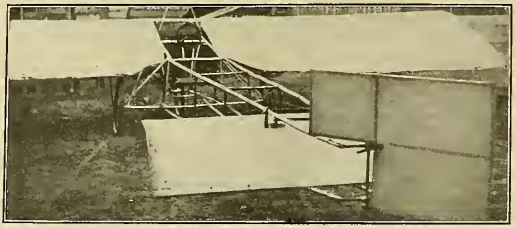
The Anzani air-cooled motors are being produced in three types for 1911. A 3-cylinder 30 h.p., a 5-cylinder 50 h.p. and a 6-cylinder 60 h.p.

The motors have been much improved and lightened for 1911 and all are fitted with automatic oiling, high tension magneto and throttle control. In the 3-cylinder 1911 motor the angle of the cylinders has been changed to 72 degrees instead of 60 degrees. This change in angle was made in order to improve the equilibrium of the motor and also to permit of ignition by magneto.

Another improvement is the eliminating of valve chambers and placing the valves at the base of the cylinders, stems upward with the exhaust in front, and admission in the rear. The advantages of this system are: First, saving in weight of 1300 gms. per cylinder; second, the exhaust in front receives all the wind when moving forforward; third, the inlet piping is shortened and straight, and therefore does not admit any condensation as before, nor does it miss in winter time at a great height; fourth, the inlet valve, guided better and pushed straight, and not sidewise as before, cannot get stuck; fifth, last and above all, the cylinder heats without valve chambers, and increases the H. P. from 15% to 20%.



6 CYL. 1911 TYPE 60 H. P. R. P. M. 1100; WEIGHT 172 LBS.



BURGESS-WISEMAN MONOPLANE BUILT IN CLEVELAND, O.

CLUB NEWS

By G. A. Haviland

The Aeronautical Society

The banquet of The Aeronautical Society held in the Hotel Astor, New York City, April 27, 1911, was one of the most notable events of its kind ever held in the United States. More than eight hundred diners sat at the tables and several hundred ladies, including Mrs. William H. Taft, wife of the President, were seated in the sixty-four boxes of the grand ballroom and banquet hall. It was unquestionably the largest aeronautical indoor function ever held anywhere in the world, and it was the first time in history that the chief executive of a great nation personally attended an aeronautical event. The speakers were:

Hon. William Howard Taft, President of the United States.

Hon. William Randolph Hearst.

Brigadier General James Allen, Chief Signal Corps, U. S. A.

Rear Admiral Robert E. Peary, discoverer of the North Pole.

Thomas A. Hill, director, The Aeronautical Society.

Prof. W. R. Turnbull, representative, Aeronautical Society of Great Britain.

Dr. Charles D. Walcott, Secretary, Smithsonian Institution.

Captain Washington I. Chambers, U. S. N.

Gutzon L. M. Borglum, sculptor.

Dr. Willis L. Moore, Chief, United States Weather Bureau.

Hudson Maxim, Toastmaster.

There were present representatives of the Aero Club of Amrica, Royal Aero Club of the United Kingdom, Aero Club of Sweden, Aero Club of Italy, Aero Club of the Netherlands, Aero Club of Australia and The Aeronautical Society of Great Britain. Also members of the Aero Clubs of France, Austria, Belgium and Spain and The Aeronautical Society of Canada.

Aero Clubs of Pennsylvania, New York, Jacksonville, Washington, Dayton, Rochester, Buffalo, New Jersey, Ohio, New Orleans, Long Island, Springfield and The Aeronautical Recreation Society of Philadelphia, Aero Scientific Club of Washington, The Intercollegiate Aeronautical Federation, The Harvard Aeronautical Society and The Southwestern Aeronautical Association.

The Long Island Automobile Club, Hebrew Technical Institute, New York Electrical Society, Chemists' Club, St. Lawrence University, Columbia University, New York University, The Brooklyn Yacht Club, The Waterway League, The Minnesota Society, The Richmond County Automobile Club and The Penataquit Corinthian Yacht Club.

The banquet was planned for the purpose of stimulating greater interest in aeronautics in the United States and was a great success in every sense of the word. Mr. Hearst was presented the first award of The Aeronautical Society, a medal struck in gold, for exceptional services during the year 1910. The award was voted by the directors of the society last December, in consideration of Mr. Hearst's public-spirited offer of $50,000 for the first American transcontinental flight.

Plans for a national monument at Washington, D. C., in honor of the famous flyers recently killed, and others who meet a similar fate, were announced.

It was also announced that negotiations for the endowment of an Aeronautical Chair in one of the leading universities, and a national laboratory for Aeronautics, were being pushed as rapidly as possible under the auspices of the society, and an appeal was made to all organizations interested in the science and sport of aeronautics to open correspondence with the society with a view to co-operative mutual development, to assist in the standardization of construction for purposes of safety, to standardize rules of aeronautical sport and flight for purposes of uniformity and in the interests of fairness to investigate and determine best methods for promoting proper legislative enactments, to crush illegitimate aeronautical enterprise and to foster discriminate investment and development along progressive lines.

There were many good speeches made which AIRCRAFT for want of space, is unable to publish. The following, however, is the address made by Mr. Thomas A. Hill, director of the Aeronautical Society, setting forth some of the aims of the organization:

Mr. Toastmaster, Gentlemen and Ladies:

I am sure, after all the intelligent opinions you have heard here to-night, it will be a very easy matter for you to go home, build a flying machine and take a trip down Broadway.

THOMAS A. HILL, DIRECTOR OF THE AERONAUTICAL SOCIETY.

I propose, in the few words I have to say, to try to point out in my own way, some of the things which I believe to be necessary for the development of the art. It is well enough to talk about future possibilities in aeronautical development, but the question is how to reach them. I agree that there is a great deal of interest in the sporting side of aeronautics, and it is well that it is so. It has its place; it is a very important part of the development; so, too, is the scientific side of it.

In this connection it will interest you to know that The Aeronautical Society hopes soon to be able to announce the endowment of an Aeronautical Chair in one of our leading universities and possibly a great Aeronautical laboratory. This, we believe, is assured through a great philanthropist, whose name I am not privileged to make public to-night.

It is the intention of the society to present a medal every year to the one who has rendered the most signal service to aeronautics during that year; and we propose to award that medal according to the vote of the directors. It was presented this year to our guest of honor this evening, Mr. William Randolph Hearst, whose public-spirited offer of $50,000 to the first to fly across the American continent was undoubtedly the greatest incentive for the year 1910.

Regular lectures of the society are given twice a month upon engines, propellers, aeronautical construction work and other kindred subjects. We maintain an aerodrome, and have purchased motors and various other equipment in so far as the means of the society will permit.

There are many things to be understood of the various types of flying machines, and for this reason we try to bring out discussion from those engaged in practical work. We believe that by so doing we secure the most reliable data, and that the proper way for development is along these lines. All organizations interested in the science and sport of aeronautics should open correspondence with the society with a view to co-operative mutual development, to assist in the standardization of construction for purposes of safety to standardize rules of aeronautical sport and flight for purposes of uniformity and in the interests of fairness, to investigate and determine best methods for promoting proper legislative enactments, to crush illegitimate aeronautical enterprise and to foster discriminate investment and development along progressive lines.

I believe, and I know a great many others believe, that this work would be more rapidly developed if there were more co-operation among the various organizations interested in this work. Hundreds of thousands of dollars are being wasted for lack of proper direction. There should be some working understanding, and aeronautical clubs and societies should be amalgamated in some manner to promote this work systematically and economically.

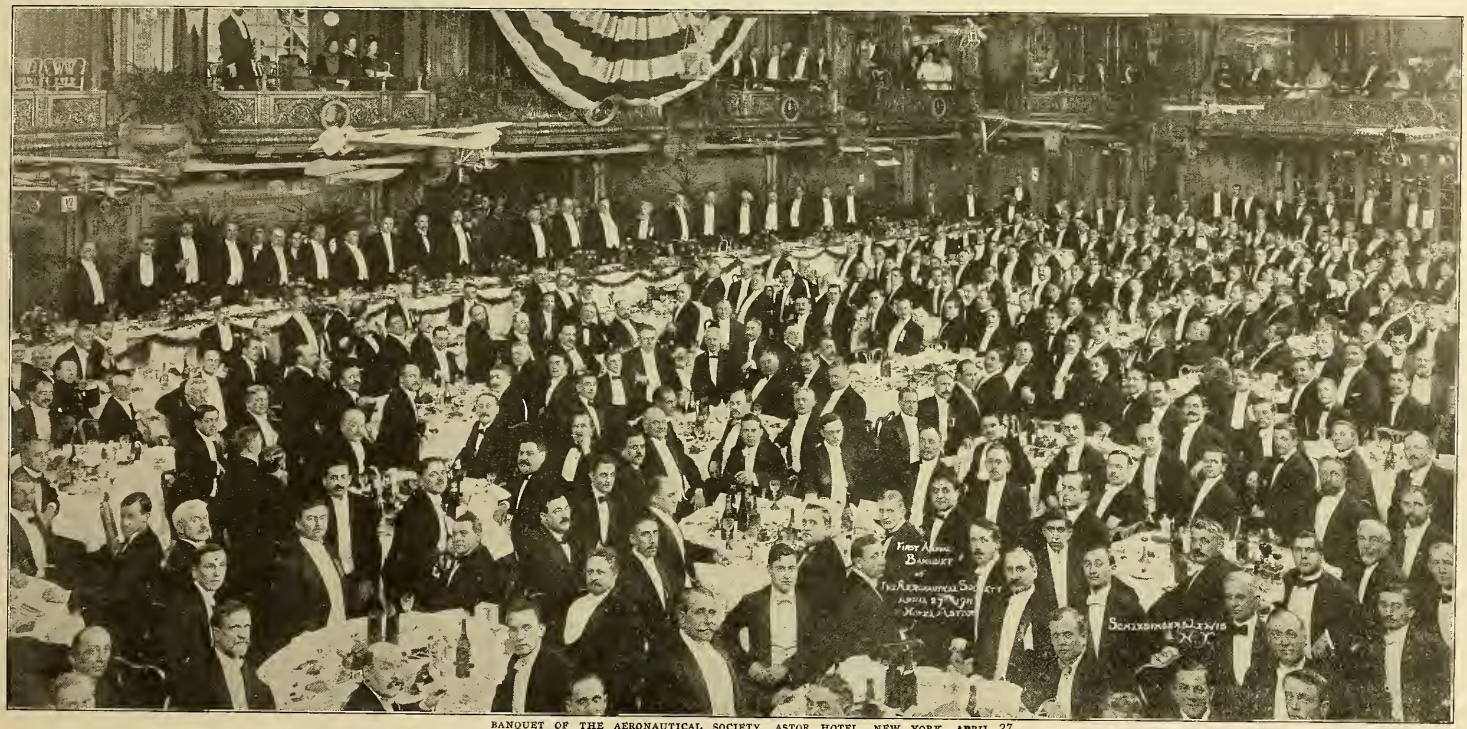
There should also be some committee or section to give attention to advertisers who offer for unreasonably small amounts to furnish standard aeroplanes; they, of course, catch many of the uninitiated who always are an easy prey to sharks, and this sort of thing intimidates legitimate prospective interests.

Then there are special lines of work which should be encouraged. One of the greatest difficulties of the beginner has been to obtain proper flying ground. You all remember Mr. Curtiss. Hardly two years ago this society purchased the first aeroplane he ever sold. Mr. Curtiss at that time could scarcely go into the air and make a turn at Morris Park. We all know what remarkable things he has done since. He also developed the water machine sometimes called the hydroplane, and it is possible that this is going to be the solution of the difficulty of aviators in trying to find proper places to fly. There is plenty of open water that could be used for this purpose, while it is difficult to secure suitable landing places on the solid earth, especially near the big cities.

Now, gentlemen, the kind of work we are engaged in promises a great future, but requires active support and co-operation. We want you to feel that you are always welcome at the rooms of the society and we hope you will become interested and attend the lectures.

The development of the aeroplane and its manufacture has assumed vast proportions. This is especially true in Europe, even much more than in the United States. If you will investigate the facts, you will find that there are quite a few French concerns employing upwards of 500 men in the manufacture of aeroplanes and motors and propellers. Last season alone, more than a million and a half of francs were expended in France for crates for aeroplanes. In the United States development has been comparatively very small.

We intend to investigate and promote all the phases of this very interesting science and will know more about it in the future. Come to our lectures and be one of us—you will all be cordially welcomed.



BANQUET OF THE AERONAUTICAL SOCIETY, ASTOR HOTEL, NEW YORK, APRIL 27.

Those present were: Hon. John J. Fitzgerald, Dr. John Henry MacCracken, Hon. Ernest R. Ackerman, Hon. Timothy L. Woodruff, Hon. J. S. Martine, General Benjamin F. Tracey, Hon. James M. Beck, Arthur Brisbane, Esq., Hon. John W. Goff, Lee S. Burridge, Esq., Hon. Nathan Straus, Pierre S. du Pont, Esq., Maj. A. W. Butt, Col. John Jacob Astor, Hiram Percy Maxim, Esq., Chas. E. Abbott, William N. Abee, Chas. E. Acker, John D. Adams, Dunbar B. Adams, Lewis R. Adams, Herrick Aiken, L. P. Alford, James M. Anderson, W.B. Armstrong, Geo. E. Armstrong, Jr., J. Loring Arnold, R. F. Arnot, N. Arrowsmith, Edward Ashforth, A. T. Atherhold, E. Atkinson, Herbert Baker, J. W. Ball, Arthur J. Baldwin, Thos. S. Baldwin, O. F. Bancroft, W. E. Banks, H. M. Barksdale, Alpheus F. Barnes, Dr. Barney, E. C. Barrett, W. S. Barstow, Stanley Y. Beach, Anson McCook Beard, Douglas Beardsley, David S. Beasley, Jr., Geo. W. Beatty, Chas. B. Beckwith, S. F. Beckwith, Curtis Bell, Peter Bentley, B. Bowman, Geo. A. Bradt, S. Brauner, P. Brauner, Eug. V. Brewster, J. D. Brown, Walter E. Brown, Geo. J. Bryan, B. A. Bullock, Henry J. Burchell, James Burchell, Thos. H. Burchell, W. Starling Burgess, Wm. Wallace Burnham, Geo. H. Burr, F. C. Burridge, James Butler, W. H. Button, Harry Buxton, S. T. Cameron, Wm. M. Campbell, Frank Canby, Allen A. Canton, F. Capdavilla, Macy Carhart, Francis X. Carmody, James Carruthers, R. R. M. Carpenter, J. M. Carples, Douglas P. Carritte, J. P. Carritte, P. Carter, J. M. Ceballos, Clarence Edw. Chapman, M. S. Chapelle, Fred. Charavay, John Lewis Childs, E. N. Chilson, Chas. Chudleigh, W. C. Church, John Holly Clark, Wm. P. Clyde, Wm. P. Clyde, Jr., Frederic B. Cochran, T. R. Coffin, Howard A. Colby, Geo. T. Colter, Louis R. Compton, S. D. Conger, Frank A. Connable, G. A. Cooper, R. E. L. Costan, M. A. H. Courmettes, J. W. Cox, J. S. Coxey, William Crawford, Byron Creamer, Preston Creighel, Harris N. Crist, Ernest Crowhurst, Frank Daniels, Jr., Lawrence Dare, Tmomas Davis Day, Ashby Deering, J. R. De Lamar, Laban W. Dennis, Henry Irving Dodge, C. Carle.on Dominick, R. J. Donovan, Baron d'Orcy, Felix Doubleday, F. N. Doubleday, Nelson Doubleday, Wm. L. Douglass, W. V. Downer, John H. Downer, Michael Dreicer, Geo. H. Dresler, Wm. Dreyfus, Jas. F. Duhamel, Louis Duncan, C. W. Dumont, A. Felix Du Pont, Ernest Du Pont, Felix Du Pont, Francis I. Dupont, Irene Du Pont, Edward Durant, C. V. Dykeman, R. J. Ecob, Thos. Edwin Eldridge, Robert E. Ely, Louis G. Erickson, Allen W. Evarts, Frank Eveland, Jos. G. Ewing, Walter L. Fairchild, J. G. Faist, Romolo Fanciulli, W. H. Fauber, Francis J. C. Ferris, Leon P. Feustman, Herbert L. Fielding, Jacob E. Fickel, W. G. Filer, E. W. Findley, Frank FitzSimmons, Ludwig C. Flaceus, Arnold R. Fleming, C. W. Force, R. K. Forsyth, Fred Foster, Geo. G. Foster, W. E. Franklin, J. S. Frazee, Leopold Friedrick, H. J. Frost, B. F. Funk, I. K. Funk, Wilfred Funk, Herbert B. Fuller, Bernard Gaffney, R. D. Garden, Wm. V. P. Garretson, Hugo C. Gibson, G. Curtis Gillespie, Henry Webster Gillett, Henry Ginnel, W. S. Ginell, Saml. Glucroft, G. H. Godley, E. E. Gold, H. C. Goode, Geo. H. Graham, C. P. Gray, Alexander M. Green, Franklin N. Gregory, H. B. Griffin, Samuel E. Hall, Wm. Hallock, J. H. Halloran, Chas. K. Hamilton, Wm. J. Hammer, Rudolph Hanau, Carl L. Hanau, W. D. Hanford, Hobart B. Hankins, Herbert B. Harding, E. Paul Harman, Clifford B. Harmon, Melvin Conkling Hascall, Henry N. Hausman, Edward H. Haven, Forbes Hawkes, D. A. Hawkins, Chas. R. Hedden, Edgar L. Heilprin, Carl Herbert, D. W. Hering, Leo. S. Herzig, F. Benedick Herzog, Robert Hewitt, Herbert M. Hill, H. Horvey Hill, John A. Hill, H. W. Hillman, Wm. T. Hoelin, Edgar P. Holliday, R. H. Hood, Edward P. Hopkins, F. L. V. Hoppin, A. E. Horn, Wm. Hoster, C. W. Howell, Jr., W. N. Howell, W. S. Howell, Jr., Geo. L. Hubbell, Chas. H. Hughes, F. E. Humphreys, Frank Landin Humphreys, Miller Reese Hutchinson, Thadeus P. Hyatt, Jas. H. Hyslop, E. F. Ingraham, Chas. H. Inman, Joseph E. Ismay, Thos. P. Jackson, J. C. Jenkins, E. M. Johnson, Frank V. Johnson, Geo. H. Johnson, A. G. Johnson, E. L. Johnson, G. H. Johnson, I. B. Johnson, I. W. Johnson, Ernest L. Jones, M. B. Jones, Wm. T. Jones, John Jones, C. Joseph, E. L. Judkins, August Jurgensen, Walter J. Kennedy, F. H. Kenny, W. R. Kimball, Wm. P. Kiggins, Chas. Kingsley, V. Hugo Koehler, Chas. Kohler, Arnold Kruckman, C. J. Lake, Simon Lake, Ernest Lallier, K. Landmesser, Leonard Landes, Dr. Lang, E. Lascaris,

(Continued on next page)

Geo. A. Lawrence, Alfred W. Lawson, L. J. Lesh, Leopold Lewis, John Lewis, Ladis Lewkowicz, Hon. John H. Lied, Jr., Frederick Linden, Thos. L. B. Lineburgh, Emil J. Limer, C. H. De Lion, Robt. McAllister Lloyd, J. A. Lomax, Herbert Longendyke, A. C. Lord, Judson Loundsbury, John W. Loveland, D. J. Lyon, Emory S. Lyon, Wilson D. Lyon, Robert T. Lozier, A. MacDougall, Benjamin Mallam, H. E. Manville, S. S. Mapes, Theo. H. Marburg, Fred L. Marshall, C. A. L. Massie, Seabury C. Mastick, John B. Maus, Reginald Maxwell, Fred J. Mayer, John B. Mayo, S. S. McClure, Willis McCornick, John H. McCovey, Dennis McEvoy, J. J. McKelvey, J. E. Meek, H. Meisinger, H. W. Merriam, G. Norton Miller, Jr., Geo. W. Miller, Hoffman Miller, Spencer Miller, Wm. W. Miller, J. H. Mink, O. B. Mitcham, J. Ad. Mollenhauer, Monell Ambrose, Russell W. Moore, Wm. J. Moran, Charles Morgan, W. B. Morrison, Willard S. Morse, Chas. D. Mosher, M. A. Mosle, John P. Munn, Fred. T. Murphy, Patrick Francis Murphy, Wolfred Nelson, W. A. Nelson, Jr., Mesrop Newton, E. Newgold, W. A. Nicolay, Nathaniel Niles, L. C. Nilson, Rex. C. Northwood, N. R. Norton, William, Oberhardt, Thos. W. O'Connor, L. J. O'Reilly, C. W. Osborn, John A. Overton, L. J. A. Owens, Chas. A. Paar, G. L. Palmer, Michael A. Paresen, Noel J. Pargon, Herschel C. Parker, Orrel A. Parker, Herbert V. Pease, Chas. W. Pearson, H. H. Pell, C. H. P. Pell, J. W. Perry, P. A. Peterson, Richard Oliver Philips, Jr., Percy Pierce, Henry Pierson, Hamilton Piltz, Chas. W. Place, H. C. Poillon, N. R. Potter, F. H. Pough, W., Augustus Pratt, Chas. F. Pray, William Pritchard, E. A. Quayle, Jos. F. Randolph, W. S. Rauch, Benj. Reass, Fred W. Reid, A. J. Reilly, Isaac L. Rice, W. B. Richards, Henry Richardson, G. A. Richardson, W. Payson Richardson, E. J. Riederer, H. E. Roberts, Geo. W. Roberts, William Robinson, Allen Rogers, N. Wash. Rohr, Jordan J. Rollins, DeWitt P. Rosenheim, Otto A. Rosalsky, Charles R. Rosevear, A. L. Rotch, David Rousseau, John T. Rowland, Jr., Jas. A. Robertson, W. B. Ruggles, Arthur Ryle, J. Salkind, John M. Satterfield, A. G. Sauter, Edward H. Sayre, Fred A. Scheffler, E. R. Schettel, Wm. Schimpf, F. W. Schmidt, Carl E. Schultze, E. E. Schwarzkopf, Ray W. Scott, W. E. Scarritt, Alonzo R. See, Alva B. See, John F. Seekamp, L. G. Seeley, Robt. H. Sexton, Ralph L. Shainwald, J. H. Shale, Paul Sheldon, O. B. Sherwood, Arch. M. Shrady, Robert Lee Sim, Geo. H. Simmerman, John T. Simpson, Frank R. Slocum, J. J. Slocum, Geo. S. Smith, H. H. Smith, Jesse M. Smith, C. O. Smyth, Herbert C. Smyth, Neptune B. Smythe, A. M. Snedeker, A. C. Soper, Chas. D. Spence, Jr., Elmer A. Sperry, A. J. Stadler, Walter W. Sternberger, Adman Stahle, Edwin Sternberger, H. S. Sternberger, Harry R. Stewart, J. R. Storer, W. L. Stow, James Louis Suffern, Sol. Sufrin, Jos. E. Stevens, A. Leo Stevens, A. B. Strange, Chas. Strauss, Eugene Strauss, M. Stuhler, D. S. Sullivan, Francis H. Tabor, Jokichi Takamine, C. E. Tarbell, Franklin Taylor, Leroy M. Taylor, U. Grant Teetsell, Fred C. Thomas, John L. Tysili, ——— Thomas, H. G. Thompson, M. Thor, David Todd, Geo. Oakley Totten, Jr., H. A. Toulmin, W. E. Towen, Joseph T. Tower, John Frederick Tracy, Dwight Tracy, Wm. Dwight Tracy, Albert C. Triaca, Geo. C. Turner, K. M. Turner, Robt. M. Thompson, Thos. T. Tuttle, W. Irving Twombly, Walter H. Tyrrell, Inglis M. Uppercu, R. H. Upson, Yves De Villers, Geo. J. Vestner, Baron Von Dewitz, Arthur P. Van Gelder, Harry A. Van Gilder, Mr. Van Mufling, Eugene Van Rensselaer, Reo Stephen Van Rensselaer, G. V. Van der Borght, A. A. Vascelins, C. E. Voigt, Alfred W. Wagg, G. N. Walsh, Wm. B. Walker, J. Bernard Walker, H. W. Walden, E. Waldenberger, Worcester R. Warner, H. R. Wardell, Reyburn Watres, W. de H. Washington, E. Wassermann, Louis T. Weiss, J. R. Westerfield, Geo. H. Waters, Ed. L. Wertheim, Chas. Werner, Walter Wellman, Louis T. Weiss, Jr., Michael H. Whalen, Robert Whitaker, Wm. Whitehouse, Louis R. Whittemore, Edward J. Wheeler, Hunter L. Wilson, E. B. Wilson. Keyes Winter, A. D. Wittemann, C. A. Wittemann, H. Winterfelt, Henry J. Winter, L. J. Wing, Louis Wiley, Pliny W. Williamson, F. G. Winkler, I. W. Wortman, Richard Wolberg. Charles Wake, Carlos De Zafra.

Aero Club of America

Advance proofsheets of the year book of the Aero Club of America for 1911 have just been received and show the work to be the most elaborate this or any other club has ever issued in addition to containing the full list of the present and former officers and members of the club, its constitution and by-laws, it includes a vast amount of informative matter regarding aviation and aviation organizations throughout the world.

Full accounts appear of the races last year for the Gordon Bennett Cup-race (balloons and aviation) both of which took place in this country.

In addition there are the world's records and the American records in both aviation and ballooning and a two-page map of the United States and Canada, showing the start of the international balloon race and the landing place of each balloon.

The club has eight honorary members: the President of the United States, the Governor of the State of New York, the Mayor of the City of New York, Comte Henri de la Vaux, Lieutenant Frank Purdy Lahm, U. S. A., Wilbur Wright, Orville Wright and James Gordon Bennett.

The seven life members are William Wallace Young, Allan A. Ryan, Colonel John Jacob Astor, Courtlandt F. Bishop, James A. Blair, Jr., William W. Miller and Archer M. Huntington.

There are 347 resident members and 142 non-resident members, making the total membership 505.

The club, as representative of the International Aeronantic Federation in America, has licensed forty spherical balloon pilots.

1, J. C. McCoy; 2, A. Leo Stevens; 3, Frank S. Lahm; 4, Lieutenant Frank P. Lahm, U. S. A.; 5, Carl E. Myers; 6, Henry B. Hersey; 7, Alan R. Hawley; 8, Captain Charles DeF. Chandler, U. S. A.; 9, Thomas S. Baldwin; 10, Albert C. Triaca; 11, A. Holland Forbes; 12, Charles J. Glidden; 14, Nason Henry Arnold; 15, J. H. Wade, Jr.; 16, A. H. Morgan; 17, Charles Walsh; 18, A. B. Lambert; 19, Charles Levée; 20, H. E. Honeywell; 21, G. L. Bumbaugh; 22, Dr. R. M. Randall; 23, Carl G. Fisher; 24, John Berry; 25, William F. Whitehouse; 26, Edgar W. Mix; 27, S. Louis von Phul; 28, Clifford B. Harmon; 29, James Bemis; 30, Henry H. Clayton; 31, Roy A. Knabenshue; 32, George B. Harrison; 33, Jay B. Benton; 34, J. Walter Flagg; 35, William T. Assman; 36, Arthur Atherholt; 37, William Van Sleet; 38, Dr. L. E. Custer; 39, E. S. Cole; 40, Horace B. Wild.

There are three dirigible balloon pilots—Thomas S. Baldwin, Frank P. Lahm and Horace B. Wild.

Twenty-seven aviators have been licensed in this order:

1, Glenn H. Curtiss; 2, Frank P. Lahm; 3, Louis Paulhan; 4, Orville Wright; 5, Wilbur Wright; 6, Clifford B. Harmon; 7, Thomas S. Baldwin; 8, J. Armstrong Drexel; 9, Todd Schriver; 10, Charles R. Willard; 11, J. C. Mars; 12, Charles K. Hamilton; 13, John B. Moisant (deceased); 14, Charles Weymann; 15, Arthur Stone; 16, Harry S. Harkness; 17, Eugene Ely; 18, J. A. D. McCurdy; 19, Walter R. Brookins; 20, Ralph Johnstone (deceased); 21, Arch Hoxsey (deceased); 22, J. C. Turpin; 23, A. L. Welsh; 24, J. J. Frishie; 25; P. O. Parmelee; 26, Frank C. Coffyn; 27, Lincoln Beachey.

Aero Club of Long Island

By Frederick Rockstroh, Vice President

At the May meeting of the Aero Club of Long Island it was definitely announced that trial flights would begin in a few weeks by members of the club. Heretofore the club confined its energies mostly to instruction of its members and the building up of a permanent organization.

Francis Willson, member, is assembling his Curtiss-type biplane at Mineola. It possesses features never before embodied in a flying machine and is expected to open the eyes of some of the veterans of the old field. It is built on thoroughly sound principles and has already won the admiration of Charles K. Hamilton.

A Chanute-type glider of exceptional efficiency has been built after his own modifications by Thomas Kramer, member, aged 18, and has already made about 150 flights on the hills near Long Beach. Young Kramer has become expert in gliding and is willing to match his machine and skill with any amateur. This is his fifth glider and he has made nearly 1,000 glides.

The motorless bi-plane of William and Henry Newel, members, is complete and will be shipped to Mineola and set up in preparation for towed flight prior to the installation of its motor. It is of the headless type, simple in construction and equipped with the Newell method of control.

Charles D. Spence, member, is having constructed a 40-foot monoplane embodying the most advanced and practical methods of trussing and control yet attained in that type of flying machine. The building of the machine is well under way. Mr. Spence's invention is a substantial modification of the well-known Pratt truss.

The Aero Club of Long Island is an educative society, and invites inquiries from those who wish to associate with it. Address Secretary, Aero Club of Long Island, Richmond Hill, L. I.

The Harvard Aeronautical Society

By Edwin C. Brown, Secretary

The First Intercollegiate Glider Meet, scheduled to be held on May 3-6 under the management of the Harvard Aeronantical Society on the Harvard Aviation Field, Atlantic, Mass., has been postponed to May 27-30, inclusive. This change has been found to be more convenient to the great majority of the Aero Clubs interested. The new dates include Saturday, the second day of the Intercollegiate track games in Cambridge; Sunday, when there will be no contested flying, and Tuesday, a holiday, and cannot, therefore, seriously interfere with college work. The meet is to be held with the sanction and support of the Intercollegiate Aeronautical Association.

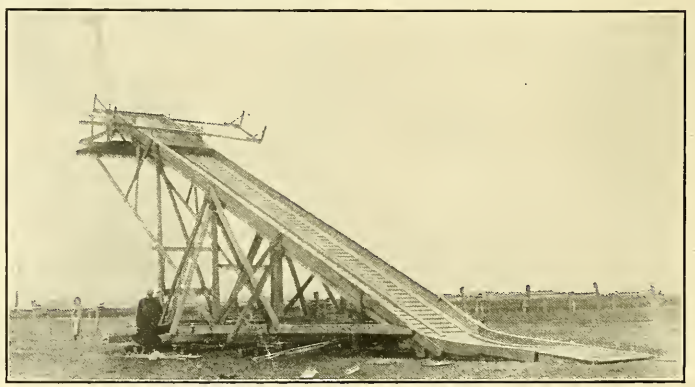
The Gliding Slope, a photograph of which accompanies this, is completed and is now being used in preliminary practice. It is 25 feet high with a slope of 52 feet and is equipped with a light truck and rack which run on a track down the slope and from which the gliders are launched. A weight and pulley attachment is being added so that increased initial velocity may be obtained. The whole structure is novel in that it is easily turned to face any prevailing wind, and should prove valuable in gliding contests and experiments.

Massachusetts Institute of Technology and Harvard have their machines on the field, and when work on the new hangars, now under construction, is completed, other gliders will be moved to the field. It is possible that the W. Starling Burgess Company will have its aeroplanes in action at its new school on the field at the time of the glider meet.

To date eleven colleges and universities have entered the meet. The final list of events and officials will be announced later. Collges wishing to enter should communicate with Edwin C. Brown, Secretary, Harvard Aeronautical Society, 34 Dana Chambers, Cambridge, Mass.

Aero Club of Connecticut

The first banquet of the Aero Club of Connecticut was held at the Stratfield Hotel, Bridgeport, Conn., April 20, and was very successful. About one hundred members and guests were present. A. Holland Forbes, President of the club, presided as toastmaster and cleverly introduced the speakers, who responded to the following toasts: "Greetings of Bridgeport," Hon. Edward T. Buckingham; "The Aero Club of America," Mr. Allan A. Ryan; "Aeroplaning in Japan and China," Capt. Thomas S. Baldwin; "Aviation as a Commercial Enterprise," Mr. Alfred T. Moisant; "Ballooning as a Gentleman's Sport," Mr. Alan R. Hawley; "The State of Connecticut," Hon. Stiles Judson; "What of the Future," Mr. Henry A. Wise Wood; "The Possibilities of Motor Power in Aeroplanes," Mr. Hiram Percy Maxim; "The Development of the Aeroplane," Mr. Augustus Post; "Aeroplaning in England and France," Mr. William C. Beers.



HARVARD AERONAUTIC SOCIETY GLIDING SLOPE.

THE LATEST PAULHAN PASSENGER CARRYING BIPLANE IN FLIGHT.

FOREIGN NEWS

Argentina

Some long flights have been made in Argentina by André, who is using a Farman biplane. On April 23rd, he made a flight of 300 kiloms, from Mar del Plata to Ferrari, passing over Marpu, Dolores and Charcomus, and on the following day he continued his journey to Buenos Ayres. Cattaneo also is indulging in cross-country flying on his Blériot.

China

Mons. Réné Vallon, of Paris, piloted a Sommer biplane over Shanghai for thirty-five minutes on April 24th at a height of 800 metres. This was the longest flight ever made in China.

Denmark

On April 21st Cozic flew over the city of Copenhagen several times during a flight of 1 hr. 13 mins., thereby winning a prize of $400. While he was attempting to land a gust of wind struck the machine causing it to collide with an aeroplane belonging to Svendsen, with the result that both machines were badly damaged, although the aviator escaped unhurt.

England

Mr. A. V. Roe, has produced a new front-propeller biplane along the lines of his standard triplanes, which met with instant success at its first trial. On April 17th, in the hands of Mr. Pixton it succeeded in flying for 1 hr. 27 mins.

Work at the different British aerodromes continues to increase and many new and promising pilots are being turned out daily. At the Brookland's grounds A. V. Roe & Company employ a staff of competent aviators and mechanics who train pupils to fly either monoplanes, biplanes or triplanes. In addition to the Roe school there are many private aviators located on the ground who fly prominent makes of machines and give flying instructions to a limited number of pupils.

London Aerodrome, Blériot School. On April 25th there was considerable activity at the Blériot School and the pupils were busy all day. A new American pupil, Mr. Dycott of New York, joined the school and was given his first lesson.

M. Prier, not content with having succeeded in flying from London to Paris without a stop, is now contemplating the repetition of this performance, but this time with a passenger on board his Blériot monoplane.

France

MARSEILLES-ALGIERS.

The Parisian aeronautical newspaper *"L'Aéro,"* is organizing a flying contest across the Mediterranean. The competitors will have to accomplish the flight from Marseilles to Algiers in two stages, the first from Marseilles to Minorca Island (400 kil.) the second from Minorca to Algiers (350 kil.).

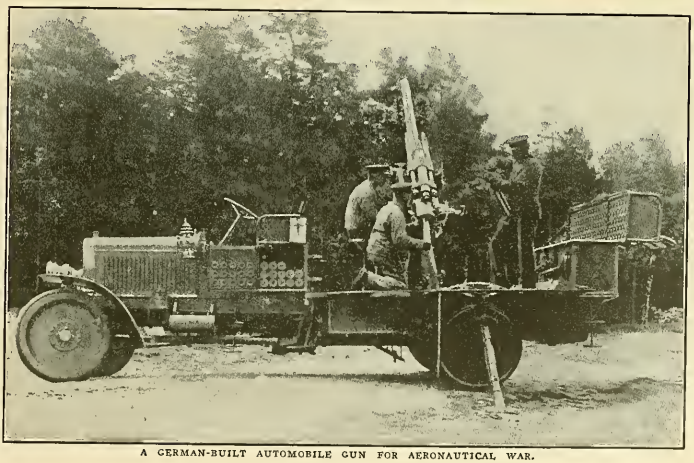
The rules provide that every machine shall be able to float and the aviators will have to wear life-saving appliances. No machine can be changed during the contest. In Minorca, however, motor and propeller can be exchanged, but this enables the aviator only to be classified for the second stage.

The contest opens on August 13th. Biplanes and monoplanes will be classified separately.

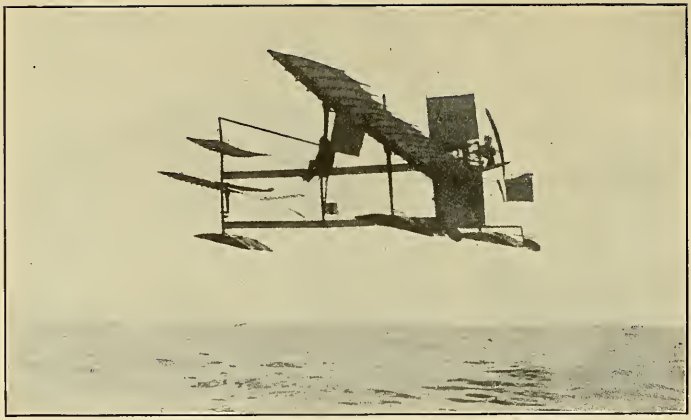
The French daily newspaper *"Le Petit Parisien,"* is organizing a flight from Paris to Madrid. The competitors are to leave Paris on May 21st and the aviator who succeeds in reaching Madrid in the quickest time will be awarded a prize of $20,000. In the event of none of the competitors reaching Madrid *"Le Petit Parisien"* will award a prize of $10,000 in the following order: $6,000 to the first, $3,000 to the second and $1,000 to the third.

During the week of April 16th a great deal of flying was seen both at the Hanriot and at the Déperdussin schools at Bétheny. On the morning of the 21st for instance, Vasseur was flying

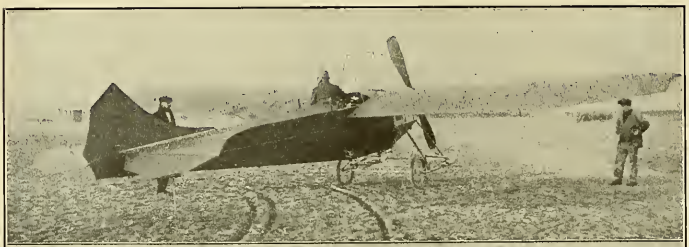
The Oxford and Cambridge Boat Race of 1911, which has become historic owing to the presence of six aeroplanes, which almost monopolised the attention of the crowds, at the expense of the two crews. This illustration shows Oxford leading past Duke's Meadows, with Graham-Gilmour watching the progress from his Bristol-Farman Biplane.

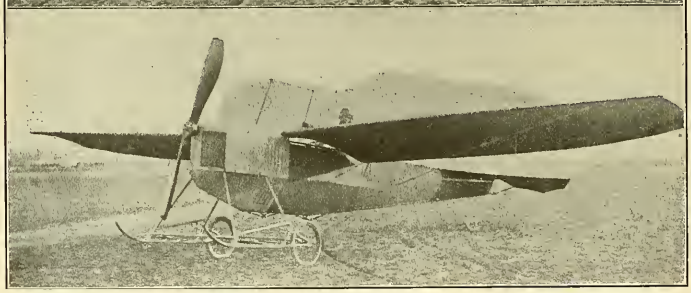


A GERMAN-BUILT AUTOMOBILE GUN FOR AERONAUTICAL WAR.

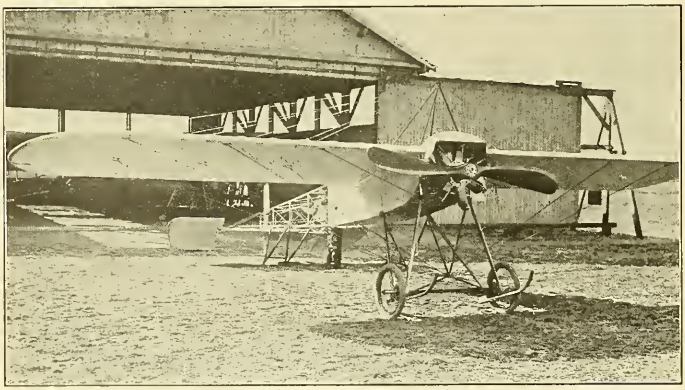


THE FABRE HYDRO-AEROPLANE IN FLIGHT AT THE MONACO MEETING.





THE NEW CLEMENT-BAYARD MONOPLANE. NOTE THE HOOD OVER THE MOTOR, NOVEL LANDING CHASSIS AND ENCLOSED BODY.



THE LATEST MORANE MONOPLANE.

on his Hanriot for two hours, while during the evening he was up for three hours during which he flew over Rheims and the environs. Marcel Hanriot was also out on the small "Dragon Fly," while his father was flying for two hours with Count d'Allincourt on a 100 H.P. Clerget-engined monoplane. Lenfant, the chief pilot of the Hanriot school was also out with passengers, and carried two from Bétheny over Vitry and the Bourgogne Woods to Mourmelon and back. Count d'Allincourt was flying for an hour by himself, while Wittoz, on his Hanriot monoplane, flew around the Bétheny Clock Tower. At the Déperdussin School, Aubrun and Pierre Marie were practising, while Pascal, the chief instructor, was giving lessons to pupils.

During the week of April 23rd, Colliex was practising at Issy with the Voisin-Canard and also with a two-seated biplane of the military type, while Anzani and Darioli, have been testing their Anzani engined Blériots, the former having a 5-cylinder motor and the latter a 3-cylinder one. Another monoplane which was out is the Roux, while Deletang made several short flights on the new Clément-Bayard monoplane.

On the 22nd of April a number of Japanese officers paid a visit to the Farman School at Buc and witnessed several demonstration flights made by Captain Etévé and Lieuts. Lucas and Binda, and afterwards Mr. Maurice Farman took each of the officers for a short trip. Barra also made some speed tests on a racing machine.

Captain Wood, of Messrs. Vickers, Ltd., is proving as much at home at the wheel of a R. E. P. monoplane as he used to be when flying a double decker. On April 20th he carried several passengers at a height of 300 metres and this performance was duplicated on the following day. Busson and Amerigo also made several good trips, the former on April 21st flying over the neighborhood of Versailles while, on the previous day, he was flying for an hour about Buc.

Some splendid flying was seen at Juvisy on April 24th when early in the morning Champel, with Pluntz on his biplane, left the aerodrome and was absent for two hours, during which he passed over Buc, St. Cyr and Villacoublay, having covered a distance of 150 kilomts. In the evening he made another excursion, this time for an hour's duration over Lougjumeau, Montlhery. In the afternoon Cassis and Didier on a Maurice Farman flew over to Buc, while Ladougne and Lieut. J. d'Aiguilou on a Goupy were also flying across country.

At the aerodrome itself good flights were made by Weiss, Gaudart, Gassier and Verdier on their various machines.

As a mark of their appreciation of the services which he has rendered to the club and the movement generally up to the time of his resignation recently, the Aero Club of France has asked M. Léon Barthou to accept an Honorary Vice-Presidency. At the same time it has been decided to persent the club's gold medal to him.

Continuing his series of passenger carrying experiments M. Sommer on April 19th took his family and several relations for a jaunt of 20 minutes at a height of 80 metres. The passengers included Mme. Geoffroy, M. Geoffroy and M. Larmoyer. Afterwards Sommer again took six passengers for a short circular flight over his flying ground, the live weight this time being 450 kilogs., while the oil and gasoline weighed another 100 kilogs.

On April 23rd Sommer was testing two new monoplanes which he has just completed. The first was a single seater built mainly for speed, and over a closed circuit it is anticipated as a result of its preliminary trials, that it will reach a speed of 110 K. P. H. The second monoplane has the two seats arranged in tandem and is said to be capable of doing 90 kilogs. an hour, while the fuel and oil tanks are large enough to contain a three hours' supply.

Mounting his Vinet monoplane on April 20th, Liger set out to fly from Jargeau to Paris. He passed Orleans at a height of 1,000 metres, but soon after found the squally winds too trying, and therefore came down at Artenay, having traversed 40 kilogs. in 28 mins.

Accompanied by his friend Lafosie, Paul Leprince, on his Nieuport monoplane, flew over Rheims and around the Cathedral on April 21st, his speed during the trip working out to an average of 95 kilogs. an hour.

The Parisian daily paper "*Le Petit Journal*" is organizing an aerial race between Paris and Rome, for which already $80,000 in prizes has been subscribed. The route will comprise stops at Avignon, Nice, Leghorn from which latter place it will follow the Italian coast.

On April 12th, Louis Bréguet, the builder of aeroplanes, flew two of his machines before the Military Aerial Commission. The test was a brilliant demonstration of the excellent qualities of his machines as Bréguet far exceeded the conditions asked by the commission, which were: flight in 6 metre wind, 65 km. speed, 200 kg. additional weight and 300 metres to be reached in 10 min. Instead Bréguet flew in a 14 metre wind, at 92 km. speed, carried 230 kg. additional weight and reached 300 metres in seven minutes.

On May 11th, Nieuport created a new world's record at Mourmelon by flying 62.1 miles in fifty minutes four seconds.

Using a Blériot monoplane to which he has

THE MORANE MONOPLANE TRAVELING 90 MILES AN HOUR WITH THE WIND.

fitted a five-cylinder Viale engine, Dancourt has made several lengthy cross-country flights in the neighborhood of Meru. On April 20th, he was flying over Lormaison, Marivault, Sandricourt and Meru.

Pierre Védrine, who left Paris in his monoplane on April 22nd, arrived at Pau on April 24th having covered the circuitous course of 500 miles in six hours and fity-five minutes actual flying time, or at the rate of 72.28 miles an hour. He thus wins the prize of $4,000 offered by the Aéro-Club de Béarn for the fastest flight between the cities. Védrine made several long stops en route.

Germany

On April 21st the German dirigible Parseval VI came to grief while attempting a non-stop flight from Berlin to Amsterdam north of Brunswick. The accident was caused by a gust of wind that caused the dirigible to slow up when flying low. The drag rope caught in the branches of a tree which gave the balloon a jerk which upset its equilibrium. This, combined with the force of the wind, made it necessary to make an immediate descent, which was done somewhat hastily and the car of the dirigible was somewhat, though not seriously damaged. On account of the wind the rip cord of the envelope had to be pulled and a new start pending repairs, was out of the question so the dirigible was sent to its shed for an overhauling.

Lieut. Roser, of the German army, who recently obtained an aviation pilot's license fell with his aeroplane from a height of 150 feet on May 2nd and was seriously injured.

Bekemuller, a German aviator, was killed at the Johannisthal aviation grounds when his aeroplane crashed against a house that had been hidden from his view by a thick fog.

Dr. Wittenstein, a newly certificated German aviator, carried out a successful journey from Munich to Augsbury recently, this being the first time Augsbury has been visited by an aeroplane. On the return journey Wittenstein was forced to land near Munich as a wire snapped, fortunately without any unpleasant results.

On April 22 last, Prince Henry of Prussia beat his own duration record by staying in the air for a period of 40 minutes during which he covered a distance of 33 miles, then having to descend owing to the motor giving trouble. The flight was witnessed by five regiments who were drilling at the time, and Prince Henry maintained an average altitude of 500 ft.

Eugene Wienczlers is now a Blériot pilot. At Munich he carried out a pretty idea during the celebrations in honor of the Prince Regent's 90th birthday, when he appeared high in air at the unveiling of a monument and scattered roses out of a basket attached to the plane on the assembled royalties and invited guests.

After careful sorting and weeding three hundred German officers have remained from whom to choose the fifty or sixty men for a course of instruction at Doeberitz. Nominations simply poured in from all regiments. The instructors are seven officers all of them good pilots themselves, the course lasting three months.

The German elimination race for the Gordon Bennett balloon race which starts from Kansas City October 5, is fixed for May 19 under the auspices of the Silesian Aero Club at Breslau.

The new Zeppelin air-cruiser "Deutschland" arrived in Duesseldorf after a circular journey from Friedrichshafen to Baden-Baden, Stuttgart and Frankfort. It embodies in its structure all the parts that were rescued from the disaster in the Teutoburger Forest last year, when the original "Deutschland" came to grief whilst piloting a party of journalists. But fate has already not been very kind to the new dirigible as, on attempting to take it out of its Duesseldorf hangar, the order was not fully understood and the dirigible was crushed against the wall ripping away the rear propeller on the right and tearing the envelope.

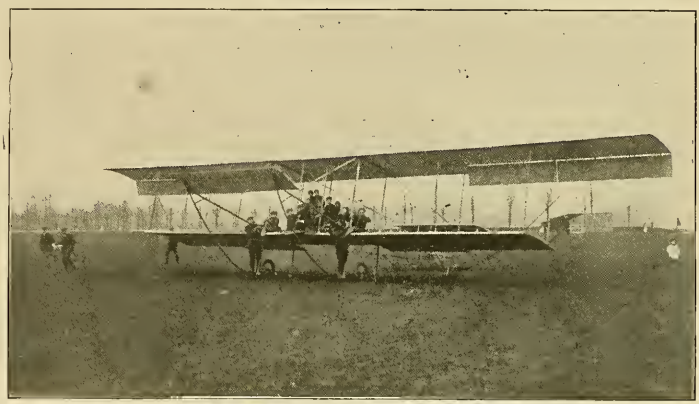
Russia

On April 20th, Capt. Alexandroff paid a visit to M. Bréguet's headquarters near Douai, to witness a Bréguet biplane built for the Russian Army put though its paces. With M. Bréguet himself at the wheel the machine had no difficulty in passing the tests laid down, and Capt. Alexandroff expressed himself thoroughly satisfied with the result.

Switzerland

Colonel Théodore Schaeck, the Swiss aeronaut who competed in last year's Godon Bennett cup-race at St. Louis, died on May 2nd at Berne.

Colonel Schaeck piloted the balloon Helvetia, which landed at Ville Marie, Quebec, having covered a distance of 826 miles. The balloon took fourth place in the contest.



THE SOMMER BIPLANE WHICH RECENTLY MADE A SUCCESSFUL FLIGHT WITH 13 PERSONS ABOARD.

Dear Mr. Lawson:

In answer to the enquiry of one of your readers which you refer to me (as to what are the duration records for continuous flight of present-day aeronautic engines), I have made up the following list, which may contain some omissions, but which, I think, will be found to be substantally correct.

As regards the Panhard, the flight referred to was not, strictly speaking, a continuous one, for Dubonnet stopped for a few seconds after about an hour's flight to enquire his way; the engine was not stopped, however, but merely voluntarily slowed down. so it seems only fair to credit it with the full figures.

There are a number of good motors. such as Clerget, Grégoire-Gyp. Labor-Aviation, Daimler, etc., etc., the best performances of which I am not aware of.

Very sincerely,

May 12. 1911. G. F. Campbell Wood.

ENGINE	TIME	PILOT
Gnôme—50 H. P.	8 hrs. 12′ 47″⅗	(H. Farman)
Renault	7 hrs. 48′ 31″⅗	(Tabuteau)
Gnôme—70 H. P.	7 hrs. 11′	(H. Farman)
R. E. P.	6 hrs. 29′ 19″⅕	(Bournique)
Green	4 hrs. 47′	(Cody)
Antoinette—50 H. P.	4 hrs. 37′ 00″⅖	(Labouchère)
Argus	4 hrs. 37′	(Amerigo)
E. N. V.	4 hrs. 07′	(Sopwith)
N. A. C. (2 cycle)	3 hrs. 55′	(Ogilvie)
Wright—30 H. P.	3 hrs. 39′ 49″½	(Parmelee)
Vivinus	2 hrs. 27′ 15″	(Sommer)
Curtiss—60 H. P.	2 hrs. 11′	(McCurdy)
Anzani, 1910—30 H. P.	1 hr. 58′	
Anzani—40 H. P.	1 hr. 57′ 12″	(Train)
Panhard-Levassor	1 hr. 40′ 50″⅕	(Dubonnet)
Anzani, 1909—24-30 H. P.	1 hr. 30′ 28″	(de Lesseps)
Gnôme—100 H. P.	1 hr. 07′	(G.-White)
Grade (2 cycle)	1 hr. 04′	(Grade)
Nieuport—40 H. P.	45′	(Nieuport)

THE EVOLUTION OF MILITARY AVIATION IN FRANCE

By Henry Woodhouse

SOME weeks ago the inhabidants of Pau and that part of Southeastern France extending from Pau to Tarbes, were regaled with the sight of an aerial squadron of monoplanes—five Blériots piloted by officers of the French army—flying from Pau to Tarbes and again from Tarbes to Pau.

The sight would have been startling in America and almost anywhere else, but it did not startle those who saw it; they were just surprised at the innovation. Pau is one of the most important flying grounds of France and one of the oldest. The Blériot, Wright and other flying schools are there, and flying is rather common.

The witnesses of these flights showed their enthusiasm, however, for, like the Germans, the French are ardent believers of military aeronautics and never fail to show their appreciation of any efforts in this line.

The flying officers made Tarbes, twenty-two miles away, and were received and feted by the officers of the garrison there; after which they again mounted their winged steeds, circled over the crowd en groupe, and returned to Pau.

Although the affair was unofficial and just a casual experiment, its significance was great. The feat was especially important, in that it showed the meteoric rise of French military aviation in the last nine months.

French military aviation is barely a year old, and when it started, the outlook for an efficient aviation body was anything but bright. The French government, like the American government, was, until recently the reverse of liberal in this respect. Seemingly, because they conducted costly experiments years ago (those of Ader in France and Langley in America) without attaining practical results, both governments refused to adopt the aeroplane until the very last, when it was impossible to do otherwise without incurring public criticism.

Early last year, when the first real interest in military aviation in France was manifested, a number of officers of the French army were practicing with aeroplanes of their own and were achieving successes. The earliest and one of the most successful, Lieutenant Cammerman, earned his pilot license on March 8, 1910; he holds the distinction of having been the first army officer to do so, outside of the late Captain Ferber, who was granted one, as a pioneer. Lieut. Bellenger, who has since been promoted to captain as a reward for his excellent services in the air, and Captain Burgeat, got their licenses on April 5, 1910; they were followed closely by Lieutenants Féquant, Sido and Acquaviva. The achievements of these attracted attention, and soon there came suggestions to the Ministry of War that aeroplanes might prove efficient instruments for scouting. In the meantime, Germany had mobilized her fleet of great dirigibles, and the French Nationalists, comparing the splendid aerial forces of Germany with the limited ones of France, bitterly reproached the Minister of War for allowing France to be so humiliated. It was then the Minister of War proposed to spend a large sum in aerial armament and to buy aeroplanes as well as dirigibles. This was followed by a wrangle, the authorities being divided in opinion as to the efficiency of the two. As Germany ruled supreme with her mammoth airships, most people favored the lighter-than-air craft, and opined that the aeroplane was more or less of a toy, and not to be compared with the big, awe-inspiring airships. The Minister of War, General Brun, did not propose, however, to act solely on outside advice. Knowing much concerning dirigibles and little or nothing about aeroplanes, he went with his staff to the Camp of Chalons, the maneuvering plains which have become such a great aviation centre, to investigate. Twenty-four hours after, France was fairly sure of its aeroplane fleet. What General Brun had seen had convinced him that the aeroplane was a most promising thing, and one far superior to the dirigible; he accordingly recommended their being taken up. In vain the conservatives cried that the War Department was once more leading France into wild speculations; in vain the partisans of the gas-bags cried that the aeroplane was inefficient compared with the dirigible, and that France would be further humiliated by failure. General Brun followed his convictions and carried the thing to success. That he was not mistaken is now evident. It was indeed a master stroke, for it took the leadership in aerial armament from Germany and gave France a distinction which has called forth the envious admiration of the other powers.

The opposition to aeroplanes did not last long. As fast as the machines were received from the factories they were put in use, and as fast as they were used their utility became evident. The French people are naturally military enthusiasts, and their antagonism to Germany is most radical. When early in June Lieutenant Féquant made two exceptionally good cross-country flights, one lasting one hour and thirty-seven minutes, the other a little over two hours, and Captain Marconnet took photographs, made drawings and noted down general information while in flight, the people became enthusiastic and the Minister of War began reaping praises. These performances had given proof of the aeroplane's efficiency for scouting purposes, and promised great things for the future.

The feats of Féquant and Marconnet were soon duplicated by Lieutenants Bellenger, Cammerman, Captain Etévé and others. Lieutenants Cammerman and Féquant distinguished themselves when taking part in the Circuit de l'Est and won the first and second Prix Militaries, respectively, the first covering 500 miles in ten days, and the second 220 miles.

The great cross-country event, which had kept France in a fever of patriotic exaltation for ten days, was followed by the grand military maneuvers in Picardy, and there, through the number of wonderful feats performed, military aviation gained for itself a solid foundation in the military establishment. Until the French maneuvers the possibility of the aeroplane playing an important part in the war game was still somewhat doubted. It is a toy, it was said, capable only of flight in exceptional weather; then it takes the power of a hundred horses to carry up one or two men in a rocket-like jump from which no practical benefit can be derived. Besides, the element of danger is so great that (quoting verbatim from a critic's comment) "all the present excitement concerning aviation is a palpable and shameful danger to humanity." A week's trial at the military maneuvers refuted all these charges, silenced the critics and brought out the admission that the introduction of the aeroplane in warfare revolutionized military science to the extent of making a change of war tactics necessary.

Some of the feats performed at the maneuvers were indeed wonderful, all the more so because, being a first trial, actions were beset with more or less uncertainty; also the scouting was done under difficulties. There were no special maps, plans or tables to guide the flying scouts, and the men went in the air without any knowledge as to how they could distinguish one armed body from another, how they could estimate the strength of bodies and how they could locate places. That they attained such good results was nothing less than wonderful.

An idea of the advantages afforded by the aeroplane on the military field can be derived from the following facts: The "Red Army," commanded by General Picquart, had on a certain day been heavily attacked; during the ensuing night the outposts kept in touch with the enemy's lines, but nothing was known of his actual intentions and dispositions. Under the usual tactics the actions would have been governed somewhat by guesswork. By employing the aeroplane, however, reliable observations were ob-

tained. §A Farman aeroplane with Adjutant Ménard as pilot and Lieut. Sido as observer, was dispatched on a scouting trip early in the morning. Lieut. Sido's report of the reconnoissance to General Picquart reads as follows:

Date, September 16, 1910. Order received to explore the region comprised between Grandvillers, Crévecœur, and Marseille-le-Petit.

Itinerary chosen: Poix, Equennes, Grandvilliers, Thieuloy, Fontaine, Lavaganne, Marseille-le-Petit, Rothois, Haute-Epine, Crévecœur-le-Grand, Le Gallet, Choqueuse, Les Renards, Beaudeduit, Sommereux, Dargis, Saint-Romain, Poix.

Left Poix 5:45 A. M. Information obtained:

5:56 A. M.—At Halloy: A cyclist company.

5:59 A. M.—Thieuloy: Sixteen squadrons of cavalry and six batteries at the southwest entrance to the village.

6:05 A. M.—Southwest of Rothois: At the north point of Malmifet wood a company and two batteries of artillery marching towards Marseille-le-Petit.

6:07 A. M.—Haute-Epine (northern entrance of the village): One company of infantry to the right and one to the left of the road from Marseille to Crévecœur; one company at point 188; one company in the village of Haute-Epine.

6:09 A. M.—At the cross roads at Lihus: A squadron of dragoons concealed behind the edge of the wood.

6:15 A. M.—On the road Crévecœur to Marseille, south of Lihus: A squadron marching towards Marseille-le-Pet t, and a troop in the villege of Lihus.

6:16 A. M.—On the Lihus to Rotangy road: A squadron and two machine guns marching toward Marseille-le-Petit.

6:19 A. M.—Southwest entrance to Crévecœur: Three regiments of cavalry, including cuirassiers, and six batteries of artillery in assembly formation.

7:00 A. M.—Landed at Poix.

This information showed that only the rear guards of the enemy's army were in the vicinity and that therefore the enemy was in retreat. Orders were issued to advance. The move proved to be entirely successful, subsequent developments proving that the day's success was due almost wholly to the good work of the aviator.

Another instance, taken from the report of the opposing army for the last day of the maneuvers, shows that the advantages were well balanced. General Meunier, of the army, ordered Lieutenant Bellenger, of the aviation corps, to make a reconnoissance on the enemy's right wing. Flying out towards a village the scout met the army's cavalry. Reasoning that if the cavalry was there the enemy could not be very far, he searched the woods and valleys around and found the enemy's cavalry at a cross-roads. That body was, no doubt, without knowledge or suspicion of the nearness of the opposing forces, for several squadrons had dismounted. The scout lost no time, made a sketch of the place and position, noted down the important details, then made a beeline (literally) for the place where he had seen his army's cavalry. Gliding downward he signalled that he had something to communicate, and dropped the message by a group of dragoons. The message was hurried to headquarters and there orders were issued for a division of cavalry to rush over to surprise the enemy. As they were about to start the scout brought a new message, slightly rectifying his first one. The position of the enemy was a kilometre further away than he had estimated at first. The cavalry, with this certain and precise information, rushed to the spot, and so exact had been the report that the enemy was surprised before they had time to remount, and the whole body theoretically captured.

As pointed out above, these results were obtained despite the lack of proper instruments of observation, maps, or knowledge of how bodies of troops looked from on high. With specially colored maps showing villages, roads, streams, woods and landmarks, and giving picture forms of how different military bodies looked from above, and some means for estimating quantities, the results would have been still more marked. It may here be noted that the aviators were allowed full freedom of action. General Brun thought he could get best results by letting the officers in charge of the aeroplanes use their own judgment, rather than follow orders. They were simply told by the commanding officers that certain reconnoissances were to be made; the details of the accomplishment of their duty was left to their skill and discretion. That was undoubtedly wise, as no one knew more about the matter than the officers themselves.

WHAT WAS LEARNED FROM THE FRENCH MANEUVERS.

Although the maneuvers lasted only a week, and the experiments made with aeroplanes were limited and undoubtedly rather elementary, their importance was obvious, and their widespread effect influenced the other nations. Germany having held her maneuvers at about the same time as France and having used mostly dirigibles, had the opportunity to compare results, and having found the aeroplanes more efficient, changed her program in favor of the latter. In America the French achievements were cited by the military authorities when urging the appropriation for military aeroplanes, and helped, no doubt, in securing them. So it was with England, Russia, Italy and Austria. They all considered the French achievements, and, recognizing the value of the aeroplane as an instrument of war, set about to develop strength in that line.

The experiments were not long or special enough to afford conclusive arguments in the matter of respective worth of aeroplanes and dirigibles, but the results afforded a fair idea of the capacities of the two and the aeroplane proved superior. The most significant point was that the dirigibles were prevented from leaving their station on several occasions by high winds, when the aeroplanes were in the air. Then the dirigibles did much slower work, were, in fact, altogether too slow and too bulky, and were easily captured by the enemy.

Another very strong point which brought the aeroplane in favor was its economy when compared with the dirigible. Twenty aeroplanes could be bought for the price of a dirigible. and the cost of maintenance was proportionately small.

After the grand maneuvers, things developed rapidly. The whole nation was enthusiastic and the army administration had no opposition in carrying out its plans. Numerous officers took up flying, aviation schools and posts were opened in different parts of the country, and everything was generally systematized. The nature of the experiments became most serious, aviators being dispatched on long flights on semi-official business, as though they were regular messengers. Already during the maneuvers Lieutenants Cammerman and Féquant had been dispatched to Bordeaux under orders. A month after Captain Bellenger signalized his promotion from the lieutenancy by making a remarkable flight from Vincennes to the Camp of Sisonne, two hundred miles, carrying orders from Colonel Estienne. A month later this same officer flew from Vincennes to Mourmelon, one hundred miles. On December 21st Lieutenient Cammerman, accompanied by Captain Hugoni, made a flight of one hundred and forty-five miles, from Chalons to Montigny-sur-Aube and return, lasting 4 hours 2 minutes 35 seconds, a flight that broke three world's records; distance and duration in non-stop passenger flight and cross-country. This feat won them the Prix Lazare Weiller of 25,000 francs, a prize put at the disposition of the Minister of War, to be given to the officer-aviator who made the best flight in 1910, by the same financier, who, as head of the French syndicate, purchased the rights of the Wright patents in France. The next best feat for this prize was performed by Lieutenants Delage and Maillols, who flew from Etampes to Blois, dropped a written message at Blois, then returned to Etampes without stopping, covering a distance of 145 miles.

The best military feat in 1911 is at this writing Captain Bellenger's flight from Vincennes, near Paris, to Pau, in the Pyrennees. Captain Bellenger started from the military aerodrome at Vin-

cennes, on the southeast of Paris, and flew straight to Bordeaux, only stopping on the way for lunch and to get oil and gasoline. He covered the distance in 8 hours 28 minutes, including the time spent in the two stops. The actual time in flight was 5 hours 21 minutes, an average speed of 60.35 miles per hour. On the following day he resumed his journey to Pau, 105 miles from Bordeaux, which he covered without trouble or stop. He flew altogether 428½ miles in 7 hours 5 minutes actual time in the air.

At the same time that Captain Bellenger was making his great flight, Lieutenant Menard, in response to a telegram from the Minister of War, left the camp of Chalons on a Farman, with Captain Camine as passenger, and flew to Satory, 125 miles away, making a safe landing there after having flown 2 hours 5 minutes, at a rate of 60 miles per hour.

This mention of abstract events gives but a faint idea of the actual development of the new military factor. The official report at the closing of 1910 showed that the aeroplanes in actual use were thirty-two in number, of different types, as follows: 11 Henry Farman, 5 Wright, 4 Maurice Farman, 4 Sommer, 2 Breguet, 4 Blériot and 2 Antoinette. Besides these there were about twenty ordered and under construction. The number of military aviators was 34, with a score more under training.

The improvements planned for the year 1911, part of which have already been carried into effect, include, among other things, the acquisition of twenty special aeroplanes and the establishment of aviation posts along the eastern frontier.

The twenty aeroplanes cost an aggregate sum of 1,200,000 francs. The new machines must have a minimum carrying capacity of 300 kilograms, be fitted with three seats for carrying pilot, observer and mechanic, and must have a minimum flying radius of 300 kilometers, at a minimum speed of 60 kilometers per hour.

Early in the year there were enforced special rules and regulations to govern the issue of pilot licenses to military aviators. According to these rules, which are special for the army, aviators, to obtain their licenses, must make a flight of 100 kilometers across country; fly for two hours; reach the 1,200 feet mark, and fly in a wind of twenty miles per hour. They are thus much stricter than the Federation rules. It is significant that when the new rules were made there were twenty officers whose accomplishments were equal to and above the requirements. Among these were the well-known officers: Captains Bellenger, Sido, Marconnet and Marie; Lieutenants Cammerman, Féquant, Rémy, Acquaviva, Cronier, Chevreau, Mailloes, Mailfert, Letheux, and Adjutant Ménard, of the army, and Lieutenenants Byasson and Delage of the navy.

A remarkable feature and a strong argument for the general practicability of the aeroplane is the fact that the present stage of progress was reached without loss of life other than that of Lieutenant de Caumont, who was killed in trying out a machine intended for the Prix Weiller. This accident was, however, ont of the military field, and the accident was due to Lieutenant de Caumont's hastiness in ascending in a machine whose elevating rudder was stiff and inclined to jam.

SOME CONSTRUCTION DETAILS

By W. H. Phipps

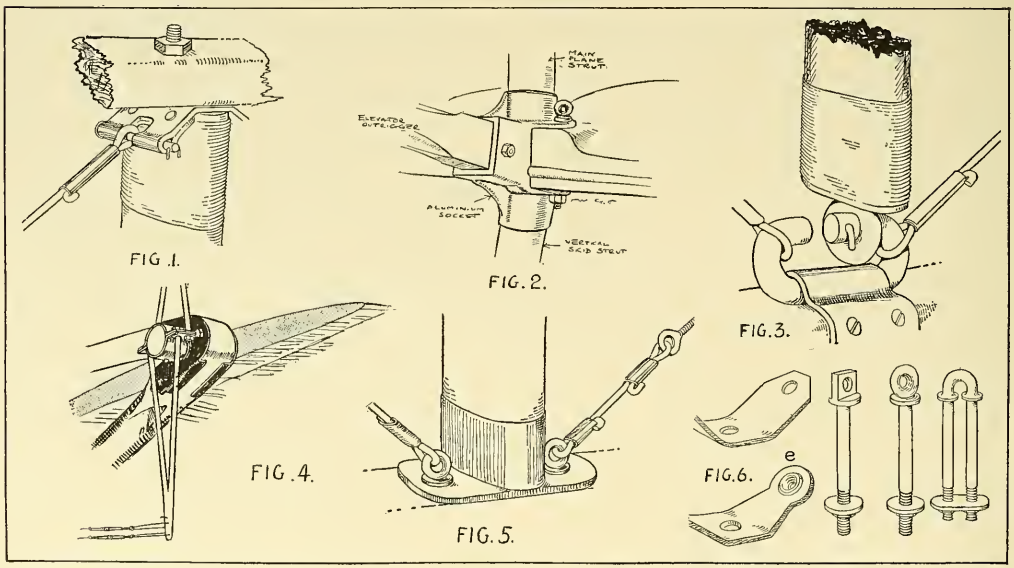


Fig. 1—Illustrates a rigid form of joint used on the Wright biplane.
Fig. 2—Shows a three-way terminal casting used on the English Bristol biplane.
Fig. 3—Shows a flexible upright connection used on the Wright biplane.
Fig. 4—Illustrates the method of attaching and staying the front elevator as used on the Bristol biplane.
Fig. 5—Shows a steel socket used on the Wittemann machines.
Fig. 6—Illustrates various eye bolts and steel plates used in the bracing of aeroplanes.

GYROSCOPIC FORCE A MENACE TO AEROPLANES

By Thomas Preston Brooke

Gyroscopic force, the most obstinate of all of nature's known forces, provokes an almost uncanny fascination to the student, chiefly because it never does just the expected thing. When the gyro is anchored to the earth through one of its poles, and its plane of rotation is disturbed, it sets up a gyrating movement with its axle describing the outline of an old-fashioned funnel. If you suspend it by a cord and suddenly change its plane of rotation the axle will then describe the outlines of two funnels with their small ends connected, now, as we have nothing in known mechanics into which such movements will fit, gyroscopic force is constantly at war with all other forces. In my four years' study of the subject, I

have discovered many interesting features, nearly all of which seem to be contrary to the generally accepted beliefs and theories. First of all, and of most vital importance to the world just at this time, is the fact that instead of being a stabilizing agent, it is a highly destructive force when employed in suspension. By suspension I mean that when suspended in the air by an aeroplane, or dirigible balloon, or suspended in the water by a ship, its action is a constant menace to the structure to which it is attached and sooner or later it is certain to cause disaster. I personally know of dozens of applications for patents on "gyroscopic stabilizing devices" for aeroplanes, and will venture to say that the number will run into hundreds. All of these devices had their inception in the false belief that the gyroscopic *resists* all effort to change its plane of rotation. If this army of inventors will take the trouble to study carefully the true action of their apparatus, and will suspend their gyros by a cord from the ceiling, to represent the perfect condition of the gyro in its relation to the aeroplane, they will speedily acquire two simple but highly valuable bits of information regarding this subtle force. (1) That instead of resisting all effort to change the angle of its plane of rotation, it requires but a slight touch to excite the gyroscope, and it immediately begins its double funnel shaped gyration with the large ends of these funnels describing circles around the original position of its axle, and at an angle of about 45 degrees from the original plane of rotation. This gyration always occurs in a direction opposite to that in which the gyro is revolving. (2) That the gyro never shows any tendency to "right" itself or resume its original position. In stating the above facts, I refer only to the gyroscope in its connection with the aeroplane, and whether this force is supplied by a high speed motor flywheel, a revolving cylinder motor or by the revolving wheel of a so-called gyroscope, the effect is the same. The amount of force exerted by these gyroscopes (when the plane of rotation of any revolving mass is suddenly changed, it at once becomes a gyroscope) depends on, (1) The diameter of the revolving mass, (2) The peripheral speed of the mass (3) The specific gravity of the mass at its periphery and (4) The abruptness of the change in the plane of rotation.

At a recent lecture given by one of these "gyroscope stabilizer" inventors, the gentleman attempted to show the great resistance set up by this force. He had constructed a gyro by filling with sand the rubber tire of a small bicycle wheel and had mounted it in a case just large enough to contain the wheel. On one edge of this case he had provided "feet" so that the gyro might stand on its rim, and to the protruding axle, squared at one end, he attached what he termed a "multiplying key." This key was composed of a crank connected with a set of multiple gears, and by its aid the gyro was set spinning at a high speed, and the key was then removed. In one of his experiments, and as be announced, "to demonstrate its wonderful stabilizing power," he placed the gyro on the floor, and after winding it, be requested some one from the audience to assist him. The appeal brought out a strapping young fellow who looked like a "tackle" on a football team. The lecturer directed this assistant to place the gyro on a nearby table, and then the fun commenced. The assistant stooped over and grasped the case of the gyro with both hands, lifted it clear off the floor, and attempted to raise it to the height of the table. Here is where the audience received the worth of their money, for, as soon as the gyro had been lifted clear of the floor it began a series of gyrations so complex and unexpected that it startled the assistant to such a degree that he quickly replaced the gyro on the floor. In setting it down it landed on but one of its feet, and at once began to merrily waltz around on this one foot. All of this seemed to strike the audience as being very funny and they laughed heartily at the young man's failure. The assistant, flushed, but with a look of determination on his face, again lifted the now gyrating thing from the floor, and after a display of contortions that would have done credit to a professional "fire dancer," finally succeeded in placing it on the table, not, however, before it had turned him completely around. The audience again laughed uproariously, and even the lecturer seemed to think it a splendid joke. I will admit that a display of this treacherous and erratic force, when presented in the lecture room, may be highly amusing, but when the demontsration occurs on a fragile aeroplane hundreds, or thousands, of feet above the earth and endangers the life of the aviator, I fail to see any humor in it. To further illustrate the resisting qualities of gyroscopic force (using the words of this inventor) he again deposited the gyro on the floor and invited someone to come forward and tip it over by pushing with a hand placed against one side of the case. Although several men in succession tried to push it over on its side, *not one of them succeeded!* The reason that they could not upset it was that the instant they began to push the gyro turned to one side and commenced to travel in circles around the stage. Any extra effort on the part of the pusher only succeeded in accelerating the movement of the gyro over the floor and in diminishing the diameter of the circles. In this experi-

(*Continued page 126*)

AVIATION WORLD'S RECORDS

(IN CLOSED CIRCUIT, WITHOUT STOPS)

Compiled by G. F. Campbell Wood

A. *SPEED*

1. *Time on a given distance*

(a) *Aviator Alone*

DISTANCE KILOM.	DISTANCE MILES	HOLDER	PLACE	DATE	MACHINE	TIME
5	3.107	A. Leblanc	Pau	April 12, 1911	Blériot	2′ 41″*
10	6.214	"	Belmont Park	Oct. 29, 1910	"	5′ 30″4/5*
20	12.427	"	"	"	"	11′ 04″3/5*
30	18.641		"	"	"	16′ 38″1/5*
40	24.855	"	Pau	April 12, 1911	"	22′ 12″1/5*
50	31.068	"	"	"	"	27′ 41″1/5*
100	62.137	"	"	"	"	54′ 55″3/5*
150	93.205	E. Aubrun	Bordeaux	Sept. 14, 1910	"	1 hr. 43′ 19″3/5
200	124.274	"	"	"	"	2 hrs. 18′ 30″3/5
250	155.342	P. M. Bournique	Buc	Dec. 31, 1910	R. E. P.	3 hrs. 04′ 28″1/5
300	186.411	"	"	"	"	3 hrs. 40′ 55″2/5
350	217.479	"	"	"	"	4 hrs. 17′ 26″1/5
400	248.548	"	"	"	"	4 hrs. 54′ 06″4/5
450	279.616	"	"	"	"	5 hrs. 30′ 35″3/5
500	310.685	"	"	"	"	6 hrs. 07′ 07″4/5

(b) *Aviator and One Passenger*

5	3.107	G. Busson	Reims	Feb. 11, 1911	Déperdussin	3′ 15″4/5
10	6.214	E. Nieuport	Mourmelon	Mar. 6, 1911	Nieuport	5′ 58″1/5
20	12.427	"	"	"	"	11′ 54″3/5
30	18.641	"	"	"	"	17′ 53″1/5
40	24.855	"	"	"	"	23′ 57″3/5
50	31.068	"	"	"	"	29′ 58″3/5
100	62.137	"	"	"	"	59′ 16″
150	93.205	"	"	"	"	1 hr. 28′ 37″4/5

(c) *Aviator and Two Passengers*

10	6.214	E. Nieuport	Mourmelon	Mar. 9, 1911	Nieuport	6′ 00″
20	12.427	"	"	"	"	11′ 59″2/5
30	18.641	"	"	"	"	17′ 52″3/5
40	24.855	"	"	"	"	22′ 44″2/5
50	31.068	"	"	"	"	29′ 37″2/5
100	62.137	"	"	"	"	59′ 08″

(d) *Aviator and Three Passengers*

10	6.214	G. Busson	Reims	Mar. 10, 1911	Déperdussin	6′ 16″3/5
20	12.427	"	"	"	"	12′ 34″1/5
30	18.641	"	"	"	"	18′ 48″
40	24.855	"	"	"	"	25′ 05″3/5
50	31.068	"	"	"	"	31′ 23″1/5

(e) *Aviator and Four Passengers*

5	3.107	G. Busson	Reims	Mar. 10, 1911	Déperdussin	3′ 34″
10	6.214	"	"	"	"	7′ 08″
20	12.427	"	"	"	"	14′ 00″3/5

2. *Distance in a given time*

(a) *Aviator Alone*

26.199	16.279	A. Leblanc	Pau	April 12, 1911	Blériot	15′*
53.424	33.196	"	"	"	"	30′*
108.424	67.371	"	"	"	"	1 hr.
167.5	104.079	E. Aubrun	Bordeaux	Sept. 16, 1910	"	2 hrs.
252.5	156.896	"	"	"	"	3 hrs.
325.905	202.508	P. M. Bournique	Buc	Dec. 31, 1910	R. E. P.	4 hrs.
407.675	253.317	"	"	"	"	5 hrs.
490	304.471	"	"	"	"	6 hrs.
522.935	324.936	M. Tabuteau	"	Dec. 30, 1910	M. Farman	7 hrs.
451	280.238	H. Farman	Etampes	Dec. 18, 1910	H. Farman	8 hrs.

(b) *Aviator and One Passenger*

23.54	14.627	G. Busson	Reims	Feb. 11, 1911	Déperdussin	15′
46.515	28.903	"	"	"	"	30′
101.25	62.914	E. Nieuport	Mourmelon	Mar. 6, 1911	Nieuport	1 hr.

3. *Greatest speed obtained, whatever the length of the flight*

(a) *Aviator Alone*

HOLDER	PLACE	DATE	MACHINE	SPEED PER HOUR KILOM.	MILES
A. Leblanc	Pau	April 12, 1911	Blériot	111.801*	69.47*,

(b) *Aviator and One Passenger*

E. Nieuport	Mourmelon	Mar. 6, 1911	Nieuport	103.211	64.132

(c) *Aviator and Two Passengers*

E. Nieuport	Mourmelon	Mar. 9, 1911	Nieuport	102.855	63.911

(d) *Aviator and Three Passengers*

G. Busson	Reims	Mar. 10, 1911	Déperdussin	96.308	59.843

(e) *Aviator and Four Passengers*

G. Busson	Reims	Mar. 10, 1911	Déperdussin	87.251	54.215

B. *GREATEST DISTANCE*

(a) *Aviator Alone*

				KILOM.	MILES
M. Tabuteau	Buc	Dec. 30, 1910	M. Farman	584.745	363.343

(b) *Aviator and One Passenger*

E. Nieuport	Mourmelon	Mar. 6, 1911	Nieuport	150.	93.205

(c) *Aviator and Two Passengers*

E. Nieuport	Mourmelon	Mar. 9, 1911	Nieuport	110.	68.351

(d) *Aviator and Three Passengers*

G. Busson	Reims	Mar. 10, 1911	Déperdussin	50.	31.068

(e) *Aviator and Four Passengers*

G. Busson	Reims	Mar. 10, 1911	Déperdussin	25.74	15.994

C. *GREATEST DURATION*

(a) *Aviator Alone*

				DURATION OF FLIGHT
H. Farman	Etampes	Dec. 18, 1910	H. Farman	8 hrs. 12′ 47″2/5

(b) *Aviator and One Passenger*

Amerigo	Mülhausen	Dec. 11, 1910	Aviatik	3 hrs. 19′ 39″4/5

(c) *Aviator and Two Passengers*

J. Mamet	Reims	July 9, 1910	Blériot	1 hr. 38′ 40″

(d) *Aviator and Three Passengers*

G. Busson	Reims	Mar. 10, 1911	Déperdussin	31′ 23″1/5

(e) *Aviator and Four Passengers*

G. Busson	Reims	Mar. 10, 1911	Déperdussin	17′ 28″1/5

D. *GREATEST ALTITUDE*

(a) *Aviator Alone*

				ALTITUDE ATTAINED METRES	FEET
G. Legagneux	Pau	Dec. 9, 1910	Blériot	3,100	10,171

(b) *Aviator and One Passenger*

F. Verschaeve	Belgium	Jan. 29, 1911		428	1,404

* The above list is checked to April 30th; cable-despatches of May 11th state that Nieuport flew, at Mourmelon, 100 kilometres in 50′ 0″; in so doing he must have beaten those records marked by an asterisk.

G. F. C. W.

GENERAL NEWS

New England News

By Denys P. Myers

On April 20 Gov. Eugene N. Foss, of Massachusetts, sent a message to the House of Representatives of the Commonwealth calling attention to the necessity for regulation of aerial traffic and suggesting concurrent action in this regard by all the New England states. This suggestion is the first of its kind in the western hemisphere. The message and accompanying document, a copy of the bill pending before the Connecticut Legislature, were referred to the House Committee on Public Health and sent up to the Senate for concurrence on the same day they were received. The message reads:

The Commonwealth of Massachusetts,
Excutive Department, Boston, April 20, 1911.
To the Honorable Senate and House of Representatives:

I call to your attention the necessity of providing for the regulation of aeroplanes.

These machines are now being manufactured in such numbers that the present year will probably witness a greatly increased use of them. They already present a serious menace to life, and their increasing use will occasion a much more serious danger to the public.

They should, I believe, be restricted, so far as law can accomplish such result, to certain limited and specified routes and practice grounds.

Governor Baldwin of Connecticut has kindly sent me the draft of a bill recently introduced into the Legislature of that state, and I transmit it herewith for your consideration.

In connection with this subject I desire to say that it appears to me that great advantage would result if all legislation of this sort is enacted in co-operation with the legislatures of the other New England states.

For lack of such co-operation, Massachusetts and the other New England states have in the past enacted laws regulating transportation which are widely at variance. Much confusion and waste result from such lack of method, and our New England states thus lose the value which a sort of confederation in our legislative methods would bring about.

I urge you to consult with the governing bodies of other New England states and endeavor to formulate laws for the regulation of transportation by air craft which will be fairly uniform.

EUGENE N. FOSS.

Connecticut News

By S. H. Patterson

It is expected that the State Legislature will pass Mr. Forbes' aviation bill substantially as presented. This will be the most complete bill regulating aviation adopted by any state.

Aviator Charles K. Hamilton of New Britain, Conn., in trying out a Burgess-Wright, biplane April 23, met with an accident and fell from a height of 80 feet. The machine was badly smashed, but Hamilton, with his customary luck, escaped uninjured.

George C. Nealy has been making a number of flights at Lordship Park, Stamford, Conn., in a Blériot monoplane, with gyroscope attachment, owned by Stanley Y. Beach, Aeronautical Editor of the "Scientific American."

Earle L. Ovington gave a three days' exhibition at Tilyon's Steeplechase Island, just off Bridgeport, on May 5, 6 and 7. On the first day Ovington made a very pretty flight of about fifteen miles, circling over Long Island Sound. He did not fly on the following day, as the number of paid admissions were too small to risk taking out his $10,000 machine. There was a good attendance on Sunday, May 7, and Mr. Ovington made a very sensational flight of about sixteen minutes and attained an altitude of 2,460 feet. On making a turn in this flight at a height of about 1,500 feet he encountered an "air-hole" and dropped fully 100 feet before regaining control. On returning to the island he made a perfect landing on the very small race track, and in this flight demonstrated his perfect control of his machine at all times.

Mr. Ovington has a 1911 Blériot equipped with a 1911 70-horse power Gnôme motor, which drives an 8 foot 4 inch propeller of 2½ foot pitch and is capable of making seventy miles per hour.

After his Sunday flight Mr. Ovington stated that he did not intend to do any more exhibition flying, but would confine himself to cross country work and keep his flyer at Belmont Park.

The meeting held at Nutmeg Park, Bridgeport, May 11, 12 and 13, in which Curtiss, McCurdy and Beachey performed was decidedly a most successful event. Lieut. J. E. Fickel of the Twenty-ninth United States Infantry, and Lieut. Ellyson, of the United States Navy, conducted experiments in shooting from aeroplanes at this meet.

The Bridgeport "Evening Post" conducted a voting contest in connection with this meet. The man and woman who received the largest number of votes were taken as passengers by Mr. Curtiss on one of his flights.

Clifford B. Harmon has leased Sandy Beach at Greenwich, Conn., where he will keep his new aeroplane of military type and do his flying. He will have as a pupil Joseph Anderson, a Greenwich High School boy, who has perfected an engine of special design with double propellers.

Washington News

By Courtland Wrightson

Washington's three day aviation meet opened on Friday, May 5, with ideal weather and good flights were made by J. A. D. McCurdy, Lincoln Beachey and Hugh A. Robinson in Curtiss biplanes. Mr. Beachey made a spectacular flight from the Benning race track to the capitol, where he circled the dome several times before starting his return flight, which was accomplished at a height of 3,000 feet. This was the first time the dome had been circled by an aeroplane and it is interesting to note that Mr. Beachey, five years ago, made the first and only flight around the dome in a dirigible halloon. Mr. Beachey took several photographs while aloft with a camera attached to the front of his machine.

On the second day, Saturday, May 6, a race of five miles was witnessed between J. A. D. McCurdy and Lincoln Beachey. The latter won, accomplishing the distance in five minutes.

On Sunday, the 7th, Lincoln Beachey and J. A. D. McCurdy performed air "stunts" and delighted the spectators by racing each other and an automobile. Both aeroplanes easily outdistanced the automobile and Mr. Beachey again nosed out his air competitor. Mr. Beachey also won an American license before a representative of the Aero Club of America by flying five times in a figure eight at an altitude of 600 feet and landing within seven feet of a given point.

EARLE L. OVINGTON WHO HAS BEEN DOING SOME SPLENDID FLYING LATELY.

H. A. Robinson made several flights, circling the course and rising to a height of 500 feet. He also made an attempt for his pilot's license, but on making his third figure eight his motor began to cause trouble and then completely stopped. Although he was then flying over some woods, by gliding he managed to get into the vicinity of a nearby marsh, into which he and his machine were precipitated, the machine being buried in mud to the seat. Mr. Robinson, however, escaped with a few bruises and scratches.

J. A. D. McCurdy, in the bomb throwing contest, hit the mark four times out of six at a height of 300 feet.

Messrs. Fred C. Dieterich and Albert E. Dieterich, patent attorneys of Washington, D. C., have received a patent on a device which has for its object the means to provide a power plant in which there is always present a sufficient amount of reserve energy that is automatically brought into operation upon the failure of the main motive power when the operation of the same drops below a predetermined degree. The number of this patent is 990,712.

California News

By Ernest Ohrt.

Clarence Walker made a twelve-mile flight from Palo Alto to San Mateo in his 60-horse power Curtiss biplane on April 11. He drove his aeroplane against a stiff wind and except for a stop of twenty minutes at Redwood City, the actual time for the trip was fifteen minutes. He flew at a height of 500 feet, and near Redwood City, where his engines stopped, he landed in a field where a Chinaman was working and who became panic stricken. Two days later he made the return trip with no stop.

While making an exhibition flight at Palo Alto on April 23, Walker met with an accident in which his running gear was badly smashed.

Charles P. Walsh tried for his license on April 16; he circled Dominguez field three times and also made a passenger-carrying flight of more than a mile.

Norman De Vaux, manager of the Reo Pacific Auto Company, has secured the agency for the Curtiss biplane.

On April 16 the Ohrt brothers' glider No. 2 made 28 successful towed flights. The Ohrt brothers, W. Hanley and Lieut. M. McHenry, of the National Guard of California, went as high as 100 feet. Flights were made from the San Francisco beach.

The R. O. Rubel, Jr., Company, of Louisville, Ky., reports the sale of two "Gray Eagle" motors. One is for Mr. Louis Ferner of Trenton, N. J., the other being sold to Mr. D. L. Dennis of Franklin, Ind.

The Pacific Coast Aeronautical Supply Company have formed an exhibition department, which will be ready for engagements by the 20th of June. They have four machines that can be booked in any section of the United States.

The Moisant Aviators

By Edward J. McCormack.

The Moisant International Aviators celebrated their return tour to this country with extremely sensational flying at Pueblo, Colo., after their brilliant exhibitions in Mexico and Cuba.

At Hutchinson, Kansas, which was the first stop after leaving Havana, and then at Pueblo, the Moisant aviators proved beyond a question of a doubt that flying at high altitudes in Mexico and in the balmy breezes of the little island republic had not decreased their pluck or skill.

At Hutchinson thousands of Kansas business men and farmers were given their first sight of an aeroplane. The country for miles around was depopulated. Hutchinson was the mecca for everyone who was able to own, buy, borrow or rent an automobile or a horse. Every train brought in its cargo of human freight—and a very curious and excited cargo it was.

The flights were, to say the least, great. Simon and Barrier opened the meet in a wind that was blowing over thirty miles an hour. Twice during the meet did an aviator come near meeting disaster. Simon was caught in a counter current of wind and his machine dropped thirty feet or so. Barrier on the second day took a sudden plunge that gave even the stolid French champion a scare.

After three days of flying the Moisant Aviators left Hutchinson for Pueblo.

Hardly three hours after the arrival of the special train bearing the aviators, Réné Simon flew over the business section of the city. The French birdman made the flight in spite of a puffy wind that caused him no little trouble. During the afternoon's programme he was again caught aloft in a hard wind and after a hair-raising joy ride in his monoplane succeeded in landing without further damage than a broken strut or two and a badly jarred motor.

The International Aviators went from Pueblo to Denver and then to Kansas City.

Mineola and Belmont Park

The fine weather of the last few weeks has occasioned considerable activity on the flying grounds at Mineola and Belmont Park, and almost every day there are new arrivals at these two places. We append a list of the machines now at Mineola:

AERONAUTICAL SOCIETY SHEDS.

1. Louis Rosenbaum, Curtiss type, Bradley-Rosenbaum 8-cylinder, air-cooled motor.
2. George Schmitt, Curtiss type, built by Wittemann Brothers, Elbridge 40-60-horse power motor and Requa-Gibson propeller.
3. Clyde, Curtiss type, made by F. Raiche, Fox 60-80-horse power motor.
4. Herricke Aitken, Curtiss type, Aeromotor, 40-horse power.
5. Blood and Hadley, original biplane, Roberts motor.
6. Louis Ragot, original monoplane.
7. Joseph Stevenson, Curtiss type.
8. N. Thor, original two propeller monoplane.
9. Walden and Dyott monoplane. Anzani 3-cylinder 30-horse power motor.
10. Captain Thomas S. Baldwin, all steel biplane built by Wittemann Brothers and fitted with an Elbridge engine and Requa-Gibson propeller.

AERO CLUB SHEDS.

1. Walter Lowe Fairchild, original monoplane, Emerson 2-cycle 100-horse power motor.

2. Moisant monoplane (Blériot type), Anzani motor.

On April 12 the first Model F Burgess biplane, "The Moth," known as the Burgess-Wright aeroplane, arrived at Mineola and the next morning April 13, W. Starling Burgess, the builder, took the machine to the aviation field and without waiting for any preliminaries, started the biplane off on a ten mile flight. The aeroplane rose smoothly and circled outside the limits of the aviation field under perfect control. After sixteen minutes' flight Mr. Burgess brought his machine to earth.

The Burgess-Wright aeroplane, manufactured under license from the Wright Company, is a duplicate of the latest Wright with the 35-horse power Wright power plant. The power plant and transmission were furnished by the Wright Company. While built on the same lines as the Wright model, the Burgess Company and Curtis have, however, introduced many minor modifications, all of which add either to the strength or to the finish of their Model F. The value of these slight changes is more apparent to the constructor and the connoisseur than to the general public, as most of them are inconspicuous and, in fact, some of them are completely hidden within the surfaces. The outside finish is up to the high standard which has made the Burgess racing yachts famous in Eastern waters. The wood work has a coat of spar varnish over the aluminum paint. Metal parts are nickel plated. Brass work is polished and the whole machine is finished and maintained in apple-pie ship shape order. As a finishing touch a small signal staff is mounted on the front skid, where it carries the Burgess private signal first made familiar on the Burgess cup defender, "Puritan." A light automobile clock mounted on one of the skid struts.

A critical inspection of the biplane showed the main body in perfect alignment and so rigid that no deflection was observable either in the front truss or in the tail when the weight was unevenly supported by lifting up either extremity. This machine is of the "headless" type and is controlled by the well-known Wright flexible rear elevator and box vertical rudder.

While future Burgess-Wrights will be covered with Goodyear No. 10 aeroplane fabric, the present aeroplane uses the special sail cloth known as Union silk, furnished and cut by Messrs. Wilson & Silsby, the Boston sail makers. Goodyear 20x2 inch aeroplane tires are used mounted with the usual Wright suspension. As may be inferred from the foregoing, the Wright Company cooperates heartily with the Burgess Company and Curtis in the construction of these machines.

The first school biplane (Model D) of the Burgess Company and Curtis came to grief on April 17 when Hilliard started out with A. Leo Stevens as passenger for a cross country flight. He had gone hardly two miles before motor trouble developed, the motor stopping in mid-air. Owing to the nearness of the motor parkway bridge and fences, Mr. Hilliard had no opportunity to find a smooth landing place, but was forced to come down in a cramped position so abruptly that parts of the biplane were broken and the aviators landed on the ground. Luckily neither was hurt and the machine was soon back in quarters.

Some good flights were witnessed at the Mineola Aviation Field on May 5. William Haupt, the automobile driver, was out in his Blériot and made his best flight by ascending 150 feet and making several circuits of the field. George Schmitt of Rutland, Vt., was up in a Curtiss type biplane. He made five flights, ascending to a height of more than 50 feet.

Sunday, May 7, was the opening day of the aviation season at Mineola, and quite a large attendance was on hand in the afternoon. George Schmitt, a novice, made an excellent flight of twenty minutes in his Wittemann built Curtiss type, which is fitted with an Elbridge motor. Schmitt is only a beginner, but he bids fair to establish a reputation for himself as a flyer.

Walter Lowe Fairchild had his monoplane out testing the motor and thrust of the Requa Gibson propeller. The large Hadley and Blood biplane, which is fitted with a Roberts motor, was also out and made several short flights with Hadley in the pilot's seat.

On May 8 George Schmitt was out at 6 o'clock a. m. and made several circuits of the field at a height of 150 feet and taking turns at sharp angles.

Charles K. Hamilton has filed articles of incorporation of the Hamilton Aviation Company, capitalized at $75,000. The company is composed of Mr. Hamilton and his wife, Mr. and Mrs. J. B. Beadette, Mr. Hamilton's stepfather and his mother, and Thomas W. O'Connor. The company is formed for the purpose of manufacturing, exhibiting, selling and buying aeroplanes. Mr. Hamilton intends using the Andrews Field at Winsted, Conn., for an aviation park and hopes to establish the greatest aeroplane centre in the world there.

Claude Grahame-White, winner of the Gordon Bennett trophy at the Belmont Park aviation meet last autumn and therefore regarded as the holder of the world's aviation championship title, is having built by the Burgess Company and Curtis, of Marblehead, Mass., a set of ten biplanes. This is regarded by American aviators as the highest compliment from an individual that can be paid to Uncle Sam's youngest industry, and it is further considered a foreign expert's endorsement of the rubberized aeroplane wing fabric manufactured by the Goodyear Tire and Rubber Company of Akron, Ohio, with which these machines are being covered.

HOWARD LEVAN, THE 17-YEAR-OLD TOLEDO AVIATOR FLYING A STROBEL CURTISS-TYPE BIPLANE ACROSS THE MAUMEE BAY. LEVAN'S LONGEST FLIGHT UP TO MAY 9TH WAS 32 MILES ACROSS-COUNTRY.

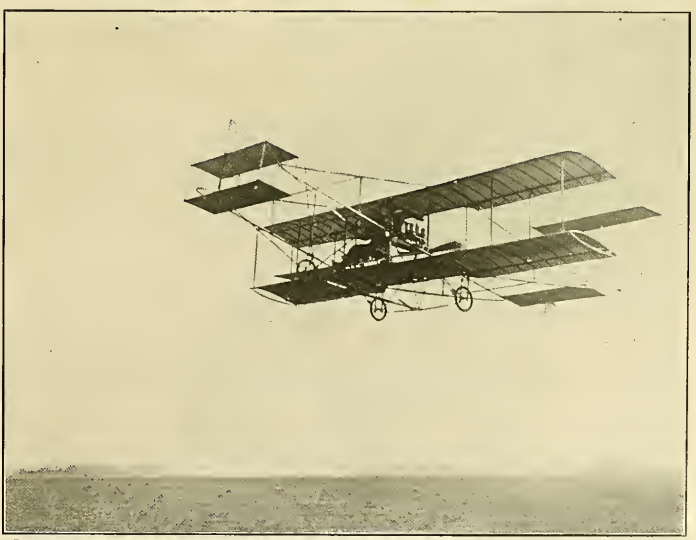
W. Starling Burgess, of Marblehead, Mass., experienced a nasty fall on May 5 while flying one of his new biplanes over the aviation field at Atlantic. The machine was badly damaged, but the aviator fortunately escaped without injury. No details are to hand concerning the cause of the accident.

St. Croix Johnstone, of Chicago, has joined the Moisant international aviators. Mr. Johnstone will be seen in a series of exhibitions and will also enter all the big contests that will be held on this side of the Atlantic, particularly those of a cross country nature. Mr. Johnstone will use the new Moisant metal limousine monoplane.

On May 5, Albert Grasing of Highwood, N. J., received a serious injury while testing a monoplane at Englewood, which he and and his brothers had built. One of the brothers took his seat in the machine for the trial and went around the field, keeping the machine on the ground. Satisfied that the machine worked properly, Albert Grasing signalled the brother who was operating it to slow down. As the latter did so the machine veered off the track and seemed about to run into a tree, when Albert Grasing ran forward and attempted to stop it. He did not, however, gauge the distance accurately, for one of the blades struck him on the head, inflicting serious injury. This accident should serve as a warning to experimenters and spectators to keep clear of the propeller.

The management of the Interstate Fair to be held at Trenton, N. J., during the week of September 25, intends to hold aeroplane exhibitions during the week. Aviators desirous of booking are advised to communicate with Mr. William T. Taylor, who is in charge of the aeronautical division.

Earle L. Ovington, the American aviator who has recently returned from France, where he gained his pilot's license at the Blériot school, has brought back with him a new 70-horse power Gnôme racing Blériot with which he hopes to



George L. Schmitt, the young aviator, of Rutland, Vt., who has been flying a short time, went into the air May 7th at Mineola, and mounting to a height of 200 feet, struck a level balance and began to wheel around the field like a veteran. At the end of 22 minutes, Schmitt came down amid the tooting of the automobile horns and sirens. Schmitt is a 19-year-old high school boy. He uses a Wittemann Curtiss type biplane equipped with a 40 h. p. Elbridge "Featheweight" engine and Requa-Gibson Propeller.

wrest the Gordon Bennett cup from England. Mr. Ovington's Blériot is the first of the new "inverse curve tail" type which will be the standard equipment for all 1911 single seater racers about. The main planes are approximately the same shape and size as those fitted to the regular 50-horse power types. This machine is the first and so far the only single seater to be sent out from the Blériot factory with the new 70-horse power motor.

Mr. Ovington has had several special features incorporated, principally to strengthen the construction. Instead of the four steel straps under the wings he has had six fitted. There are also two extra main-spars running the full length of the wings and just twice as many ribs as in the ordinary 50-horse power Blériots. Every control wire is duplicated, while the warping wires are extra large and strong.

A feature of the Aeronautical Society's banquet held at the Hotel Astor, New York, on April 27, was the menus, which were printed on Goodyear aeroplane fabric. This is a new rubberized cloth made especially for the wings of heavier than air machines. It had done so much to advance the triumph of the "air man" that the committee on arrangements included it in the features which marked the banquet as a unique event.

Army News

During the military manoeuvres held at San Antonio, the government aeroplane was made use of and on May 4 the aeroplane was ordered to scout east and north of the battle front formed twelve miles from San Antonio, for signs of the enemy, the division cavalry having reported no signs of the enemy. Lieut. B. D. Foulois and Aviator Frank Coffyn were asleep when the order arrived, but were awakened and inside of ten minutes were off reconnoitering. They returned forty minutes later without having been able to locate the enemy.

Future army and militia manoeuvres will include training in aeronautics, and there will be at least one aeroplane on the field.

The War Department is already mapping out plans for manoeuvres to be gone through by the Massachusetts militia which will begin late in July and work out important military problems. Captain M. E. Hanna, U. S. A., of the Chief of Staff's office, has just returned from a hurried trip to the scene of the manoeuvres. He went over a good portion of the ground in an automobile and is having maps prepared to aid the militia officers.

There will be five regiments of infantry, three batteries of artillery, four troops of cavalry, one signal corps, one hospital and an ambulance corps and two companies of cadets. One aeroplane at least will be operated for scouting purposes.

The advantages which the use of the aeroplane offers to the army necessitates a radical departure from some of the older methods of reconnissance. Difficulties in locating the enemy's position or in getting an idea of the topography of the ground are minimized by the work which observers can do from their position high in the air.

Altogether there will he upward of six thousand men on the field when the war game begins in Massachusetts.

Indiana News

The "Aerodrome" of the Aero Club of Indiana, which is located on the Indianapolis Motor Speedway's grounds, houses five machines—four Curtiss and one Blériot type.

Shaw and Slaick own two of the Curtiss, they are the most modernly equipped and the only ones in constant use. The other Curtiss belongs to G. L. Bumbaugh, the pioneer balloon man, and is a double surface plane having a box tail. A noticeable feature is that his rear wheel is turned by the same control that operates his perpendicular rudder.

The Hunt machine which is also of the Curtiss type bears no special features whatever.

Ray Harroun, the well-known Marmon driver, has constructed a monoplane of the Blériot type. He has just returned from Tampa, Florida, making a few short flights and is now building a couple of new machines in preparation for his aviation school which he intends to start soon.

Notes

The Chicago Aeroplane Manufacturing Company of Chicago, Ill., announce an increase in their capital stock to $50,000. The rise of this company has been rapid. Less than two months ago the company found it necessary to more than treble their floor space and now occupy quarters with seven stores on Cottage Grove avenue, 2224 to 2238, and three stores on Indiana avenue, the building extending through from one street to the other.

In addition to this, the company has an aviation field, with hangars, shops and living rooms for those of its employees and students who desire to live at the aviation grounds.

The present equipment provides for the completion of two aeroplanes per week. In spite of these increased facilities the company finds itself unable to meet the demand for its product and negotiations have already been closed for three more stores on Indiana avenue, which are being remodeled to be used as machine shops.

A new control and automatic stability for aeroplanes has been perfected and patented by M. B. Dunkle of Culdesas, Idaho. Its main features may be described briefly as follows:

The supporting planes are hinged to the chassis in such a manner that their line of connection forms an angle converging to the rear. Thus as a side is swung down its angle of incidence is increased or when raised its angle is decreased, and the air pressure on that side respectively increased or decreased. The opposing sides are connected so they reciprocate when acted upon by the unequal pressure of the air and by thus qualizing the air pressure the equilibrium is preserved.

This movement of the planes is either entirely automatic or under the control of the operator. An additional adaptation of the connecting element permits the use of the main planes as elevators, and also to adjust themselves to changes in speed as in the stopping of the engine. This plan does entirely away with any twisting or warping of the planes, and with extra weight or complex apparatus for control or equilibrium.

Mr. Charles H. Metz, head of the Metz Manufacturing Company of Waltham, Mass., builders of aeroplanes and automobiles, has recently purchased a tract of land in that town which comprises 120 acres, where he intends to establish an aviation school and factory.

Mr. W. Wilson Southard of Baltimore has recently had delivered to him a 40-50-horse power Roberts aero motor, which he is installing in a large monoplane of his own design, which incorporates some of the features of the Blériot and Antoinette types.

On April 21, Horace F. Kearney of Kansas City met with an accident while flying at St. Louis. The accident was caused when he tried to cross a barbed wire fence and caught the rear wheels on it, wrecking the aeroplane, but fortunately not seriously injuring the aviator.

Chicago is to hold a great air meet in August. One hundred thousand dollars has been offered for prizes, and Harold McCormick, John D. Rockefeller's son-in-law, is the prime mover behind the meet.

Failing in their attempts to reach the altitude of 4,700 feet gained by James J Ward in the meet at Nashville on April 28, J. A. McCurdy and Lincoln Beachey on April 30 relinquished to the youngster the silver cup offered for the highest altitude made during the meet.

The White Aeroplane Company of Brooklyn, New York, have gone into the making of regular aeroplanes and have shipped one Curtiss Willard and a racing monoplane which is of unique design.

The Queen Monoplane Company of Fort George is conducting an aviation school at Belmont Park which is one of the largest of its kind in the country. Its factory is most complete and is being rushed to its full capacity.

The Aeronautical School of Engineers have shipped to Mineola two more machines. They have now four machines there which are being flown whenever weather permits and Manuel A. Gonvalez, a Philippine, is being instructed at the school.

Lieut. George E. M. Kelly of the U. S. Army was killed in a flight at San Antonio on May 10th. The accident appears to have been caused by the aviator making a bad landing. He came down at a sharp angle and bounced right off the ground again, at the same time losing control of the machine which heeled over and fell.

Gyroscopic Force

(*Continued from Page 123*)

ment he again proved the contrary of his claims in that, while the gyro refused to move in the direction away from the applied force, *it did* move in other and complex paths that must have resulted in disaster to an aeroplane. After these convincing (?) demonstrations the lecturer, with a satisfied smile on his face, informed the audience that he had applied for patents on his "wonderful invention," and that he felt certain that the world would eventually recognize in him a great life saver for having discovered and invented the "Gyroscope Aeroplane Stabilizer." He thereupon pushed out his chest a bit further, buttoned his coat over it, picked up his apparatus and wended his way homeward to smoke, and dream again.

In my long study of gyroscopic force I have positively proven, and I believe that many other experimenters have also found, that when the gyrating motion is stopped, the gyro immediately falls and, under this condition, it exhibits no more life than does a brick.

In the upper left hand corner of one of the illustrations is shown one of my twin rotor gyros. Each rotor weighs but eight ounces, is 2½ inches in diameter, and the entire gyro weighs approximately 5 lbs. This gyro is provided with four flanged wheels, so that it may travel on rails. For the experiment shown in the accompanying illustration, I constructed an inclined track at an angle of 30 degrees, a curve and an extension on a horizontal plane, substantially as shown. When one or both gyros were revolving anti-clockwise, as viewed from the front, thus representing the high speed flywheel motors and the revolving cylinder types, and the gyro then placed on the track at the top of the incline and released, it ran down until its direction was suddenly changed to that of the horizontal; at this point it was jerked violently to the left, toppled over and plunged downward, head foremost. This test never failed to show the same disastrous result. Again, when the rotors were revolved in opposite directions, to represent the action of my Non-Gyro Aero Motor, the gyro ran smoothly down the incline and out on the horizontal track without the slightest tremor.

In a paper recently read before the French Society of Engineers by one of their prominent members, M. Bouchaud-Praceig, he stated that a great number of aeroplane accidents were undoubtedly due to the gyroscopic force generated by the revolving motors. M. Bouchaud-Praceig also gave some demonstrations with a twin gyro similar to mine and suggested, as a remedy, that two motors revolving in opposite directions, one driving a tractive and the other a propulsive propeller, be employed in aeroplanes. He further suggested that clutches be provided and the propllers cut out when making a glide. He explained that this arrangement would permit the motors to be operated and the force (?) so generated would assist in stabilizing the machine. In this later suggestion the gentleman was in error, as there would be absolutely no more force perceptible in the motors when operated in this manner than if they were not running at all. He also neglected to state that, to accomplish perfect results, it would be necessary to connect the motors so that they would always revolve with the same speed and also that the revolving mass of one motor would have to be of the same weight as the other. Interesting extracts from this paper with illustrations were printed in "La Nature" under date of March 4th, 1911.

In view of the above facts, and *they are facts*, as can be readily vertified by anyone that may care to experiment right, are we not tempting fate by carrying up into the air this powerfully destructive force hidden away in our aeroplanes, to risk having it awakened by a sudden lurch of the machine and, by sheer brute force, hurl us to our deaths? There are also several other reasons why all gyroscopic force should be eliminated from our aeroplanes, but as they bear directly upon the science of aeronautics, and as that subject is too big to take up at this writing, I will save them for future discussion.

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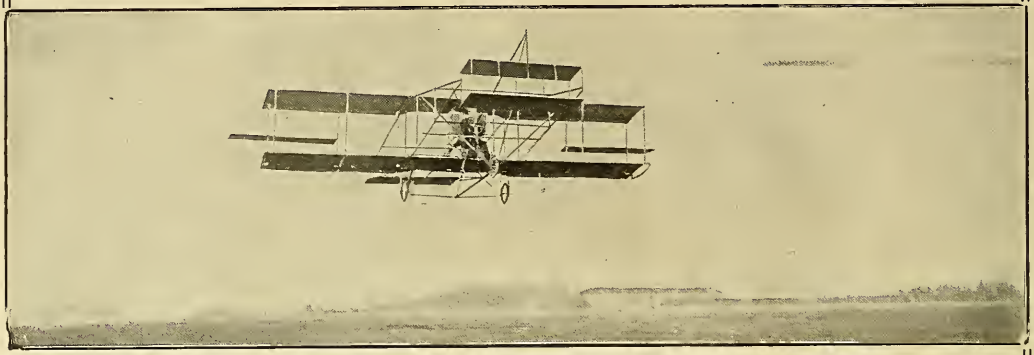

GEORGE SCHMITT, A YOUNG NOVICE, FLYING AT MINEOLA

Mineola, L. I., April 27.—George Schmitt, of Rutland, Vt., who did a little flying in his home town last fall, has been the star performer at Mineola the past week. He has a Curtiss type machine, and is on the field early and late. His best flight was made in the early part of the week, when he did a mile cross country and return. Schmitt is but 19, and has the enthusiasm of a boy with a new toy. Old aviators say he has the making of a cracker-jack aviator if he will curb his exuberance, take aviation seriously, and not try to learn it all at once.

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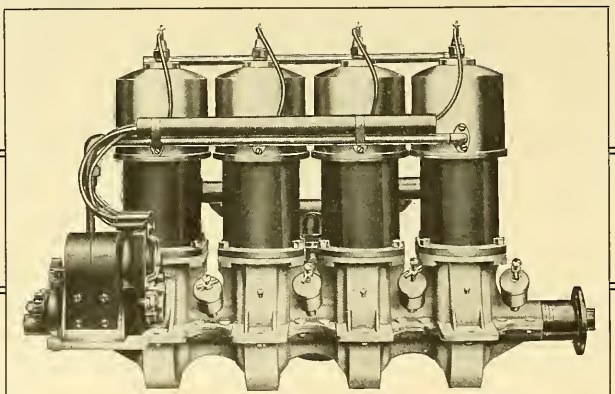

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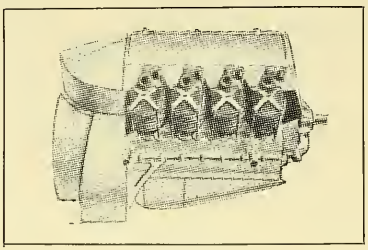

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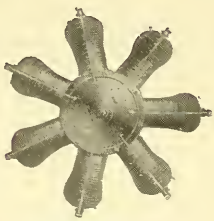

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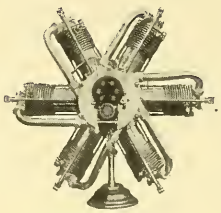

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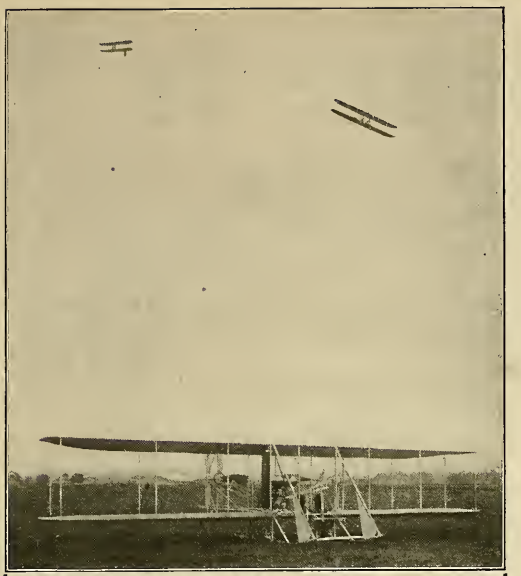

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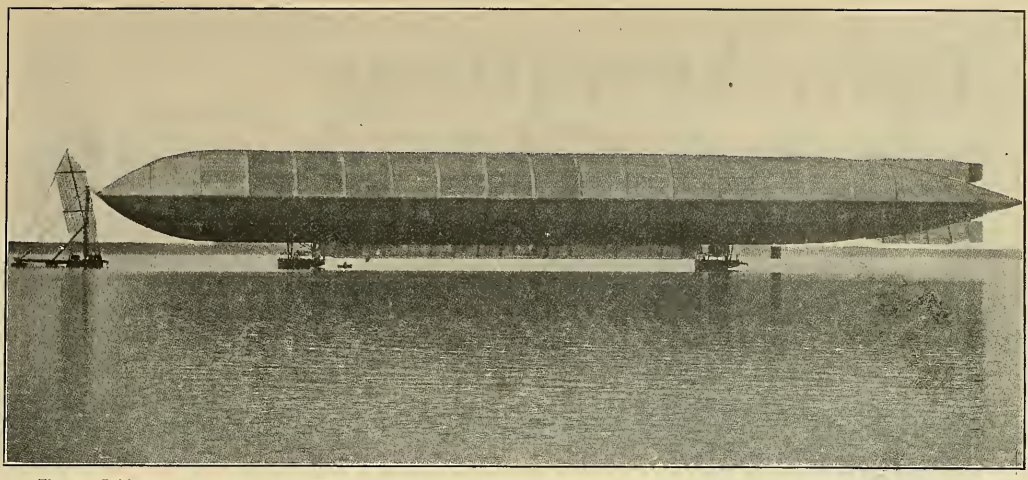

The new British Naval dirigible No. 1, resting in her moorings in Cavendish Dock, near London. A full description and drawing of this airship was published in the April number of AIRCRAFT. This dirigible has just been completed, after two years of planning and labor, and the above is one of the first photographs taken. It will be noticed that the front end of the airship is blunt, while the rear end tapers away to a sharp point.

Attention is also called to the novel method of anchorage and the windshield.

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AIRCRAFT

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AIRCRAFT

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$PORT$MAN$HIP—?

By Henry A. Wise Wood

THE time has come when the aeronautic fraternity in the United States must settle the correct orthography of the word, *sportsmanship*. It must be determined whether the dollar-sign shall prevail in its spelling—and in its practice—or the old-fashioned Anglo-Saxon form of the word be used in the terminology of flying, to express *the ort of participating in sport for the love of sport*. In flying, of course, as in all other recreations, the dollar has its place—its legitimate place—but if flying is to be developed and survive as a sport, those who foster it must be clean of the charge that they have used it for profit. This is axiomatic; but even so obvious a truth needs sometimes to be shouted into the ears of people. Flying, like many another new-found gold field, has need of its vigilance committee,—and this must consist of those upon whom rest the responsibilities of the sport, whether they govern flying in a small community, or in the nation at large. Already many evils are afoot that need to be considered and dealt with, while still others are forming. To treat these effectively there must be lodged in the sporting authorities wisdom and power; and in their personnel freedom from interested motives, with an unselfish willingness to render service without return.

Fortunately there already exists an international body of unimpeachable character, which exercises supreme authority everywhere over the sport. According to its first statute the Fédération Aéronautique Internationale is "a Union of the Clubs governing aeronautic sport in their respective countries." By virtue of the sanction of this body alone can pilots receive and hold licenses, and competitions and trials for record occur; while, under its laws, "All competitions, record-trials, etc., not organized in accordance with these," (its) "rules are forbidden, and all contestants in such shall be disqualified." The general principles to be observed in the conduct of the sport of flying, as expressed in certain regulations, have been laid down by the F. A. I., and these its representative club in each country is authorized, and is firmly required, to enforce. In France the Aéro-Club de France, and in England and the British possessions the Royal Aero Club of the United Kingdom, represent and act for the Fédération Aéronautique Internationale,—while in the United States the Aero Club of America is its representative. But one club in a nation can exercise the powers of this body, as is illustrated by the fact that the Aero Club of Canada, for instance, can only affiliate directly to the Royal Aero Club of the United Kingdom in order that it should enjoy the benefits of recognition. In this respect the question has been asked, whether the prerogatives possessed by a national representative of the F. A. I. may not be exercised on its behalf by another organization. The answer is that they cannot; that its prerogatives are not transferable. The Fédération Aéronautique Internationale rigidly imposes upon its members the initial requirement that each shall be the sovereign sporting power in its own country. As, it is obvious, there can be in each country but a single central authority, and this of necessity is the representative in that country of the F. A. I., it behooves those interested in the development of the sport to strive to do two things: they must labor to make of their sovereign club a body which is actually representative of the nation at large; and they must strengthen its hands to the end that the sport of flying may be dealt with in such a broad spirit that it shall become in every sense a national pastime, and rest upon a nation-wide structure of legitimately conducted industrial enterprises. It goes without saying that if the sport be energetically fostered by the good-willed co-operation of intelligent American sportsmen, regardless of their locality, and be by them kept clean of prostituting influences, it should quickly become a huge national asset.

The situation, therefore, would seem urgently to call for the coming together, under the auspices of our national club, of all those, in all sections of the country, who wish actively to co-operate in the sport of flying; in this new sport which has such amazing possibilities. Already a nucleus of strong and able men are gathering at the helm of aeronautics in this country; but many more are needed, so tremendous are the opportunities for service, and all who volunteer may count upon a cordial reception by those upon whom the national responsibilities at present rest. The movement needs active men who will contribute thought, or work, or money, or influence to its furtherance; it needs laymen, scientists, and sportsmen,—but it must be guarded against the charlatan, and those who fly false colors. The real-estate operator, the amusement-park man, the exploiter of questionable aeronautic enterprises all will come in the guise of sportsmen seeking power. These must be rigidly denied control of the sport. To suppress all who degrade it is the duty of the national club, which alone can exercise the summary powers of the international organization, and to its assistance should rally all who wish flying to be put upon a healthy sporting basis. It is to the necessity for widespread co-operation in the defence of the sport against spoliation that the writer referred, when he said that the time has come when the aeronautic fraternity in the United States must settle the correct orthography of the word, sportsmanship.

While the subject of sportsmanship is under discussion it should be pointed out that there is a field in flying for the sportsman of means which is as yet untouched, and which offers possibilities of the most attractive kind. Why should not one have a flying stable, and enter one's machines and pilots in national and international events? In this country airplanes are owned for the most part by professional flyers, who as a rule cannot afford expensive and well-groomed outfits. In a few instances only have sportsmen purchased machines; while even in these there seems to be a universal disinclination on the part of owners to fly. This leaves the practice of the sport in

America in a strange position. We all *believe* in flying; are glad to watch and encourage the sport; and occasionally purchase a machine, which we hasten to place at the disposal of anyone else who will use it,—but we ourselves do not take to the air. This hesitation is explicable, of course, in the light of the recent unfortunate American disasters; nevertheless this lethargic influence must be shaken off, and a start made in the direction of the development of the amateur side of flying. The institution of the flying stable, it seems to the writer, with its one or more pilots and its variety of craft, would be a very long first step in the right direction. It would greatly add to the popular and pleasurable side of the sport,—while from owning an airplane, which is flown by one's pilot, to becoming an interested passenger, and, at one's pleasure, a driver, is to advance in the art by such safe and insensible degrees as to make this seem the correct method of developing the amateur. Not every sportsman, it is obvious, could afford such a luxury, but an inestimable advantage of the system would lie in the fact that one's friends also would share its privileges; while, in one way or another, its benefits would eventually extend to the amateur fraternity at large.

NINETEEN ELEVEN'S CUP-RACE

By G. F. Campbell Wood

EVERY sport has its classic: "Racing" has its Epsom Derby; "polo" its International Cup; yachting its "America's" Cup; coursing its Waterloo Cup; motoring its Grand Prix de l'A. C. F.; motor-boating its Coupe des Nations; cycling its Grand Prix de Paris; rowing its Henley regatta; athletics their Olympic Games, etc., etc.; the latest and grandest sport of all: flying, has also its classic and, if it lacks the prestige of age, the Gordon Bennett Aviation Cup has nevertheless come to be recognized as the blue-ribbon event of the year in flying.

Donated by James Gordon Bennett in the last weeks of 1908—when Wilbur Wright was once and for all proving at Le Mans that human flight had really "arrived"—the Coupe Internationale d'Aviation was first contested for on Saturday, August 28th, 1909, at the first Rheims meet.

Against the formidable coalition of French fliers—Blériot, Latham, Lefebvre, Tissandier, etc.,—but one American ventured to compete, Glenn H. Curtiss. Driving an all-American machine of his own make: Curtiss biplane, Curtiss motor, Curtiss propeller, he defended the interests, prestige and honor of his country, his club and his firm in a manner which will never be forgotten by those who, in those dim, distant days of twenty-two months ago, were already following the startling growth of the new-born Art.

On not one single occasion did he alight where or when he did not desire to (a record shared only at that meet with Henry Farman and his Gnôme-driven Voisin), and on no occasion did he make a false move, a mistake or an unnecessary effort throughout the eight days of the historical tournament.

Like the first contest for the Gordon Bennett Cup for balloons, the first Aviation Cup-race was thus won by the only compatriot of the Cup donor's to be in the race.

The Cup crossed the Atlantic, and on October 29th last, the Aero Club of America's team sought to defend the trophy against the challengers from the Old World. This it did not succeed in doing. The machines of the defenders, either in speed or in reliability, fell far short of those of Leblanc and of Grahame-White and the race was entirely between these two; Grahame-White achieved a magnificent victory, although the Frenchman's greater speed had made it appear unlikely until the latter failed to compete his final lap.

The Cup thus went to England and on July 1st, at Eastchurch, Isle of Sheppey, it will once more be contested for by defenders and challengers.

At this writing nothing definite is known as to the composition of the various teams, and little or nothing has been divulged concerning the exact peculiarities of the special machines built for the event.

It is known that the Bristol Company, which manufactures both biplanes and monoplanes, ordered some time ago one of the only six 140 H. P. Gnôme motors to be turned out, but it seems likely that the fastest machines available for the defending team will again be French ones: Gustave Hamel is probably the best English Blériot driver and is looked on as a likely candidate; on the other hand it is quite likely the Royal Aero Club's team will be the same as last year: Grahame-White, Ogilvie and Radley.

The challengers this year are the Aero Clubs of Austria, of Germany, of France and of America.

At this writing the members of the Continental teams are not named: it is expected one or more drivers of Etrich monoplanes will be named by Austria, while Germany will have several good men and machines to select from,—her most promising candidate being probaby Lindpaintner with his swift Farman.

France's elimination contests are now (June 5th) in progress; they consist in individual trials against the watch, to be made between June 1st and 20th, over the full Gordon Bennett distance of 150 kilometres on a course of a *maximum* perimeter of 5 kilometres (the Cup-race calling of course for a *minimum* perimeter of similar length). Candidates can make their trials when and where they please and as often as they wish, officials of the Aero Club of France being at their disposal to measure the course, time the attempt and man the pylons.

With the tremendous number of French flyers and of fast machines at their disposal, it is impossible to say who will make the team; Morane monoplane, because of Védrines' extraordinary averages across country, has a great reputation for speed; on the other hand it is hardly possible to believe that Blériot has not a Cup-racer in readiness to do him credit. The Morane is a shorter machine than the Blériot and logically should be a better circuit-racer, but the Morane drivers have had very little experience on small circuits. Védrines' only competitive flying in this line occurred at Florence some weeks ago; he can however have greatly improved since then, while, if Morane himself,—now fully recovered from his last year's accident,—should take the helm of one of his racers, the chance of the Borel-Morane machines would appear bright indeed.

Concerning the Blériot chances, it is very probable that Leblanc is anxious to personally achieve the victory which escaped him last year when practically within his grasp; it seems also likely that Lemartin, one of Blériot's crack demonstrators, may try for the team, or better still, Roland Garros, who looms up as a very likely Gordon Bennett Cup-winner indeed and whose victory would certainly please his many friends in America.

Other machines likely to be flown in trials for the team are R. E. P., Déperdussin, Nieuport and Bréguet, and it must be admitted that at this time the contest is absolutely open and might be won by any of these.

One representative only has so far been named by the Aero Club of America: Charles Terres Weymann; he will drive a Nieuport monoplane in the big event.

Recently the attention of the writer was drawn to a note which appeared in a New York Sunday newspaper to the effect that it was "evident that Weymann had no chance in the race." How utterly misleading this statement was can be gauged from the fact—which *remains*, whatever the future may bring forth—

that, were the race run off at the present time, Weymann would unquestionably start as logical favorite; the reason of this is not a very occult one, it is simply that Weymann is as skilful a small-circuit-flyer as the world has as yet known, and that the Nieuport at his disposal is beyond the smallest shadow of a doubt the swiftest machine to have flown up to this time.

In the next few days the Cup-racers may show themselves as fast, perhaps faster, but until then they are unknown quantities, while Weymann with the aid of a motor having just half the power of his Cup-racer recently smashed every world's speed record by several miles-an-hour.

The special Blériots and Moranes will of course go faster than the 35 H. P. Nieuport, but the Cup-racing Nieuport will be a different proposition from the present world's record-holder. Weymann's machine is fitted with one of the new Gnôme "seventies"; for various reasons these motors have not shown themselves as reliable as the famous "fifties"; with a "fifty" there would be little or no question of Weymann going the distance without a hitch and every partisan of an American victory should pray hard on July 1st that the more powerful and apparently less reliable engine keeps up to its work for the required seventy minutes (93 miles at 80 miles an hour).

The fact that these engines of larger bore do not run as smoothly may well influence those firms which intenlded using 140 H. P. Gnômes—which are "double seventies"—to content themselves with 100 H. P. motors, such as Grahame-White won the Cup with last year. Comparing the chances of good behaviour of the "seventy" and the "hundred," it is obvious that having fourteen cylinders instead of seven increases the chance of something happening; it is also generally held that the rear set of cylinders do not cool as efficiently as the forward set, staggered though they be, but it must be remembered that Grahame-White's "hundred" went without a hitch at Belmont Park, whether in his sixty-seven minute flight in the course of which he won the Cup or in the thirty-six minute flight of the dangerous Statue of Liberty contest or in the heat and final of the Grand Speed race, so that taken all in all the "hundred" and the "seventy" are pretty nearly on a par, for reliability.

And now the question arises, can a 70 H. P. Nieuport hold a 100 H. P. Morane or Blériot? It seems useless to speculate on the point without any basis of comparison, (although we know that a 35 H. P. Nieuport is faster than a 50 H. P. Morane). There is one thing certain, however, and that is that we all *hope* it can.

GENERAL STEPHANE BRUN

FATHER OF FRENCH MILITARY AVIATION

by Henry Woodhouse

WHILE the progress in French military aviation is the result of the work of a hundred men, the principal credit for having brought about the remarkable results is due to General Brun, the late Minister of War, who hardly lived to see the full development of his schemes, as he died on February 23d last. With untiring energy and continuous interest, he made aviation develop from an experiment to a well defined factor, occupying a distinct and important position in the military system.

When he first became interested in aeroplanes, aviation was just starting on its professional period. Some rather remarkable feats had already been performed, but the numerous failures tended to indicate that the achievements were more or less accidental. On the other hand the dirigible was well thought of and the strength of nations, in aerial matters was reckoned in dirigibles and the size of them. He knew much concerning dirigibles—and to that knowledge is perhaps due his turning to the aeroplane. However, when Germany's display of aerial Dreadnaughts made it necessary for France to follow suit, when the nationalists cried loud for action to lead Germany, General Brun thought he would try the aeroplane. That started a controversy and he was with the minority, for the spectre of the giant Zeppelins held the majority as if in a spell. To give his staff, most of whom favored the dirigible, an opportunity to study the matter and to get a good idea himself, he paid a visit to the aviation camp at Chalons, taking his staff along, and put the aeroplanes through a close inspection, even flying in the late Charles Wathcer's monoplane and Lieutenant Féquant's biplane. When all was over he pronounced the aeroplane a marvelous engine of war—and that practically marked the beginning of action.

How much personal interest he took in the matter is shown by the following incident: On July 14th, which is France's "Fourth of July," the army aeroplanes were not yet in use, but there had been planned to have four army dirigibles and three aeroplanes belonging to officers take part in the annual military review at Longchamps. On that day there was a heavy fog, and the authorities in charge of the aerial craft refused to let the eager pilots take them out of camp. After the review of the troops was over the President of the Republic and the King of the Belgiums—and everybody else, for that matter—waited for the aerial exhibition, but in vain. After waiting a while, the aircraft failing to put in appearance, every one left. General Brun, of course, understood the circumstances and did not find fault, but a colleague expressed a doubt as to whether what they had witnessed a month before were the true conditions. Perhaps it was just some fixed-up-to-look-nice affair, he suggested. General Brun did not call a commission to investigate; instead, he went to Issy, there and then, to see for himself. It is somewhat amusing that he met with difficulties when he tried to gain admittance to the aviation grounds. He was stopped three times by watchmen and had to show his Aero-Club card. When he finally was allowed on the grounds he turned towards the hangars. The watchman challenged him. "That's all right, my friend," said General Brun, stopping right there, "but will you kindly ask Lieutenant Camermman to come to see me?" Lieutenant Camermman was busy testing his motor, and not knowing who the visitor might be, sent word back that he was busy and would see the visitor after a while. Luckily some one had recognized the General and advised the Lieutenant, who then hastened to his superior and guided him on his inspection.

It is doubtful if any one with less skill than General Brun could have carried aviation to victory as he did. Considering the many difficulties and opposition he had to face, his feat was indeed monumental. As an illustration a tour-de-force of his may be mentioned, by which aviation was advanced many pylons. At the grand manoeuvres the aviation corps were composed of the best aiators, military and civilian. The uniformed civilians included such famous aviators as Louis Paulhan, who was a lieutenant of Reserves; Louis Bréguet, the successful aeroplane manufacturer; Hubert Latham, who was a *sapeur,* and a number of others. In less skilled hands the outcome would have brought dissatisfaction in either or both sides. Had he favored the reservists, to obtain better results, the military aviators would have been somewhat discredited and he would have lost some of the support of the military element, and the firms who supplied those aviators would have expected unlimited patronage. Had he favored the military, the reservists would have objected that they were put to all the inconveniences and the firms who supplied those aviators would have withdrawn their support. On the other hand, had he occupied the whole body of aviators, it is possible that their combined activities would have discredited the rest of the army which was not adequately equipped to oppose the new element, and would have been charged with

unfairness by the partisans of the dirigibles, who would have charged that the dirigibles were crowded out.

He handled the situation most admirably. The number of aviators on the field was limited, yet they were all occupied. Lieutenants Féquant and Cammerman, whose mastery of aviation would have made the employment of reservists unnecessary and might have overshadowed the achievements of the rest of the army, were dispatched to Bordeaux on a political errand which brought them no less honor, but did not interfere with the plans of the manoeuvres. Some of the most active reservists were daily occupied outside of the field, and those who remained were employed in a way as not to let their achievements overshadow the achievements of the military aviators.

When all was over he saw to it that all concerned were rewarded. Lieutenants Bellanger and Sido, whose activities had, indeed, been remarkable, having made several important reconnoisances, the first causing the capture of a division of cavalry, and had performed other important tasks, were promoted captains. Lieutenants Cammerman, Féquant and others were made *chevaliers* of the *Légion d'Honneur*. The members of the Reserves, including Latham and Bréguet, were also made chevaliers of the *Légion d'Honneur*, and the aeroplane manufacturers who had concurred in making the thing a success were rewarded with orders for aeroplanes.

By these tactics he placed military aviation at the head of French aviation and above commercial aviation; he won the people's faith to the cause and lifted French aviation from the exhibition stage to the practical stage. His splendid treatment of the military aviators encouraged them to better efforts, and the liberal rewards to the civilians elevated military aviation in the estimation of professional aviators so that now it is every aviator's highest hope to be dressed in military uniform. Of course, the dirigible did come out somewhat discredited, but it cannot be said that it did not get a fair show.

The passing of General Brun removes one of the most powerful champions of military aviation, but no doubt the progress will be continued in spite of the regrettable fate of his successor, the late Maurice Berteaux, another champion of French military aviation, who was killed by Train's monoplane at the start of the Paris-Madrid race.

Tremendous Profits in the Flying Machine Industry

In the May issue of AIRCRAFT we published balance sheets for 1910 of the Blériot and Gnôme companies, showing net earnings of $66,800 and $355,824 respectively.

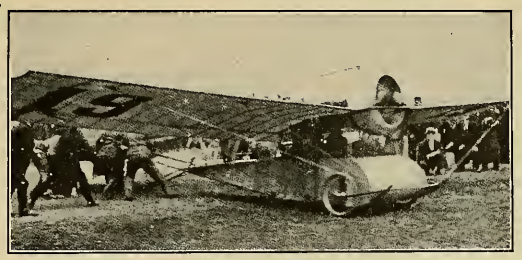
We have just received a balance sheet from Henry Farman, showing a net profit of $138,106.70 from May, 1910, to May, 1911. These figures prove beyond doubt that the aeroplane industry has reached a practicable and profitable stage in France.

AIRCRAFT predicts that within five years there will be more than fifty aeronautical concerns in the United States, that will be able to show yearly, net earnings of over $100,000 each. We advise all ambitious Americans, either with or without capital, to become actively engaged in the development of this wonderful new industry, while it is in its infancy. The chances of great success are much better for the individual seeking fame and fortune before it has dawned upon the average man that there is a new field of exploitation, and the big crowd starts in this direction.

Below will be found the balance sheet direct from Henry Farman of Paris:

Profits Made by Henry Farman at His Aeroplane Factory at Buoy, France

			May 15, 1910. Francs.	May 15, 1911. Dollars.
Difference between the Credit and Debit of Merchandise:				
Credit			3,785,155.99	757,031.20
Debit			2,850,212.35	570,042.47
			934,943.64	186,988.73
Credit Balance of Profit and Loss Account			125,973.27	25,194.65
Goods on hand, as per Inventory, May 15, 1911			168,917.64	33,783.53
Gross Profit			1,229,834.55	245,966.91
To be deducted:				
	Francs.	Dollars.		
Salaries	235,566.30	47,113.26		
Packing and Transportation	19,286.65	3,857.33		
Commissions	78,410.00	15,682.00		
General Expenses	113,347.50	22,669.50		
Legal Expenses	99,602.09	19,920.45		
Advertising	39,267.71	7,853.51		
Patents	2,910.00	582.00		
			588,390.25	117,678.05
			641,444.30	128,288.86
Prizes obtained at Meetings, etc			49,089.20	9,817.84
Net Profits			690,533.50	138,106.70



THE TRAIN MONOPLANE STARTING ON THE FLIGHT WHICH ENDED SO DISASTROUSLY AT THE START OF THE PARIS-MADRID RACE.

FOREIGN NEWS

News from Asia

By A. F. B. Silva-Netto.

At Shatin, on the 23rd of March, 1911, Van der Born flew in the presence of a considerable number of people, the majority being schoolboys. He performed several evolutions and on his return to the spot where he started he was met with a slight mishap through the folly of a lot of schoolboys who rushed towards the hangar and aerodrome. Realizing the danger of a collision and possibly serious injury to some of the reckless spectators, Van der Born, who was traveling at a considerable speed, exercised his presence of mind and swerved his aeroplane with great celerity to avoid serious consequences. This gave very little space to land safely and the result was a collision in which the horizontal plane, the front spars and some of the struts got damaged. Luckily there was no damage to the motor and Van der Born fortunately escaped with a few bruises.

Another successful performance was made by Van der Born at Shatin on the 27th of March, when the aviator made two good flights.

All the arrangements were ably carried out by Mr. K. Offer, manager of the Far East Aviation Co., who had to surmount many obstacles in the way on account of the Government restrictions.

Canton.—On April 28th, Van der Born made a successful flight at In Tong outside the city in the presence of the Chinese authorities and a large number of spectators. The enclosure on the aviation ground was filled with a few hundred spectators but outside the enclosure there were thousands who assembled to take a surreptitious view of the "Human Bird." Van der Born took a straight-away course and did not fly very high.

Tragic End of the Tartar General.—On returning from the aviation field a sensational murder took place. H. E. Fu Chi, known as "Guardian of the Cantonese," was traveling in his sedan chair, after honoring by his presence the aviation meet given by the Far East Aviation Co., was suddenly assassinated by a man with a revolver. All the bodyguards and chair bearers fled on the first report of the firearm and the assassin fired three more shots at his victim. The assassin was arrested the same evening and has since been decapitated. The historical event set the ball rolling for the Cantonese revolutionaries, and the last emeute in Canton, which was practically an anti-Manchu demonstration, was crushed, but the revolutionary movement is still active in China and the native authorities are taking every precaution. In consequence of the above outrage the aviation meeting, which was to continue the following day, was abruptly stopped by the authorities. Thus the first attempt to introduce or demonstrate aviation in Canton ended under most inauspicious circumstances.

Shanghai.—Mr. Vallon, the pioneer of aviation in China, whose flying feats were attended with such a great success in Shanghai, met with a very tragic end. I enclose N. C. Daily News of the 8th inst. giving a grahpic description of the fatal accident and its probable causes. Of course, it is not meet that an uninitiated should give his opinion, but it is believed one of the causes of the accident may be attached to loss in requisite velocity after the motor had stopped whilst planing and turning simultaneously, which is considered a difficult task. The probable causes advanced by Mr. Aveyard, who was formerly engaged in the British Army Balloon Factory at Aldershot, may be taken as correct, but how can it be explained that Mr. Vallon, who had been flying so successfully with the same biplane, which was so badly damaged in transit from France and repaired locally. From the same paper you will also find that great indignation was felt in Shanghai that the race meeting was allowed to continue after the tragedy.

By the death of Mr. Vallon not only has the world and Shanghai lost a daring and intrepid aviator, but Hong Kong has again suffered another disappointment.

Mr. Glen Curtiss.—I understand that Mr. Curtiss will be communicated with, with a view to giving an exhibition in Hong Kong under the management of the Far East Aviation Co. Mr. Curtiss' latest hydroplane would be very useful for this place, the island and surroundings being hilly, exhibitions could be made from the harbor frontage, same as given in California. It is to be hoped that the local Government will stretch a point and allow aviation in the Colony.

Japan.—Late telegrams reveal some interetsing facts concerning aviation in Japan, and a notable achievement should be recorded. At Tokorozawa Capt. Tokugawa, of the Japanese Army, made a successful flight in the presence of Prince Kitashirawa, many military officials and a large number of spectators. After going around the grounds eight times the Bleriot monoplane ascended 800 feet. He took with him Lieut. Ito, who was seen scanning the horizon and the lower regions with glasses. The Captain and his passenger alighted safely after having gone round the ground thirty-four times or a distance of about forty-nine miles in one hour and nine minutes. It was a remarkable performance and all previous records (as far as Japan is concerned) were broken. It was Captain Tokugawa's third experimental flight and the flight was the most noteworthy yet accomplished in Papan.

Hong Kong, May 18, 1911.

BEAUMONT, THE WINNER OF THE PARIS TO ROME RACE, FLYING OVER THE RUINS OF ANCIENT ROME PRIOR TO LANDING AT THE AERODROME.

England

On May 25th, an aviation pupil named Benson was killed at Hendon. He was trying to glide and the machine got out of hand and dove head first.

Great Britain's first naval aerial warship, the Mayfly, was successfully launched on May 22nd at Barrow-in-Furness. The dirigible looks frail, but is really the strongest, largest, swiftest and most powerful in the world.

It is boped it will be a valuable aid to the fleet in searching for the enemy's ships and reporting their movements by wireless telegraphy.

It will also be used in taking photographs of coast defences.

It will first be subjected to prolonged tests at Morecambe Bay for the purpose of ascertaining its behaviour in strong winds.

The airship, which is 512 feet in length, is of the rigid type, with a blunt nose tapering to a pointed stern. A feature of the construction is the provision for two separate gondolas for the engines. The airship is specially designed for naval purposes and can be moored on the water.

The outer covering of the upper half of the dirigible, which is 48 feet in diameter, consists of silk treated with a special waterproof dressing, over which aluminum dust has been sprinkled. The lower part of the bag is of yellow silk treated with the same waterproofing material, but without the alumium. The framework contains eighteen gas bags filled with hydrogen.

James Radley, the English aviator, who took part in the Belmont Park meeting in this country, and later gave exhibitions here, has returned to England and has been flying at Huntingdon. He is building a new machine of his own design which will shortly be ready for trials.

The Aerial Navigation Bill. Text of the Measure

Mr. Churchill's Bill "to provide for the protection of the public against dangers arising from the navigation of aircraft," which he introduced in the House of Commons on May 25, has been printed. The bill is a temporary measure brought in with a special view to safeguarding the public who will witness the Coronation ceremonies from reckless aviation, and the areas which it is desired to safeguard during the Coronation ceremonies will subsequently be specified by regulation. The operative clauses are as follows:

Penalty on navigating aircraft to the danger of the public.

1. If any person navigates an aircraft recklessly or negligently, or in a manner which is dangerous to the public, he shall be guilty of an offense under this Act; and in determining whether an aircraft is navigated in a manner which is dangerous to the public, regard shall be had to the amount of damage to person and property likely to be occasioned in the event of a mishap occurring to the aircraft.

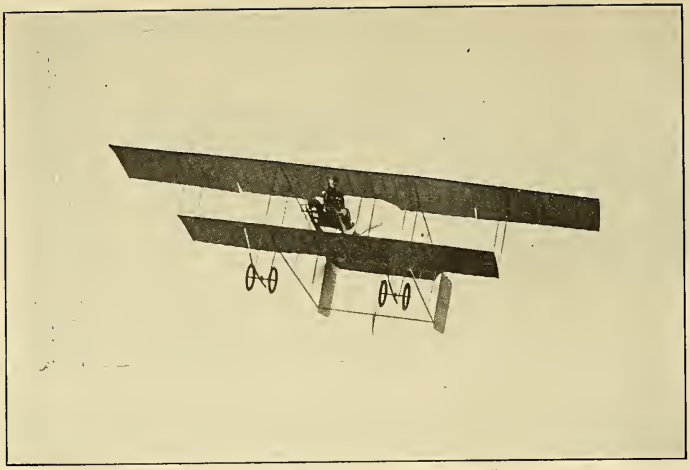
Power to prohibit navigation of aircraft over prescribed areas.

2.—(1) A Secretary of State may, for the purpose of protecting the public from danger, from time to time by order prohibit the navigation of aircraft over such areas as may be prescribed in the order, and if any person navigates an aircraft or allows an aircraft to be navigated over any such area in contravention of any such order, he shall be guilty of an offence under this Act.

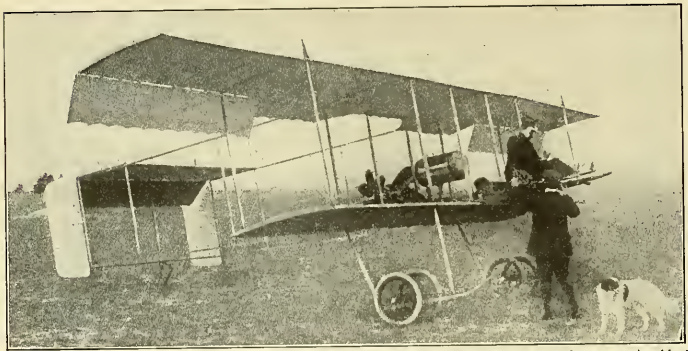
(2) Any such order may apply either generally to all aircraft or to aircraft of such classes and descriptions only as may be specified in the order, and may prohibit the navigation of aircraft over any such prescribed area either at all times or at such times or on such occasions only as may be specified in the order, and either absolutely or subject to such exceptions or conditions as may be so specified.

Penalties for offences.

3. If any person is guilty of an offence under this Act, he shall be liable on conviction on indictment to imprisonment for a term not exceeding two years, or to a fine not exceeding *five hundred pounds*, or to both such imprisonment and fine, or on summary conviction to imprisonment for a



THE NEW HEADLESS FARMAN BIPLANE IN FLIGHT.



The above photograph shows the latest Farman military biplane. The first and most noticeable point to be observed is the absence of the front elevator. In this machine the fore and aft equilibrium is obtained by the use of a tail elevator, which forms a hinged extension on the horizontal tail plane. It will be noticed that this elevator plane is of fairly high aspect ratio, as also are the balancing planes in the trailing edges of the upper main planes. The tail and the tail outriggers have a light workmanship appearance, and it can also be observed that the two rudder planes are in line with the elevator, so that the fixed tail plane is wholly in advance of all the moveable members. The machine is fitted with a Gnome Rotary engine. In the above photograph Mr. Farman is seen talking with Lieut. Menard.

André Frey, who completed the flight from Paris to Rome and made a plucky attempt to continue the flight from Rome to Turin, but met with an accident in the mountainous country intervening.

term not exceeding three months, or to a fine not exceeding *one hundred pounds*, or to both such imprisonment and fine.

Short title.

4. This Act may be cited as the Aerial Navigation Act, 1911.

France

Lieut. Menard on the new headless military Farman, illustrations of which appear on this page, established a world's record for both distance and duration with a passenger on May 25th when he flew from Mourmelon to Poitiers, a distance of 373 miles, in nine hours and fifteen minutes with only two stops en route.

The flight was accomplished in the following order: Leit Mourmelon at 3 o'clock in the morning and stopped at Chartres at 5.45 for gasoline. He made another start at 6.15 and arrived at Vendome at 7.15, leaving that place two hours later he continued his flight to Poitiers where he landed at 12.15 P. M.

Describing the above event Marcel Violette, redacteur of the "Vie au Grand Air," writes: On a new Henry Farman Military Aeroplane, Lieut. Menard having with him Lieut. Do-Hu of the Foreign Legion as a passenger, has undertaken a tour of France. The first stage was Chalons-Poitiers.

While the aviators were struggling in the Paris-Madrid and Paris-Rome-Turin race, the two officers with a more modest object, although far from being less useful, undertook a tour of France by long stages. Their aeroplane is the new Henry Farman headless biplane with elevation rudder at the rear, the equilibrium being obtained by placing the two passengers out in front of the main planes.

The tour is divided into the following stages: Chalons-Poitiers-Rochefort; Rochefort-Bordeaux-Pau; Pau-Toulouse-Narbonne; Narbonne-Nimes-Marsielle, Marsielle-Valence-Lyon. When they have reached this last city the two aviators will take a few days rest before undertaking a raid on which they keep silent, but which will surprise the whole world if they succeed in their attempt. Such trials will do more for military aviation than many unsafe crosscountry flights."

Paris-Madrid Race

It is with sympathy and regret that we have to record the national loss sustained by France in the death of M. Berteaux, the Minister of War, who was struck down by the monoplane of M. Train when it became unmanageable at the start of the Paris-Madrid aero race on May 20th, and charged a group of officials, killing M. Berteaux, and injuring, though not seriously, M. Monis, the Premier, his son Antoine Monis, and H. Henri Deutschde la Meurthe, the generous sportsman who has done so much for aviation.

Following the accident a judicial inquiry was set on foot to determine its exact cause and it is satisfactory to note that M. Train has been completely exonerated from all blame in the matter.

The following is M. Train's own explaination of the accident: "I started with the intention of making one or two circuits of the field, so as to be able to judge whether everything was going well, and to land in case any part needed attention.

As soon as I left the ground, I perceived the motor was not working well. I was about to land, after making a turn to one side, when I saw a detachment of cuirassiers crossing the flying field. I then tried to make a short curve to avoid them and to land in the opposite direction, but my motor at that moment failed more and more, and I was unable to undertake the curve. I raised the machine, so as to get over the troops and to land beyond them. At that very moment a group of persons, who had been hidden from my view by the cuirassiers, scattered before me in every direction. I tried to do the impossible, risking the life of my passenger to prolong my flight, and to get beyond the last persons of the group. I was about to land when the apparatus, which had been raised almost vertically, dropped heavily to the ground. I got out from the wrecked machine with my passenger, believing that I had avoided any accident. It was only then that I learned the terrible misfortune."

Like all other accidents, this one teaches a lesson, which in this case is that nobody except the few necessary officials and mechanics should be allowed on the flying grounds during a race of this kind.

Turning to the race itself, it can hardly be regarded as a great success, inasmuch as out of twenty-three entrants only a few started. Vedrines on a Morane monoplane, was the only competitor to arrive at Madrid, but both Garros and Gibert on Bleriot machines, reached Spain only to encounter hard luck and were eventually forced to give up.

The race was divided into three daily stages: First, Issy to Angouleme, 400 kilometres; second, Angouleme to San Sebastian, 353 kilometres; third, San Sebastian to Madrid, 462 kilometres.

Vedrines' time, stage by stage, was as follows:

Issy-Angouleme	3 h.	42 min.	18 secs.
Angouleme-St. Sebastian	3 h.	42 min.	19 secs.
St. Sebastian-Madrid....	7 h.	29 min.	41 secs.
Total time in the air	14 h.	55 min.	18 secs.

Paris-Rome-Turin Race

By way of contrast to the Paris-Madrid race the start of the Paris-Turin race was accomplished without a hitch or an accident. Profiting from the lesson taught by the Issy disaster, special precautions had been taken to protect and control the crowd.

Unperturbed by the fate which had overtaken his predecessor, General Goiran, the new Minister of War, was present, accompanied by M. Emile Constant and M. Antoine Monis, son of the French Premier. In addition to the 21 entrants, a tabulated list of whom will be found on page 156, nine military officers had been commissioned by General Roques to follow the race as far as Nice and so there was quite an animated scene at Buc on the morning of the start. Previous to the start a little diversion was caused by the arrival of the dirigible "Astra-Torres" and two biplanes piloted by Pommier and Paulhan. At six o'clock on the morning of May 28 a bomb was fired to indicate the start and within 90 seconds Garros, on his Bleriot, was on his way. Less than a minute after Lieut. Conneau, who was again flying under the name of "André Beaumont" had started on his Bleriot-Gnome. The accompanying list shows the rapidity with which the first flyers got away.

		H.	M.	S.
Garros (Bleriot)	at	6	1	28
Beaumont (Bleriot)	"	6	2	9
Vidart (Deperdussin)	"	6	3	27
Kimmerling (Sommer)	"	6	5	4
Manissero (Bleriot)	"	6	7	4
Frey (Morane)	"	6	8	41
Weymann (Nieuport)	"	6	8	52
Level (Savary)	"	6	10	36
Gaget (Morane)	"	6	12	27
Bathiat (Sommer)	"	6	16	47
Bielovucic (Voisin)	"	6	44	23
Molla (Sommer)	"	7	5	52

Dijon was the first compulsory stop and "Beaumont" was the first to reach there at 11.12 followed closely by Garros, who arrived 10 minutes later. Regarding the other competitors, Weymann had to land at Saclay and again at Melun owing to motor troubles. Bielovucic only got as far as Juvisy where motor troubles caused him to land, while Manissero got very litle further. Bathiat landed at La Trombe, Level at Bray-sur-Seine, Vidart, Kimmerling and Weymann all stopped at Troyes, while Gaget, in making a bad landing at Venaret, smashed his propeller.

After a short rest at Dijon, both "Beaumont" and Garros set out to continue to Avignon. A stop was made at Lyon, where a large crowd had gathered to welcome the aviators, and during the morning they had been entertained with some fine flying by Legagneux, Hanriot and Berlot. At 3.28 "Beaumont" arrived and was given an enthusiastic reception, as also was Garros, who arrived shortly afterwards at 4.02. "Beaumont" restarted again at 4.14 and Garros at 4.46. "Beaumont" landed at Avignon at 6.49, while Garros arrived there at 20 minutes to 8. Both aviators decided to spend the night there.

Monday, May 29th, the second day of the race, was very unfavorable for flying, being windy, with a fine rain steadily drizzling. As there was no sign of any likelihood of improvement at Avignon, "Beaumont" decided not to postpone his start, and got on his way at 4 minutes to 4 in the morning, but Garros did not leave Avignon until 5.36 A. M. The weather affected the running of his engine so much that he was forced to make a stop at Mollemort, and descending, he smashed both the planes of his machine, but determined not to give up until every chance had gone. He at once motored back to Avignon and purchased another machine from Kuhling. "Beaumont" was compelled by the elements to make a stop of six hours at Besse-sur-Issole. He restarted from there at 10 minutes to 4 in the afternoon and continued to Frejus, where he landed at 4.35. Two hours afterward he was again on his way and at 7.19 he landed at the Nice California Aerodrome, where he received a great reception, and was carried in triumph to a hotel. Meanwhile, Garros in his new machine, set out afresh for Avignon and made a splendid flight to Frejus, where he arrived soon after "Beaumont" had departed for Nice. After about a quarter of an hour's halt there, he was again in pursuit of his rival, and landed at Nice at 7.57. In regard to the other competitors, Kimmerling started from Troyes at 3.30 and reached his native town of Lyon at 8.15. Stopping for about an hour there, he then continued on to Avignon, which was reached a few minutes after noon. He stopped there for about an hour and then started for Nice, but was compelled by the wind and rain to come down at Brignoles at 65 Kiloms short of Nice. Frey, who had stopped over night at Dijon, started at 4.15, and arrived at Lyon about 8.15. Starting from there about an hour later, he lost his way, and came down at Valence. While making inquiries, he saw Kimmerling pass over head, and immediately set off in pursuit of him, reaching Avignon 10 minutes before him. Frey then decided to stop for the day. Weymann, the American, also started from Troyes, but only got as far as Celles-sur-Onise, when, in coming down, he broke his Nieuport monoplane so badly as to put him out of the competition. Vidart, who also left Troyes at 5.30, continued with one stop to Chalons-sur-Saone, where the wind compelled him to make a stop. As this moderated he made a

TOUR OF FRANCE

Lieutenant Menard and Lieut. Do-Hu on the new headless military Henry Farman biplane, about to start on his great tour of France with a passenger under orders from the French Government. The first day (May 15) they flew from Chalons to Poitiers, a distance of 373 miles in 9 hrs., 15 mins.

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LAWSON AIRORAFT NY

MENARD ON FARMAN BIPLANE BEATS ALL WORLDRECORDS FLYING FROM CHALONS TO POITIERS WITH PASSENGER

FARMOTORS

TRY AIRCRAFT

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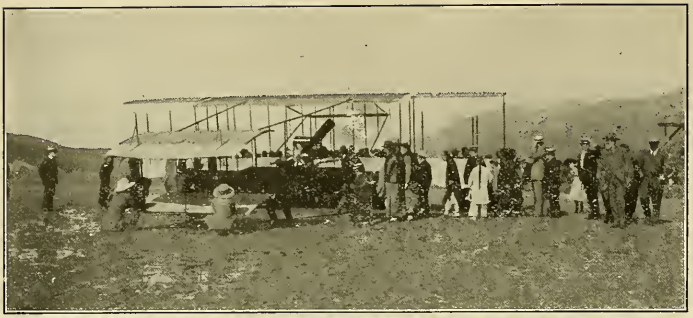
CABLEGRAM FROM HENRY FARMAN TO "AIRCRAFT" AT THE CONCLUSION OF THE REMARKABLE FLIGHT OF LIEUT. MÉNARD AND PASSENGER FROM CHALONS TO POITIERS.



VAN DER BORN AT SHATIN, CHINA, EXPLAINING THE WORKINGS OF HIS BIPLANE TO SOME CHINESE GENERALS.

VEDRINE, THE WINNER OF THE PARIS-MADRID RACE, PASSING ABOVE THE MOUNTAIN OF IGUELDO UPON HIS ARRIVAL AT ST. SEBASTIAN.

fresh start late in the afternoon. Arriving at Lyon, he appears not to have recognized this place, and passed over it without noticing the aerodrome. As no signs developed of his making any attempt to land, Legagneux and Hanriot set off on their monoplanes and managed to bring him back to Lyon, where he landed at 6.26. Molla, who reached Dijon over night, got away from there at 9 minutes past 5, reaching Arbigney, where he was forced to land on account of the rain. As soon as the rain let up, he made a fresh start, and only got as far as Villeurbanne, where he attempted to make a landing and smashed up his machine.

On Tuesday, May 30th, the third day of the race, "Beaumont" prepared to continue the race from Nice, but his engine refused to work properly, and he decided to delay a start until a new motor could be fitted. Garros, however, started a few minutes before 5 and arrived at Genoa at 7.20. Leaving Genoa on a new machine, which Le Blanc had purchased for him, he followed the coast line to Spezia and reached Pisa, where he landed at a quarter to 12. Frey started from Avignon at 5 o'clock and arrived at Nice at 8.11 and did not get away until 2.36, when he continued his journey straight through Genoa, arriving at 5.39. Vidart left Lyon in the afternoon and reached Avignon at 4.30.

On Wednesday, May 31st, the fourth day of the race, "Beaumont" was the first to arrive at Rome, at 4.05, thereby winning the prize of $20,000, which was offered for the first man to reach the eternal city. His reception at Rome was one of the greatest triumphs since the ancient days. The hills about the city and roofs, terraces, balconies and domes were black with people, who greeted him with wild cheers. Garros made a good start from Pisa, but between Cecina and Castagente, his machine fell and was considerably damaged. Garros decided not to give up and returned to Pisa, where he secured a new machine.

On June 1st, Garros, having obtained a new machine, set out from Pisa at 10.40 A. M. and followed the Mediterranean coast to Rome, where he arrived at 5.10, completely exhausted and ill from the injuries sustained in his fall near Pisa. Frey was the third to arrive at Rome, while Vidart arrived fourth.

Owing to the dangerous nature of the last stage of the route, which necessitated crossing the Apennines mountains, "Beaumont," Garros and Vidart decided not to attempt to continue to Turin. Frey, however, decided to start and on June 13th he set out from Rome, only to be caught in a violent wind storm which caused him to lose control of his machine, which fell head first and was completely wrecked. Frey was thrown from his seat and sustained serious injuries.

At the Buc Aerodrome, situated at about five miles from the city of Versailles, amateurs of aviation have the opportunity of flying under the guidance of one of the best Farman pilots.

These cross-country flights are made over fields and without any danger for the passenger; they constitute a real ride about the country.

These rides of about 10 kms. take place every afternoon, weather permitting, which means on an average of four days out of five.

PARIS—MADRID RACE.- Table of characteristics of machines entered.

Pilot and Machine.	Weight			Span.	Length.	Balancing.	Under-carriage.	Suspension.	Control.			Engine.					Propeller.					Flight Speed.
	Supporting Area.	Empty.	Flying.						Balance.	Elevator.	Rudder.	Make.	h.p.	Cyls.	Bore.	Stroke.	Make.	Dia. meter.	Pitch.	Blades.	Speed.	
	sq. ft.	lbs.	lbs.	ft. ins.	ft. ins.													ft. in.	ft. in.		c. p. m.	m. p. h.
Védrines (Morane)	187	440	770	30 8	22 0	W	W & s	R	Lever		Bar	Gnome	70	7	130	120	Integrale	9 3	5 11	2	1200	77
A. Frey (Morane)	187	440	770	30 8	22 0	W	W & s	R	"		"	"	50	7	110	120	"	8 7	5 5	2	1100	68
Weymann (Nieuport)	196	750	1100	33 0	27 10	W	W & s	S	Pedal		Lever	"	70	7	130	120	"	8 10	6 7	2	1200	77
Chevalier (Nieuport)	196	720	1050	33 0	27 10	W	W & s	S	"		"	"	50	7	110	120	"	8 7	5 5	2	1100	71
P. Divetain (Goupy)	235	440	770	19 10	23 0	F	W & s	R		Wheel		"	50	7	110	120	"	8 7	5 5	2	1100	53
Ladougne (Goupy)	235	475	835	19 10	25 0	F	W & s	R		"		"	70	7	130	120	"	9 3	5 11	2	1200	62
Prince de Nissole (Tellier)	246	680	1100	38 8	36 5	W	Wh	S		"		R. E. P.	60	5	110	160	—	—	—	-	1300	46
Mamet (R.E.P.)	214	880	1320	36 5	26 5	W	W & s	R & P	Lever		Lever	"	60	5	110	160	Regy	8 1	4 10	2	1300	65
Amerigo (R.E.P.)	214	880	1320	36 5	26 5	W	W & s	R & P	"		"	"	60	5	110	160	"	8 1	4 10	2	1300	65
P. Barillon (Barillon)	160	480	1000	39 0	29 10	W	W & s	R	Wheel		Bar	Gnome	50	7	110	120	Voirin	8 1	Var	2	1100	80
Le Lasseur de Ranssay (Blériot)	187	550	880	29 5	25 4	W	Wh	R	Lever-wheel		Bar	"	70	7	130	120	—	—	—	-	1200	62
Bobba (Goupy)	288	510	835	29 10	23 0	F	W & s	R		Wheel		"	70	7	130	120	Integrale	9 3	5 11	2	1200	59
A. Beaumont (Blériot)	187	510	835	29 5	27 0	W	Wh	R	Lever-wheel		Bar	"	50	7	110	120	—	—	—	-	1100	59
Garros (Blériot)	187	510	835	29 5	25 4	W	Wh	R	"		"	"	50	7	110	120	Integrale	8 7	5 5	2	1100	59
Gibert (Blériot)	187	510	835	29 5	25 4	W	Wh	R	"		"	"	50	7	110	120	"	8 7	5 5	2	1100	59
Train (Train)	171	420	770	26 5	26 5	W	W & s	R	Lever		"	"	70	7	130	120	"	8 10	5 11	2	1200	62
L. Garnier (Morane)	187	570	900	30 8	22 0	W	W & s	R	"		"	Labor	70	4	100	120	"	9 3	5 11	2	1150	77
Verrept (Morane)	187	440	770	30 8	22 0	W	W & s	R	"		"	Gnome	50	7	110	120	"	8 7	5 5	2	1100	68
Lieut. Menard, M. Dévé, Capt. Etévé (H. Farman)	750	1100	1800	53 0	43 0	F	W & s	R	"		"	"	50	7	110	120	"	8 7	5 5	2	1100	46
F. Barra (M. Farman)	640	—	—	53 0 / 36 5	42 5	F	W & s	R	Wheel		—	Renault	60	8	—	—	"	8 7	5 5	2	900	50
Lieut. Tretarre (Breguet)	394	1100	1600	46 6	27 3	W	W & s	P		Wheel		R. E. P.	60	5	—	—	Regy	8 0	4 4	2	1300	56

Notes.—W = Warping. F. = Flaps. W & s = Wheels and skids. Wh = Wheels. R = Rubber. S = Springs.

The fee charged for each ride is two hundred francs payable in cash.

It is announced that the French Gordon-Bennett elimination trials are to be held at Douai. The Municipal Council has decided to accept the terms offered by the Aero Club of France and also to provide the necessary money.

Roger Sommer recently re-opened his Mourmelon school, and in order to deliver the necessary machines there Molla and Bathiat took turns flying them over from Douzy.

On May 18th, Pierre Marie Bournique, better known by his flying name of "Pierre Marie," ascended in a strong wind on his 100 H. P. Deperdussin with Lieut. Depuis as a passenger. He had just completed one round of the course and had risen to a height of 200 feet, when the machine was struck by a squall and capsized. The machine fell head first to the ground and burst into flames. "Pierre Marie" was still alive and taken to the hospital, where, however, he succumbed to his injuries. His passenger was burnt to death before he could be extricated from the wreckage. Pierre Marie Bournique dies a victim of his own imprudence and recklessness, for he had been strongly advised not to attempt a flight in such a wind.

"Pierre Marie" was only 23 years of age and was an Alsatian by birth. His first successes as an aviator were scored on the R. E. P., and it was on one of these that he made a splendid flight of six hours at the close of last year in an attempt at the Michelin Cup.

On May 20th, Mme. Marthe Niel, while flying her monoplane at Gaillac-sur-Tarte, failed to negotiate a gust of wind and the machine fell heavily and was partially wrecked, but fortunately without seriously injuring Mme. Niel.

The new six-bladed Deperdussin monoplane which attracted considerable attention at the last London Aero Show, was given a try-out on May 25th by Vidart, who flew in it from Courcy to Mourmelon and back in 37 minutes, attaining a speed of over 100 k. p. h.

For the European Circuit the Farman works have entered a new type biplane designed especially for events of this kind and called the European Circuit type. It has a speed of 100 km. an hour and it was on a machine of similar type that Lindpaintner, the German pilot, won the Circuit of Saxony. The new machine will be piloted by Loridan, the well-known Farman aviator, who took part in the Paris-Bruxelles race and also was the first man to fly over Paris with a passenger.

Maurice Farman has also constructed a new type machine for the European circuit, which will be flown by Eugene Renaux, with Senoucques as passenger, the team which won the Puy de Dome flight. The presence of M. Senoucques assures this machine a formidable advantage over the others, owing to the fact that he has made many balloon ascensions and is able to follow the most difficult routes. It is thought that the harder the trial may be the more chance this team stands of winning.

At the Farman school at Bouy, in the presence of the aerial commission of the army, Lieut. Menard recently tested a new military type called Tour de France, which more than met all the requirements asked for by the military commission. It carried an extra load of 220 kilog., rose to a height of 320 metres in 4 minutes 45 seconds and attained a speed of 90 kiloms an hour.

Germany

The German War Office is negotiating for the purchase of the new Parseval airship, at present undergoing its finishing touches at Bitterfield. It will be known as "Parseval III," and is fitted out with two 200 H. P. Korting motors.

Helmut Hirth set up a new German altitude at Camstatt on May 7th, carrying Lieut. Henke as passenger. He ascended to a height of 800 metres, easily beating Lieut. von Thunas' former best altitude of 600 metres. Hirth's machine was a 70 H. P. Etrich-Rumpler.

The first fatal accident at Berlin-Johannisthal occurred on May 11th, when Bockemuller, a Poulain aviator, collided with the post office erection on the ground, his chest being crushed by the wood work. The unfortunate young man died immediately. He joined the ranks of aviators about six months ago and was very popular.

The new "Deutschland" dirigible has met with a sudden end, as it was shattered on May 16th, whilst being taken out of its Dusseldorf hangar for a trip to Baden-Baden. The weather was extremely squally and a sudden gust tore the balloon away from the employees and dashed it against the roof of the hangar, from where the passengers, some ladies among the number, had to be brought down. The remains of the airship are now at Friedrichshafen and will be built up for the third time, as they comprised all that was left of the original Deutschland after its mishap in June, 1910, whilst carrying a load of pressmen across the Tentoburger Forest. It is a matter of wonder why the airship was taken out of the hangar, as the journey, which had been postponed once before, was not tied down to any special date, all the more so as the weather was so unfavorable.

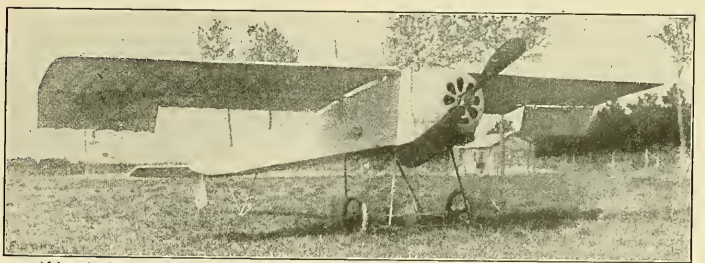
Helmut Hirth won the Upper Rhine Circuit from May 21 to 27, which led through the Rhine district from Baden-Baden to Frankfort. Of all the six starters Hirth (Etrich-Rumpler monoplane) was the only one to finish without a contretemps. Thelen (Wright), Brunhuber (Albatross), Jeannin (Aviatik) and Witterstaetter (Euler), all suffering accidents on the way, whilst Laemmlin was killed at Strassburg during the aviation meeting held there. Hirth won about $15,000 in all, and the German War Office intends purchasing a machine of the above type. A number of military men took part in the special contests for officers.

Germany is to buy four new military aeroplanes, the War Office having set aside $25,000 for such purpose. The machines are to be chosen from among those successful in this season's competitions.

The aeroplanes are to be of German origin,

MAURICE FARMAN AND HIS FATHER PREPARING FOR THE TRIP MADE RECENTLY FROM BUC TO ETAMPES AND BACK A DISTANCE OF 100 MILES.

The above photograph shows the cruciform tail comprising the elevator and rudder. On the trailing extremities of the main wings are hinged balancing ailerons. The span of the machine is 9 metres (nearly 30 feet) and the over all length 8 5/10 metres (28 feet). The starting area is 17 sq. metres (about 183 feet).



Although the name of Farman is inseparably associated with biplanes, Mr. Henry Farman has for some time past successfully experimented with a monoplane of his own design. We are now able to give the photograph of this machine, perhaps the most striking feature of the external appearance of the machine is the neat stamped-out casing that encloses the 50 H. P. Gnome Rotary air-cooled engine. Also, as may be observed, the entire rectangular body is covered with surfacing material.

though the motor may be of foreign make, and they must be constructed in such a way that observations can be easily made from them. They are to prove that they can fly with a passenger at a height of 1,400 feet, because the War Office considers that in time of war this height must be reached in order that the observation officer may fulfill his task.

The War Office has offered prizes to the value of $17,500 to be competed for in seven aviation meetings during the present year.

Italy

The Italian aviator, Cirri, while making an aeroplane flight at Vogitera on May 28th, fell from a height of 650 feet and was killed.

Signor Cirri used a Bleriot monoplane. He had completed several evolutions when suddenly there was an explosion and in a moment the wings of the machine were on fire.

At the Florence meeting Renaux and Mlle. Dutrieux, on Maurice and Henry Farmans respectively, accomplished beautiful flights and were congratulated by the King and Queen of Italy. Mlle. Dutrieux won the cup offered by the Italian King. On May 13th, the last day of the meeting, Renaux won the speed prize, which was considered the most important event of the meet.

Japan

By Yonosake Shimadza.

Aviation has not yet progressed far in Japan; but Captain Hino and Captain Tokugawa have made several successful flights with foreign machines—Wright and Farman biplanes, Bleriot and Grade monoplanes. Captain Tokugawa, who has the best record here, went fifty miles in one hour and five minutes. This flight took place twenty-three miles from Tokyo, at Tokoro-zawa, the only aviation grounds in the East.

Mr. I. Yamada has made an airship after his own design and has made repeated attempts with it; but has not yet succeeded in attaining good results.

Baron Iga is experimenting with a glider from which we may see developments later.

Mr. Moriba of Osaka has made the first successful flight on a monoplane of Japanese invention.

Lieut. S. Narahara—a naval architect—has been working at biplanes for some time. He tried his machine with an Anzani motor of 25 H. P. on the 30th and 31st of last October. Owing to defects in the motor only 10 to 15 h. p. could be obtained. It was also advertised as weighing 130 pounds, but in reality weighed 190. Consequently the results of Lieut. Narahara's flight were disappointing to himself and all interested. He has, however, made a second and a third biplane, one strong for practice, the other for speed. He is now preparing for another exhibition at Tokoro-zawa, as soon as the weather permits, and his friends have reason to anticipate a better reward for his untiring efforts, as he is using the famous Gnome 50 h. p.

Aviators coming to Japan should be apprised of the variable and strong winds prevailing here in the spring and of the June rainy season. Our best weather usually occurs from the middle of October to the end of the year.

Russia

A British aviator named Smith, flying a Sommer machine, during an aeroplane competition at St. Petersburg on May 27th, fell from a height of 125 feet and was killed.

Spain

Mons. Vedrines, the winner of the Paris-Madrid air race, gave an exhibition at the Getafe Aerodrome on May 28th, in the presence of the King and Queen and other members of the royal family. The King decorated the French aviator with the Order of Naval Merit.

Mons. Vedrines also flew from the aerodrome over the city of Madrid at a height of about 700 feet. King Alfonso and the Queen watched the evolutions of the aeroplane from the roof of the royal palace. More than 20,000 persons gathered in the Plaza de Oriente and cheered wildly as Mons. Vedrines passed over their heads in the air.

A banquet was given by Senor Camalejas, the Premier, for Mons. Vedrines in the evening. Several high officials of the government and municipality were present. Senor Gasset, of the Cabinet, representing the King, proposed the health of the daring aviator.

The French Club of Madrid gave Mons. Vedrines a luncheon and the Aero Club of Madrid presented him the King's Cup.

PARIS—ROME—TURIN.—Table of characteristics of machines entered.

Pilot and Machine.	Supporting Area.	Weight		Span.	Length.	Balancing.	Under-carriage.	Suspension.	Control.			Engine.					Propeller.					Flight Speed.
		Empty.	Flying.						Elevator.	Balance.	Rudder.	Make.	h.p.	Cyls.	Bore.	Stroke.	Make.	Dia-meter.	Pitch.	Blades.	Speed.	
	sq. ft.	lbs.	lbs.	ft ins	ft. ins.													ft. in	ft in.		r.p.m.	m. p. h
Niemela (Nieuport)	196	750	1100	33 0	27 7	W	W & s	S	Pedal		Lever	Gnome	50	7	110	120	Integrale	8 7 5		2	1100	72
Bathiat (Sommer)	182	580	900	34 9	29 8	W	W & s	R	Lever		Bar	"	50	7	110	120	Rapid	8 6 5	4	2	1100	59
Lemasson (Caudron)	235	550	880	26 5	26 4	W	W & s	R	"		"	Anzani	60	6	105	125	Normale	—	—	2	—	59
Vidart (Deperdussin)	150	495	825	29 8	30 0	W	W & s	R	Wheel			Gnome	50	7	110	120	Rapid	8 3 5	4	2	1100	62
Molla (Sommer)	182	580	900	34 9	29 8	W	W & s	R	Lever		"	"	50	7	110	120	"	8 3 5	4	2	1100	59
Beaumont (Blériot)	187	505	835	29 4	26 8	W	Wh	R	"		"	"	50	7	110	120	Integrale	8 7 5	5	2	1100	59
Tetart (Bristol)	454	800	1100	34 9	38 7	F	W & s	R	"		"	"	50	7	110	120	"	9 3 5	4	2	1100	50
Bielovucic (Voisin)	342	1100	1590	36 4	34 9	F	Wh	S	Bar		Wheel	"	70	7	130	120	Voisin	8 7 6	7	2	1200	62
Lusetti (Morane)	187	440	770	30 7	22 1	W	W & s	R	Lever		Bar	"	50	7	110	120	Integrale	9 3 5	4	2	1100	62
Kimmerling (Sommer)	182	580	900	34 9	29 8	W	W & s	R	"		"	"	50	7	110	120	Rapid	8 6 5	4	2	1100	59
Landron (Autoplan)	288	790	1140	36 4	29 8	F	W & s	R	"		"	Labor	70	4	100	160	Integrale	9 10 6	7	2	900	50
Védrines (Morane)	187	790	1140	30 7	22 1	W	W & s	R	"		"	Gnome	50	7	110	120	"	8 7 5	5	2	1100	62
X—(Ch. Joly) (Voisin)	450	1100	1540	36 4	34 9	F	Wh	S	Bar		Wheel	"	50	7	110	120	Voisin	8 0 5	4	2	1100	50
Level (Savary)	555	1210	1540	46 3	29 8	F	W & s	R	Lever		Bar	Labor	70	4	100	160	Integrale	8 10 6	7	2	800	56
Gaget (Morane)	187	440	770	30 7	22 1	W	W & s	R	"		"	Gnome	50	7	110	120	"	8 7 5	5	2	1100	68
Tabuteau (Bristol)	454	800	1100	34 9	38 7	F	W & s	R	"		"	"	50	7	110	120	"	9 3 5	4	2	1100	50
A. Frey (Morane)	187	440	770	30 7	22 1	W	W & s	R	"		"	"	50	7	110	120	"	8 7 5	5	2	1100	68
Garros (Blériot)	187	505	835	29 4	25 4	0	Wh	R	"		"	"	50	7	110	120	"	8 7 5	5	2	1100	59
Prince de Nissole (Tellier)	256	680	1100	39 0	36 4	W	Wh	S			Wheel	R. E. P.	60	5	110	160	"	—	—	2	—	46
Weymann (Nieuport)	196	750	1100	33 0	27 7	W	W & s	S	Pedal		Lever	Gnome	70	7	130	120	"	8 10 6	7	2	1200	78
Manissero (Blériot)	187	505	835	29 4	25 2	W	Wh	R	Lever		Bar	"	50	7	110	120	"	8 7 5	5	2	1100	59

Notes.—W = Warping. F. = Flaps. W & s = Wheels and skids. Wh = Wheels. R = Rubber. S = Springs. P = Pneumatic.

Airswirls and Their Relation to Aviation

By D. E. Conner.

Whatever may be the result of the hasty conclusions of "aviators" of the present time concerning the so-called "swirling air-holes" above the earth, the future may decide that electro-magnetism is the main factor to be considered.

That atmospheric electricity, both positive and negative, are always present and mingling with the highly magnetic oxygen of the atmosphere appears to be a fact well settled by scientists.

And what electricity brought into contact with magnetic materials will do, is abundantly attested in our daily experience.

But the ever-present, positive and negative electric atmospheric forces, under ordinary conditions, does not appear in nominal equilibrium until some elemental change brings a sporadic excess of more or less electric force, which immediately takes its natural direction in this latitude, northeasterly, rotating in the opposite direction to that of the hands of a watch. We now know that all the electric forces coming from the so-called inter-planetary space, upon reaching the atmosphere of the earth and its highly magnetic oxygen, set up a rotation in the opposite direction from that of the hands of a watch, in the Northern Hemisphere.

Violent whirlwinds, waterspouts, tornadoes and lightning strokes, etc., obey the same law.

The more violent and excessive the contact of electric and magnetic elements above, the shorter and more direct is their descent to the earth, suggesting the existence of "swirling air-holes."

These conditions now need but little proof, as our tornadoes, in the absence of some local obstacle deflecting them from their natural courses, invariably move towards the northeast, and rotate in the opposite direction to the hands of a watch, thereby agreeing with the rotatory motion of the earth, viewed from its positive, or north pole. Therefore, these so-called "swirling air-holes," consisting of a combination of electro magnetic fields, that had encountered no obstacle in the upper atmosphere to disarrange and break up their poles, find their first obstruction by coming in contact with an aircraft, resulting in immediate change of natural conditions; a possible disarrangement of their poles, and accidentally a sudden confusion of adjoining air-currents.

This appears to have been exactly what occurred recently upon the "Dominguez Aviation Field" in Los Angeles, California, that resulted in a tragedy. It is evidently well settled, when from accident, or any abnormal electro-atmospheric conditions occur, forcing the negative pole of an electro-magnetic field lower—or, in other words, nearer to the magnetic axis of the earth—than its positive pole, electro-magnetic force immediately ceases, and thereby leaves an aircraft at the mercy of the necessarily resultant commotion of the atmosphere, for which a remedy may yet be found.

Yet, in the Southern Hemisphere, many of the above described conditions appear to be reversed. South of the equator—or the apparant path of the sun around the earth, where all electro-magnetic forces, approaching the earth from the so-called interplanetary space come, rotating in the same direction as that of the hands of a watch and move towards the southwest, thereby agreeing with the rotatory motion of the earth, viewed from its negative, or south pole.

In keeping with these general laws the writer obtained some practical proofs, by a personal correspondence with United States consuls stationed in the Southern Hemisphere—at Samoa, Australia, New Zealand and the Argentine Republic. Every reply cordially endorsed the writer's suggestion that all tornadoes occurring in the Southern Hemisphere rotated to the right—in the same direction as that of the hands of a watch, and moved towards the southwest. The British astronomer at Sydney was one of the writer's endorsers by personal letter.

The Samoa representative explained the destruction of the American and German warships in that harbor in 1889 as having been caused by a tornado, some miles at sea, that moved towards the southwest, rotating to the "right hand," in the direction of that of the hands of a watch.

If the sun is a great dynamo, with incidental heat, as suggested by scientists, it would be supposed to furnish the earth with all its primary electrical currents, that begin and end at the sun. Such currents must reach the nearest parts of the earth at the equator, or, to be exact, upon the apparent path of the sun around the earth. From this base-line the positive circles the earth, to the north pole, rotating in the opposite direction from that of the hands of a watch, and the negative circles the earth to the south pole, rotating in the same direction as that of the hands of a watch, resulting in both rotating in the same universal direction, tending to enhance the revolution of the earth from west to east, just as it does rotate.

As a conductor for electric currents, the earth, from its equator to its poles, decreases in size and capacity, until the concentrated excess of electric forces at the magnetic poles explode into Aurora Borealis and Australis.

These facts may be lightly rejected, but a lengthy experience and observation of results amount to conviction occasionally. When one has frequently seen tornadoes from great heights come roaring towards the earth, swirling in the opposite

direction to that of the hands of a watch, and upon reaching the surface of a level prairie take northeasterly courses, rotating everything—fence-rails, shingles, etc., from wrecked cabins—in the same direction, to say nothing of the remaining grass and weeds that are left lying in evidence of the course of the rotating storm—and if any one still doubts such testimony—they must indeed be skeptical reasoners. Even in a prairie such electric tornadoes universally follow the low places, the depressions that lie northeasterly, until the ravine changes its course, leaving the rotatory force of the tornado in contact with higher ground, which disarranges its poles, and ends or weakens the storm.

It requires a tornado of strong electric force to cross a high ridge of ground, and when it occurs it is sure to ascend along some ascending ravine and cross the high ground at its lowest place.

The writer once saw a well developed tornado moving along a small valley lying northeasterly until it reached a large pile of old iron, the remains of a dismantled saw-mill.

At the first contact with the iron pile the tornado appeared to pour into the ground as promptly as water escaping into a sewer-sink, and ceased all action immediately, leaving only a wild commotion in the atmosphere, scattering the debris collected by the tornado in all directions.

There are simple but no less potent proofs of these natural conditions constantly in evidence.

A lightning stroke, cutting a groove down a standing tree trunk, leaves all the fine wood fiber adhering on the negative side of the groove, plainly indicating the direction of its rotatory force. It is simpler still to fill a stationary wash-bowl with water and then pull the plug out of the bottom and witness the escape of the water, swirling in the opposite direction to that of the hands of a watch, like the so-called "swirling air-holes" discovered above the earth by "aviation" reporters.

Many similar and corresponding facts are plainly demonstrated by the growth of vegetation.

DESCRIPTION OF THE PARIS-ROME TYPE OF BLERIOT MONOPLANE

By W. H. Phipps

The Bleriot monoplanes used by Beaumont and Garros in the Paris-Rome-Turin race were of the improved 1911 cross-country model. As a type they differ but little from the machine used by Louis Bleriot in his historical flight from Calais to Dover on July 25th, 1908. Since that date up to the present time M. Bleriot has adhered to his cross-channel type and his more recent successes have been due more to the adaption of the Gnome motor and refinements in construction than to a distinct change in design.

Unlike the older Blerios the new machines are fitted with a single "V" shaped support for the upper wing wires, instead of the double "V" as formerly used.

There is also a long, sloping hood, entirely covering the engine, tanks and controls. This is a distinguishing feature of the new type and acts as a most efficient wind shield, besides adding to the racy appearance of the machine.

Every accessory which it was thought would be of aid to an aviator is fitted to these models. In front of the pilot is a map holder so arranged that by simply turning a knurled wheel the aviator can move the map and follow the country as he passes over it.

The map unrolls from one cylindrical rod and rolls up on the other. It has a glass cover for protection, and is made of aluminum throughout.

An electric speed indicator is fitted to the Gnome motor and so mounted that the pilot can tell at all times whether his motor is keeping up to its proper speed.

On the right of the aviator's seat is a level indicator. It is an ingenious device containing a red liquid in a triangular glass tube which is mounted in an aluminum bracket. It enables the pilot to tell whether he is climbing, falling or flying horizontally and therefore is a great aid in adjusting the tail elevators.

Turning now to a description of the machine itself the main fuselage consists of a box girder 23 feet long. Four slender wooden booms run the length of the machine and these are strengthened at intervals of 18 inches or more by uprights and cross pieces held and braced by diagonal wires anchored to U bolts, which also secure the wood struts as shown in an accompanying illustration. (Fig. 1.)

This system of construction and the use of the U bolts is patented by M. Bleriot. At the rear the four main booms come together to join a stern post to which the rear rudder is hinged. They gradually open out towards the front to admit of the seat and engine.

The longitudinal members of the fuselage are either of ash or red pine, the latter being apparently rather more common nowadays than the former. They do not each consist of one long piece but of two joined between the vertical struts marked C and D by a square steel tube, which is a fixture, and not intended to provide a means of packing up the machine into a small space.

At the front the fuselage longitudinals are as nearly as possible 1¼ inch square, and taper uniformly down to ¾ inch square in section at the extreme rear, where the top and bottom pairs converge, respectively, to a point.

The vertical and horizontal crosspieces of the fuselage are of oval section, except at their extremities, where they are rectangular, and are assembled as shown in Fig. 1. Their sizes are as follows: A and B, 2 in. by 1¼ in.; C, 2 in. by 1 in.; D, 1¾ in. by 1 in.; E, 1¾ in. by ⅞ in.; F, 1⅝ in. by ⅞ in.; G, 1½ in. by ⅝ in.; H, 1½ in. by ⅝ in.; I, ¾ in. by ¾ in.

The tubes for the support of the wing-warping mechanism under the cloche (bell-drum) are ¾ in. diameter, and about 12 gauge.

In Fig. 1 is shown how the fuselage is constructed, which is certainly an extremely light and strong piece of work that in many respects could scarcely be improved. The vertical and horizontal struts are lightly mortised into the longitudinals, and being compression members require nothing further to hold them in position. The rectangular ends of the struts are deeply grooved to allow room for long U-shaped bolts, which pass through the longitudinals and form an anchorage for the stay wires, which are secured in the usual manner and are furnished throughout with turnbuckles.

The spread of each main wing is 13 ft. 6 in., the chord 6 ft. 8 in., and the total span 29 ft. 4 in. The wings are built up on two ash main spars as shown in Fig. 2, the front one of which is channelled out for lightness, and is about one foot behind the leading edge. The ribs are of I section, and are built up of three separate strips of wood, the middle one forming the web, being hollowed out as shown, while the whole is strengthened by the use of several subsidiary spars which serve also to prevent the fabric sagging from its designed curvature.

The front spar is secured to the fuselage by being fitted into one end of a steel tube, which forms a cross member of the latter (see Fig. 3), whilst the rear one is supported in a special cast aluminum box (Fig. 6), which caps the vertical member B. The older Bleriot practise was to use a much broader vertical member and thrust a spar through a hole cut in it, but the more modern attachment is certainly a great improvement in every way.

In Fig. 5 is illustrated the general arrangement of the landing chassis and the introduction of a diagonal strut between the lower "buffer-beam" and the fuselage. These upper and lower beams are each 5 in. wide by ⅞ in. thick and are chamfered to approximately streamline form, except at the joints where they are left rectangular in section. The middle vertical members are 3 in. wide by 1⅛ in. thick at head and foot and 4 in. wide by 1½ in. in the middle, where they are attached to the fuselage longitudinals. The diagonal to the fuselage is 3 in. by 1¼ in., and of oval section. The distance piece between the wheel hubs is a hollow spar, 1½ in. diameter in the middle, and tapering to either end. The upper extremities of the steel slide rods of the landing chassis are braced to the middle portion with stout steel ribbons.

In Fig. 3 is given a more detailed view of part of the landing chassis, and this figure also shows how the Gnome engine bearers are attached to the fuselage. The necessity for making this particular part of the machine of exceptional strength will be realized when it is pointed out that, owing to the diameter of the Gnome engine being greater than the width of the fuselage, it is not possible to brace with wires that portion of the fuselage in which the engine is supported.

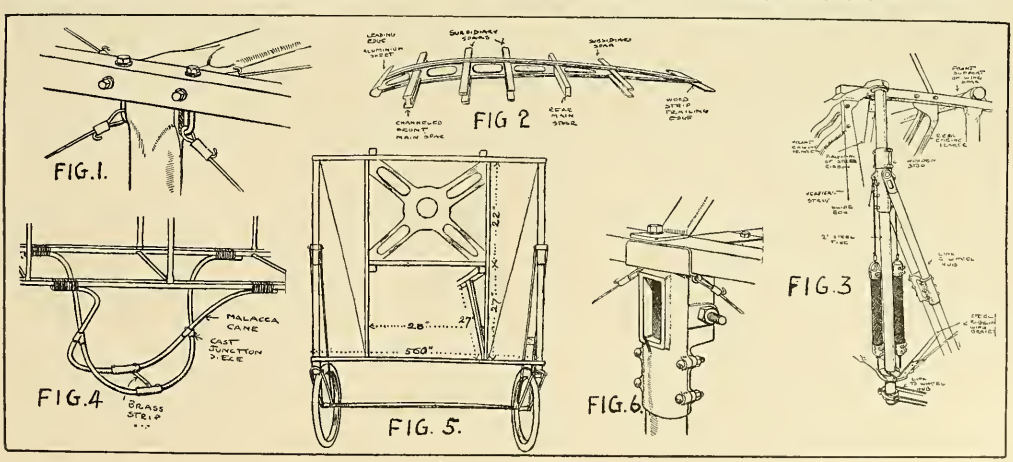
The steel columns forming the vertical slide rods for the landing wheels are 2 in. in diameter, and the compression links are also steel tubes 1½ in. by ½ in. oval section braced with cast aluminum cross pieces.

A view of the rear landing skid is given in Fig. 4. Formerly a wheel was used to support the tail, but this allowed the machine to run a considerable distance after landing and was discarded for the skids. The new method is certainly the better of the two, not only because it is lighter, but even more so, because the shock is thereby distributed over a larger portion of the fuselage.

The tail is half fixed and half controllable, the full spread being 12 ft. 1 in. by 2 ft. 11 in., and the controllable ends have each a span of 35 in. These latter are fixed to a tube, set as nearly as possible to coincide with the normal center of pressure, which passes inside the framework of the fixed tail and is operated by a single central crank.

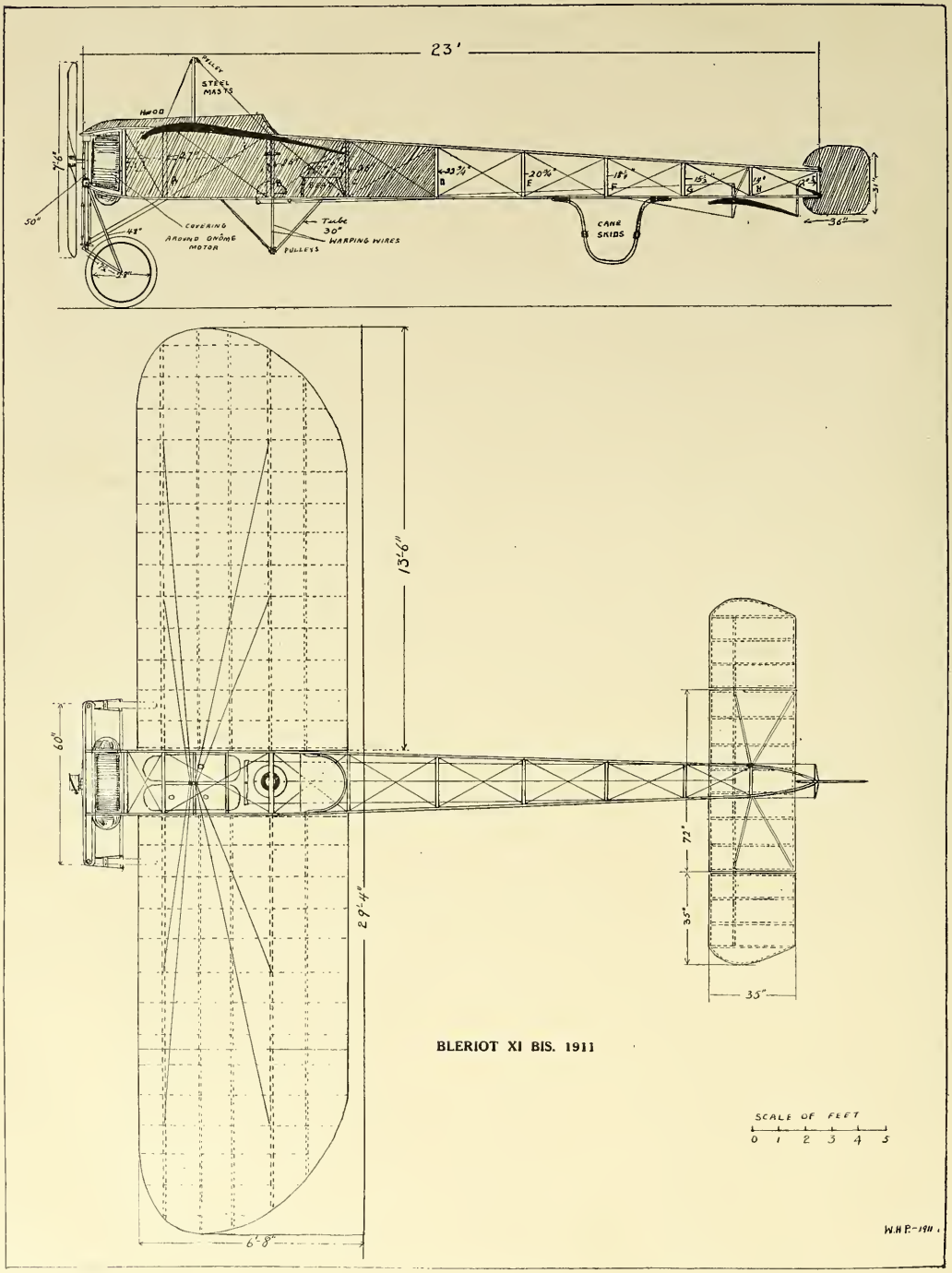
The rudder is 36 in. long by 33 in. deep, and is mounted as shown in Fig. 8.

We are indebted to London "Aero" for the detail drawings accompanying this article.



SCALE DRAWINGS OF THE NEW BLERIOT MONOPLANE

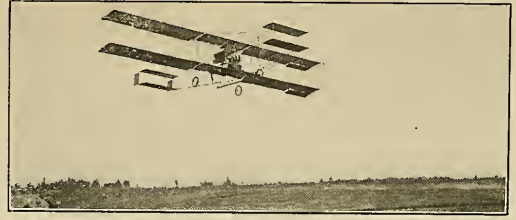
(PARIS-ROME TYPE)



BLERIOT XI BIS. 1911

SCALE OF FEET
0 1 2 3 4 5

W.H.P.-1911.



CHAS. F. WALSH MAKING A FLIGHT AT PORTLAND, OREGON. THIS MACHINE IS FITTED WITH A HALL-SCOTT MOTOR.

CLUB NEWS

Aero Club of America

Realizing the dream of months to have a home of its own, the Aero Club of America on June 14 took possession of the handsome club house at No. 297 Madison avenue and threw open the doors for an old-fashioned house warming.

Everybody in aeronautics, whether as sportsman or professional, was present and inspected the beautiful rooms on the five floors of the newly refitted building. Not a few were present from cities of the West and South.

There was no formal programme of exercises, but a buffet luncheon was served, and all the members organized themselves into a committee to make the visitors feel at home. In the supper room a camera had been rigged up and photographs were taken of some of the best known aeronauts present. Among the fliers in attendance were Thomas Sopwith, J. A. D. McCurdy, Thomas Baldwin, C. B. Harmon, St. Croix Johnstone, Augustus Post and Leo Stevens.

The new home, five stories in height, constructed of Indiana limestone, faces Madison avenue and extends eastward along Forty-first street. A high iron fence of ornamental design protects the little border of lawn that runs around the house. The main entrance is broad in its welcome and opens directly into a reception hall of onyx walls that affords the first hint of the beauty and richness of the house.

Originally designed and built as a residence for a man of wealth, the Club has finishings and furnishings of a lavish kind. Onyx and marble, brass and bronze, carved wood and cut glass, silken tapestries, leather from Spain, parquet floors and panelled ceilings, grill work of iron and wood from the hands of master artists, stained glass windows, costly mantels and chandeliers form this miniature palace in which the Aero Club resides.

The Aeronautical Society

The annual election of officers, directors, and committees of the Aeronautical Society took place at their club room, 250 West 54th Street, New York, on June 8th, with the following results:

President—Willis McCornick.

Vice-President—Thomas A. Hill, Dr. John Henry McCracken, James M. Beck, Capt. W. I. Chambers, Roger B. Whitman.

Board of Directors—Willis McCornick, Lieut. F. W. Humphries, Sen. J. F. Duhamel, Col. E. A. Havers, Geo. F. Campbell Wood, Frances T. Sanford, Carlos deZafra, Thomas A. Hill, Hiram P. Maxim, James M. Beck, Capt. Thos. S. Baldwin, John H. McCracken, Lee S. Burridge, Hudson Maxim, Roger B. Whitman, Arnold Kruckman, W. Irving Twombly, William J. Hammer, Hugo C. Gibson, Louis R. Adams, C. Wesley Howell, Geo. S. Bradt, Wilbur R. Kimball, H. A. Wise Wood, Capt. Chambers.

Treasurer—Geo. S. Bradt.

General Secretary—Arnold Kruckman.

Recording Secretary—Raymond Beck.

Law Committee—Thomas A. Hill, Chairman; Orrell A. Parker, Herbert C. Smyth, James F. Duhamel, Francis X. Carmody, James M. Beck, William R. Page.

Membership Committee—Carlos deZafra, Chairman; William R. Kimball, Charles Wake, Fred A. Scheffler, J. R. Westerfield, Dunbar Adams, Lieut. F. E. Humphreys, Geo. S. Bardt, Ralph Upson.

House and Grounds Committee—William R. Kimball, Chairman; Dr. H. W. Walden, C. O. Hadley, William Blood, Wilson S. Howell, Jr., C. A. Luff, Henry J. Winter, R. G. Ecob, Lee S. Burridge.

Technical Board—Hugo C. Gibson, Chairman; William J. Hammer, Prof. A. Lawrence Rotch, Prof. Dwight W. Hering, Prof. Todd Davis, A. Leo Stevens, Earl Atkinson, W. L. Fairchild, Prof. John I. Montgomery, Greely S. Curtis, Capt. W. I. Chambers, Prof. Herschel C. Parker, J. Bernhard Walker, John F. O'Rourke, M. B. Sellers, W. Irving Twombly, Carlos deZafra, Ernest V. Lallier, Prof. Collins P. Bliss, Prof. D. L. Gallup, Prof. William Hallock, Wilbur R. Kimball, Lewis R. Compton, Harry R. Burt, Earle Ovington.

Library and Publication Committee—Thomas A. Hill, Chairman; A. E. Horn, Librarian; Ernest L. Jones, Arnold Kruckman, Wilson S. Howell, Jr., C. Wesley Howell, Baron Ladis Las d'Orcy, H. A. Wise Wood, Raymond Beck, W. L. Fairchild.

Foreign Relations Committee—G. F. Campbell Wood; W. Irving Twombly, Carlos deZafra, Baron Ladis Las d'Orcy, Baron von Dewitz, William J. Hammer, Rudolf Wille.

Entertainment Committee—Lee S. Burridge, Chairman; Geo. S. Bradt, Roger Whitman, Carlos deZafra, Wilson S. Howell, Jr., Hugo C. Gibson, Baron von Dewitz.

Model Committee—Wilson S. Howell, Jr., Chairman; Percy Pierce, Carl H. DeLion, Louis R. Admas, Lawrence J. Lesh, Louis Ragot.

Auditing Committee—A. A. Whitman, Chairman; Dwight Tracy, Herbert Longendyke.

Aero Club of New York

By Richard R. Sinclair, Secretary.

Eleven of the twenty-one hangars at the Aerodrome, Garden City Estates, are now completed and occupied. A large force of men worked day and night to put the field in shape for the opening, which took place on June 10th and was a decided success in every way.

The Aero Club of New York, although affiliated with the National Council, is an independent organization whose officers are representatives of the four leading Aeronautical Associations of America with Timothy L. Woodruff as President.

The Club has been organized for the practical promotion of aviation. Its purpose is to provide and maintain an aerodrome superior to any heretofore established in this country for those who have acquired the art of aerial navigation, and also for those who seek the facilities of learning to fly.

The New Aerodrome is one of the best equipped in America. The hangars are of a uniform size and contain every feature necessary to the successful exploitations of the sport.

The flying field is situated just east of Nassau Boulevard, a thoroughfare stretching from Jericho Turnpike to Hempstead Turnpike, and within easy walking distance of the Nassau Boulevard station on the Hempstead Division of the Long Island Railroad and the new Merillon Avenue Station on the main line of the Long Island Railroad.

The privileges of the Garden City Estates Club have been extended to members of the Aero Club of New York. The aerodrome is twenty miles from the heart of the Borough of Manhattan, reached either by the Long Island Railroad from the Flatbush Avenue Station, Brooklyn, or the new Pennsylvania Station, Seventh Avenue and Thirty-third Street, or by automobile via Queensboro Bridge, Hoffman Boulevard, Hillside Avenue, Rocky Hill Road, Jericho Turnpike and Nassau Boulevard.

An adequate space has been fenced in on the flying field for the exclusive use of members and their invited guests, thus affording every comfort and convenience for witnessing the flying.

Two hundred parking spaces skirt the field on the West.

No admission will be charged at any time.

Aero Club of California

By Van M. Griffith.

The following standing committees have been appointed by the President, Geo. B. Harrison, of the Aero Club of California, for the ensuing twelve months:

Membership—Raymond I. Blakeslee, Los Angeles; E. Roger Stearns, Los Angeles; Ed. R. Maier, Los Angeles; Leon Escallier, Los Angeles; William Stevens, Los Angeles; Glenn L. Mortin, Santa Ana; Frank T. Searight, San Diego; E. H. Earle, Pomona; James R. Ricketts, Long Beach; Harvey H. Hinde, Riverside; Louis Mortimer, Los Angeles; James R. Townsend, Los Angeles; E. J. Campbell, Pasadena.

House—Charles F. Walsh, M. C. Tunison, Mrs. H. La V. Twining, R. S. Stratton, Charles Forman.

Entertainment—L. P. Barrett, Earle Remington, C. H. Temple, L. K. Freeman, F. G. Calkins.

Technical and Contest—H. LaV. Twining, H. S. Dosh, W. S. Eaton, Charles Rillet, Buel H. Green.

Financial and Auditing—J. J. Slavin, W. H. Leonard, M. H. Gallegher, Chas. Skoglund.

Investigating—R. C. Hamlin, C. H. Day, W. E. Cannon, W. H. B. Kilner, Alfred Solano.

Member National Council of Aero Clubs of America—Earle Remington; alternate member, Ernest LaRue Jones.

New York Representative Committee—E. L. Jones, T. A. Hill, F. E. Moskovics.

Foreign Representatives—London, R. J. H. Hope; Paris, Louis Paulhan.

Aero Club of Illinois

Chicago just at the present time is the center of the aeronautical map of the United States, and Harold F. McCormick, Treasurer of the McCormick Harvester Co., and also son-in-law of John D. Rockefeller, is probably doing more for the development of aviation in this country than any other one man. Through the efforts of Mr. McCormick, both actively and financially, the greatest aviation meet of the year in the United States is being organized and will be held at Chicago from August 12th to the 20th, and the most remarkable feature of this meet is the fact that it will be held right in the front door yard of the Western Metropolis. The meet is to take place in Grant Park, which lies along the lake front right in the heart of the city. It is expected that the entire cost of the meet will be in the neighborhood of $250,000, $80,000 of which will be offered in prizes.

The admission fees will be small, ranging from 25 cents to $2, with a considerable area set aside for free admissions. The profits which are derived from the meet will be given to the United Charities of Chicago. The schedule of events as so far arranged, barring details, are as follows:

EVENT NO. 1.

Totalization of duration (entire meet), seven prizes, aggregating $8,000.

EVENT NO. 2.

(This is really eight events.) Daily totalization of duration. Prize, $1,000 for each day divided into six graded parts.

EVENT NO. 3.

Speed contest for biplanes, 20 miles (15 lamps) from a standing start. Prizes, $1,200, divided into four graded parts. To be run in heats if more than four contestants.

EVENT NO. 4.

Speed contest for monoplanes, 20 miles from standing start. Prizes, $1,200, divided into four graded parts.

EVENT NO. 5.

Handicap speed contest for all types of aeroplanes, 20 miles from standing start. Reserve two starters in the previous contests. Prizes, $1,200, divided into four graded parts.

EVENT NO. 6.

Climbing contests for monoplanes, 500 meter altitude. Prizes, $2,200, divided into four graded parts.

EVENT NO. 7.

Climbing contests for biplanes, 500 meters altitude. Prizes, $2,200, divided into four graded parts.

EVENT NO. 8.

Climbing contests for all types, 1,000 meters altitude for shortest time off the ground. Prizes, $3,500, divided into five graded parts.

EVENT NO. 9.

Alighting contests as to accuracy, aiming at a given point or line. Prizes, $1,000, divided into four graded parts.

EVENT NO. 10.

Starting contest (to get off the ground quickest). Prizes, $1,000, divided into four graded parts.

The Aero Club of Illinois, under whose auspices the Chicago meet will be held, is now budding forth as one of the most important Aero Clubs of America, and it might safely be said that it ranks second to none, except, perhaps, the Aero Club of America. Already the club has in the neighborhood of about five hundred members, and has just acquired through the generosity of Mr. Harold F. McCormick a new aviation field, which extends over an area of about one hundred and sixty acres of fine, level ground, which has been scraped and rolled, until it is almost as level as a billiard table.

Five different transportation lines from the center of the city run to the grounds and the five cent fare and twenty-three minutes of time on the Metropolitan Elevated Railway, will land one right at "Aeroville Station," which is the main entrance to the grounds.

A high board fence encloses the entire field. Hangars, grandstands, Machine and repair shops, and a clubhouse, are now being built.

This field will be run entirely by the Aero Club of Illinois, and will be open to all amateur flyers. Hangar space will be provided for all those who wish to try out there machines. Prizes will be given for amateur flights at weekly matinees.

Model contests for the small boys will number among the events. Spherical and dirigible balloon races will have their places on the program. The grounds will probably be the most complete in America, and will cost over $100,000.

The officers of the Aero Club of Illinois are as follows: President, James E. Plew; First Vice-President, Harold F. McCormick; Second Vice-President, T. Edward Wilder; Secretary, Grover Sexton; Treasurer, Chas. E. Bartley; Consulting Engineer, J. S. Stephens. Directors—David Beecroft, F. C. Donald, C. E. Gregory, Wm. F. Grower, Frank X. Mudd, Frank Wentworth.

Horace B. Wild, the famous spherical and dirigible balloon pilot, and who will shortly try for an aviation pilot's license, has rendered invaluable services to the Aero Club of Illinois during its period of organization.

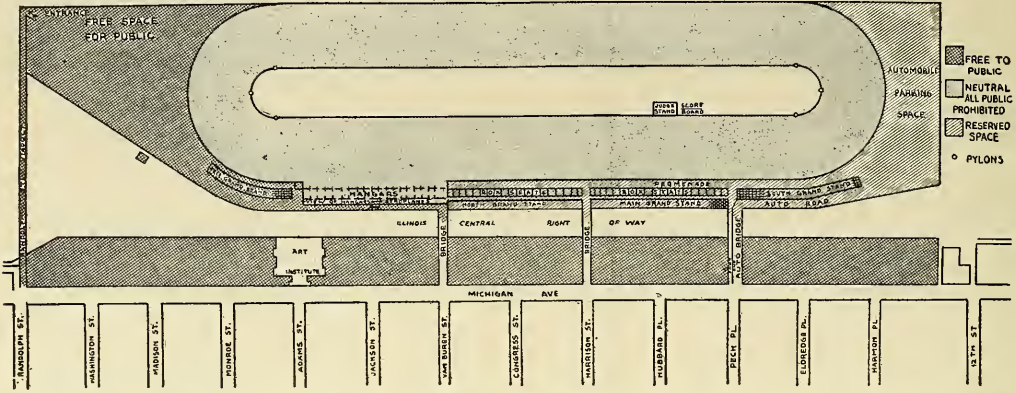


DIAGRAM SHOWING THE SPLENDID LOCATION OF THE GROUNDS TO BE USED FOR THE INTERNATIONAL AVIATION MEET AT CHICAGO. THESE GROUNDS, AS CAN BE SEEN, ARE RIGHT IN THE VERY HEART OF THE BUSINESS SECTION OF THE CITY.

GENERAL NEWS

New England News

By Denys P. Myers.

Following a hearing, the Committee on Public Health of the Massachusetts Legislature, to which Governor Foss' Message advising aeroplane regulation was refered as affecting public safety, reported a bill (No. 521) in the Senate on May 17. The bill differs considerably from the Connecticut bill, includes gliders within its purview and makes experimentation illegal without a license. The section devoted to liability for damages seems unnecessarily harsh, and, curiously enough, all moneys received under it would be devoted to road repair. The text reads:

An Act

Relative to the Registration of Flying Machines, Dirigible Balloons, Gliders and Other Apparatus intended to be propelled through the Air and to the Licensing of Operators thereof.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section 1. Every owner of a flying machine, dirigible balloon, glider or other apparatus intended to be propelled through the air shall, before operating the same, file annually in the office of the Massachusetts highway commission, on a blank furnished by said commission, a statement of his name, residence, post office address and such description of such apparatus sought to be registered by him and such other information as shall be required by said commission. Said commission, or its duly authorized agent, shall register such apparatus, assigning to it a distinguishing number or mark, which shall be displayed conspicuously thereon, and shall thereupon issue to the owner thereof a certificate of registration. Such certificate shall at all times be carried with such apparatus, and shall be subject to examination upon demand by any proper officer. The commission shall collect for each certificate of registration so issued a fee of ten dollars. The registration shall expire at midnight on December thirty-first of each year.

Section 2. No flying machine, dirigible balloon, glider or other apparatus intended to be propelled through the air shall be operated within this state by any person until his qualifications have been ascertained by the Massachusetts highway commission, after such examination as it shall deem necessary in each case, and a license has been issued to him, which shall specify, among other things, what kind or kinds of apparatus may be operated by the holder thereof. Said license shall be carried by such person at all times when operating. Said commission shall collect for each license so issued a fee of two dollars. All expenses of examination incident to applications for such licenses shall be borne by the applicant. All licenses so issued shall expire one year from the date of issuance.

Section 3. The commission may for any cause it may deem sufficient suspend or, after an investigation or hearing, revoke any registration certificate or license issued by it under the provisions of this act and may order said registration certificate or license to be delivered to it; and neither the registration certificate or license shall thereafter be reissued except in the discretion of the commission.

FRED WISEMANN, THE WELL-KNOWN CALIFORNIAN AVIATOR, WHO HAS BEEN MAKING SOME REMARKABLE FLIGHTS IN THE WEST LATELY.

Section 4. The owner, lessee or charterer shall be liable for all damage resulting from the use or operation of such apparatus without proof of negligence or fault in its operation or management.

Section 5. Whoever violates any provision of this act shall for each offence be punished by a fine not exceeding one hundred dollars, or by imprisonment for a term not exceeding six months, or by both such fine and imprisonment.

Section 6. The provisions of *section thirty of chapter five hundred and thirty-four* of the acts of the year nineteen hundred and nine, as amended by *chapter five hundred and twenty-five of the acts of the yeor nineteen hundred and ten*, shall apply to the disposition of the fees and fines received under the provisions of this act.

State of New York, No. 1756. Int. 1436

In Senate.

May 23, 1911.

Introduced by Mr. DUHAMEL—read twice and ordered printed, and when printed to be committed to the Committee on Codes.

AN ACT

To amend the state boards and commissions law, in relation to establishing an aviation license board.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

Section 1. Chapter fifty-six of the laws of nineteen hundred and nine, entitled "An act in relation to state boards and commissions, constituting chapter fifty-four of the consolidated laws," is hereby amended by inserting a new article to be article four-a and to read as follows:

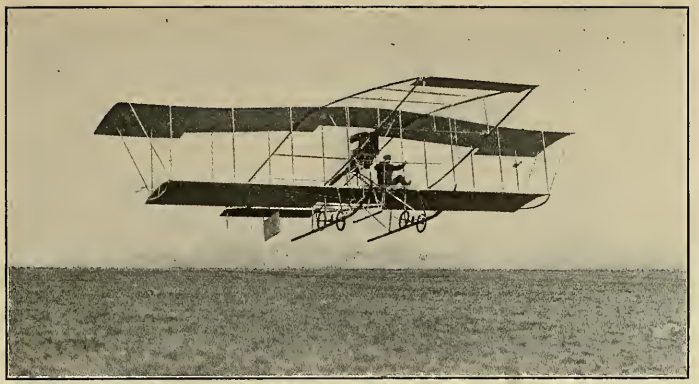
Explanation.—Matter in *italics* is new; matter in brackets [ ] is old law to be omitted.

ARTICLE 4-A.

Aviation License Board.

Section 44. Aviation license board.
45. Powers and duties of board.
46. Examinations; licenses; fees.
47. Officers and employees.
48. Offices; seal.
49. Reports.
49-a. Violations punishable.

Sec. 44. Aviation license board. The governor shall appoint a commission of ten to be selected from the membership of the various aeronautical clubs, societies and scientific bodies identified with the science and sport of aeronautics, to be known



THE HADLEY AND BLOOD BIPLANE, REMARKABLE FOR ITS GREAT SIZE, MAKING A SUCCESSFUL FLIGHT AT MINEOLA. THIS MACHINE IS FITTED WITH A ROBERTS MOTOR.

as the aviation license board. The members shall be known as aviation commissioners and shall serve without compensation. The term shall be during the term of the governor appointing such commissioners. So far as practicable the board shall include a member from each of the said organizations. Any vacancy occurring by death, resignation or otherwise shall be filled by the governor within ten days after notice of such vacancy, and upon the governor failing to fill said vacancy as aforesaid, the said board shall elect a commissioner by a majority vote of the remaining members. The governor may remove any commissioner for cause, and the vacancy caused shall be filled as aforesaid.

Sec. 45. Powers and duties of board. It shall be the duty of said board to protect life and property and to safeguard public interest with respect to aeronautical devices; to conduct regular physical and mental examinations of those intending to operate aeronautical devices in order to determine the qualifications of applicants with regard to their physical condition or ability to safely engage in work of this character and for the purpose of determining the knowledge possessed of such apparatus to insure the proper and safe handling of the same; to inspect all aeronautical devices used or intended to be used in public flight for the purpose of determining the safety of such apparatus and to ascertain the manner in which public meets, events, contests or other aeronautical exhibitions or public demonstrations are held or to be held for the purpose of insuring proper safeguards to the public; to investigate all safety appliances and the manner in which public gatherings are to be conducted, and said board shall use every means within its power to protect persons attending same and properly shield them from all dangerous positions with respect to aeronautical devices, either while the same are in flight or on the ground.

Sec. 46. Examinations; license, fees. It shall be the duty of said board to hold examinations at regular stated times throughout the state, notice of the place and time of which shall be advertised in the daily newspapers of the locality in which such examinations are to be held at least sixty days before the date thereof. Each applicant for examination shall pay an examination fee of five dollars. Such examinations shall be held for the purpose of ascertaining the qualifications of all applicants, and if an applicant is found duly qualified, the said board shall issue to him a license for which there shall be a fee of ten dollars to be paid to the secretary of the board. All apparatus intended to be used at meetings or exhibitions to which the public are admitted shall be submitted for examination and inspection to said board, and if found to be safe and proper, a license shall be issued therefor upon the payment of a fee of twenty-five dollars. All persons intending to conduct schools of instruction for the operation of aeronautical apparatus shall obtain a license from said board and pay therefor a fee of ten dollars. All persons intending to hold public meets or exhibitions shall first obtain a license from said board aad pay therefor a fee of one hundred dollars. Special licenses may be issued by said board for special events as across country or over city flights for which a special license fee of five dollars shall be paid in each case. Said licenses are to be in form as prescribed by said board and may be limited to the operation of a dirigible or an aeroplane.

Sec. 47. Officers and employees. Said board shall elect by a majority vote from its own members, a president, a secretary and a treasurer of said board who shall perform the usual duties devolving upon such officers. Said board may also employ such clerks, inspectors and employees as it may deem necessary for the proper carrying out of the provisions of this article and said employees shall receive salaries to be fixed by said board.

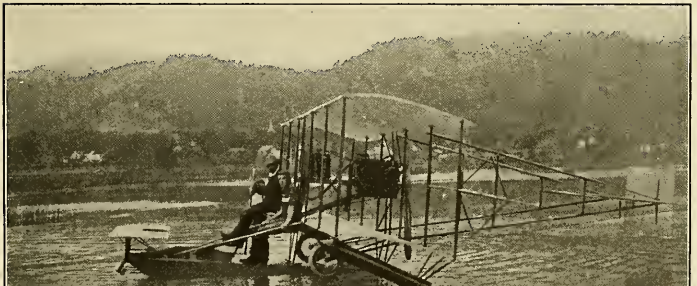
Sec. 48. Offices; seal. The main office of the board shall be in the city of Albany in connection with the motor vehicle bureau of the office of the secretary of state, but the board may establish branch offices in any of the cities or civil divisions of the state for the purpose of facilitating the work of the department. The board shall have an official seal and shall cause the same to be affixed to every license issued by the board.

Sec. 49. Reports. Said aviation license board shall make annual reports to the governor and shall pay over to the state treasurer one-half of all funds received by it during the fiscal year, retaining the other half for the purpose of defraying running expenses and necessary incidentals of said board.

Sec. 49-a. Violations punishable. Any violation of this article shall be a misdemeanor and shall be punished as follows: For the first offense, by a fine of one hundred dollars; second offense, by a fine of five hundred dollars; third offense, by a fine of not less than one thousand dollars or imprisonment for not less than one year, or both.

Sec. 2. This act shall take effect immediately.

Senate, No. 1756.



Glenn H. Curtiss and Lieut. Ellyson, U. S. N., just after alighting upon the lake at Hammondsport, N. Y., after making a fine flight in his latest hydro-aeroplane. This machine is built to run along the ground, alight on the water or fly in the air.

Intercollegiate Glider Meet

The first intercollegiate glider meet held under the auspices of the Harvard Aeronautical Society on its field at Squantum, May 29 and 30, contained two classes of entrants: one of mechanically and the other of body controlled gliders. In the former event Tufts with 13 points was first, and Cornell with 11 points was second. In the later event Massachusetts Institute of Technology with 13 points and Volkman with 11 points were first and second respectively.

The Harvard glider on account of incorrect mounting on its skids was unable to make a flight. While the contests in the different events were being conducted, W. Starling Burgess and Charles K. Hamilton made a number of successful flights in Burgess-Wright biplanes.

A feature of the second day was the aviation exhibition given by Harry N. Atwood of Lynn, who made 16 flights during the afternoon, covering about 120 miles all told, and carried a passenger on every flight but one. His control of the Burgess-Wright machine, which he had never seen before, was wonderful. He had never operated an aeroplane alone until eighteen days before.

There were three events: duration, distance and accuracy in landing. In each event a silver cup was offered to the aviator winning first place and a medal for second place. The entries included Massachusetts Institute of Technology, Cornell, Tufts, University of Pennsylvania, Swarthmore, Waltham Aeronautical Society, Volkman and Harvard. The club winning the largest number of points won the meet and the large silver loving cup offered by the "Intercollegiate Magazine."

The summary follows:

1. Mechanically controlled: (in the computation of which were considered efficiency, based upon the distance, duration, total weight, and supporting surface, counting first 5 points; second 3 point; third 1 point; the getaway, control in flight, and landing, each counting, first 3 points; second 2 points; third 1 point): First—Tufts, 13 points; E. P. Bugbee. Second—Cornell, 11 point; C. H. Wetzell.

2. Body controlled: First—M. I. T., 13 points; Dalrymple. Second—Volkman, 11 points; Lombard. Third—Swarthmore, H. Blumhardt.

3. General control in flight—Won by Cornell (mechanically controlled glider), C. H. Wetzel.

4. Greatest distance in single flight—Won by M. I. T. (body controlled glider), 653 feet, 23 seconds, Dalrymple.

The results are subject to the sanction of the contest committee.

There are nine aeroplanes now in course of construction at the Burgess Company and Curtiss plant at Marblehead, Mass. One for the government has been completed.

J. Albert Brackett, special justice of the West Roxbury Police Court, Boston, and attorney for the Association of Theatre Managers of Boston, has bought a Bleriot monoplane. It is the second of that make owned in Massachusetts. Burgess Company and Curtiss of Marblehead having the other.

Adjutant-General Pearson has completed the general plans for the maneuvers which will be held during the week of July 23-30. Boston will be the point of attack. It is probable that the maneuvers will be conducted for the working out of problems in grand tactics as well as instructing officers and men. There will be upwards of 5,000 members of the militia in action at the same time.

At the Harvard aviation field, June 3, Harry N. Atwood, in a Burgess-Wright biplane, made fourteen flights, under excellent weather conditions. He carried up four passengers and made a trip accompanied by Mrs. Charles K. Hamilton, the wife of the aviator. The other passengers carried by Mr. Atwood inculded Miss Wainwright of Milton, Sven Hjertberg and two pupils of the Burgess flying school. The longest flight made was one of eighteen miles. This distance was covered in about twenty minutes, but the average flights took about ten minutes each. The biplane is fitted with hydroplanes.

"Women should try aviation. I believe that they can make more money at it than men; all it needs is a cool head, and they have that. Flying is the most wonderful sensation in the world, it is my greatest interest in life. I could not bear to settle down to hum-drum existence, without the excitement and thrill of it."

This is what Mrs. James V. Martin, the first woman aviator to come to Boston, thinks of her calling.

Connecticut News

By S. H. Patterson.

A. Holland Forbes' Aviation Bill which was presented to the State Legislature in April readily passed both Houses and was signed by Gov-

ernor Baldwin on June 8th, on which day it became operative. This bill is substantially as presented by Mr. Forbes and was published in April Aircraft and is the most complete and comprehensive act to regulate aviation without interference adopted by, or presented to any State in the Union. By the provisions of this act no aviator will now be allowed to make any cross country flights in Connecticut, unless he has obtained from the Secretary of State an operator's license and registered his machine on which he must display registration numbers not less than 3 feet in height, which must be visible while machine is in flight to those beneath; unless he be a non-resident of Connecticut, in which case he may operate his machine in this State not to exceed 10 days in any one year, without being obliged to comply with these laws, provided he is a resident of a State which requires registration of air ships and the licensing of operators, and with which he has complied. Failure to comply with these provisions subjects one to a fine of not more than $100.00, or imprisonment for not more than six months, or both.

The Secretary of State proposes to confer with the Governors of The Aero Club of Connecticut in the matter of issuing licenses for aviators in this State and the Governors of the Club are to determine whether applicants for licenses are, or are not, proper persons to receive them, which will be ascertained by their witnessing flights by the applicants and seeing that all tests necessary for obtaining pilot licenses are complied with.

These tests will be made at the Charter Oak Park in Hartford, and at Lake's Aerodrome in Bridgeport.

The Aero Club of Connecticut is making arrangements whereby every member will be able to make a flight as passenger in an aeroplane this Summer, for which they will be charged according to the duration of the flight.

The Yale Aero Club held a meet on May 19th and 20th in which McCurdy and Beachey made some clever flights. In one flight Beachey attempted to drop baseballs on to the field for Catcher Carhart of the Yale 'Varsity team to catch, but they went wide and the attempt was given up.

A meet was held at Charter Oak Park at Hartford, on May 29th and 30th, in which the Wright Flyers, Brindley and Turpin, made some excellent flights before a large attendance.

Howard Wilson, of Bridgeport, who has built two successful biplanes, has accepted a position with Capt. Baldwin as head machanician.

California News

By Ernest Ohrt.

A. V. Hartle, an Ohioan, age 26, who was ambitious to become an aviator, fell to his death at Dominguez Field near Los Angeles, on May 17. He gave a contract two months ago to Harry A. Dosh for a Curtiss type biplane.

When forty feet in the air one of his ailerons flew off. Hartle started to descend in the middle of the field but rose again, appearing to have complete control of his craft.

To observers it looked as if he intended to land, but he again rose to an altitude of forty feet, when his machine was struck by a gust of wind and he was unable to right it and crashed to earth with the engine on top of him.

Eugene Ely made two flights at Eureka on May 28th and on his second flight he circled above the bay and city.

Clarence Walker made two short flights at the Fourth Avenue Heights near Oakland on May 21st. These flights were of short duration on account of the flying field being small with a hill in the foreground and a valley on each side. Didier Masson—Paulhan's old mechanic, who next tried the Curtiss biplane, made a very steep ascent, causing him almost to slide backward, but he made a safe landing after a short flight. The entire outfit will leave in the near future for the South Sea Islands.

G. Glizman, a young man of San Francisco, is constructing an original Farman type biplane which he hopes to try out soon. He will install a five-cylinder rotary engine of his own design in it. Glizman has made numerous glider flights.

The Ohrt brothers' glider No. 2 has lately made many flights on the San Francisco beach. The flights were all towed and the highest altitude was 175 feet by W. Hanley, and the longest 3 1-2 minutes by Ernest Ohrt; in one instance both of the former glidists went up. The Ohrt brothers and Hanley will soon be trying for the world's record in height for towed flight.

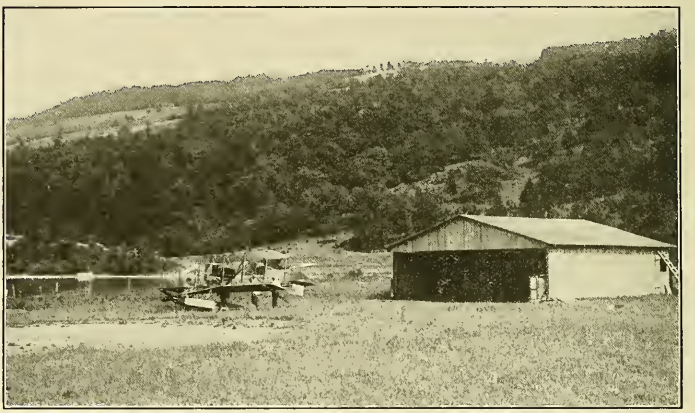
Marshall Giselman, of San Francisco, is building his second biplane and also an engine of his own design.

Mineola and Belmont Park News

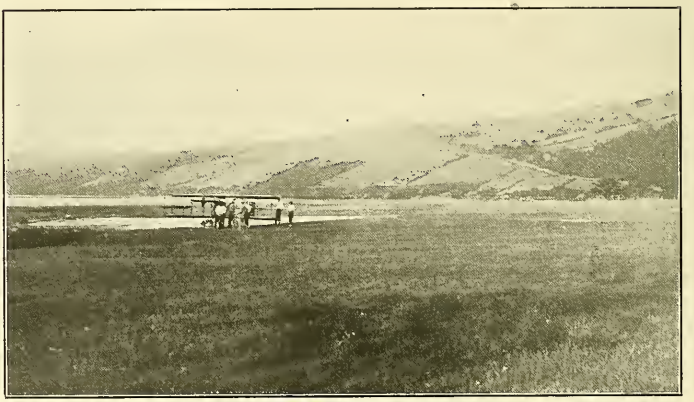
On May 21st, some splendid flying was accomplished at Belmont Park by Earle Ovington, who gave an exhibition of cross-country and fancy flying.

Joseph Richter gave Belmont Park a little surprise by jumping into his Shneider biplane, equipped with Roberts motor, with Joseph Costello as passenger and flying out over West Hempstead and back, a round trip of twenty-eight miles.

FRED WISEMANN MAKING A FLIGHT AT CUCHONUSH, WASHINGTON, IN A WISEMANN BIPLANE, FITTED WITH A HALL-SCOTT MOTOR.



THE CURTISS HANGAR AT HAMMONDSPORT, N. Y., NEAR THE LAKE, IN WHICH IS HOUSED HIS LATEST HYDROAEROPLANE. THE PICTURE SHOWS THE MACHINE BEING TAKEN FROM THE HANGAR TO THE LAKE FOR EXPERIMENTAL WORK.



VIEW SHOWING A PORTION OF THE CURTISS FLYING GROUND AT HAMMONDSPORT, N. Y., WHERE STUDENTS ARE TRAINED IN THE ART OF AVIATION.

Then flying alone he circled over Floral Park, and Garden City, and landed at the Mineola aviation field, afterward returning to Belmont Park.

Robert Bessier, mechanic for St. Croix Johnstone, had a narrow escape on May 28th at the Mineola Aviation field.

Mr. Johnstone had brought out his Bleriot, which is equipped with a 50 H. P. Gnome motor. By some mistake the motor had not been throttled down, so that when Bessier turned the propeller over it began to revolve at high speed. Mr. Bessier was struck on the right side by the propeller but did not sustain any serious injury.

A. Sallinger, the Johnson brothers of California, and Joseph Costello, made short flights at Belmont Park.

Joseph Richter in a Roberts-Shneider biplane, fitted with Requa-Gibson propeller, made a number of fine exhibition flights at heights ranging from 200 to 900 feet on May 30th.

At the termination of his exhibition he again started and climbed in circles until he was about 900 feet high and then made a straight line for Belmont Park.

When he arrived at Belmont Park he was flying at a height of about 1,800 feet. When he was directly over the field he cut off his motor and made a long vol plane to the ground, making as fine a landing as was ever made on the field.

The Roberts motor worked perfectly at all times and was highly praised by every one who saw the performance.

On June 1st, two aviators came to grief while flying at Mineola. Miss Harriet Quimby, the young woman aviator who has been practising on the Moisant machine at the Moisant school, was out before 5 o'clock in the morning and made a couple of circuits of the field at a low altitude. S. S. Jarvan next took control of the machine and was doing nicely until he tried a turn at the far end of the field, but did not warp his wings properly, with the result that the machine tipped over sideways and dived head first to the ground a distance of 30 feet.

Joseph Stevenson was in the midst of a short flight when he attempted to make a landing in front of the grandstand, but something went wrong with the machine and instead of gliding to the ground, it suddenly rose in the air, went over the high fence surrounding the grounds and landed across the road against a hangar. Stevenson managed to retain his seat but his machine was badly damaged.

On June 4th, St. Croix Johnstone made an excellent flight at Mineola, during the course of which he rose to a height of 1,500 feet, where he shut off his motor and glided to within 100 feet of the ground when he restarted his motor and set off on a cross-country circuit.

At Belmont Park, Wilbur R. Kimball has been testing his new tailless biplane, which is fitted with two Requa-Gibson propellers running in opposite directions by a new and novel transmission which does away with the crossing of one of the chains.

Army and Navy Notes

On May 24th the government's balloon school at Fort Omaha was opened and sixteen students were instructed in the filling and handling of balloons by Capt. C. de Chandler.

In the afternoon Capt. Chandler, accompanied by four students, went aloft in the big army balloon and landed at Woodbine, Iowa, shortly after dark. The balloon carried a wireless outfit and messages were sent to and from the balloon.

The foundation of a United States aerial navy was laid on May 25th when Assistant Secretary Winthrop signed contracts, aggregating $13,000, for the delivery at the Naval Academy by July 1st, of three aeroplanes.

Two of the machines will be of the Curtiss type, one with eight cylinders and the other with four, and the other aeroplane will be furnished by the Wrights. These must be capable of rising from and alighting upon the water and of carrying at least one passenger.

Immediately upon delivery of the machines a naval school of instruction for aviators will be established at Annapolis.

Lieut. Thomas D. Milling, Fifteenth Calvary, U. S. A., has been sent to Washington to drill other army officers in the art of aerial navigation. Lieut. Milling handles a Wright biplane which he learnt to fly after two hours and ten minutes practice with an instructor in the air at the Wright's aviation school at Dayton.

The Wright Camp

Continuous fiying is taking place at the Wright School in Dayton where two or three machines are frequently seen in the air. Average flights per day last month were over fifteen. The following pupils have completed their training: L. W. Bonney, Wellington, Ohio; Oscar A. Brindley, Columbus, Ohio; and Howard W. Gill, Baltimore, (Wright aviators). Mr. Gill made his debut in the exhibition field at Saginaw, Mich., on June 29-30, where his old time skill as an automobile racer stood him in good stead and furnished pleasing entertainment to a large crowd.

Mr. Brindley made his debut at Hartford May 29-31. Lieut. Henry Arnold and Thos. De Witt Milling have completed their training of aviation work in the Signal Corps of the Army. After two hours and fifteen minutes in the air, Lieut. Milling made a number of short flights and then went up 1,500 feet and glided down.

Mr. Jack C. Henning, St. Louis, Mo., private owner, Mr. Atwood, Boston, Mass.; and C. P. Rodgers, N. Y., also Mr. Harold Brown, Boston, Mass., have completed their training on Wright biplanes.

Mr. Coffyn flew almost continuously in Government work at San Antonio on the Wright machine and the excellency of the machine for reconnoitering and wireless purposes was a great surprise to General Carter and other members of the staff. The Navy Department takes delivery of a Wright machine on the first of July and the War Department have several orders for Wright biplanes on hand.

SUMMARY.

Showing the rapidity with which Lieut. Thomas D. Milling learnt to fly at the Wright Camp at Dayton. He took his first ride on May 2nd. Began training May 6th and finished his training on May 12th. J. C. Turpin acted as instructor.

THE OHRT BROS. GLIDER MAKING A HIGH TOWED FLIGHT.

Operator.	Lesson.	Time. in air.	Remarks.
Welsh	1	14 Mins.	Rode as passenger.
Turpin	2	9 "	Principally rode as passenger.
"	3	8 "	Had charge of warping lever for awhile.
"	4	12 "	
"	5	11 "	
"	6	14 "	Had charge of warping lever.
"	7	5 "	Had machine when in air.
"	8	11 "	
"	9	8 "	
"	10	8 "	Throttled engine on him to teach gliding.
"	11	8 "	
"	12	9 "	Landed without assistance.
"	13	3 "	Bumped shed door, broke front skid.
"	14	3 "	Landed without assistance.
"	15	7 "	Landed without assistance.
"	16	5 "	Landed without assistance.

135 Mins. or 2 hrs. 15 mins.

The Curtiss Aviators

The return of warm weather has brought with it renewed interest in aviation exhibitions and contests. Jerome Fanciulli, general manager of the Curtiss Exhibition Co., who has just returned to New York after an inspection trip during which he traveled 9,000 miles, and visited over a dozen cities where Curtiss aviators were scheduled to fly, states that the past month has been the best in the history of aviation exhibitions in this country.

"We have kept eight aviators busy," said Mr. Fanciulli, "and have turned down business aggregating over $15,000.00 which we were unable to take care of on account of conflicting dates and shortage of aviators, and have even had to call into service Mr. Curtiss, who is endeavoring to devote his entire attention to the manufacturing end of the business.

"The hydro-aeroplane is attracting the attention of summer resorts, and even the Yacht Clubs and Motor Boat organizations, as well as big civic celebrations, such as the Fall River Cotton Centennial, the Astoria Oregon Centennial and the Seattle Potlach Celebration. We find that the hydro-aeroplane can be used where no grounds are obtainable for the regular machine."

Messrs. McCurdy and Beachy provided the flights and contests at the aviation meet which was held by the Wilkes-Barre, Pa., Aero Club, from May 29th to June 3rd. Many sensational flights were made by both participants. Mr. Beachy is now regarded as the most senstaional biplane exhibitor in the country; many of his antics are original and display great skill.

Another big meet conducted by the Curtiss Co. was that at Wichita, Kansas, in which Messrs. Ely, Ward, Witmer and St. Henry participated. So much enthusiasm was created as a result of this meet, that Messrs. Ward and Robinson have been busy daily filling contracts for the Curtiss Co. in that section of the country. Among the places at which these aviators provided the flights were: Joplin, Mo., Little Rock, Ark., Lincoln, Neb., Topeka, Ottawa and Salina, Kansas.

Fort Wayne, Ind., another Curtiss aviation meet, was participated in by Messrs. Willard and Witmer. Mr. Willard flying there by special arrangement with the Curtiss Exhibition Co.

An unusual field for aviation exhibitions in which the Curtiss Exhibition Co. seem to be particularly active, is the conducting of aviation meets by newspapers. The most recent success in this line was the big meet just concluded at Evansville, Ind., at which Messrs. Witmer and Beachey flew for the Evansville Courier.

Another meet under the auspices of a newspaper was that at Lafayette, Ind., in which the Purdue University also co-operated. The flying being done by Messrs. Beachey and Witmer, at the Purdue University Grounds. Over 8,000 persons witnessed the flights.

A big crowd saw Mr. McCurdy fly at Springfield, Mass., on June 8th and 9th.

R. C. St. Henry, one of the most recent Curtiss aviators, has been making numerous flights in Western Canada and in North Dakota. He flew at Regina, Fargo, Jamestown and Carrington.

The American Propeller Company of Washington, D. C., has been doing a splendid business of late. They are the makers of the Paragon propeller which has been so successfully used on many machines. Among the well known aviators and builders who use these propellers are: Newell Aerial Navigation Company, Seattle, Washington; Joseph A. Blondin, Los Angeles, Cal.; D. L. Thompson, Tacoma, Washington; R. V. Jones, Seattle, Washington; A. L. Leatart, Los Angeles, Cal.; American Aeroplane Co., Wilmington, N. C.; M. C. Hoyle, Warre, Mass.; Matthewson Aeroplane Co., Denver, Colo.; Overland Washington Motor Co., Washington, D. C.; Romaine de Bersaques, Ft. Myer, Va.; Sydney V. James, Chicago, Illinois; W. P. Gary, Paterson, N. J.; Dan Lewis, Sonora, Mexico; C. V. Cessna, Enid, Oklahoma; The Ray Harroun Co., Indianapolis, Ind.; F. Rodirguez, New York City; A. M. Williams, Douglas, Ariz.; H. W. Jacobs, Topeka, Kans.; George C. Wegner, San Francisco, Cal.; The Gallaudet Engineering Co., Norwich, Conn.; W. W. Southard, Baltimore, Md.; Brown Aeroplane Co., Baltimore, Md.

McCurdy-Willard Aeroplane Co.

J. A. D. McCurdy, Charles F. Willard and R. R. Young have completed arrangements and organized a company which is known as the McCurdy-Willard Aeroplane Company. The company's offices are located in the Goodrich Building, 1780 Broadway, New York. They are building a biplane type of machine known as the McCurdy-Willard. The machines are all equipped with Gnome motors and are built in three sizes, viz: special passenger carrying machine; regular standard, carrying one man, and a small high-powered racing type. The company will carry on a regular exhibition business, entering all the big meets, also manufacture these machines for the trade. Mr. McCurdy and Mr. Willard are among the oldest men in the aviation business. Mr. McCurdy was associated with Dr. Alexander Graham Bell, experimenting with heavier than air machines four years ago. Mr. Willard was the first man to give a public exhibition with a heavier than air machine in this country.

The Queen Aeroplane Co.

The Queen Aeroplane Company of New York, must now be recognized as one of the big aeronautical manufacturing concerns of the United States. It has a well-equipped plant at Fort George and a large corps of experts are busily engaged these days turning out the Queen monoplane. At this writing there are nine monoplanes at the factory approaching completion, some of them being constructed according to orders and others being built for the company's exhibition de-

partment. Arthur Stone is the company's licensed pilot and he has been making many flights at Belmont Park recently. The company has decided to send two machines to the Chicago meet in August.

The Farman Company of America

Mr. Alfred W. Lawson, president of the Farman Company of America, spent two weeks touring the West during the month of June in search of a suitable site for a factory and flying school grounds. He remained several days in the cities of Detroit, Chicago, St. Louis and Kansas City, and reports that any one of those cities would make a good place for the Farman Company to locate in.

It is expected that within the next thirty days a decision will be reached as to just what locality will become the permanent home of the Farman Company.

Secretary Baron d'Orcy, of the Farman Company of America, reports that he is in receipt of a great many applications from both men and women in all parts of the country who desire to learn to fly the Farman machine.

Mr. L. Blouet, the sales manager of the Farman Company of America, has become a member of the Aero Club of America.

The Baby Engine

We take pleasure in being able to announce to the followers of aeronautics, the advent of the "Baby Engine," manufactured by the Eckert Bros., at Stamford, Conn.

This diminutive motor, weighing according to the claims of its makers 3¾ lbs., constructed along standard lines, automatic in its operation, and developing a full ½ horse-power at its working speed of 1,300 r. p. m., with a 24 inch diameter, 18 inch pitch propeller, or 2,300 r. p. m. with an 18 inch diameter 13 inch pitch propeller, delivers between 7 and 8 lbs. thrust.

Among the special features which it embodies, are an automatic and infallible lubricating system, which distributes to all parts of the engine a predetermined quantity of oil. It is further equipped with a very highly efficient aluminum spray carbureter, so small that it can be placed on a 25c. piece (patent applied for), and which, together with a spun aluminum gasoline tank holding gasoline sufficient for a twenty-minute run, weighs slightly over three ounces. The ignition is of the high tension type and includes beside a diminutive spark plug, a commutator of special design, which permits of perfect spark control. The equipment includes a highly finished 18 inch diameter 13 inch pitch aluminum propeller.

The sphere of usefulness for which this little engine is designed, is one which must suggest itself to every reader of Aircraft. There has long been a demand on the part of experimenters, model builders, and those engaged in the fascinating new science of the air, for a positive power coupled with maximum strength and minimum weight. The "Baby Engine" is designed for installation in flying models from 6 to 8 feet spread of both biplane and monoplane construction.

The Sanford Aerial Construction Co. is yet another concern to branch from the field of automobiles to further the art of aviation.

Mr. Sanford, the president of the F. T. Sanford Automobile Co. of New York, is also the leading light in the new construction company. For the past six months this concern has been turning out propellers which have shown up very favorably in comparative tests, for efficiency and also for construction and finish. They have now taken a lease on an additional building to be devoted entirely to building complete aeroplanes of all types. With their well established reputation for thoroughness and attention to detail, we have no hesitation in predicting a successful and prosperous future for the Sanford Aerial Construction Company.

General Notes

Both Fred E. Wisemann and Charles F. Walsh have been doing some excellent flying during the past month in machines equipped with Hall-Scott motors. Since winning the novice events at the San Francisco aviation meet held at Selfridge Field in December, 1910, Mr. Wisemann has practically rebuilt the plane throughout, changing the design and construction and thereby reducing the weight from 1,100 pounds to 750 pounds.

The machine is now able to fly with the throttle of the 80 H. P. motor half open. Mr. Wisemann has entered the ranks of professional aviators and has been giving successful exhibitions along the coast and is at present covering the Northern territory.

Mr. Chas. F. Walsh, who only recently installed a Hall-Scott 60 H. P. power plant in his modified Curtiss type has been giving a good account of himself and on almost his first attempt with this motor he rose to a height of 700 feet at Portland, Ore.

While Louisville may not be the actual center of the aeroplane manufacturing industry in the United States, it is by no means on the extreme outer rim, for already the enterprising firm of R. O. Rubel, Jr. & Co., scarcely three years old, has had to enlarge its quarters to accommodate the rapidly increasing business that is coming its way. This firm, which has been manufacturing aeroplanes and aeronautical supplies since its birth, has just leased another three story building two doors north of its present location which will be used exclusively for the assembling of aeroplanes.

Some good flying took place at the Columbus aviation meet held from May 29th to June 5th. The aviators were: Capt. Thos. Baldwin with his Hall-Scott engined "Red Devil"; Earle T. Ovington, with a 70 H. P. Gnome Bleriot; Thomas Sopwith, of England, with a 60 H. P., E. N. V., Howard Wright biplane, and Philip Parmelee with a Wright biplane.

Under weather conditions decidedly unpropitious Clifford Turpin made two brief flights in a Wright biplane at Charter Oak Park on May 29th. Because of the wind, which freshened suddenly in the afternoon, and on account of his lack of experience in high wind flights, Oscar A. Brindley, Mr. Turpin's partner, did not essay a flight.

The Queen Monoplane Company of New York, makers of Bleriot type Gnome driven monoplanes, report a lively sale of their machines. Their business has grown to such an extent that they have recently ordered twenty Gnome engines for installing in machines now on order.

The New York Aeronautical Supply Company reports two more machines sold, one a Bleriot and the other a Curtiss type, and are working the facotry to its full capacity in the general line.

Maximilian Dingfelder, president and designer of Maximotor Makers, helped construct the famous Daimler engine used in the German Mercedes automobile. He has been building marine engines for ten years, the last five of which his boats held the Detroit championship against the speediest racers brought against them from all over the country. He drove the first automobile on the streets of Detroit long before Henry Ford started the industry which nearly doubled the city's population in five years. For the past three years Mr. Dingfelder has been experimenting with aeronautic engines, and attending the big meets and exhibitions. The "Aeromotor" was put on the market by his company, the Detroit Aeronautic Construction Co., about a year ago. It is now flying in planes and dirigibles as far away as Japan.

We have just received from the E. J. Willis Company of New York, a copy of their latest 1911 catalogue, which we feel sure will be of interest to all who contemplate building an aeroplane or are engaged in so doing. The catalogue, in addition to listing all their goods, also contains scale drawings of the Bleriot XI monoplane, Curtiss biplane and Farman biplane.

An exceedingly interesting and well gotten up catalogue has been issued by the New York Aeronautical Supply Company of 50 Broadway, New York. It contains drawings and descriptions of all the parts used in the manufacture of aeroplanes and will be sent free to all interested parties.

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FOR SALE

IF you want passenger balloons, dirigibles, captives or aeroplanes; large stock; immediate shipment; any size built to order. Teach purchaser to operate. Exhibitions furnished throughout United States and Canada. G. L. Bumbaugh, builder and operator. Indianapolis, Ind., U.S.A.

FOR SALE—One 50 H. P. 4-cylinder, 4 cycle, Harriman engine. We bought this engine for a monoplane, but the plane was a failure and was never completed, the reason we are selling. Harriman company selling this engine for $1,650; our price with propeller, $700. LeBron Adams Aeroplane Co., Omaha, Neb.

FOR SALE—Farman type biplane; water-cooled motor. Cheap. Box 790, Pasadena, Cal.

AEROPLANE PROPELLERS—Ash and Mexican mahogany; five laminations; any pitch; guaranteed workmanship; $5.00 per foot. Model propellers, laminated 12½c. per inch; unlaminated 6¼c.; blanks 2c. Ohrt Bros. Aero Mfg. & Supply Co., 1825 McAllister St., San Francisco, Cal.

FOR SALE—40 to 60 H. P. Elbridge 1911 Aero-Special engine, complete with Bosch magnete and G. & A. carburetor. Brand new, in perfect condition, has never been used. Also 12-gallon gasolene tank, El Arco radiator, 1 Requa-Gibson propeller, 1 Paragon propeller, and Requa-Gibson propeller flange. Complete plant, cost over $1,600. Will sell for $1,000 cash. Immediate delivery. M. F. H. Gouverneur, Wilmington, North Carolina.

AEROPLANE—Curtiss improved type, with which I made very successful flights 1000 feet high and 20 miles across country. Equipped with 40 horse power motor. Will set up and teach buyer to fly. $2,000 complete. Will build exact duplicate—NEW—complete, $2,500. Worth double. Perfect flyer guaranteed. Buy direct from Aviator who builds and flies his own aeroplanes. I KNOW HOW! 10 years' experience. Henry Chas. Cooke, 128 West 65th St., New York.

FOR SALE—A PROPELLER, 6-7 and 8 foot, high grade laminated. Best make known; new. Used for experiment only. High thrust. Reasonable to first purchaser. Henry Rehbein, 281 Avenue E, Bayonne, N. J.

MODEL PROPELLERS—Single price, hickory 5c. per inch, laminated 8c. Wright propellers, in pairs our specialty. Any design made to order, or our own type MIDGET THRUST BALL BEARING, weight 11 grains. All parts hardened and polished. Increases propeller efficiency 100%. Mailed free upon receipt of 50c. Sole Western Agents. Robinson & Brown, 25 Carl St., San Francisco, Cal.

FOR SALE—50 H. P. HF or Harriman Aviation engine, new, $500.00. This is the same size engine that the Harriman Motor Works are charging $1,675 for. Address Box 3, Girard, Kansas.

FOR SALE—Two new aeroplane wheels 20x2, 5 ins. between flange, steel rims and Hartford tires. $15.00 cash. Address H. C. Boche, Norfolk, Nebr.

WILL OWNER or manufacturer of machines furnish me machine and expenses? Will enter any competition or exhibition and divide earnings; 23 years of age; mechanic with aeronautical knowledge, experienced, energetic, courageous and well educated; weight 168 pounds. Address J. Buklenica, 514 S. Sacramento Bldg., Chicago, Ill.

EXCEPTIONAL OPPORTUNITY offered to a man of good character between ages of 23 and 35, with $400.00 to invest as a partner in an aeronautical proposition. Must have some mechanical or electrical experience and be able to furnish reference as to character, etc. Success assured. Don't write unless you mean business. Address 5815, care AIRCRAFT.

AVIATORS WANTED

WANTED—An aviator for a three days attraction at Golden City, Mo. Also would like to hear from ballonists and dirigible pilots. E. D. Marshall, Golden City, Mo.

WANTED—AN EXPERIENCED AVIATOR FOR THE BALDWIN AEROPLANE TOURS OF THE WORLD, LEAVING AMERICA ABOUT SEPTEMBER 15TH, 1911. LIBERAL INDUCEMENTS MADE TO A FIRST-CLASS, SOBER, RELIABLE MAN. ADDRESS: CAPT. THOS. S. BALDWIN, BOX 78, MADISON SQUARE P. O., NEW YORK CITY.

POSITIONS WANTED

ASSISTANT—Young man of excellent education desires position in aeronautical work. Have had experience in building and repairing biplane. Raymond Stone, 533 Union Ave., Paterson, N. J.

CAPABLE MAN, now making practical flights on Curtiss type machine, well acquainted with construction work, desires engagements. Address P. J., care AIRCRAFT.

YOUNG MAN (28 years), desires a position as aeroplane operator. Had seven years' experience at steam and electrical engineering. Can give best of references as to character, etc. Address care of Aircraft, Box 739.

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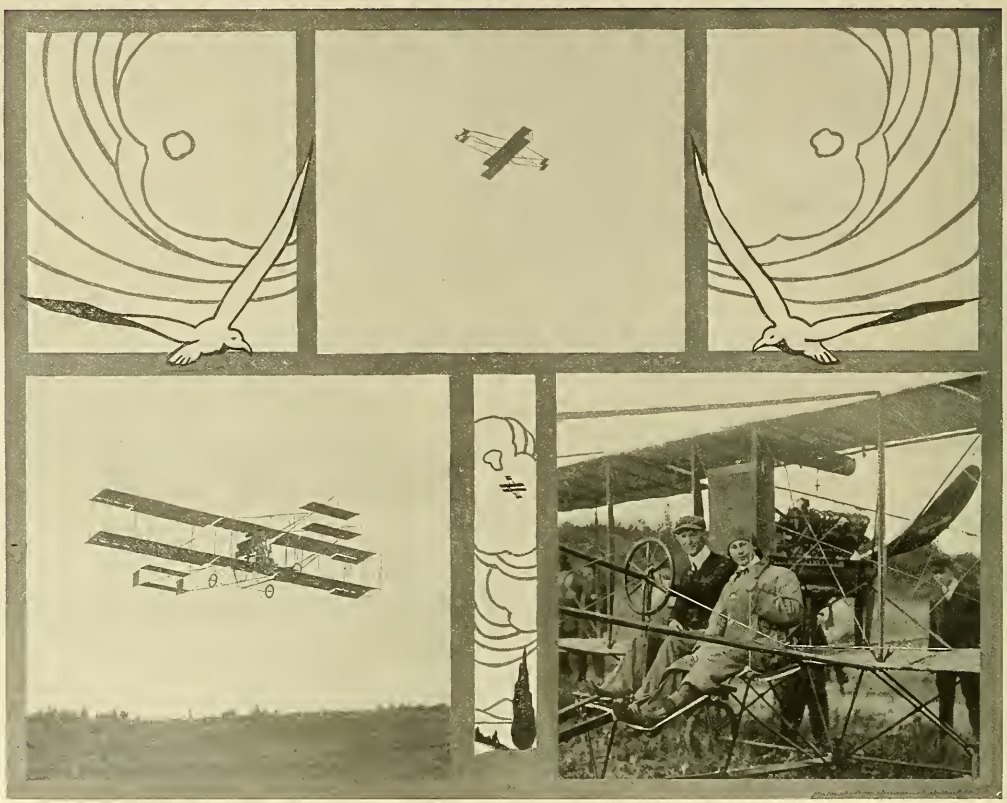

CHAS. F. WALSH MAKING GOOD WITH HALL-SCOTT EQUIPMENT

Top: Flying over East Portland, Oregon. Left: Close view of Walsh bi-plane in flight. Right: Passenger carrying at Country Club, Portland, Oregon.

Previously to flying with Hall-Scott equipment, Walsh had tried out with other motors with fair amateur success but could not qualify as a professional. A HALL-SCOTT power plant has placed him in the professional ranks. Many others have had the same experience.

Why not start in with Hall-Scott Equipment and get real flying power and dependability.

Write us for further information or see Capt. Thos. S. Baldwin at Mineola, and his metal bi-planes with Hall-Scott equipment.

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FOR MODEL AEROPLANES

$35.00

3¾ lbs.
½ H. P.

3¾ lbs.
½ H. P.

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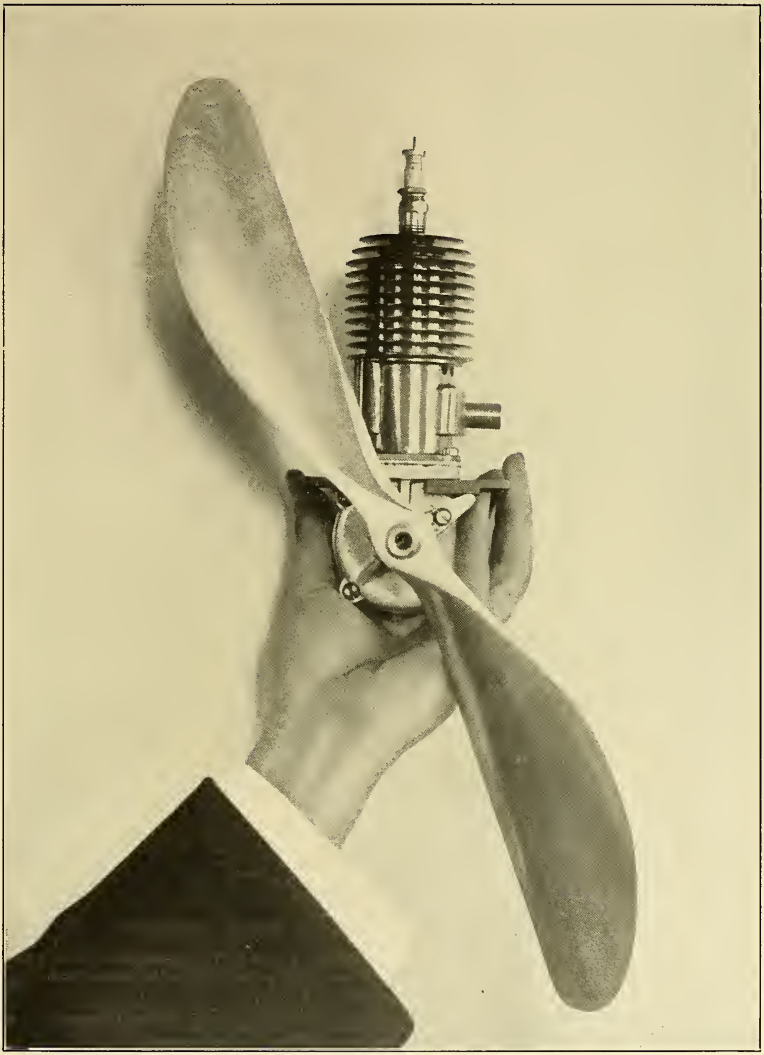

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Turns the 18″ diameter 13″ pitch propeller shown above 2300 R. P. M. developing a full ½ H. P.

Its 3¾ lbs. of weight include the engine, commutator, special spark plug, aluminum carbureter, gasoline tank and 18″ aluminum propeller. The engine is valveless and has only three moving parts. **PRICE $35.00**

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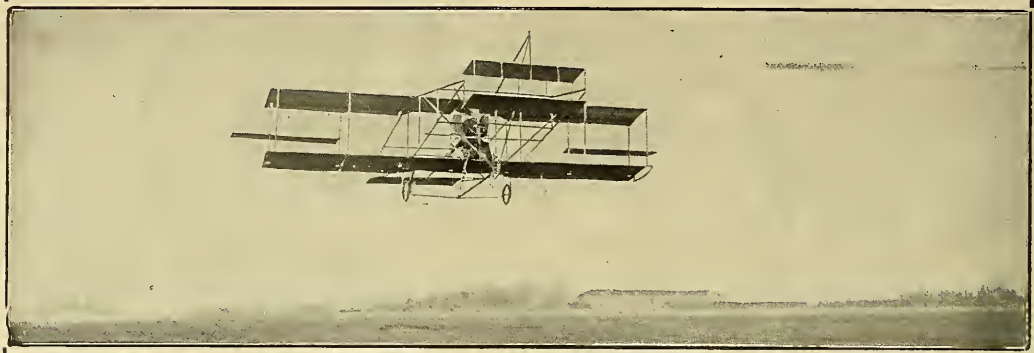

GEORGE SCHMITT, A YOUNG NOVICE, FLYING AT MINEOLA

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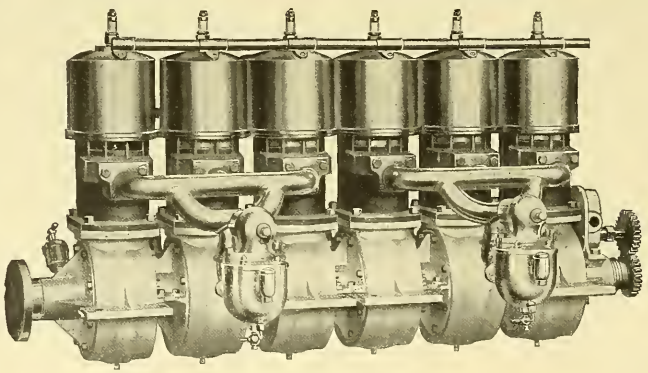
The Dependable Aero Engines Produce Professional Aviators by Flying Every Day Without the Aid of Expert Mechanics

¶ Wm. Evans, J. J. Frisbie, Chas. F. Walsh, Charles Morok, F. D. Paine, George Russell, J. N. Sparling, Thomson and Van Arsdale of the Mathewson Aviators; Glenn L. Martin, George F Schmitt and many more of the men best known in American aviation bought **ELBRIDGE ENGINES**—learned to fly with **ELBRIDGE ENGINES**—have done their best work with **ELBRIDGE ENGINES.**

¶ Now most of these men don't have to pay for engines or aeroplanes. Their names are so well established they are paid for flying with different makes.

¶ A list of the men who have flown with **ELBRIDGE ENGINES** would fill this page, but beyond question more amateurs and professionals have learned to fly with Elbridge Engines than with all other American makes combined.



6 Cylinder Featherweight

"IT IS BETTER TO BE SURE THAN SORRY"

is the motto of many best known schools of aviation. **ELBRIDGE ENGINES** are used by The Aeronautic School of Engineers, Sparling Aviators, Chicago School of Aviation, J. W. Curzon Mathewson Aviators, and many others.

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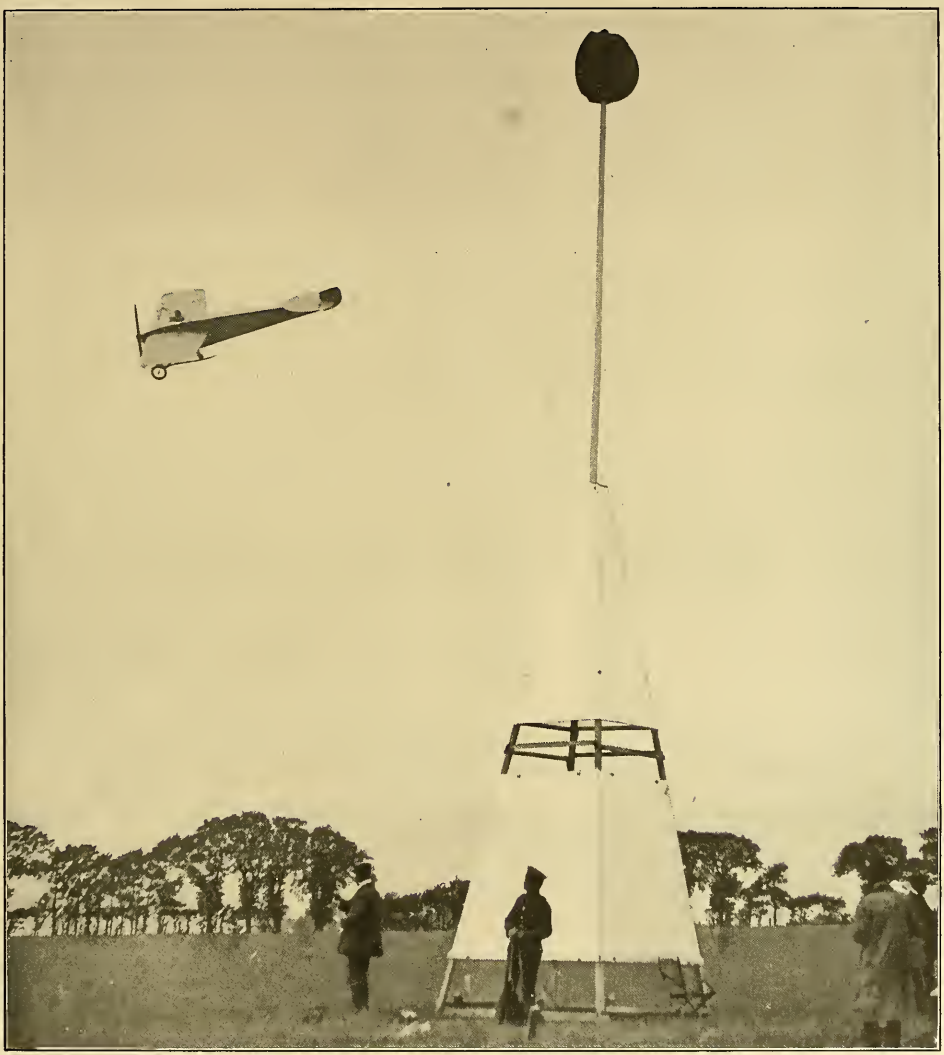

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The only three standard motors for aviation—

Holding the world records for speed, height, duration and cross country

ANZANI

On June 24th, Lewkowicz, with 50 H. P. 5-cylinder Anzani engine, 1911 type, made a flight of one hour at an altitude of 6000 feet, descending because of lack of gasolene.

On July 8th, same aviator, with 50 H. P. Anzani, left Nassau Boulevard, L. I. and flew all over New York at an altitude of 9000 feet (this is the first time an aeroplane flew over this City) landing in New Jersey because of lack of gasolene.

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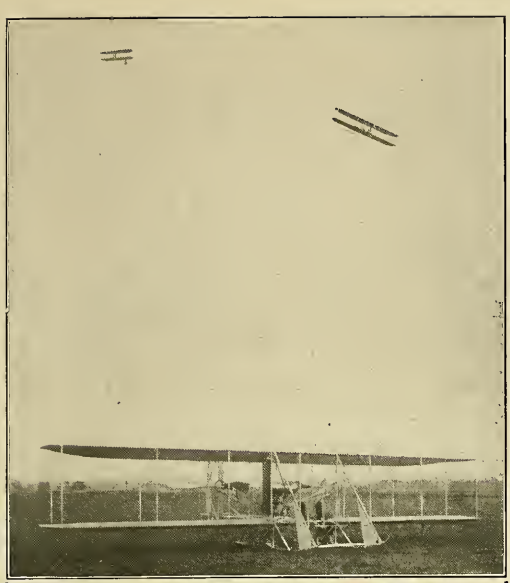
Best Imported Covering Cloth for AEROPLANE



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THE WRIGHT FLYER

Our Aeroplanes are not experiments. Every part is tested, standardized and made under constant expert supervision *in our own factory.*

The Wright Flyer Holds All American Records

ALTITUDE: 11,474 ft.
DURATION AND DISTANCE: 3 hrs. 39 mins. 48 secs.
CROSS COUNTRY: 106 miles (two passengers)
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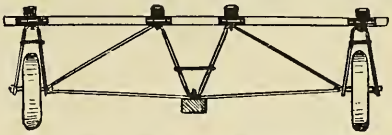

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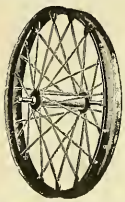

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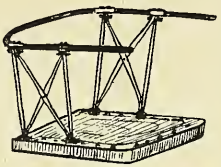

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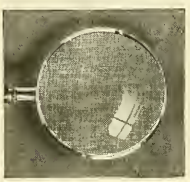

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AIRCRAFT

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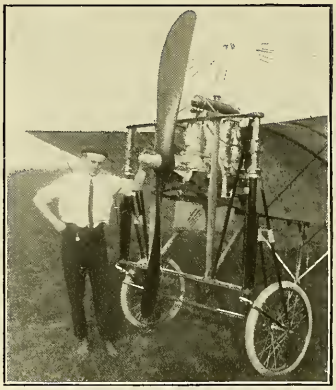

WM. HAUPT, Blériot type

Mineola, N. Y., June 29, 1911.

Roberts Motor Co., Sandusky, Ohio.

Congratulations on the performance of your 4-X aeronautical motor in my all American built and powered cross country type Blériot monoplane. The motor has wonderful power and flexibility and runs extremely smooth and regular. I am turning a regular 50 H. P. Gnome propeller as fast as the Gnome and the motor is still stiff. (Signed) WILLIE HAUPT.

HADLEY & BLOOD, Farman type

Mineola, N. Y., May 18th, 1911.

Roberts Motor Co., Sandusky, Ohio.

Gentlemen:—

It will no doubt be gratifying to you to receive an account of the success we have obtained with our new 4X Roberts Aero motor which we purchased from you last month.

Our biplane in which we installed this motor is 45-foot spread by 6-foot chord, and is said to be the largest machine that ever made a successful flight on Mineola field.

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Yours very truly,
(Signed) HADLEY & BLOOD.

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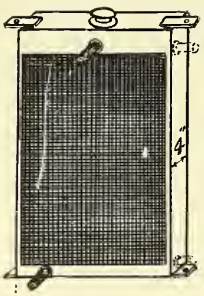

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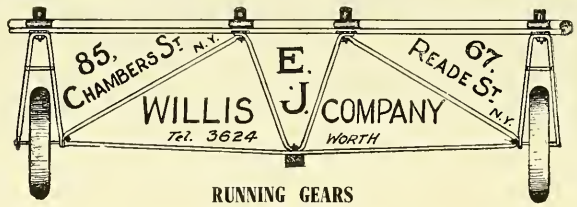

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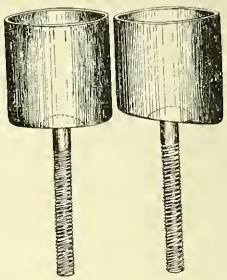

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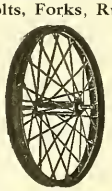

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AIRCRAFT

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NINETEEN ELEVEN'S CUP-RACE

(Second Article)

By G. F. Campbell Wood

THERE seems to be hardly anyone on this side of the Atlantic who, on considering Weymann's victory in the Gordon Bennett Aviation Cup race on July 1st, has not taken the occasion to point out that this was a most incomplete American victory: in giving vent to these axiomatic comments the critic would fain convey that he at least is not misled by the fact of the return of the Cup into believing that a truly national victory has been achieved.

As a matter of fact, there is no one who more fully realizes the exact rôle America played in the re-conquest of the Cup and the part in it which it did *not* play, than those who, after scouring the country for American residents therein who would fight for the Cup—with American machines and American engines—turned at last to those Americans living abroad who had learned to drive the foreign speed creations, with the hope that if a complete American victory could not be achieved, at any rate a partial one could, and that when the Cup was re-won more national enthusiasm would be shown in retaining it than was shown in going after it.

The report of the Gordon Bennett Aviation Challenge Committee of the Aero Club, which is printed elsewhere, shows clearly enough how every domestic source of supply was considered before asking a non-resident American, born in a foreign country and driving a foreign machine fitted with foreign power plant, to represent the country.

It will be remembered that last year the national aero-club appealed to the International Aeronautic Federation with the earnest proposal that the champions of each country in the Gordon Bennett Cup should be compelled to drive machines built entirely in the country they represented and that this proposal was overriden on a technicality: the fact that it had not been presented sixty days before the Conference as called upon in the F. A. I. rules.

In its hour of need, therefore, America availed itself of the lack of that very clause which it ineffectually sought to have added to the rules of the race to make its conditions harder, and it is presumed that the general criticism referred to in the beginning of this article as to a man of one nationality winning the Cup on a machine of another, will sufficiently show the wisdom and sportsmanship of the proposal made last year.

The last paragraph of the report of the Gordon Bennett Committee shows clearly that the victory which the lack of this clause enabled America to win, has not effected any change in the opinion of the governing body as to the course to pursue to make the event truly international in character

That the Aero Club clearly recognizes the rôle played in Weymann's triumph by the machine he drove is evidenced enough by the cablegram sent to the Aero Club of France immediately after the race, a translation of which would read: "Aero Club France, Paris; Aero Club America wishes convey through you French aeronautic industry intense admiration results Gordon Bennett."

From the fact that it was not the triumph of an American machine, great consolation can however be derived from that it was the triumph of an American man. Charles Terres Weymann, because he was born at Hayti and lives in France has been very extensively referred to as a Haytian and a Frenchman. Probably no one would appreciate the humor of such statements more than Charlie Weymann himself, except perhaps his friends; also, one doesn't very well "see" the foreign aero-clubs letting him carry off the Cup under the Stars and Stripes, if he didn't have every right to claim them as his own!

Outside of being an American citizen pure and simple, he is constantly referred to as "le merveilleux Américain" in continental sheets and his nationality is so well recognized abroad that it is referred to without being named, for instance "L'Auto" of June 28th, which happens to be before the writer, says:—"Weymann, although in fourth place, has abandoned the contest" (the European Circuit) "at Utrecht, to go to England, where, on Saturday, he will carry the colors of his country in the Gordon Bennett Cup."

There are several reasons why this was a particularly fine achievement for Mr. Weymann: one is that he gave up the lucrative European Circuit, as just stated, to fight for the Cup,—showing just that degree of patriotism which one sometimes meets with in men living outside of their own country,—another is that he elected to do so without cost to the Club he represented; and lastly, what too good a thing can be said of a man who, contesting against the maker of the machine he drives, beats him by more than four per cent in speed? In fact, seeing that the rules enabled competitors to drive the machines they wished and made the international struggle one of men, one likes to think that the individual qualities which won the race were American in character and one certainly has the right to do so. The reason Weymann drove a 100 H. P. machine and Nieuport a 70 H. P., was merely because of the greater daring of the American.

There is no getting around the fact that, under the present rules, the Gordon Bennett Cup winner must be a very daring man. In present-day machines surfaces cannot be temporarily increased for starting and alighting, and it takes a man of wonderful skill to handle them at these times, for their minimum flying speed is so great that they must run along the earth at tremendous velocity before rising and come in contact with it at a similar high velocity, in fact, it is almost better to have some wind to face on alighting and thus diminish the speed than to fly in the until-recently-much-desired dead calm.

When dining at a mutual friend's some months ago, Wilbur Wright expressed himself to the writer on the subject of limiting the power in coming Cup-races. There is no question that

a very large share in the rapidity of the improvement of self-propelled road vehicles is directly attributable to the restrictions made from year to year in the big French road races. The maximum limit of weight encouraged researches along the lines of maximum strength for minimum weight, to which we owe the wonderful compound steels of the present day. The limiting of fuel consumption led to the development of the economical engine; the limiting of the cylinder bore led to the remarkable long stroke engines now coming into use and the regulations calling for a *minimum* weight (the direct opposite of the first rule) is leading to great improvements in the pneumatic tire, the present imperfections of which blind one to the greater imperfections of but a short time ago.

Restrictions are therefore excellent things for the industry in a championship event and the suggestion which Mr. Wright made at that time and which, according to recent newspaper dispatches, he still favors, seems a step in the right direction.

The 50 H. P. Gnôme because of its tremendous vogue is certainly the best standard which could be adopted; whether the adoption of such a measure would mean a slower race than this year, is, however, a very doubtful point; the writer is of the belief that in a year's time, machines will be built capable of greater speed than Weymann's with half the power.

This magazine gave Weymann as the logical favorite of the race as late as June 5th last, so it cannot be written here that his victory was unexpected. The same cannot be said of the performance of Alfred Leblanc, at least, not in the mind of the writer. In his opinion Blériot's effort to once more win the Cup and Leblanc's masterful handling of the craft placed in his hands by the famous constructor, are among the finest things which this magnificent sport of flying has so far presented. To the initiated it seems almost a miracle that Blériot could have turned out in a few months a racer which, with the same power, should get within two minutes of the amazing Nieuport machine on so long a distance.

Wonderful as was Leblanc's performance at Belmont Park last October, when what one might call a stupid accident robbed him of victory in the last few hundred yards, it does not compare with his magnificent flight at Eastchurch flying the tiny-winged Blériot. He hugged the pylons and swept around the course at a greater speed than the so-far-invincible Edouard Nieuport driving his own record-breaker, only to find on his landing that his time was two minutes slower than that of the (in every sense of the word) "flying" American.

Blériot machines, therefore, have the remarkable distinction of having finished second in 1909, first and second in 1910 and second in 1911.

England was most unlucky in the race and her fortunes were not unlike those of America last year. The crack Blériot driver, Gustav Hamel, who, it is said, cut down his surfaces on the morning of the race, overbanked on his first turn and slid to the ground, having a lucky escape from serious injury.

Alec Ogilvie, a true sportsman, once more drove his little Wright machine and, although completely outclassed by the French monoplanes, plugged through the full distance at a little over fifty miles an hour, finishing fourth and saving the honor of the defending team. With Latham, Ogilvie is the only man to have finished in two Gordon Bennett Cup races.

The German and Austrian teams never showed up, but it is to be hoped that they will, by next year, have machines of sufficient promise to be sent across the Atlantic after the coveted trophy.

If the winning machine is not here extensively referred to it is because a description of it occurs in a special article in this number of "Aircraft."

MAKING LAWS FOR AVIATION AND AVIATORS

By Henry Woodhouse

LEGISLATURES throughout the country are considering measures intended to regulate and control aviation and aviators. The advance of aerial navigation is creating new conditions and problems. The aeroplane is an iconoclast, disregarding the established, most generally, and whereas it is a new thing and there are no laws to control its actions it is literally lawless.

Until recently most lawmakers took into consideration the youth of the science of aviation and favored waiting for further development before going into the matter of making laws, but since the recent succession of accidents suggested the possibility that aviators might be reckless, the matter has practically been thrust upon them.

It is evident from the character of some of the bills that those who drew them either knew little of aviation or else they were opposed to it for some reason. The most drastic of all the measures proposed, so far was perhaps the Warner Bill, introduced in the House by Representative Warner, of St. Louis. Representative Warner was a personal friend of Arch Hoxsey and Ralph Johnstone and following the accidents which cost the lives of those two air-knights he proposed to have a law passed to prohibit aviators from ascending to a height of more than 1,000 feet. To bind the aviators to obey that law he included a clause requiring aviators to give bond of $10,000. What would happen to anyone who might break the law is given in Section 2 of the bill, is quoted here verbatim:

> "Any aviator, pilot or engineer who shall make an ascension or flight without first executing a bond in compliance with the provisions of this act or who shall ascend to a greater height than 1,000 feet above the earth's surface shall on conviction be deemed guilty of earth's suicide and punished by imprisonment in the penitentiary for a term of not exceeding five years."

That this bill was based on a wrong understanding of aviation is evident by the mention of the 1,000 feet limit. Surely a fall of 1,000 feet is as likely to be fatal as a 5,000 feet fall, but while in the latter the aviator has a chance of regaining control before reaching the ground, in the first he has not. Likewise the aviator would be deprived of a means to escape storms and unsettled atmospheric conditions by flying to higher and quieter atmospherical stratas if caught by a storm. Beside, with possible exception of Arch Hoxsey, the cause of whose death has not yet been ascertained, none of the fatalities were due to high flying. The requirement of a $10,000 bond is unpractical as it would confine aviation to people of means, excluding no less than seventy per cent of the present aviators.

Less drastic but yet objectionable is the proposed plan to inspect aeroplanes and test the solidity of their construction before allowing them to be flown. This plan was proposed in America following the accidents in which Moisant, Hoxsey and Johnstone lost their lives. It was, however, first proposed in France some months ago when the death of Chavez and the accident to Morane, following the death of a number of aviators, suggested that weakness in the construction of the machines might be a cause of many of the accidents. It was not carried into execution then principally because it was objected to by some of the constructors who objected that whereas every machine that was sold was duly tested by actual flights made by either the constructor himself or by the expert pilot and there were no better tests than actual flights, it were useless to have such a measure as a matter of effect. On the other hand the principle was somewhat pertinent, as it put the expert constructor at the mercy of a possibly inexpert official tester and made him pay the expenses beside. At the present stage of

aviation people proficient enough to judge the construction of an aeroplane are few, all professionals themselves in the business and drawing large incomes from it. That and the fact that most of them are partisans of different theories or forms of construction would proclude all possibilities of any of them being employed to pass judgment on other constructor's machines.

As it comes to us now the matter appeals in where it seeks to provide for more safety for aviators. Anything intended to promote safety is welcomed. However, it is doubtful if this plan could be carried into execution. Even supposing that fair, competent judges can be secured to carry on the inspection, the principal of unlimited personal liberty would defeat this measure. Whether right or wrong it has always been held that it is an individual's unalienable right to risk his life in anything or any way he may see fit. A person can no more be restrained from driving an aeroplane if he so wishes, than he can be restrained from driving a spirited horse or a broken automobile. He may do these things if he does not endanger public life.

In a way it seems well that it is so. As we look back we find that most of the great inventions were the results of some very unsafe propositions. Confining ourselves to aviation for illustration, let us suppose that some well meaning person had taken the death of Percy S. Pilcher and Otto Lilienthal as examples and had had a law passed to restrain people from experimenting with gliders, even on the humanitarian grounds that it might have caused loss of human life. That would have killed aviation in the very embryo stage for, surely, the apparatus with which the Wright Brothers made their experiments would not have passed inspection, more so as there were no reasons to believe that it would ever afford more than short, unpractical glides. Who is to say that Smith or Jones' machine which seems a freak, does not contain some principles that may be developed to supply some important needs? At this stage of aviation, when the need for new ideas of construction and mechanism is dire, anything that tends to limit the experiments is undesirable.

To apply the French constructor's objection to American conditions:—Who is to decide whether an aeroplane is in a condition to be flown? American experts are very few indeed and these few are financially interested in aeroplane constructing concerns, and are partisans of this or that theory or form of construction. It would be too much to ask of these experts to put their stamp of approval on other machines, especially on the hundreds of machines used by amateurs all over the country. Should they condemn them it would hardly be possible to restrain the owners of those machines from flying them and were it possible it might prove a drawback and a check to the progress of the science of aviation.

The need to-day is to popularize aviation and that can be done best by encouraging amateurs rather than curtailing their activities.

It really seems that the best judges of aeroplanes are the pilots and constructors themselves and their machinics, they being the most concerned. The only satisfactory solution to the problem of avoiding accidents lies in that they will exercise their utmost care and avoid taking chances.

The Connecticut bill which has been signed and will go in effect on January 1, 1912, seems rather acceptable on the whole. So seem some of the bills being considered by the legislatures of different states. The objection to most of them is that they have clauses providing that no flying machines shall be operated unless in charge of persons whose qualifications has been approved in writing by *the superintendent of the state police*. Now the superintendent of the police, even *state* police, may not be a qualified person to pass judgment on the capacities of aviators. As things stand now, those capable of filling such a position—in where the judging of aeroplanes and aviators are concerned—are few and are sought to fill positions bringing higher salaries than governors get. And an inefficient man may prove a hindrance to the aviation interest.

For that same reason the New Jersey bill is highly objectionable. This bill provides not only for state inspection of aeroplanes and aviators, but for state control of everything pertaining to aviation, including sanctioning and controlling meets, issuing permits, settling disputes, inflicting penalties, granting damages and so on through the whole gamut of aerial things. That plan would be splendid if it were possible, but it is not. It is proposed to have a commission composed of six men to attend to all aerial things, but no provision is made for securing capable men, that is, men with such a knowledge of the science of aviation as would make them competent judges. The impression seems to be that the average lawyer and business man is qualified for such a position. It is quite possible that a lawyer is no more qualified to decide on things pertaining to aviation than an aviator is qualified to decide on things pertaining to law.

One of the most popular measures proposed sometime ago was the one designed to safeguard the air-men from exemplary damages for trespass when contingencies force them to land in private gardens or grounds. It provided that when aviators find it necessary to land on private grounds they shall not be held liable for anything but the actual damage they do. This would prevent any "bleeding" of aviators. But nothing has been said about it of late. Let us hope that it is yet alive.

An important measure is the proposed amendment to the penal code, making it a felony equivalent to attempted homicide to shoot at an aeroplane in flight. This measure is an actual need. On several occasions already aviators, while flying across country have been shot at by unknown parties. For such acts there are really no excuses, they are brutal in every way. The perpetrators must be aware that an aeroplane is full of vulnerable spots, that a bullet striking either the aviator or the motor, the gasolene tank, the control wires, the propeller, or almost any part of the machine, may result in dashing the aviator to the ground, to probable death. It is well, therefore, to have stringent laws in that respect, so that those who indulge in that practise may meet a punishment proportionate to the crime.

Nothing has yet been done in America to determine how far the landowner's rights extend heavenward over their property; but the matter will, undoubtedly, soon be before the courts, for there have already been heard objections from a number of people who claim that the aeroplanes flying over their property endangered their lives and property. It will, therefore, be interesting to watch the proceedings of the suit instituted by a cotery of ground owners against Farman, in France, to restrain him and his pupils from flying over their grounds unless they are two hundred metres up. Farman has flown over those grounds for two years and an increasing number of pupils fly over them many times daily. The owners did not object to Farman when he was alone experimenting. But now that his school has dozens of pupils who fly continuously they complain that the aeroplanes scare their horses and are a danger to the men who work in the fields. They propose therefore, to put the matter to a test and find the extent of their rights.

While the danger fom falling aeroplanes will be lessened but little by forcing the aviators to fly at a height of 700 feet, the enforcement of that rule would not only proclude all possibilities of frightening the horses, but would bar all flights from novices, as it takes a fairly experienced aviator to climb to the height of 700 feet. That may be the object of the complainants, and it seems quite reasonable, since there is a certain amount of danger connected with the aeroplanes. Aeroplane experiments should be conducted in uninhabited places.

Most of the proposed legislation is unfavorable to aviation, and if put in effect would undoubtedly be detrimental to the interests of aviation; but it is not entirely surprising. Practically all the important inventions went through like trials in their career and some, like the automobile, were retarded in their development by factional opposition. A reason for this in where aviation is concerned, is that the people who know the worth of aviation and of its great possibilities are busy developing aviation and know very little about law, and those who don't know anything about aviation—well, some of these make laws.

THE CHICAGO MEET

By Geo. F. Campbell Wood

ON August 12th will begin at Grant Park, Chicago, the first important flying meet of the year. From many standpoints the tournament will be the most remarkable ever held. The amount in prizes offered for competition is the greatest ever known in the history of the sport and compares favorably with the totals offered in the great European cross-country events, where the flyers cross many frontiers and move from one large city to another as stellar attractions.

Another point which makes the Chicago Meet stand out among all others is the fact that it is not for profit. Any favorable difference beween the receipts and expenses will be given to charity.

The management of the Chicago tournament is not paying any guarantees to any of the contestants ontside of five hundred dollars per man for travelling expenses. When it is remembered the huge guarantees it has been necessary to pay in earlier meets to secure the stars the step forward taken by Chicago to put the sport on a more competitive basis will be appreciated.

This measure will no doubt curtail European representation at Chicago because of the heavy expenses transatlantic flyers will be put to to reach the seat of operations.

There are, however, a certain number of foreign flyers in the country at present and with the liberal prizes offered it is hard to see how any one of them can afford to stay away from the meet.

Americans will, of course, be there in force. Those who have made a name for themselves and their country on previous occasions will be seen again in actual competition while the latest flyers to have achieved fame will also be there in search of gold laden laurels.

McCurdy and Willard, Baldwin and Mars, Ely and Beachey, Schriver and Frisbie will represent the Curtiss school of flyers, either on Curtiss machines or their derivatives. It is also hoped that Glenn H. Curtiss will be there with his hydraeroplane: this should be a tremendous attraction in itself.

No doubt by that time Atwood, the hero of the Boston to New York flight will be a licensed flyer and with Hamilton, will represent the Wright school of flying on Burgess machines. Sopwith and Martin will be the chief exponents of the Farman type on a Howard-Wright and an American-built Grahame-White repectively.

It is probable, too, that Martin will have a genuine Henry Farman with him.

So much for the biplanes.

Single-plane flyers will also be in evidence, and the Gnôme-driven Blériot XI seen once more in its graceful flight. Two of the greatest Blériot flyers in the world to-day, Réné Simon and Réné Barrier, will amaze the onlookers with their wonderful mastery of the air as they have in almost every state in the Union.

Hardly if any less capable aerial drivers will be seen in the persons of St. Croix Johnstone on a Gnôme-driven American-built Blériot from the factory of the Moisant Company and Ladis Lewkowicz on a Blériot fitted with one of the new 5-cylinder Anzani engines. Arthur Stone and André Houpert may also be present, both with American-built Blériots, while the latest and swiftest types of seventy horse-power Blériots will be driven by Earle Ovington and Thomas Sopwith.

If the weather is at all good the meet should be a great success. The flights over water, the climbing contests and the passenger-carrying events will be of special interest to the assembly of military and scientific authorities who believe in the aeroplane as a thing of the future rather than as a spectacle.

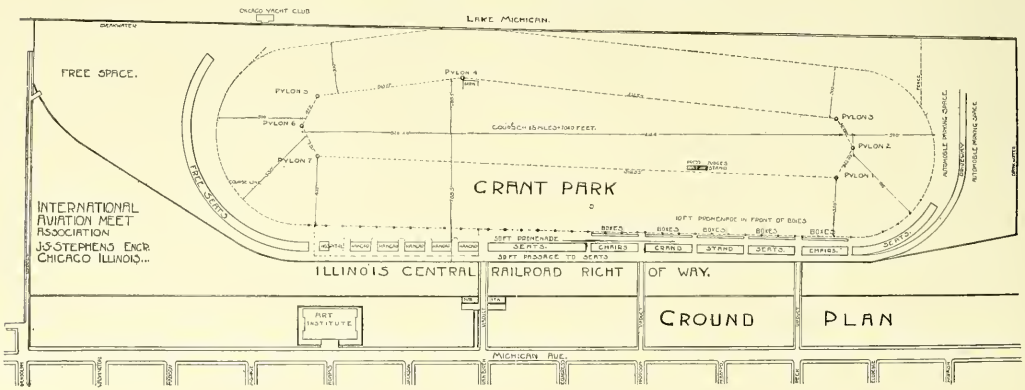
The course is somewhat narrow but admirable opportunity has been taken of the space available by Mr. James S. Stephens, the eminent technician of the Aero Club of Illinois, who has displayed untiring energy to make the meet a success.

The moving spirits of the great undertaking are Harold F. McCormick and James L. Plew and to anyone who knows these gentlemen this in itself spells Success with a capital S.

The initative and energy of the Aero Club of Illinois cannot be too highly commended. They are giving a magnificent example to the rest of the country which, it is hoped, Eastern clubs will follow; with the experience of many aviation meets behind them the organizers have avoided many of the mistakes which have marred such competitions heretofore.

It seems safe to say that the Chicago meet will be one where spectators and aviators will both leave satisfied and with praise for the consideration showed them. No man who flies will fly for nothing in case he be outclassed by his competitors; also, no man who establishes a record performance will risk losing the benefit of its recogntion, for the men of Chicago are taking all steps to secure for their meet international recognition by the Federation. In fact no stone has been left unturned to make the meet the thorough success it deserves to be.

GROUND PLAN OF CHICAGO MEET



A Year's Crop of Aerial Law and its Lesson

By DENYS P. MYERS

THE legislative sessions which have just ended have been somewhat affected by the desire to legislate for the airman, and in most cases the projects of law have been purely amateurish, well deserving the fate that awaited them—consignment to the limbo of still-born bills. The aviator is the last man in the world to seek freedom from legislation which is either proper or necessary to protect the general public and private rights, but his experiences so far have neither been extensive enough to make regulatory laws a crying necessity, nor is his number yet so large that protection for the public has become an actual need. Next year the situation will be different, and in all probability half the states and Congress itself will be tackling the question of aerial legislation. It is therefore pertinent to report the present legal status of aviation, to point out the good and bad points of efforts in this direction, and to do what may be done to crystallize thought on the subject.

It is a fact that certain questions in reference to aviation are now susceptible of being solved by law. It is proper, for instance, for a state to license machines and to regulate the conditions under which pilots shall operate in their jurisdiction. Most of the projects of legislation deal with these subjects, but only the New York bill and the Connecticut law seem unobjectionable in detail. There has been a tendency during this year to give the state highway authorities control over aviation, a scheme which sounds logical, but which, as it has been worked out, has portended the assimilation of aeronautics to the road regime, against which all the logic of the situation argues. If aviators are taxed they should benefit by it.

About 20,000 words of projected law were introduced into American legislatures this year, only one bill, that of Connecticut, being enacted. The bill in Massachusetts (text in AIRCRAFT, July, 19—) passed the Senate and to the third reading in the House, when it was held up by the substitution of a resolution to have the Highway Commission study the subject and report, which resolution in turn passed the House but was rejected by the Senate,—putting the entire project out of consideration for the present. A similar fate met a California bill which was introduced early in the session. The resolution was "passed on file," but a recent letter from the Motor Vehicles Department of the state says that all the legislation failed of passage. The meritorious New York bill (text in AIRCRAFT, July, 19—) was lost in the shuffle at Albany. In Pennsylvania a careful bill was introduced at the instance of the Aero Club of Pennsylvania last April, but nothing has been heard of it. Such is the extent of projected legislation in this country and its results before the law-enacting bodies.

While all of this material is confined to states, a national project is also in existence. Prof. Simeon E. Baldwin, now Governor of Connecticut, submitted to the American Bar Association at its Chattanooga meeting in September, 1910, a project for national control. The proposition was similar to the present Connecticut law, making the collectors of internal revenue the licensing officers. One idea in it is worth attention even in a brief notice. He suggests that every aviator intending to do interstate flying shall file a bond of at least $1,000 against which suit for any damages incurred may be brought, thus avoiding the necessity of interstate reclamation. The association's committee on law reform was intrusted with the project, and at the forthcoming session this year it will doubtless be put into shape for submission to Congress.

In Europe the closeness of nations to each other has made aerial legislation more pressing. Already numerous decrees and regulatory provisions of an official character are in existence. The city of Strassburg, France, and Prussia forbid flying over populated centres and since April, 1909, special customs regulations have been in force in France for aeronauts who cross the frontier and land on French soil. Switzerland wants a law, but has encountered a constitutional difficulty, and Russia has taken a pretty strong stand by forbidding aviation above both cities and forts.

Late in May an Englishman or two—remembering that the Oxford-Cambridge boat race had been followed by aeroplanes—suggested in Parliament that aviators might try the same stunt when the coronation festivities came on. Whereupon Winston Churchill, Secretary of State for Home Affairs, prepared a bill which was sent to Parliament May 25, and, modified as to penalties, became law on June 2. This act is inoperative of itself, simply giving the Home Secretary the right to issue prohibitory orders as occasion warrants. Two such orders were promulgated. The English Government intends to supplement this law with a fuller one.

On June 2 the International Congress on Aviation Law ended its session at Paris after adopting an agreement of seventeen clauses. The cabled reports conveyed the idea that this was an official conference called by the governments. But it was not. It was the congress held at the first annual reunion of the International Juridic Committee on Aviation, which is composed of about six hundred members throughout the world, and which since January, 1910, has been publishing a monthly review devoted to aerial law. The American members of the committee are headed by James Brown Scott, former solicitor of the State Department and secretary of the Carnegie Endowment for International Peace, and Governor Simeon E. Baldwin, of Connecticut. They include Massachusetts, New York, Maryland, Pennsylvania and Rhode Island men. The committee began work by preparing an outline of an international code and so far three chapters have been put into shape. National committees write out suggestions on a designated subject, these are reviewed by the directive committee at Paris and finally voted on, the resulting text being a good digest of world legal thought. The chapters of this project on atmospheric liberty, right of landing, home ports and nationality, wrecks and jettison were voted at the Paris conference.

All of this is not law, but only a striving toward it, though in most respects the committee's decisions will be hard to improve upon. The same condition maintains in regard to the decision of the Institute of International Law, which held its last meeting at Madrid in April. The institute is made up of 120 of the greatest international lawyers of the world, sixty members and sixty associates. It studies and works out projects on unsettled problems and has been considering aerial law since 1901, when Paul Fauchille first reported on the subject. The question was up in 1906, 1910 and finally in 1911. Its decisions are important as indicating the concensus of the best legal international thought on any matter it studies, and time and again its projects have later been enacted into international conventions. Its Madrid decision, however, is at present nothing more than opinion.

It would be supposed that the American state projects—all of which deal primarily with registration and licensing—would closely resemble each other, but such is not the case. No better general idea of them all can be obtained than by reviewing their various provisions comparatively.

The States are not in the least inclined to agree on the price an aviator ought to pay for the privilege of flying within its boundaries. The Connecticut law, which goes into effect January 1, 1912, provides for a registration fee of $5, for examination for a pilot's license, $25; for the license of the pilot himself, $2; or a total of $32. That is, its fees are purely nominal, except for the examination, which must necessarily be somewhat com-

plicated and require services more expert than the merely clerical one of writing out a paper. The Pennsylvania project would charge $5 for a pilot's license and tax the operator $25 if he wants to carry passengers. The Massachusetts project places the registration under the control of the Highway Commission, and secures all financial benefit under it for the good of the state roads, which airmen won't use if they can help it. His annual registration fee will cost the aviator $10, but his examination for fitness will cost only $2, although the would-be aviator will pay all expenses incident to his trials. New York, which wants an aviation commission, wants $5 for examination, $10 for the license and $25 for certifying every piece of apparatus for use at public meetings.

A question of public interest which the lawmakers have tried to solve, is how to assess damages or punishment for injuries done. Massachusetts makes the aviator thoroughly responsible. Here is what the bill says:

"The owner, lessee or charterer shall be liable for all damage resulting from the use or operation of such apparatus without proof of negligence or fault in its operation or management."

This is objectionable, for damage is the last thing in the world the aviator wants to do. His place is in the air, and there he is safe. If he comes down where he does not want to land the chances are all against him. An automobile can run a man down with little danger of harm to its occupants, but if an aeroplane lands on a spot not intended for the purpose the probability is that there is something wrong with its mechanism that the pilot is in at least as great danger as any bystander. The aviators detect some animus in the wording of the section, and it has even been suggested that it is unconstitutional, if it deprives the defendant in any resulting suit from adducing evidence in his own behalf. The Connecticut law, it seems to be agreed, goes far enough in this regard. It says that "every aeronaut shall be responsible for all damages suffered in this state by any person or persons caused by any voyage in an airship directed by such aeronaut." This would allow the introduction of a defence and the pleading of mitigating circumstances, which occur even in the air.

Penalties for aerial misdemeanors are being worked out. The English aerial navigation act is now a very satisfactory document in this respect. As introduced, it provided that if any person navigates an aircraft recklessly, negligently or in a manner which is dangerous to the public he shall be guilty of an offence under the act and shall be liable, on conviction, to imprisonment for a term not exceeding two years or a fine of £500 or both. The Royal Aero Club protested against both provisions and as passed the act omitted the definition of an offence in the terms just quoted and made the penalty six months' imprisonment or £200 fine. The American laws and projects are primarily in relation to licensing and the penalty clauses are as a consequence reasonable. Breach of the Connecticut law means liability to $100 fine or six months' imprisonment. Pennsylvania puts it $50 for the first offence, $200 for the second and forfeiture of licenses for the third. Massachusetts follows Connecticut. New York intends to have its commission obeyed and puts fines for disregard of the law as follows: $100 for the first offence, $500 for the second and $1,000 fine or one year's imprisonment, or both, for the third breach.

Of course, since all except one of the American propositions has failed, the discrepancies in the projects are not serious, and will presumably be overcome in great part if Congress considers the subject at its next session, for its action would tend to establish a standard for schemes considered by the states.

There is one important practical lesson for airmen in this year's attempts at aerial legislation: aviators should look after their interests in that regard. To my knowledge, only the Aero Club of New York, which has a law committee, and the Aero Club of Pennsylvania, which wrote the state project, have concerned themselves with the question to any great extent, although, I believe, the California bill was written with the cognizance of the club of that state. Co-operation and exchange of views, through the various aero clubs, is desirable.

It is morally certain that in the fall and winter, the solons will exercise their pens at writing projects of law. These will be, in the main, well-intentioned and will meet the actual needs fairly well, while doubtless incorporating many half-baked ideas and a good deal of anti-aviational venom: for many of the writers will be in some degree imbued with the attitude of one man who came to attention. A fellow-legislator asked if I did not think aviators should be examined for physical fitness before being allowed to fly. "Oh, those dare-devils don't need that," broke in a colleague. "Nobody but fools would fly, and their hearts are always all right."

Now, it is the aviator who, and the sport that, will be affected by laws, whatever their nature. Laws can kill or foster a sport or an industry. The manufacturers are as much concerned as the clubs, perhaps more so, for they have investments at stake. It therefore seems that the following suggestions are in order:

Every aero club and the Aeronautical Manufacturers' Association should have a legal committee to watch projected legislation and to advise with the legislators. These committees should appoint a committee to act as a clearing house and national advisory committee, and should produce a uniform project for action by such legislatures as desire to consider the question. The committee should also be in close touch with the American Bar Association, which has already taken the initiative looking toward a national law.

THE NIEUPORT MONOPLANE

(From London "Aero")

THE EVOLUTION AND DESIGN

One thing to be particularly noted about the smaller powered Nieuport is the fact that it is all Nieuport. Not only is the machine itself of M. Nieuport's own design and construction, containing several notable patents, but the engine is of Nieuport build, it is fitted with Nieuport ignition plugs and Nieuport magneto, while Nieuport himself is its best pilot. The bigger passenger-carrying machine is, however, fitted with the all pervading Gnôme engine, but so efficient has the design proved that, with a 50 H. P. Gnôme, M. Nieuport has beaten the world's speed records with a passenger.

Historically, M. Nieuport may be reckoned one of the pioneers of aviation, though it is only comparatively recently that his name has become prominent. His practical experiments actually began soon after Esnault-Pelterie, the Voisin brothers, Blériôt, and Santos Dumont had begun their work, and those of us who remember the early days of the flying machine, when a hop of a hundred yards was something to write home about, recollect that the name of Nieuport, the magneto maker, used to crop up every now and then as one of those who was experimenting in the endeavor to produce a small fast machine.

Genealogically his machines may perhaps best be described as descended on one side from Robert Esnault-Pelterie, and on the other from the Santos Dumont. But while R. E. P.'s steadily developed in the direction of greater speeds, greater power, and greater weight, together with very practical attempts at reducing head-resistance, and while the Santos Dumont machines became steadily lighter and lighter, Nieuport kept steadily to his "medium" ideal of a small, light, fast, and scientifically designed machine which would fly with small power because it was properly designed to do so.

By careful wing design, the internal construction of which is the subject of a special patent, he produced a wing which, it is claimed, gives the maximum of lift with a minimum of drift, and is extremely light, though at the same time so strong that only a single stay-wire is needed to hold it down to the chassis. By further experiment and attention to detail, he produced a fuselage which gives remarkably little head resistance, while at the same time giving ample accommodation to the pilot, and plenty of strength to withstand shocks of landing. Then he managed to cut the landing chassis down till he produced a little affair of steel tubes and a leaf spring, with a couple of tiny wheels. This looks quite inadequate, and yet in practice stands quite as much knocking about as some more elaborate and much more weighty arrangements.

The result of all this work is a machine which looks, at first sight, like a miniature R. E. P., and requires about the same power as a Demoiselle.

ITS PERFORMANCE RECORD.

M. Nieuport's early experiments were not exactly what one could call notably successful, but they were always encouraging, in that they showed him he was working in the right direction. In fact, it was not till the big Reims meeting last July that he achieved a notable flight, but he then astonished everybody by flying 20 kms. in 17m. 10s., and that with an engine of only 20 h. p. a very remarkable performance at the time.

The machine then was, in all essentials, exactly like that seen at the Paris Show, and in March last at Olympia, but Nieuport still kept at work on it, and also produced an improved engine, so that on March 9th last, after a further eight months' work, he bettered his time for the 20 kms. by doing the distance with a 30 h. p. engine in 11m. 14s. Continuing his flight till compelled to come down by the darkness, he covered 80 kms. in 44m. 52s. (about 66.3 miles an hour).

The full value of this performance may be realized when it is pointed out that the world's record time for the distance, held by Leblanc on a 100 h. p. Gnôme-Blériot, was 44m. 29s. It therefore seems only reasonable to assume that the wonderful speed of the little machine must be

attributed entirely to its design and construction, for it is obvious that a small two-cylinder horizontal engine cannot compete for power with a fourteen-cylinder rotary. It is exceedingly interesting also to compare these speeds with the speed of the passenger-carrying Nieuport having a 50 h. p. Gnôme engine. Nieuport's time on March 6th for 20 kms. with one passenger and himself on board was 11m. 54s., and for 80 kms. 47m. 26 2-5s. (about 62.4 m.p.h.), his 100 kms. time being 53m. 10s., 150 kms. in 1h. 28m. Three days later he took two passengers with him, and his times for the same distances were respectively 11m. 59s., 47m. 2s., and 59m. It will thus be seen that, whether with two or three people on board, the passenger machine flies at about the same pace, the variations being accounted for by the pilot cutting his corners fine or swinging wide, yet the tiny single-seater is noticeably faster throughout. Of course all Nieuport's previous performances were quite put in the shade by his records made on May 12th, when, officially timed, he beat all the single-seater records from 10 to 100 kms. On a new machine, similar to that shown at Olympia, with a 28 h. p. two-cylinder engine, as usual made by himself, he did the 10 kms. in 5m. 7s., beating Leblanc's 100 h. p. record of 5m. 30s. His time for 20 kms. was 10m. 9 2-5s., against Leblanc's 11m. 4 3-5s. At 50 kms. his time was 25m. 14 3-5s., against Leblanc's 27m. 4 1-5s. and he finished at 100 kms. with 50m. 36s., aagainst 54m. 51 3-5s. for Leblanc's 100 h. p. His speed was thus 119.68 kms. per hour, or over 74 miles per hour, whereas Leblanc's was 111.8 kms. per hour, or about 67 miles per hour. What Nieuport's speed really would have been if he had flown in a straight line instead of round a little circuit of 5 kms. perihery one can only guess, but it could not have been much less than 80 miles an hour.

The Nieuport has up to the present had a very clean record in the matter of accidents, for the only fatality in a machine of this make was the death of Lieutenant Count de Caumont la Force, who was killed at Buc while experimenting with a Nieuport with a 100 h. p. Gnôme engine. His rudder jammed, and he forgot to cut off his engine, with the result that he hit the ground hard and broke both his legs, dying later the same day, though, be it said, if he could have been properly attended to on the spot, instead of being, as he was, carted from Buc to St. Cyr and thence to Versailles in a farm wagon, he might well have survived.

The Nieuport machine is rapidly becoming popular in France, and on one day early in May as many as seven Nieuports were all in the air together at the Mourmelon school. Several crack fliers have taken the machine up, among them being Weymann, the American, whose recent success in winning the Gordon Bennett Aviation Cup at Eastchurch, England, gained for this machine the title of the World's fastest aeroplane. A point of interest about the machine is revealed in a recent experience at Mourmelon, when one of the school machines landed in a ploughed field, some distance from the school, owing to an engine stoppage, and Nieuport flew off to it with tools for repairs, landing on the same soft ground, and getting up out of it again without difficulty when the work was finished.

GENERAL DETAILS.

Having dealt with the history and development of the Nieuport monoplane, let us now consider some of its more salient mechanical details, which are full of interest for many reasons. Not only does the machine possess a marked individuality in design, but it has one or two characteristic features which are not to be found on other machines—apart from the really remarkable speed performances to which allusion has already been made in this article, and the possibilities of still more wonderful work in the future.

Turning now to a description of the 25-30 h. p. machine the principal dimensions are as follows: Span, 27 ft. 7 in.; length, 24 ft. 7 in.; chord of wing at fuselage, 6 ft. 10 in.; chord at wing tip, 5 ft. 8 in.; engine 25-30 h. p. two-cylinder horizontal opposed and air cooled, with a bore and stroke of 130 x 135 millimetres respectively; propeller diameter, 6 ft. 7½ in.; pitch, 4 ft. 5⅛ in.; weight without pilot, 495 lbs. It is very readily packed up for transport, and in this condition occupies a space 21 ft. 4 in. long, 5 ft. 10 in. wide, and 6 ft. 2½ in. high.

THE FUSELAGE.

The fuselage is of the covered-in type, and is principally remarkable for its great depth at the forward end of the machine, whence it tapers sharply back to the tail, the area of side resistance of the fuselage in front of the centre of gravity being approximately half that of the fuselage behind the centre of gravity. The fuselage is built up of wood in much the same way as on the Blériot, and is entirely covered with fabric. A considerable amount of weight has been saved by channelling out the ash longitudinals, except at the points at which the cross members are mortised into them, as shown in an accompanying illustration. Owing to the depth of the fuselage in front, the pilot is provided with a very roomy cockpit, whilst in addition a species of scuttle dashboard, as indicated in an accompanying sketch, causes him to be practically entirely sheltered from the wind.

THE MAIN PLANES.

The main plane, although having a framework built up in the usual way, is notable for a plane section which is quite different from that of any other machine. The approximate form of this is shown in an accompanying drawing, whence it will be seen that the tipping front edge, properly speaking, is entirely dispensed with, and that the centre line of the section is practically horizontal over the first third of the width of the plane. The effect of this form will be dealt with later.

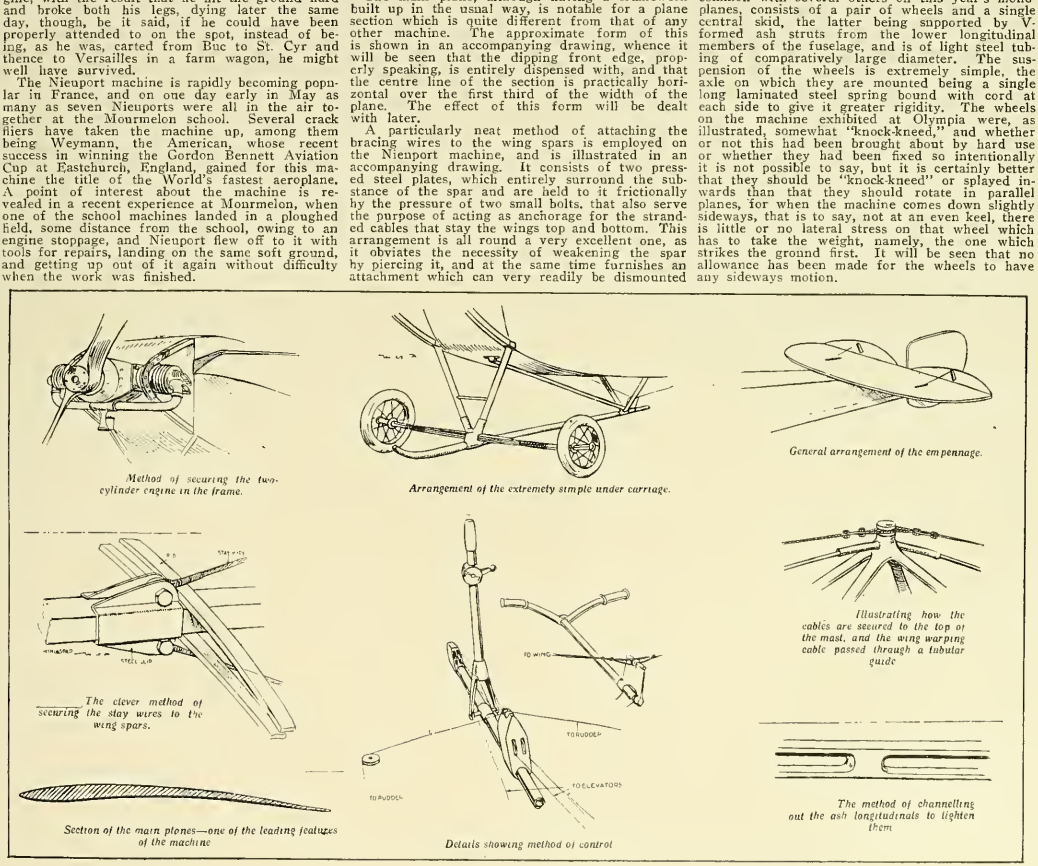
A particularly neat method of attaching the bracing wires to the wing spars is employed on the Nieuport machine, and is illustrated in an accompanying drawing. It consists of two pressed steel plates, which entirely surround the substance of the spar and are held to it frictionally by the pressure of two small bolts, that also serve the purpose of acting as anchorage for the stranded cables that stay the wings top and bottom. This arrangement is all round a very excellent one, as it obviates the necessity of weakening the spar by piercing it, and at the same time furnishes an attachment which can very readily be dismounted without interfering with the fabric covering of the plane, through which, of course, the edges of the bolt plates protrude. For the sake of extra strength, the ends of the plates are brought close up against one of the plane ribs. The lower bracing wires from the wings are taken to the skid, whilst the upper ones are carried to a pyramidal mast built up of light steel tubing. On the top of the mast is a stud which supports the stranded wires that proceed from the front spar of the plane, whilst underneath this stud is a short length of steel tubing through which passes a heavy gauge plain steel wire, which equalizes the wing warping effect by connecting the rear edge of one wing to that of the other. Objection to the use of a plain instead of a stranded wire for this particular purpose may be made by some designers. Certainly it is quite a heavy affair, but, on the other hand, is perhaps better fitted to withstand the friction caused by continually sliding through the tubular fairlead than is a stranded cable. At the same time, of course, it has to take practically no stress, except when the machine alights on the ground, when it has to take up part of the force produced by the momentum of the wings.

THE TAIL.

The non-lifting tail plane on the new machine is practically semi-circular, and enters the air circumference first, but on the older machines this was of triangular shape but of the same area as the new one, and the aeroplane flies equally well with either, but the semi-circular type makes the machine slightly faster. The two elevator flaps are likewise semi-circular, but have their circumference trailing. They are operated through cranks, the wires to which pass through slits in the tail plane. The framework of the rudder, tail plane, and tail flaps is entirely built up of very light steel tubes brazed together, and entirely surrounded by a tightly stretched covering of fabric.

DETAILS OF THE LANDING CHASSIS.

The landing chassis, which is an extremely neat piece of work, and is, also, quite effective, is shown in an accompanying illustration, and, in common with several others on this year's monoplanes, consists of a pair of wheels and a single central skid, the latter being supported by V-formed ash struts from the lower longitudinal members of the fuselage, and is of light steel tubing of comparatively large diameter. The suspension of the wheels is extremely simple, the axle on which they are mounted being a single long laminated steel spring bound with cord at each side to give it greater rigidity. The wheels on the machine exhibited at Olympia were, as illustrated, somewhat "knock-kneed," and whether or not this had been brought about by hard use or whether they had been fixed so intentionally it is not possible to say, but it is certainly better that they should be "knock-kneed" or splayed inwards than that they should rotate in parallel planes, for when the machine comes down slightly sideways, that is to say, not at an even keel, there is little or no lateral stress on that wheel which has to take the weight, namely, the one which strikes the ground first. It will be seen that no allowance has been made for the wheels to have any sideways motion.



Method of securing the two-cylinder engine in the frame.

Arrangement of the extremely simple under carriage.

General arrangement of the empennage.

The clever method of securing the stay wires to the wing spars.

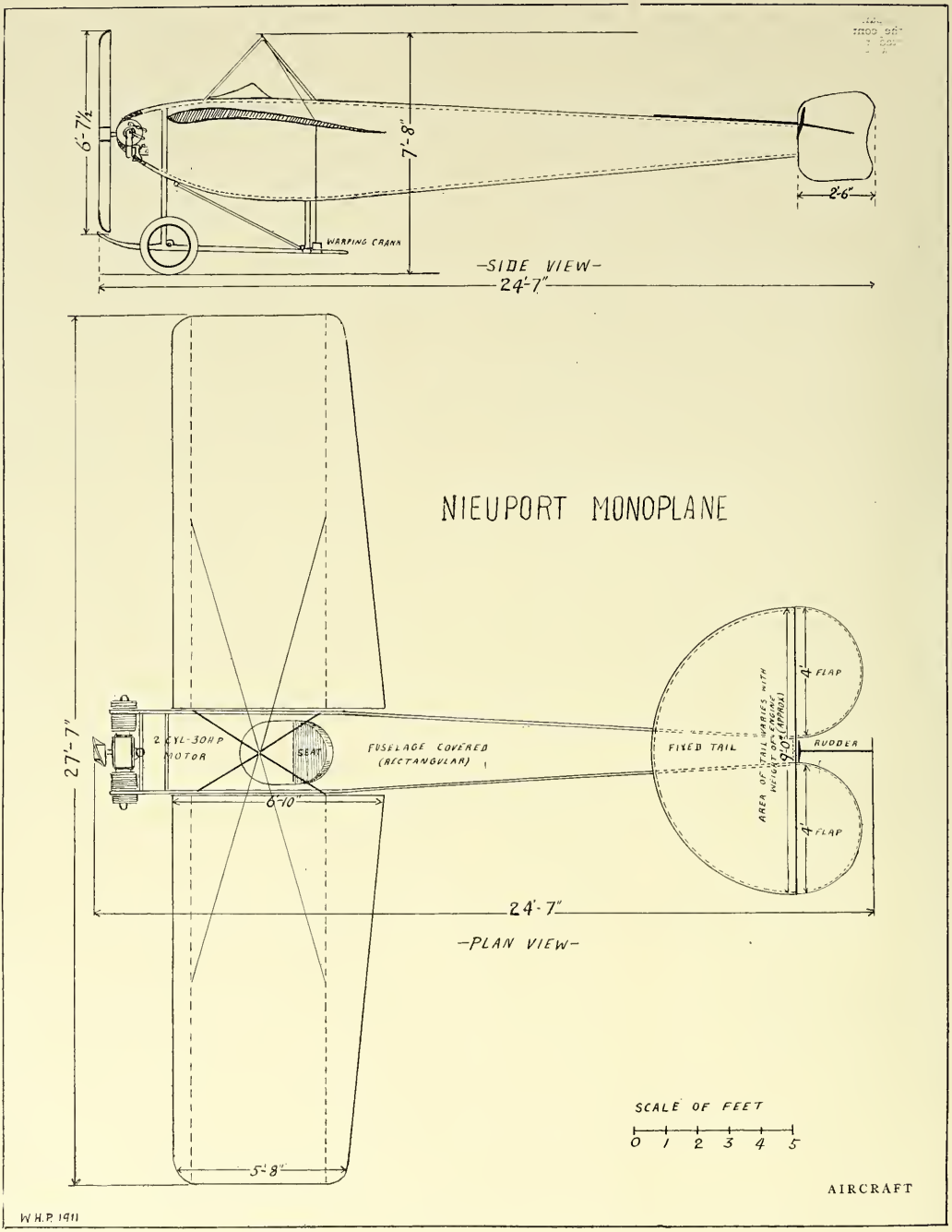
Illustrating how the cables are secured to the top of the mast, and the wing warping cable passed through a tubular guide

Section of the main planes—one of the leading features of the machine

Details showing method of control

The method of channelling out the ash longitudinals to lighten them

SCALE DRAWINGS OF THE NIEUPORT MONOPLANE



The wing warping lever is mounted at the tail end of the skid, and is operated through a long shaft below the fuselage. There is no skid or other landing protection for the rear of the fuselage.

CONTROL ARRANGEMENTS.

An accompanying drawing shows the arrangement of the control gear. The single hand lever is articulated to a hinged shaft slung in vertical bearings. A side-to-side movement of the lever rotates the shaft, which has mounted upon it a block of wood, and to the top of this last the ends of the cables, passing to the vertical rudder at the back, are connected. A forward and backward motion of the vertical lever on its own pivots operates the elevator flaps in the tail by means of wires which pass under pulleys housed in the wooden block before mentioned, a direct return pull being effected by carrying return wires through a further pair of pulleys at the front end of the horizontal shaft. The warping of the wings is effected by a pedal, the general arrangement of which is shown in an accompanying drawing. This pedal is attached to an inclined shaft which passes through the floor of the fuselage, and proceeds, as shown, to the tail end of the skid, where it is connected to a lever to which are taken the wing warping wires. The vertical lever is provided with a throttle control and also a switch to the engine magneto.

A very good point in connection with the Nieuport control gear is that all the moving parts are made of brass, so that their operation can have no effect whatever upon a compass when such an instrument is used for steering. The arrangement of the control gear is also commendable, as all the wires are well out of the pilot's way.

ENGINE ATTACHMENT.

An accompanying drawing shows one of the most characteristic points of the Nieuport machine, viz., the method of supporting the engine from the front of the fuselage. As shown, the longitudinal members in front are extended beyond the covered-in part, and are connected together by a semi-circular channel steel bracket, which is securely fixed to one of the engine cylinders by means of a second semi-circular clip, the two together totally surrounding the cylinder. No better method of mounting the engine could well be devised, as it is at once so strong, light and simple. The method of fitting a Gnôme engine is shown in an accompanying photograph.

To return to the remarkable speed capabilities of the machine, these are probably equally due, first, to the use of the Phillips entry, and, secondly, to the efficiency of the engine. The advantage of the plane section used on the Nieuport is that, even at an exceptionally high speed, no surface or discontinuity can possibly be formed behind and below the front edge, even at the machine's flying speed of probably well over 60 miles an hour.

Another point which should be noted is that the total head resistance of the machine is considerably reduced by the form of entry of the fuselage itself, and also by the fact that the pilot is almost entirely hidden behind a small scuttle dashboard. In view of this, it is not surprising to find that the Nieuport is claimed to be a particularly fine glider, which is, of course, one of the first considerations in a machine intended for use in cross-country work. During some official tests carried out before the French War Office officials, we understand that the Nieuport glided for a distance equal to some twenty times its height, a figure which on the face of it is so remarkable that further details as to the state of wind and weather would be decidedly interesting.

PROBLEMS THAT REMAIN

By Henry A. Wise Wood

A BRIEF taking of stock, to ascertain the existing condition of the science of flight, it seems to the writer, will serve a particularly useful purpose at the present moment. Trained aeronautical thought has already become an established department in the intellectual life of the French, among whom, in fact, it may be said even to have taken on traditions; while with us it cannot be claimed that there exists so much as a widespread inkling of the simple principles upon which mechanical flight depends. To the latter statement our "Patent Office Gazette" bears indisputable weekly testimony: we busily fill its volumes with childish clap-trap constructions, which we assert in our specifications will fly,—when every line of our drawings frankly confesses that we are wholly ignorant of the very rudiments of flying. And there is another manner in which we unconsciously admit our ignorance of the subject;—we fail to interpret the principles of flight for ourselves. Instead, we fall to making slavish copies of the work of a few masters; and, without the ability successfully to add a single point of value, we have the presumption to rechristen them with our own names. Thus the country is full of imitations of the Blériot and the Curtiss machines,—as also it would be of the Wright, were the copiers not in wholesome dread of our great and militant masters. Where, as in France, men are at pains to gain fundamental knowledge of the subject of flight before they attempt to become constructors of aeronautical apparatus, a great variety of useful machines, each possessing an individuality of its own, will result. The Voisin, Santos Dumont, H. Farman, Antoinette, Blériot, M. Farman, Nieuport, R. E. P., Hanriot, Breguet and many others are strongly individual structures which the French have produced. Among ourselves but two native types exist; and beyond these we seem powerless to go. It can truly be said that had the Wrights and Curtiss been born elsewhere, and done their work abroad, the world would now be without a single practical flying machine that could be called American. This, the writer contends, is a shameful record for a people who persist in thinking themselves a nation of inventors.

However, it is not the purpose of the present paper to deal with our scientific shortcomings, but to attempt to estimate the precise position in the scale of progess that the science of flight and the art of flying have attained, and to suggest some of the remaining problems which most urgently press for solution. If we should apply to flying the test of the man in the street (and there is no better touchstone) we should ask, Has it reached the point where it is safe? To this, the writer believes, there can now conscientiously be given the answer, Yes. If three sets of correctly adjusted conditions are always present it may truly be said that flying is always safe. Therefore an ascertainment of these conditions will clearly show us the degree of practicability we have reached. The first is still air; the second, a correctly designed and well-built machine, composed of suitable materials, and possessed of an adequate and dependable power plant; the third, a competent driver. The first condition is a constant; the second, so long as it does not detriorate through lack of upkeep, is also a constant; while the third, because of the presence of the human equation, is a variable. Were the third condition a constant, as are the other two, there could now be no possible failure in a thousand flights. Hence, it may be said that with proper apparatus in still air, flying is wholly safe—so long as the flyer handles his craft correctly. The question will at once arise, Are machines to be had which fulfill the requirements imposed by the second condition? They are. It is the uncertainty of the third condition, only, that can raise the doubt; but even the third condition becomes almost a constant in the person of a well-trained and cautious operator. Upon the conditions which the foregoing prescribes even the ultra conservative must now admit flying to be shorn of any but the usual risks incident to modern sport.

It is because of the substitution of other factors for those of the equation of safety herein set forth that uncertainty arises. If a flyer be adventurous; or lack poise; or be unskillful, his safety in the air will dwindle as his vagaries increase. If a machine be poorly conceived; or faultily built or engined; or if it be permitted to deteriorate, neither still air nor skillful driving can make the equation of safety whole again. So, too, with the wind. Unfortunately, flying compels us to stake our lives upon the very element that has furnished us with a synonym for inconstancy; for uncertainty. So long as air is still, flying man may be called its master; so soon as it moves he may, at the present time, be said merely to occupy his new throne upon sufferance with but slim tenure of a treacherous domain. His physical apparatus and himself man can easily perfect; he is used to deal with both, and can readily adapt both to any fixed condition with which he is familiar. But in flying he is called upon to deal with the most unstable of our elements—not in the old two-dimensional way at the earth's surface that it has taken the mariner centuries to learn—but in a wholly new, a three-dimensional way. The Phoenicians were thought brave because they went into uncharted seas;—but the sea was the sea, and they were ready to go forth because they had thoroughly learned how to deal with its whole gamut of phases. The things done by them, and by the leading nautical spirits of succeeding centuries, have come down to us as masterpieces of courage and enterprise;—but what that they did could not have been finer than the flight of Chavèz above the Alps, or of Védrines above the Pyrenees?—both traversing a new element the very nature of the probable behavior of which neither could have more than

dimly estimated. It is the science of meteorology that is in arears, in those of its departments with which men in the air must now concern themselves. The man and his machine are neither of them yet to his liking,—still they are further advanced than his knowledge of the air itself, or of the application of dynamical laws to that new vehicle which passes midway between earth and heaven. Did the airplane travel in contact with the former, our cut-and-dried formulae of transportation would apply, and solutions be easy; or did it move in the vastnesses of outer space, we should be able to refer its behavior to the department of astrophysics, and so be done with it. But no existing department of science will wholly serve; so a new one will of necessity arise. Meanwhile a confusion of counsel must be expected; while here and there a really valuable contribution to the new science will occur. When such appears it should be preserved, and given the widest publicity. For this reason, upon the suggestion of the present writer, the publishers of AIRCRAFT have included in this issue an address by James S. Stephens, entitled "Dynamics of the Flying Machine," and delivered on April 5th, 1911, before the Western Society of Engineers. Nothing has recently appeared which is likely to be of such great use in the furtherance of safe flight, as the new law set forth by Mr. Stephens in this address. Mr. Stephens not only correctly accounts for certain classes of mishaps, the causes of which have hitherto been shrouded in mystery, but in this, his law of turning in the air, he has made a contribution of permanent value to the science of aviatics.

DYNAMICS OF THE FLYING MACHINE

PAPER PRESENTED TO WESTERN SOCIETY OF ENGINEERS

By James S. Stephens, M. W. S. E.

It should be understood that while it is the writer's belief that this paper contains a plausible theory to account for some of the dangers of mechanical flight, he hopes it will be chiefly instrumental in interesting some of the engineering profession who have heretofore given the matter little serious thought or attention; also that it may promote a discussion of some of the phases of the question and thus bring out information that may assist in the advancement of the art.

The writer is aware of the fact that some of the statements and deductions made herein, when considered from certain view points, are not in accord with the laws of dynamics as commonly accepted by the authorities, but this should aid rather than prevent a liberal discussion, as some of the peculiar conditions involved may cause the majority of those who consider the matter to at least question the exactness of some of the laws of dynamics as commonly understood, when applied to the operation of a flying machine.

During the past decade, public opinion of the flying machine may be said to have passed through three stages.

First, viewed as ridiculous, then as sublime, and now, on account of the great number of fatal accidents which have occurred, as tragical.

All of these accidents have had some specfic cause, and numerous explanations and theories have been offered to account for them. Unfortunately the man who would have best been able to offer a satisfactory solution has in practically every case lost his life.

Theories have been advanced by some of the aviators blaming the so-called *Swiss cheese* sky and *holes in the air* for many of these accidents.

It is generally admitted that there are many varying currents in the air, and that these changes of speed and direction in the motion of the air are undoubtedly greater near the surface of the earth than they are higher up, and while some of the difficulties of flying are chargeable to this cause, it has, the writer believes, been blamed for a great deal more than it is accountable for. Such variations as do occur in the trend of the wind or air currents are not sufficiently abrupt to make flying extra hazardous from that cause alone.

Once a machine is off the ground, it would be immaterial whether the wind was blowing steadily in one direction one mile or one hundred miles an hour, if it were not for the fact that it is necessary to give due consideration to the laws of inertia, acceleration, retardation, momentum, centrifugal force and gravity in their proper relation to the speed of the machine, both relative to the air and relative to the earth.

The writer will not undertake to discuss in mathematical detail these various factors governing the conditions of mechanical flight, but will confine himself to some simple illustrations which he believes will provide an explanation of the causes of many of the aeroplane accidents which have lately happened.

In still air a flying machine, in maneuvering in a horizontal plane, would have to accommodate itself to practically the same conditions as a vehicle on the ground. In starting up, increasing or decreasing the speed, the inertia of the weight of the machine must be overcome, thus introducing the elements of time and power. In turning, some positive resistance, such as banking the machine, must be depended upon to counteract the centrifugal or tangential forces.

All of the men who have flown these machines have learned to do so in comparatively still air, and have been thoroughly familiar with the conditional requirements just referred to, as a result of their experience with vehicles running on the ground.

Flying in a wind, the writer believes, introduces the effect of some of Nature's laws in a way that up to the present time has not been fully appreciated, and therefore has not had the consideration which is due.

To illustrate, imagine a machine flying at the rate of 40 miles an hour, which is in round numbers 60 ft. per second, directly against a wind blowing at the same speed. While such a machine would maintain itself in the air just as surely and safely as if it were flying on a calm day and covering a distance of 40 miles an hour as measured on the earth's surface, it would in fact actually be standing still, in so far as its relative position to the earth is concerned, and the entire output of its engine would be expended in supporting it against the action of gravity and pereventing it from drifting backward in the wind.

Now, for the sake of the illustration, consider what would happen if the 40-mile wind could be suddenly stopped. The machine, having no initial velocity or momentum, could get no support from the air until it could acquire a sufficiently high relative velocity. This, on account of inertia, and the limited power available, requires time, and during such time-interval, the machine must fall. While the abrupt stopping of a 40-mile wind is not possible, a somewhat analogous condition may be brought about by an abrupt turning of the machine when it is stationary relative to the earth through flying against a high wind as above mentioned.

Under the most favorable conditions, it would take considerable time to bring a machine weighing about 1,200 lb. from a standing position up to a speed of 60 ft. per second, or double this speed, as the writer will endeavor to show may be necessary under certain practical conditions.

The following is quoted from AIRCRAFT. the December issue, describing the flight of Johnstone and Hoxsey at the Belmont Park International Aviation Meet, both of whom have since lost their lives as martyrs to the cause of progress.

"They faced the wind coming in from the ocean, and as they went higher their speed in relation to the ground rapidly diminished as that of the air they were meeting became greater. Soon they appeared to be standing still, the velocity of the wind being just even to theirs (about 38 miles), and then, as they went higher, they started to lose ground and the higher they went the faster they went backwards. Close together they appeared like two great kites on a string—a string being slowly paid out.

"How great a wind Johnstone faced at his maximum altitude of 8,500 ft. no one can say, but with his machine going close on to 40 miles an hour, he was blown backwards some 40 miles in the course of less than two hours, and 75 miles an hour is not an exaggerated estimate of the maximum velocity of the wind met by him."

Brookins, Johnstone, and Hoxsey on Wright machines have made complete circles in the air in about six seconds. Let us suppose one of them had undertaken to make such a turn when flying against a head wind; a quarter of a turn would be made in less than two seconds with the result that, whereas the machine before the turn had the necessary supporting power to maintain it in the air, in less than two seconds of time it would have turned around a quarter of a turn in the air, and with respect to its relative position to the earth, would have practically turned upon its own center, and have begun to drift sideways, having practically lost all of its sustaining power; it had no initial forward motion when commencing to make the turn, the time allowed not being sufficient to acquire the necessary acceleration, and the power available not being great enough.

Should he be able to get his machine around a full half turn, which he might be able to do in three seconds, the machine, even though assisted by all the power of its engine, and the effect of the wind in the direction it had turned, could not in that limited time have gotten up sufficient headway against its own inertia so as to be moving as fast as the wind itself, and the wind would actually be blowing from behind and aiding gravity in forcing the machine downward. It seems hardly probable that under such conditions it would be possible for the operator to again right the machine, even though it were falling head first, especially if he was not aware of the actual cause of the trouble.

As a matter of fact, a machine under such conditions as above outlined would, in so far as the forces of gravity and inertia are concerned, have to start from a standstill and acquire a velocity of 80 miles per hour relative to the earth before again obtaining its normal supporting power of 40 miles per hour relative to the air in which it would be flying.

A further complication would be the fact that once commencing a turn under the conditions above stated, the machine would have a tendency to turn practically on its own center, and having thus acquired in initial rotary motion with little forward motion in the same plane, it would be much harder to check or reverse the turn. Any effort which might be made by the operator would probably be such as would result in just the reverse to that intended, as the conditions of support would for the time be reversed.

The support of a flying machine in the air depends upon a nice adjustment of speed relative to the air, its surface and power, as opposed to the action of gravity. The power may be so applied when flying as to store up within the machine dynamic force which would be the product of its speed relative to the earth and its weight, or simply to overcome the static force caused by gravity, if the machine were flying against a wind blowing at the same speed required for sustention. In fact, if the machine were flying against a wind blowing relative to the earth at greater speed than the speed of the machine through the air, it would then have stored up within itself dynamic force acting in the opposite direction to which the machine would be actually moving through the air.

It seems evident that a flying machine may be turned very quickly and may, on account of the small frictional hold it has upon the air, and due momentum, or centrifugal force, skid a considerable distance in making a turn, unless the resistance available by banking the machine is adjusted very nicely to the relative forces brought about by the speed of the machine.

It is the writer's belief that such quick turns, if made in a wind, are extremely dangerous and are responsible for at least some of the fatal accidents which have occurred.

Professor Langley, the writer believes, was the first to compare the flight of an aeroplane to a skater passing rapidly over thin ice, which would sustain him safely so long as he maintained sufficient speed to distribute his weight over a sufficient area. Let us go a little further with this illustration; we know that the skater might turn his body around while passing swiftly over such thin ice, and still continue on in safety, but should he check his speed and endeavor to reverse the direction of motion, he would surely break through. So with a flying machine; if turned too quickly, its momentum would tend to carry it along in the direction in which it had been flying until it reached a critical position without sufficient support from speed in the direction it had been turned.

Safety in either case could be assured only by making a long turn that would meet the requirements of time, weight, and surface; and, while the skater might turn on his own center, skating either face forward or backward, without affecting his safety so long as he maintained his speed, the flying machine must of necessity at all times present its front directly toward its direction of motion, and at the same time maintain its proper angle of incidence and forward speed relative to the air to prevent its falling.

This essential condition that the machine must be moving at its full speed relative to the air and in the direction it has turned irrespective of the speed of the wind or the relative speed of the

machine to the earth, and the fact that such changes in direction when flying in a wind may bring about or require rapid changes in the actual velocity of the machine itself, so that at all times it may have a normal speed relative to the wind, is, the writer believes, responsible for conditions which we have not had to consider in other methods of transportation prior to the advent of the flying machine.

It is believed that a greater power is required to get a machine off of the ground than that necessary to maintain it in the air in horizontal flight.

If making a flight in still air, the machine might start in any direction on level ground. The power required would be that which would be necessary to overcome the head resistance of the air, the frictional resistance of the air, the action of gravity, and the inertia of the weight of the machine in bringing it up to the speed necessary for sustention, in a given time. After attaining this speed, that portion of the power required for overcoming inertia would remain in the machine as kinetic energy, and when flying in still air would remain constant irrespective of the direction in which the machine might be flying.

If a machine were started from a stationary position on the ground against a head wind blowing at a speed equal to that necessary for the support of the machine, no power would be required to overcome the inertia of the machine in a horizontal plane; it would maintain its relative position to the earth; and if it were possible for the wind to instantly stop blowing, the machine would fall during the time necessary to accelerate the machine up to a speed necessary for support.

If a machine were started from a stationary position on the ground, moving in the same direction with a wind blowing at a speed equal to that necessary for the support of the machine, it may be assumed that, if sufficient time is allowed, the force of the wind will accelerate the speed of the machine up to the speed of the wind, but from this time until the machine obtains a speed necessary for support greater than the speed of the wind, the same elements of resistance will have to be overcome as in starting from the ground in still air, including the power and time necessary to overcome the inertia of the machine.

The above statements, the writer believes, demonstrate the fact that in flying in a wind and making a turn, the necessity for quick changes in the actual velocity of the machine, required to accommodate the speed of the machine to the speed of the wind when the direction of the machine is changed, may be such as to cause the machine to fall for want of sufficient surplus power to meet such variable conditions, or on account of not allowing sufficient time for the small amount of power available to meet the requirements of changes in the actual velocity of the machine.

In flying in a wind it would seem as if there must always be a variable resistance or momentum to be considered when making a turn; that this variable will be proportionate to the speed of the wind, and must be provided for, when turning, by the allowance of ample time for increase or decrease of the actual speed of the machine so that it may at all times maintain its normal speed relative to the air. Also that, in making such adjustments of time and speed, the weight of the machine, the normal speed, the amount of surface, and the surplus power available will all have to receive due consideration—in the hands of an expert operator who has become thoroughly familiar with these conditions and their relative values—if safety in flight is to be attained.

A flying machine cannot, without risk of falling, be turned in its course through the air without allowing the necessary time relative to the power and weight to overcome its inertia and maintain its speed in the direction it has turned.

For the sake of argument, consider what would actually happen to a flying machine weighing 1,000 lb. moving through the air at the rate of 60 ft. per second, or 40 miles per hour, and making a complete turn in the air in six seconds, while the wind was blowing at a speed of 40 miles per hour, the turn to commence when the machine was flying against the wind and practically standing still relative to the earth. In making such a turn in still air, the machine would traverse a true circle about 360 ft. in circumference both in the air and relative to the earth, commencing and completing the turn with the normal speed necessary for sustention, 60 ft. per second in the air and relative to the earth's surface at all points of the turn.

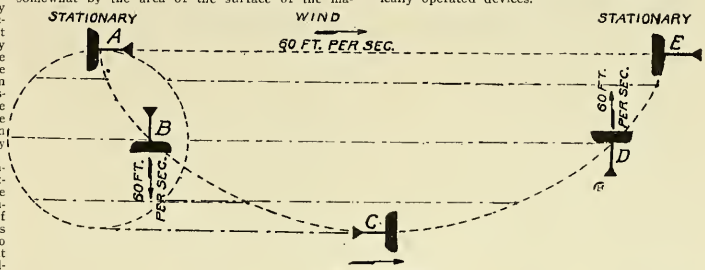
In making a turn in the air with the wind blowing 40 miles per hour, the machine would, if it were not for the effect of inertia, traverse a true circle relative to the air just as when turning in still air; but relative to the earth, it would move in the direction in which the wind was blowing 60 ft. per second. But on account of inertia in making such a complete turn the weight of the machine, 1,000 lb., would have to be accelerated from a standing position to a speed of 120 ft. per second in the first three seconds of the turn, and retarded from this speed to a full stop in the last three seconds of the turn.

As a matter of fact, a flying machine may be turned around in about six seconds and with comparative safety in still air but to make such a turn and at the same time increase the speed of 1,000 lb. weight to 120 ft. per second, and again retard it the same amount in six seconds, is beyond the power available for acceleration or the strength of the machine to act in retardation, especially if we consider the fact that the power available for acceleration would be very small, practically all of the power being actually necessary to support the machine in the air. The amount of power available over and above that required for sustention may be approximated by the ability of the machine to rise. For instance, if a machine weighing 1,000 lbs. were capable of rising 100 ft. per minute, this would indicate that it had 3 h. p. or 100,000 foot pounds per minute of surplus power above that required to maintain speed of sustention. Three seconds is one-twentieth of a minute, so that we would have 5,000 foot pounds available for three seconds to increase the velocity of 1,000 lbs. weight to 120 ft. per second. It would take about 140,000 foot pounds to do this in three seconds, or about a minute and a half to accelerate 1,000 lbs. weight with the energy available, 5,000 foot pounds.

These figures are merely approximations made to illustrate the conditions involved.

The wind would assist in acceleration on the first half of the turn, and the resistance of the air to forward motion would help decrease the time necessary on the last half of the turn. This would materially decrease the time required for the complete turn. The arbitrary conditions mentioned herein are used for illustration only. The actual time in which a safe turn may be made in the air may be closely estimated, if we have the weight of the machine, know how much surplus power it has, know the speed of the machine relative to the air, and the speed of the wind.

The product of the factors would be varied somewhat by the area of the surface of the machine, the form of the machine, and the ability of the operator to control it to the best advantage.



A diagram may be made, graphically showing any combination of the conditions governing the turning of a flying machine in the air:

To illustrate the conditions above mentioned, the following method is suggested:

Let A, B, C, D and E represent five different locations of a machine relative to the earth when flying 40 miles per hour against a wind blowing 40 miles per hour, and making a complete turn, the dotted line representing the course of the machine relative to the earth in making the turn, and A, B, C, D and E relative positions of the machine during the turn. The machine would be standing still at A; it would have turned a quarter of a turn and increased its speed to 60 ft. per second at B; half a turn and a total acceleration of 120 ft. per second at C; three-fourths of a turn and retarded to 60 ft. per second at D, and a full turn to a stationary position relative to the earth at E. It would therefore appear that such a turn could not be made safely in much less than a minute and a half under conditions previously stated.

If the machine were flying in still air, it would have completed a true circle both relative to the air and earth, and location E would coincide with location A on one side of the circle. This it might do safely in a few seconds of time.

Such a diagram might be made to show time, weight, distance, speeds, etc., and their relation to each other for any specific construction of machine, and in this way establish limiting conditions which would be a guide to the aviator in governing the movements of the machine, so as to be able at all times to keep it under safe control.

It is believed that some of the accidents referred to have been due to a combination of the above named causes, and the failure of the aviator to appreciate their varying influence as compared to his speed through the air and his relative speed over the earth due to the speed of the wind. It is only when quite near the earth that the relative speed of the machine may be judged of; when higher up, the aviator's attention is given to necessary adjustments to meet the changing conditions in the air.

On approaching the ground, he has no way of determining the direction or speed of the wind except by noting some object such as smoke or a flag, or by first flying in a circle near the earth and noting the amount and direction of the side drift of the machine. And it must be admitted that to do this even approximately must require a highly cultivated sense of speed and direction. Any speed indicator placed upon a machine can only show the speed through the air. Nevertheless, such an instrument is of the highest importance as a guide, to limit speed in gliding and to maintain necessary speed for sustention. It is quite possible that accidents have occurred on account of lack of knowledge of these relative speeds.

This paper has been presented with a belief that it will give rise to a discussion of the subject which may lead to further investigation, and perhaps develop a greater interest in the possibilities of the flying machine from the standpoint of the engineer.

The writer has long been interested in this subject and determined about a year ago to commence the construction of an experimental machine, with a view to in some measure safeguard the operator by devising a construction which will, he believes, have a large margin of natural inherent stability in the air.

Before commencing this construction, he had become thoroughly convinced that a machine could be built to meet the following requirements, which it is believed are fundamentally essential to safety in flight:

1st. That the machine should be designed so that without manual control, it will automatically assume and maintain a straight horizontal line of flight when operated under power, and a proper minimum gliding angle forward when the power is shut off.

2nd. It must at all time automatically maintain its transverse stability when in flight, or when gliding without attention of the operator, or the intervention of intermediatory mechanically operated devices.

3rd. It must be capable of being positively controlled by the operator by a single simple controlling member to accomplish all of the operations of steering in any direction or of changing the lateral inclination of the machine to meet unusual requirements which may be met with in flying or brought about by the operator in steering.

4th. Such a machine should be built so as to have the same factor of safety relative to the strains involved in actual flying conditions as would be allowed for any other refined construction, upon which it is intended to carry the risk of human life.

These requirements have been stated simply to indicate the line of thought which has led up to a belief that some combination of the conditions as outlined in this paper have been responsible for a number of the fatal accidents with flying machines.

Acrobatic stunts and thrillers involving quick turns have been accomplished with apparent safety by competent aviators in still air. To attempt such demonstrations in a strong wind, whether it be blowing steadily or not, before we know definitely about all the various factors involved in safety in flight, seems to be an endeavor to beat some of the well-known laws of the resistance of weight to a change of motion, and likely to prove suicidal for the experimenter.

The Elbridge Engine Company

The Elbridge Engine Company have issued a 24-page book, which should be in the hands of all interested in aviation, for it not only describes and illustrates the Elbridge line of aero engines for 1911, but as well gives much valuable information to the builder and experimenter.

Among the various half-tone illustrations there are two pictures showing different methods of installing Elbridge engines in Blériot type monoplanes, one showing the method of installing the engine in a Curtiss type biplane, and one showing engine installed in Farman type machine. These pictures also show different ways of attaching the radiators and propellers.

There are also a number of good pictures of world-famous aviators and their machines.

The Elbridge Aero Engines described in the catalogue comprise the well-known line of "Featherweight" engines, ranging from 20 H. P. to 60 H. P., as well as the new "Aero Specials" models in four-cylinder and six-cylinder sizes. The prices range from $550 to $2,150. Copies of the catalogue will be mailed free to readers of this paper on receipt of request addressed to Elbridge Engine Company, 8 Culver Road, Rochester, N. Y.

CLUB NEWS

Aero Club of America

Gordon Bennett Aviation Challenge Committee, 1911—Robert J. Collier, Major Samuel Reber, U. S. A., Cortlandt F. Bishop, Henry A. Wise Wood.

Report of July 6th, 1911, duly acepted and approved by the Board of Governors, with a unanimous resolution tendering a vote of thanks to the Committee for the efficient work performed and the brilliant results obtained, each contertber resolution that the report be conveyed to all members and affiliated clubs in a Special Bulletin.

ALLAN A. RYAN, Esq.,
President, Aero Club of America.

Dear Sir: I beg to offer the following brief report of the work of the Gordon Bennett Aviation Challenge Committee, 1911:

The following were the conditions set for the Gordon Bennett Aviation Cup-Race of 1911:

"In accordance with the general rules it is declared that for the year 1911 the distance to be traveled by aeroplanes taking part in the contest will be 150 kilometres (93.2 miles). This contest must be held over an aerodrome having a perimeter of not less than 5 kilometres (3.1 miles). Landings during the contest are permitted. There is no minimum time in which the distance of 150 kilometres must be accomplished. Each contestant may start at any time during a period of seven hours on the day fixed for the race. It is understood that each contestant must cross the starting line at least one and one-half hours before sunset on the day designated. During this period of seven bours, as is above stated, contestants can start at any moment, but they are allowed only one start, and before that start they are obliged to declare to the judges their intention to contest for the Gordon Bennett Cup. It is understood that the start is considered valid from the time that the aviator crosses the starting line in full flight after having notified the judges of his intention to compete for the Cup.

"If starting line is not crossed in full flight, the aeroplane having touched the ground, the start will not be considered as having been made. It is further understood that the contestant must have crossed the line before the hour fixed as above; that is to say, that every contestant who has been timed after the hour fixed will be regarded as having made a false start; for example, if the final limit is fixed for 6.30, in the event the competitor should cross the line one-fifth of a second later be is disqualified."

As this event was to be purely a speed contest we had to concern ourselves particularly with the selection of such men, airplanes and motors as should be able to go the distance in the least possible time. The Wright brothers were the first appealed to, but we were unable to obtain their co-operation. Orville Wright when seen at Dayton, stated that although he might be able to reconstruct the Belmont Park "Baby" racer in time, it would be necessary to build another engine, and that owing to the amount of work on hand this could not be accomplished. We thereupon offered him a 100 H. P. Gnôme, upon which we had secured an option, and he was informed that all of the costs of the enterprise would be borne by us, but this offer was declined by Mr. Wright and further efforts to interest him in the event were unavailing.

Glenn Curtiss, when seen at Hammondsport, immediately upon his return from the Coast, was at first inclined to make an effort to get into the race, but upon an investigation of his manufacturing affairs he decided not to make the attempt. The offer of funds and motor that had been made to the Wrights was also made to Mr. Curtiss.

A diligent search of the field in this country failed to reveal any one else who was competent to construct a suitably fast machine; so it became necessary for your Committee to turn to foreign makers, and to such Americans abroad as were competent to fly speedy foreign machines. Early in the year Mr. Campbell Wood particularly, and others of us who had carefully noted the progress of flying abroad, became convinced of the superiority of the Nieuport monoplane, at least so far as speed was concerned, and also of the prowess of Charles T. Weymann, the American, as a clever track flyer. Through Mr. Campbell Wood your Committee thereupon got in touch with Mr. Weymann, who appeared to favor the Morane monoplane, and succeeded in inducing him to equip himself with a Nieuport, of the power, which we deemed necessary for the race, and to undertake the race on behalf of the Aero Club of America.

James Martin, who was flying a Burgess-Curtiss "Baby" Grahame-White biplane in England, was the only other flyer abroad who seemed worth consideration; but, his machine not having sufficient speed, he was not chosen as a member of our team.

Earle Ovington, who had been flying a 70 H. P. Blériot in this country, was considered but was not put on the team for the reason given in Mr. Martin's case.

Thus, no other suitable equipped flyers being available, it was necessary for us to go into the race with but a single man. Still, as the following paragraph from a letter sent by the writer to Mr. Collier on June 30th will show, your Committee was satisfied that in Weymann and the Nieuport it had effected a combination which would be likely to bring honor to the Aero Club of America:

"For the foregoing reasons we go into the Gordon Bennett race tomorrow at Eastchurch, England, represented by but a single flyer; nevertheless we feel that our chances are extremely good, because the Nieuport has recently fulfilled our predictions as to its speed, and Weymann is one of the cleverest track flyers abroad. We were recently pleased to find our judgment of the Nieuport confirmed by the French Club which has selected two Nieuports and one Blériot to represent France."

We have the pleasure formally to report that the Gordon Bennett Aviation Cup-race of 1911 was flown at Eastchurch, England, on July 1st, 1911, over a distance of 150 kilometres (93.2 miles) and was won by Charles Terres Weymann, the representative of the Aero Club of America, in one hour, eleven minutes, thirty-six and one-fifth seconds—a new World's Record. He drove a 100 H. P. Gnôme-engined Nieuport monoplane.

The following table will give the records of the other starters:

TIMOTHY L. WOODRUFF, PRESIDENT AERO CLUB OF NEW YORK.

Second—Alfred Leblanc, France, (100 H. P. Gnôme-Blériot) 1 hr. 13 m. 40 s. 1-5.

Third—Edouard Nieuport, France, (70 H. P. Gnôme-Nieuport) 1 hr. 14 m. 27 s. 2-5.

Fourth—Alec Ogilvie, England, (1910 "Baby". Wright) 1 hr. 49 m. 10 s. 2-5.

Fifth—Chevallier, France, (70 H. P. Gnôme-Nieuport), 37 m. 56 s. 1-5 for 60 kilometres.

A wind varying from twenty to ten miles an hour blew throughout the contest, starts for which could take place between 11.46½ A. M. and 6.46½ P. M. Greenwich time. The course measured 6 kilometres to the lap so that twenty-five circuits had to be flown.

The speed of the winner was something over seventy-eight miles per hour, equivalent, probably, to about eighty-eight miles straightaway. Leblanc was about two miles per hour slower, and, in this connection, it is interesting to note that on February 21st last, in our first letter to Weymann, the opinion was expressed that in order to win the Gordon Bennett Cup a straightaway speed of one hundred and forty kilometres (87 miles) per hour would be necessary.

It is recommended that the thanks of the Club be given to Mr. G. F. Campbell Wood, its Secretary—who was the first to discern the possibilities of the Nieuport—for the leading part which he took in the selection of our successful entrant and of his machine; Mr. W. S. Hogan, a member of the Club who resides in Paris, for his assistance; Mr. Robert J. Collier, for his offer of $5,000, to be used in the work of your Committee; and Mr. Harry Payne Whitney for his offer of a similar sum to be used for the same purpose.

In connection with the subscriptions of Messrs. Collier and Whitney it is pleasing to state that as we were able to persuade Weymann to equip himself without cost to the Club it was unnecessary to call either of these subscriptions. Such money as the Committee spent amounted to but $206.88, which we suggest be paid out of the general funds of the Club. It is also recommended that adequate expression of the Club's appreciation of his victory be sent to Mr. Weymann, and that the Gold Medal of the Club be conferred upon him.

Appended to this report are copies of the correspondence which relates to the work of your Committee.

We are of the opinion that the representatives of the Aero Club of America in the Gordon Bennett Race of 1912 should, if possible, drive exclusively American machines fitted with American motors. As this will entail the development of apparatus much speedier than any now procurable in this country, the year ahead is not too long a time for its development. It is therefore recommended that the Gordon Bennet Aviation Defense Committee be appointed at once.

The Committee respectfully begs that it be discharged.

Yours respectfully,
H. A. WISE WOOD,
Acting Chairman.

Aero Club of New York

With ex-Lieut. Gov. Woodruff presiding, the first meeting of the Board of Governors of the Aero Club of New York was held July 12 under a large awning which ordinarily shelters the club's guests at aeroplane exhibitions. It was voted to build ten more hangars at this place and also to convert the Garden City Estates Clubhouse into the clubhouse for the new organization.

The Aero Club of New York has become affiliated with the Aero Club of America, and for a period of one year the two clubs will jointly control the Nassau Boulevard Aerodrome.

Aero Club of Michigan

Aero Club of Michigan is the first club to hold a meet solely for the purpose of arousing interest and enthusiasm in the aviation game. The club engaged a Wright machine piloted by Frank Coftyn, for the use of members and friends during the three days of June 19-21. The machine made 50 flights in all during the three days, 42 of which were with passengers, and not a single mishap occurred. Amongst those who were taken up were: Mr. and Mrs. Russel A. Alger, Mr. and Mrs. Fred M. Alger, S. D. Waldon, officer of the Packard Motor and their three children, aged 5, 12 and 15, and C. H. Taylor, a well-known automobile engineer. C. B. DuCharme, secretary of the club, E. W. Lewis, secretary of the Timken-Detroit Axle Co., R. D. Chapin, a famous automobile designer; Wm. E. Metzger and Howard E. Coftyn, motor car manufacturers, were some of the others who enjoyed flights from the golf grounds of the Grosse Pointe Country Club.

Aeronautic League of New Jersey

By WM. A. KRAUZ, SECRETARY.

The Aeronautic League of New Jersey, on August 6th, 1911, will hold a propeller contest open any any one. Entrees for same must be sent to Propeller Committee of Aeronautic League of New Jersey, 300 Union Street, Union Hill, New Jersey.

The tests will be made with 3 ft. Propellers of any shape and the one which proves to be the most efficient one considering power required and load pulled will be awarded a prize consisting of a loving cup bandsomely engraved.

The contest will be held at the League's Aviation Field in Guttenberg, New Jersey. For further information regarding this contest the above named committee may be addressed. At the above Aviation Field are at the present time a number of very busy hangars and a number of different kind of aeroplanes are nearing completion. Among them will be found one constructed of all steel tubing with two aluminum propellers and muslin coverings. There may also be found a monoplane which has its carrying surface all covered with sheet aluminum.

The Southern Aeronautical Association

The Southwestern Aeronautical Association of Fort Work, Texas, was recently incorporated under the laws of Texas with the following officers:

Board of Directors, Warren V. Galbrath, W. G. Burton, Major C. O. Elliott, Marshal Spoouts, Sam D. Triplett, J. H. Price and R. E. Lee Coston.

The Chairmen of Committees are Judge R. F. Milam, Law; Paul S. Hurley, Auditing; B. G. Leake, Technical and Engineering; J. J. Langever, Signals and Ordnance; George C. Clarke, Exhibits; G. E. Vinnedge, Contests; Hunter L. Wilson, Reception; A. L. Jackson, Registrar; H. H. Martin, Library, and J. H. Price, Membership.

FOREIGN NEWS

By W. H. Phipps

Asia

Hongkong, June 18th, 1911.

Editor "AIRCRAFT."

I confirm my lines of the 18th ult., as per copy enclosed.

China—A native telegram from Peking states that the Chinese Government has ordered two Chinese students who are well versed in western knowledge to study the possibilities of aerial navigation in China with a view to purchasing aeroplanes or airships for the Chinese army.

Japan—Experiments were made with the Isobe naval airship off the coast of Yokosuka naval station. In the course of the flight the airship capsized and fell into the water. Commander Isobe, who was in charge, was picked up by a boat and taken ashore.

Yours very truly,
A. F. B. SILVA-NETTO.

Austria

On June 22nd Captain Umlauff succeeded in flying from Vienna to Budapest, the journey taking 2 hrs. 18 mins. The return journey to Vienna was made on the 24th ult., when the officer covered the distance in 18 mins. less time. Unfortunately, a large crowd had assembled to see the arrival, and Captain Umlauff found it extremely difficult to land his machine. In order to avoid running in the crowd, he had to bring it down so suddenly as to practically wreck it.

Algeria

The General Council of Algeria has decided to offer as a memorial to the late French Minister of War, Mons. Maurice Berteaux, a prize of $50,000 to the first aeroplane which shall cover 800 kilometres without a stop, carrying 1,000 kilograms of war material. The prize will be known as the Prix Berteaux and will be competed for in Algeria.

Argentine Republic

The Italian aviator, Signor Cattaneo, made a cross-country flight from Rosario to Buenos Ayres on June 26 without stopping, winning a prize of $5,000.

The distance is 188.27 miles. His time was three hours forty-nine minutes, making his average speed 51 miles an hour.

Signor Cattaneo previously attempted to go to Buenos Ayres, but was compelled to descend twice. A dispute ensued, and the givers of the prize finally consented that he should start again midway, but Signor Cattaneo ended the matter by starting again at Rosario.

He met an enthusiastic reception from the crowds that had gathered on the grounds of the Sociedad Sportiva.

Australia

Before he left Australia for London Senator the Hon. G. F. Pearce, Minister of Defence, announced his intention of arranging for an aerial fleet for Australia. There are indications that the Bristol biplane the value of which has been fully demonstrated here, will be among the most favored machines by the military authorities in Australia.

Belgium

Among the resolutions passed by the International Aeronautical Map Commission of the F. A. I. in the course of its recent sittings in Brussels, are the following:

It is indispensable to adopt a unique scale for the Aeronautical Map; the commission suggests that the 200,000th. be adopted.

The map is to be divided in accordance with the sexagesimal system. The sections will be cut from degree to degree as per the parellels and the meridians.

The geographical names will be printed in the language of each corresponding country; each section will bear on top the name of the principal city indicated on same. With a view of facilitating the assembling of the sections, each section will bear on its four sides the name of the adjacent ones.

England

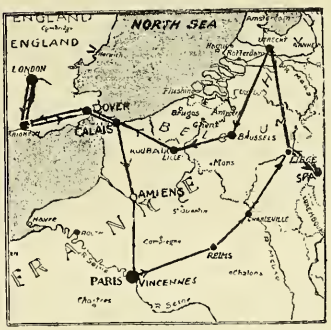
On July 1st Charles Terres Weymann, America's sole representative, won the Gordon Bennett Cup race at Eastchurch, Isle of Sheppy, on a Nieuport monoplane, covering the 150 kilometres in 1 hr. 11 mins. 36 1/5 secs., or at a speed of approximately 78 miles an hour.

Alfred Leblanc, on a Blériot, was second with a speed of about 76 miles an hour, while Nieuport, on a machine of his own make, was third with a speed of 75 miles an hour.

Only one accident marred the day's flying. Gustav Hamel, of the English team, sustained a severe shaking up when his Blériot monoplane dashed to the ground while he was making a turn at tremendous speed.

Expert opinion credits the cause of the accident to the shortening of the planes of the machine, which caused it to slide sideways on the turns.

CHARLES TERRES WEYMANN, THE AMERICAN, WHO WON THE GORDON BENNETT AVIATION CUP RACE AT EASTCHURCH, ENGLAND, JULY 1ST.



MAP OF THE COURSE OF THE EUROPEAN CIRCUIT RACE.

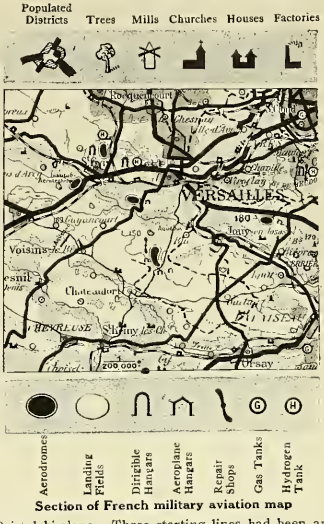
Of the English team the only contestant to complete the course was Alec Ogilvie in a British built "Baby" Wright. His speed was about 51 miles an hour.

France

The European Circuit Race.

In spite of the unfortunate beginning of the European Circuit Race more than a dozen aviators stuck to their task and succeeded in accomplishing the hardest aerial feat that has ever been attempted up to the present time. Out of the fifty-two entries for this race only seven completed the course without serious mishaps.

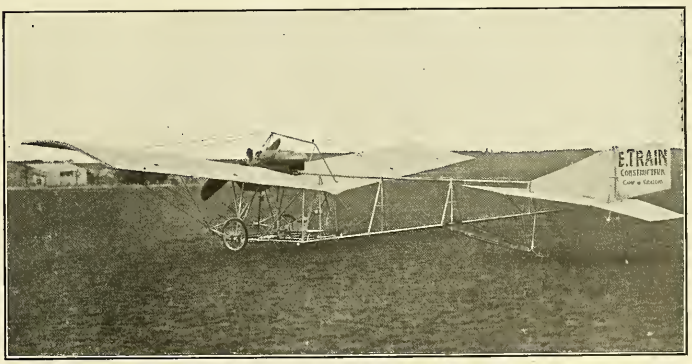
The race began from the aerodrome at Vincennes near Paris, on June 18th. The first to get away at six o'clock was Tabuteau on a British



Section of French military aviation map

Bristol bi-plane. Three starting lines had been arranged and were marked A, B and C. Aviators took their departure from each of the three tracks at two minute intervals so that there was an interval of six minutes at each line. Altogether forty-three out of the fifty-two competitors got away and twenty-one succeeded in getting through to Rheims without trouble.

A fatality, however, marred the starting operations. Le Martin, chief pilot of the Blériot School, was killed by his machine diving from a height of about 200 ft. The accident seems to have been caused through the controlling gear becoming out of order, as it does not seem probable that such a wonderful pilot as Le Martin could have lost control of the machine unless such were the case.



THE NEW TRAIN MONOPLANE, WHICH WAS FLOWN BY ITS DESIGNER, EMILE TRAIN, IN THE EUROPEAN CIRCUIT RACE. IN SPITE OF ITS LOW CENTRE OF GRAVITY, THIS MACHINE HAS PROVED ITSELF A REMARKABLE FLYER.

Two other participants, Princeteau and Landron, were burnt to death through their machines catching fire, while they were in the air. One other competitor was seriously injured, this being Lieut. Gaubert, who was flying a Morane monoplane under the name of Daiger.

The first to arrive at Rheims was Vidart on his racing Deperdussin monoplane and five minutes later he was followed by Vedrines, (Morane), Prevost, (Deperdussin), and the indefatigable "Beaumont" on his Blériot, Duval on a Caudron, Loridan (Henry Farman) was the next to arrive and was followed by the others in quick succession. Most of them did not stay long but departed as soon as possible to complete the day's stage at Liege. Vidart was again first to arrive there and his time for the course of 250 miles was 3 hrs. 9' 64", the second was Vedrines, Weymann on a Nieuport third, Beaumont fourth, Barra fifth, Duval sixth and Garros seventh on a Blériot.

On June 21st the competitors re-started for Spa at half-past seven. The first to get away was Vidart on a Deperdussin, followed by Vedrines, and these two being followed at short intervals by ten others. Several more made the trip during the day, and altogether fifteen got through, these including Vidart, Vedrines, Beaumont, Duval, Barra, Renaux, Gibert, Kimmerling, Amerigo, Prevost, Verrept, Le Lasseur and Train.

The fastest time was made by Vedrines, with Vidart second and Beaumont third. The third stage to Utrecht was undertaken on the 22nd, and ten competitors succeeded in getting through, with Gibert first, Garros second and Vidart third, while the others arrived in the following order: Beaumont, Weymann, Kimmerling, Train, Renaux on a Maurice Farman with a passenger, Tabuteau and Wynmalen.

On June 26th the weather was very bad, and it looked as if there was no possibility of the race being continued, but later in the day the conditions improved, and led by Beaumont, thirteen competitors progressed so far as Brussels. Beaumont was the first to reach the Belgium capital, followed by Kimmerling, Vedrines, Garros, Gibert, Duval and Renaux, while the other starters, Barra, Tabuteau, Train and Prevost, were delayed in the neighborhood of Breda. Wynmalen got to Brasschalt, near Antwerp, and Vedrines stopped at Malines. Wynmalen and Vedrines got to Brussels on the following morning.

The fifth stage, Brussels-Roubaix, was run off on June 28th. The first to arrive at Roubaix was Vedrines, who was followed by Garros, Kimmerling, Beaumont, Vidart, Renaux on a Maurice Farman with a passenger, Gibert and Valentine.

On the next day, June 29th, the aviators started from Roubaix to the next control at Calais. Here again Vedrines was first to arrive, and was followed by Vidart, Beaumont and Renaux. Most of the others had trouble on this stage and did not finish till the following day.

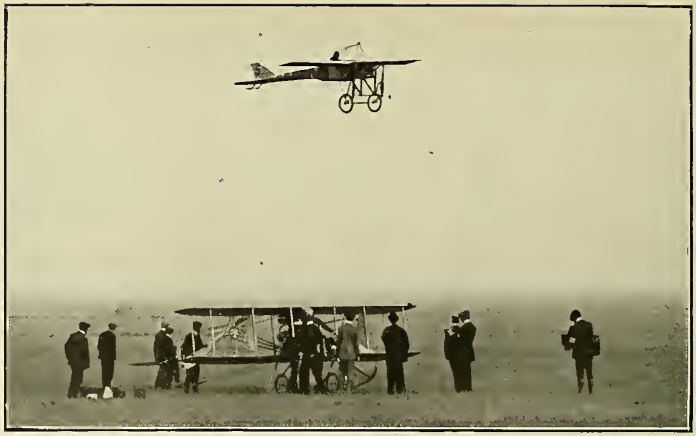
The seventh stage, from Calais to Dover, was postponed until July 3rd on account of some of the aviators having to take part in the International Aviation Meet in England.

The weather being fine on July 3rd, the aviators started to cross the channel, and the first to get to the English shore was Vedrines. Within an hour after his landing other aviators, looking like a great flock of birds, crossed the channel and landed within a short distance of Vedrines' machine. After replenishing their gasoline supplies at Dover the aviators started on the eighth stage of the race, from Dover to Shoreham, and here again Vedrines was first, followed by others at short intervals. From Shoreham the aviators flew into Hendon, near London, Vedrines being the first to arrive.

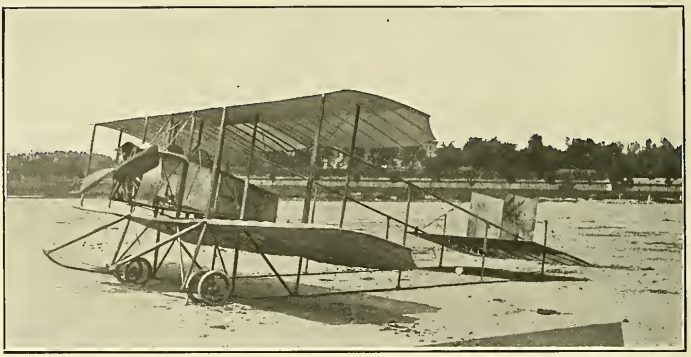
On July 5th the return journey from London to Paris was begun. Vedrines was again first to arrive at Dover, with Vidart second and Beaumont third. The others arrived in the following order: Gibert, Garros, Tabuteau and Renaux. The surviving aviators recrossed the channel from Dover to Calais, and on July 7th completed the last stage, Calais to Vincennes.

Beaumont, whose real name is Lieut. Conneau, was declared the winner, and receives about $50,000 as the result of his work. Garros was second and Vidart third. Vedrines, the winner of the Paris-Madrid race, who led through all the later stages of the contest, came to grief near Amiens and was compelled to give up. Kimmerling had motor trouble and was compelled to alight at Cologne, but effected repairs quickly and was soon in the air again and arrived at Vincennes Aerodrome at 10:15 A. M. The total time of the aviators to finish the race, counting only the time that they were flying, was: Beaumont, 58h. 36m.; Garros, 62h. 18m.; Gibert, 73h. 32m.; Kimmerling, 89h. 42m.; Vidart, 93h. 10m., and Renaux, 110h. 44m.

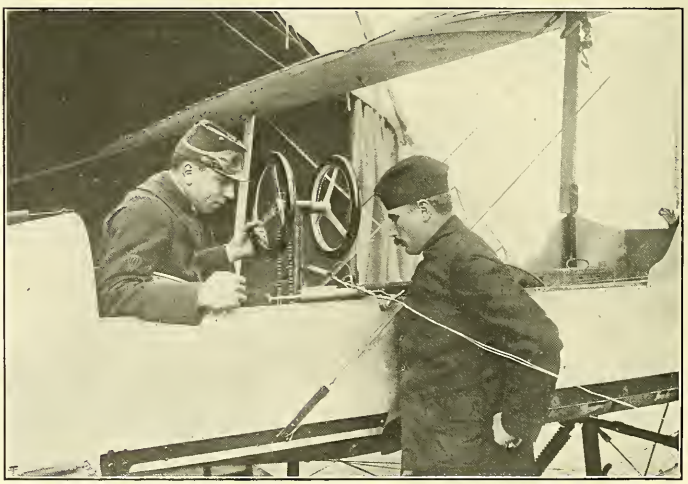
Vidart was the first man to arrive at Vincennes and received a splendid welcome, while Conneau, who officially won the race, finished fourth in the last stage, with Roland Garros second and Gibert third. Renaux on a Maurice Farman biplane was the only contestant to carry a passenger, and his flight was all the more wonderful when it is remembered that he used the same machine throughout the entire flight, while many of the other contestants changed their machines at the different stages.



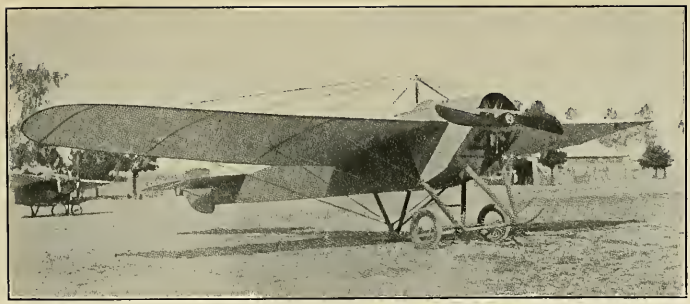
LEBLANC, WHO FINISHED SECOND IN THE GORDON BENNETT AVIATION CUP RACE, EASTCHURCH, ENGLAND, IS SEEN FLYING HIS RACING BLERIOT IN THIS CONTEST AND IS JUST PASSING OVER OGILVIE'S "BABY" WRIGHT RACER. NOTE THE SMALL PLANES OF THE BLERIOT, WHICH HAVE ONLY 97 SQUARE FEET OF SURFACE.



THE LATEST CAUDRON BIPLANE WHICH WAS FLOWN BY DUVAL IN THE EUROPEAN CIRCUIT RACE. NOTE THE LANDING GEAR, POSITION OF THE PILOT AND FLEXIBLE WINGS.



PRIVATE HENRI BREGI RECEIVING INSTRUCTIONS FROM LIEUT. LUDMAN, CHIEF OF THE MILITARY AVIATION SCHOOL AT DOUAI, BEFORE STARTING ON A MILITARY RECONNAISSANCE.



THE 70 H. P. GNOME DRIVEN CROSS-COUNTRY TYPE NIEUPORT WHICH WAS FLOWN BY WEYMANN IN THE EUROPEAN CIRCUIT RACE. NOTE THE MOUNTING OF THE MOTOR AND EXTRA HEAVY LANDING GEAR.

PUSHING AMERIGO'S R. E. P. MONOPLANE TO THE STARTING LINE OF THE EUROPEAN CIRCUIT RACE. NOTE THE SIMILARITY BETWEEN THIS MACHINE AND THE NIEUPORT.

Form 2 T W

COMPAGNIE FRANÇAISE DES CÂBLES TÉLÉGRAPHIQUES.

NEW YORK
25 BROAD ST., (TELWAYS AGEN'
TELEPHONE, 401 & 402 BROAD
PULITZER BUILDING, PARK ROW.
TELEPHONE 2065 BEEKMAN.
3 MERCER STREET,
TELEPHONE, 1236 SPRING.
1 WORTH STREET,
TELEPHONE, 304 FRANKLIN.
561 BROADWAY,
TELEPHONE 1258 SPRING.
66 FIFTH AVENUE,
TELEPHONE, 1004 STUYVESANT.
701 FIFTH AVENUE,
TELEPHONE, 287 MADISON SQ.
ORLEANS, MASS.
LOUIS A. LURIENNE,
MANAGER.

PARIS.
36 AVENUE DE L'OPERA.
LONDON
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2 MINCING LANE.
NEW BRIDGE STREET, E. C
BALTIC MERCANTILE AND
SHIPPING EXCHANGE, E. C.
24 SOUTHWORTH ST., S. E
36 VICTORIA STREET,
WESTMINSTER.
HAVRE.
40 RUE DE CHILOU
BREST.
30-32 RUE DE CHATEAU.
ANTWERP.
AGENCY 14 RUE VENUB.
ST. PIERRE, MIQUELON.

TIME, 3.21

DATE,

The following MESSAGE is received via CABLE *subject to the terms and conditions printed on the back hereof, which are ratified and agreed to.*

7 24 PARIS 18

LAWSON AIRCRAFT NY

WORLD S RECORD HEIGHT BEATEN BY LORIDAN ON HENRY FARMAN BIPLANE BY 3280 METRES

FARMOTORS

(10,758 ft.)

☞ Cable and Telegraph addresses registered at telegraph offices in any part of the World are available for the delivery of Cablegrams *sent* by this line. No inquiry respecting this Message can be attended to without the production of this paper. ***Repetitions of doubtful words should be obtained through the Company's offices, and not by DIRECT application to the sender.***

CABLEGRAM TO AIRCRAFT FROM HENRY FARMAN IMMEDIATELY AFTER HEIGHT RECORD WAS BROKEN.

Lieutenant de Malherbe, a French military aviator, recently flew 286 kilometres (177.8 miles) in one hour, forty-four minutes and thirty-five seconds. This is at the rate of 102.15 miles an hour.

Mons. Henry Farman has now designed a silent aeroplane. This newest of aeroplanes is also fitted with wireless telegraphy. The banishment of noise has been accomplished by the complete silencing of the powerful Renault engine.

At the Douai Aerodrome on June 15th, Lieut. Ludmann and Lieut. Fequant, on behalf of the French military authorities, accepted delivery of five Breguet biplanes. Each one was put through a test flight by either M. Breguet or Debussy, and attained an altitude of 600 metres, a speed of 95 k. p. M., with a useful load of 305 kilogs on board. Breguet, flying with the wind, attained a speed of 120 k. p. h.

On being appointed chief pilot at the new French Military Flying School at Rheims, Lieut. Girard was ordered by General Roques to transfer the machines at Mourmelon to Rheims by way of the air. A start was made on June 14th, when Lieut. Girard, in spite of a strong wind, piloted the first of the machines to the new school.

On June 14th, among the visitors to the Farman School at Buc, was Commandant Krebs, the director of the Panhard-Levassor firm. He was taken for a lenthy trip by Mr. Maurice Farman, who afterwards carried M. Defly, an engineer of the Panhard firm.

Recently at the Military Hospital of St. Cyr, Lieut. Loder, who was seriously injured in an aeroplane accident some time ago, was decorated with the Cross of the Legion of Honour.

Mounted on a Blériot monoplane to which he had fitted a 50-h. p. Viale engine, Dancourt, on June 21st, succeeded in flying from Orleans to Paris, a distance of 135 kiloms., in 1h. 19m. Before landing at the Issy Parade Ground, Dancourt continued on and circled the Eiffel Tower, so that there might be no doubt that he did actually reach the city of Paris.

During the week of June 25th a great deal of work was put in at the Deperdussin School, at Courey Betheny. On one day Chapel, after executing several figures of eight on a two-seater machine, fitted with a 50 h. p. Anzani engine, carried Lieut. Boncour and Madame Prevost for a short trip. Lieut. Porte and Mr. D. L. Santoni each made a cross-country trip on their small machine by way of training for the Daily Mail cross-country competition, for which they have entered.

Some very fine flights have recently been made at Issy with Blériot monoplanes fitted with Anzani engines. On June 22nd Anzani himself was flying for an hour on his Anzani Blériot, and Darioli on a Blériot, fitted with a 6 cyl. Anzani engine, made one or two good trials, as also did Sadi-Lecomte on a similar machine.

Germany

The dirigible balloon Parseval V., while undergoing repairs on June 26, caught fire and was destroyed. No one was injured.

The Parseval V. had been recently making passenger trips out of Berlin. On April 2 last the airship made a perilous descent at Halberstadt during a storm. The crew was compelled to rip the envelope and made a rough landing.

The Parseval V. was owned by the Aerial Trafefic Company, Limited, of Berlin, who purchased it from the builders, the Parseval Company.

Hirth, the German aviator, who with a passenger in his monoplane started from Munich at 7 P. M. on June 29th, arrived at Berlin at 9:08 the next morning. His actual flying time was 5 hours and 41 minutes for 345 miles. A stop over night was made at Nuremberg, and another landing was made at Leipsic. The airman wins a prize of $12,500. The express trains make this trip between Munich and Berlin in ten hours.

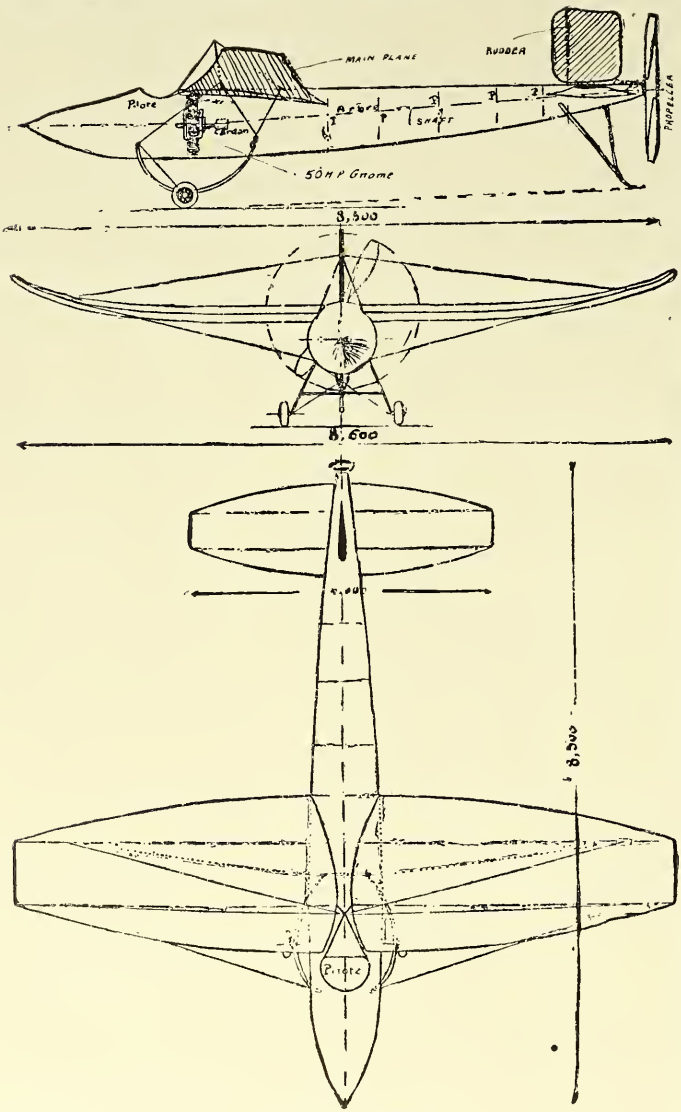
Hirth recently made a world's record for height with a passenger, ascending 5,182 feet.

Italy

Of the last days of the Turin flying week most flying was seen on June 22nd, when Fischer on a Henry Farman biplane, and Weiss on a Pivott monoplane, both made the round trip to Sagra St. Michael and back, a distance of 58 kiloms. Manissero on a Blériot won the speed contest, covering the 20 kiloms. in 14 mins. 34 2-5 secs., and Weiss was second. Cagno on a Farman, and Labouchere on a Zodiac biplane, both made trips with passengers, while flights were also made by Cobianchi (Farman), Ruggerone (Farman), and Neri (Antoinette). On the 23rd, Chevalier Neri on his Antoinette covered 100 kiloms. in 1 hr. 8 mins., and Mlle. Marvingt made a good trip, for which she was awarded the Ladies' Cup.

Table of Particulars of Starters in the Gordon-Bennett Race, together with their Times and Speeds

Pilot	Country	Machine	H. P.	Propeller	TIMES AND SPEEDS					
					5 Laps	10 Laps	15 Laps	20 Laps	25 Laps	Speed
					m. s.	m. s.	m. s.	m. s.	m. s.	m.p.h.
C. T. Weymann	United States...	Nieuport	100	Chauvière	14 7⅘	28 21⅕	42 51	57 17	71 36⅕	78.
A. Leblanc....	France	Blériot	100	Régy	14 49⅘	29 29⅘	44 23⅘	59 6	73 40	76.56
E. Nieuport....	France	Nieuport	70	Régy	14 46	29 32⅘	44 27⅘	59 39⅘	74 37⅘	75.62
Alec Ogilvie...	Great Britain..	Baby Wright...	50	Wright	21 43	42 53	63 36	84 4⅘	109 10⅘	51.58
M. Chevalier..	France	Nieuport	28	Régy	19 7⅕	37 56⅕	------	------	------	----
G. Hamel.....	Great Britain..	Blériot	100	Régy	------	------	------	------	------	----



TATIN-PAULHAN MONOPLANE.

The Tatin-Paulhan Monoplane

By Ladislas d'Orcy.

Paulhan has just turned out a monoplane which will probably revolutionize the construction of aeroplanes; the pilot sits in front of the body, the wing ends are tilted up and the propeller is in the rear! This novel machine was tested a week ago by Mamet, the former Blériot pilot and showed splendid qualities. It flew very steadily, made beautiful turns and glides and landed without a mishap; all this at the speed of 130 kilometres per hour which is certainly most remarkable. The success of this aero is due to Victor Tatin, the doyen of French aviators, who designed it according to the ideas he always preconised in the construction of aeronefs, and which, after many failures, proves to be right at last.

The body is spindle shaped and 8 metres 30 centimetres long. Its greatest diameter lies in the forepart where the motor is placed and realizes thus, what is called in aerodynamics, a good "projectile." It contains from fore to aft the fuel tank, the pilot seat, and the engine, a 50 H. P. Gnome which is placed almost underneath the wings, and drives the propeller at reduced speed through a gear and shaft transmission. The wings are trapezoidal and have each a length of 3 metres 80 centimetres and near the body a width of 2 metres, which decreases towards the ends to 80 centimetres. The wing ends are tilted up at their extremities: this is intended to assure automatically the lateral equilibrium. They are braced on both sides, on the upper side to the pilot cabin, and on the lower side to the landing gear. The rear part of the wings is flexible and permits the use of warping, though Tatin expects to do away with it completely after some trials, as the use of the tilted wings will assure the stability.

In the rear, there is a trapezoidal stabilizer, 4 metres spread and 1 metre 25 centimetres width near the body, which width decreases at the end to 50 centimetres. The rear part of this stabilizer is also flexible and acts as an elevation rudder. The direction rudder is above the body and in front of the propeller which is protected against rough landings by a skid. The landing gear consists of two wooden semi-circular skids which carry two wheels. While the fore part of these skids is fixed directly to the body, the rear part contains a shock absorber made of rubber rings.

This aero, which is evidently built for racing, marks a new path in the construction of flying machines. It is probable that Mr. Tatin will soon turn out a touring machine in which, however, he will have to reinforce his landing gear, which seems somewhat weak if we consider the rough landings an aeroplane has sometimes to endure.

Switzerland

A prize of $2,000 to be known as the Eynard Prize, has been offered for the first Swiss-built machine piloted by a Swiss aviator, which shall fly from one end of Lake Geneva to the other between certain points, making three stops on the way, on the surface of the lake and rising from it when restarting, within a distance of 1,000 metres from the stopping point. None of the stops must be of more than half an hour's duration. In this connection it is interesting to note that the Dufaux brothers are experimenting on the lake with an aeroplane adapted to rise from the surface of water. A prize will also be awarded at the end of the year to the aviator who makes the best time over the course under these conditions.

A non-stop flight from end to end of the lake of Geneva was made last summer by the elder Dufaux on their remarkable biplanes, which bears about the same relation to an Antoinette, in appearance, as a Goupy biplane bears to a Blériot.

NEWS IN GENERAL

New England News

By Denys P. Myers

The next meet on the aviation grounds at Squantum will not be held under the auspices of the Harvard Aeronautical Society, according to plans under way. It is felt that the society, being composed of undergraduates and therefore lacking permanent membership cannot successfully undertake such a task. It has therefore been decided to organize a corporation, to be known as the Harvard Aviation Association, with a capitalization of $50,000, to carry out the plans, make the meet worth while, and put it on a business basis. Some twenty-five or thirty well-known residents of Greater Boston, not all of them Harvard men, will be connected with the association. Adams D. Claflin, who was the business manager of last year's meet, is attending to much of the preliminary work.

Harry N. Atwood is considering a cross-country flight to begin some time in August, if he can make satisfactory arrangements, for the $50,000 Hearst prize. This flight he thinks he will make alone and should he undertake it he will probably start from the Pacific coast and fly east. In that way he would have the worst of the flying across the ranges of mountains at the beginning.

While Charles C. Witmer, one of the youngest aviators in the business, was attempting to make a turn on the aviation field at Allen farm, two miles east of Pittsfield, Mass., July 4, a gust of wind struck his Curtiss biplane, flopping it over, and it plunged with Witmer downward 150 feet. Witmer, with rare presence of mind, climbed out of the seat and over on top of the biplane before it struck the ground. The impact wrecked the biplane completely and seriously injured Witmer. He lost control of the biplane by the steering wheel failing to work. The plane seemed to whirl half around and then turned turtle. There were 1,500 persons on the aviation field when Witmer ascended.

Stewart Davis, of New York, covered a large part of Southern Rhode Island on June 30 in the dirigible Zodiac IV., carrying James J. Scott, of New York, as a passenger. Starting from Fort Philip Kearney, at Launderstown, the aeronauts circled Newport and Narragansett Pier and landed at Wickford. The aerial craft made a speed of about 30 miles an hour throughout the trip. The dirigible is 110 feet long and will carry three passengers. It is of the model used by Comte de la Vaulx, of Paris, and was used by Mr. Davis in his flight over the Eiffel tower in Paris several years ago.

The Burgess Company & Curtiss, of Marblehead, have delivered the Burgess-Wright biplane that it built for the United States Government. W. Starling Burgess went to the capital July 4 to test the machine before the Government's experts. The price which the War Department is to pay is $5,000, the same as is charged private parties for the standard type.

Washington News

By Mrs. Lulu Wells Smith

Actual flying has begun again at College Park and very properly under the army regime, the first flights were made by army men. Lieut. de Milling and Lieut. Henry Arnold gave the first exhibition flight on the afternoon of June 23. The first headless biplane to be seen on this field arrived the morning before, and was put together that afternoon, and was ready the next morning, the officers and men breaking all records in putting it together. These trial flights came in the nature of a surprise, and each day the young officers have been clearly demonstrating that they lost no time in taking advantage of all the opportunities offered at the Wright's school.

Each day witnesses a little higher altitude, some new stunt in the air, both lieutenants reaching a maximum of 800 feet daily, sometimes rising to 1,500 feet and gliding from a thousand. The first army pupils were Lieuts. Kirkland and Chanlee, who are proving themselves proficient. These flights, practically the only ones being made at College Park at present, have not been extending over twenty minutes, but recently the flyers have been essaying cross-country trips, extending from five to ten miles, preparatory to making a flight into Washington which is planned.

The latest innovation in the army camp is the football helmets which the army flyers are using during their flights. As it happens, these were invented by one of the pupils of the Rex-Smith School, Raul Le Mot, a well-known athlete and lately a recruit to the flying game.

General Allen has been a regular attendant at the flights, and the daily visitors so far are largely made up of army people, though a large contingent of society folk still in Washington motor out every afternoon or morning.

The camp here is in charge of Captain Charles de Forest Chanlee, and Lieut. Kirkland is in charge of the field. The hospital corps is in charge of Captain Kelly.

Strange enough, the first accident in the camp has come from an entirely unforeseen and outside force, when during a recent thunder storm Earl Wilson, the first enlisted aviator, was struck by lightning and was badly shocked.

The general get-in-readiness has not abated one particle, but rather enthusiasm is on the increase since the fine opening flights, and every one is hurrying to get in line.

Mr. H. C. Dorian, who has been assembling his Curtiss type biplane since he arrived from Blue Fields, announces that he will be ready soon to make the trip from here to Baltimore.

The Rex-Smith factory is in motion. The school of anxiously waiting pupils, however, is at present at a standstill, as the old machine, which has been under an unusual strain of hard use, is laid up for repairs, and the new machine is not yet finished. However, the Government flights are good object lessons and the fledglings are taking every advantage in gaining points about the art of flying as well as building.

Two Curtiss machines, with Lieuts. Beck and Ellyson as flyers, are expected to arrive here shortly, and with the other Government machines already flying and those being repaired, besides the machines to be tried out for the first time, there ought to be something doing through the next few months.

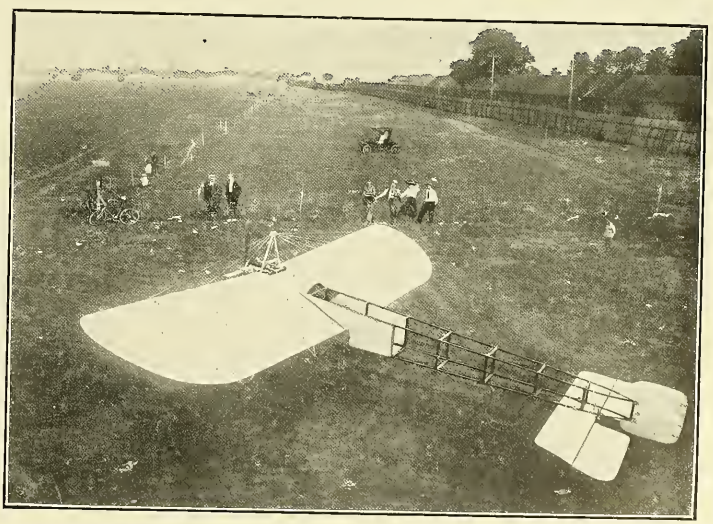
California News

Roy Truesdale, of Haywards, California, has made several successful flights in a home-made biplane of his own design and construction. Truesdale has perfect control of his craft when in flight.

The San Francisco Aero Club is putting the finishing touches on their new shed, which will house several large gliders. Flights will be made from the sand-dunes.

NATIONAL BALLOON RACE

BALLOON	Manned by	Landed at	Distance (Approx.)
New York	C. B. Harmon, pilot Augustus Post, aide	Fremont, Iowa	186
Kansas City	H. E. Honeywell, pilot John Watts, aide	Lindy, Iowa	193
Miss Sophia	W. F. Assman, pilot J. O'Reilly, aide	Franklin Park, Ill.	415
Topeka II.	F. M. Jacobs, pilot Ralph Emerson, aide	La Harpe, Ill.	210
Million Population Club.	John Berry, pilot Paul McCollough, aide	Lacrosse, Ind.	445
Buckeye	J. H. Wade, Jr., pilot Reuben Hitchcock, aide	New Holland, Ill.	288
St. Louis IV.	Lieut. Lahm, pilot Lieut. Hart, aide	Lapaz, Ind.	480



WILLIE HAUPT'S NEW CROSS-COUNTRY TYPE BLERIOT MONOPLANE, WHICH WAS BUILT BY THE AMERICAN SUPPLY HOUSE AND IS FITTED WITH A ROBERTS MOTOR.

Boston-Washington Flight

Atwood's Flight Stage by Stage.

Date	Miles
June 30—Boston to New London	135
July 1—New London to New York	133
July 4—New York to Atlantic City	110
July 10—Atlantic City to Baltimore	148
July 11—Baltimore to Washington	42
Total	568

On June 30th Harry N. Atwood set out from Boston on what proved to be a record flight. He left Squantum Field with a passenger at 7.15 a. m. in his Burgess-Wright machine, and flew to New Haven to witness the Yale-Harvard boat races. Upon arriving at New Haven he circled above the course before alighting in a field just outside the town, much to the delight of the many thousands who lined the shores. Later on, while the boat race was in progress, Atwood followed the crews with the Mayor as a passenger.

On the next day, July 1st, Atwood decided to continue his flight to New York, and accordingly early that morning he set out in his biplane accompanied by his mechanician, Fleet. He continued his flight without a stop to Astoria, a suburb of New York, where he landed and replenished his supply of gasoline before continuing to Governor's Island. Leaving Astoria, he headed down the East River until he was opposite lower New York and then he headed direct for the Singer Building, which he circled before landing on the island.

Deciding to continue his flight to Washington, he accordingly re-started on July 4th from Governor's Island at 9.11 a. m., and fought his way against a head-wind to Atlantic City.

He had a thrilling experience with the strong wind and was forced to land three times for gasoline. Atwood had figured in making Atlantic City by 11 o'clock, but it was after 2 before he finally managed to get there.

Two mishaps marred the start from Atlantic City and it was not till July 10th that Atwood, accompanied by Charles K. Hamilton, finally got safely away at 5.04 a. m., and continued with only one stop to Stemmer's Run, a little town near Baltimore, where they were compelled to stop at 9.25 on account of the heat and humidity, which affected the running of the motor.

Starting at 4.40 the next morning, Atwood and Hamilton set off on the last leg of the flight to Washington, and arrived at the College Park aerodrome at 5.45 a. m. For this flight Atwood received a trophy presented by the New York Times.

Nassau Boulevard News

What promises to be the most popular and successful aerodrome in the vicinity of New York is that recently established at Nassau Boulevard, Long Island. Already many flyers have located there and flying can be seen on almost any day that the weather permits. The following are already located at the aerodrome:

FLYERS AT NASSAU BOULEVARD.

Hangar No.

10. L. Lewkowitz—Blériot Monoplane.
11. Geo. Russell—Curtiss Biplane.
12. H. Moore—Curtiss Biplane.
13. Williams—Williams Biplane.
14. Queen Aeroplane Co.—Queen Monoplane.
15. Thos. Sopwith—Howard-Wright Biplane.
16. Queen Aeroplane Co.—Queen Monoplane.
17. C. R. Northwood—Biplane.
18. Twombly—Twombly Biplane.
19. Church Aeroplane Co.—Church Biplane.
20. Dietz Eason—Paraplane and Biplane.
21. Hortan—Hortan Biplane.
22. Hamilton—Hamilton Monoplane.
23. Islnar-Maynard—Islnar-Maynard Biplane.
24. Queen Aeroplane Co.—Queen Monoplane.
25. Wright Bros.—Wright Biplane.
26. Earle Ovington—Blériot Monoplane.
27. L. E. Scott—Curtiss-Scott Biplane.

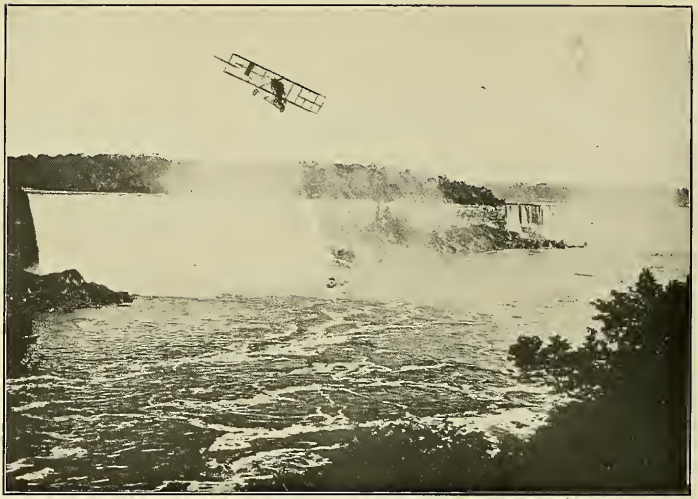
In addition to the above hangars there are eight more under construction which will be occupied as soon as completed.

Thomas Sopwith has been the star attraction during the last month and on almost every day he could be seen carrying passengers in his machine above the aerodrome.

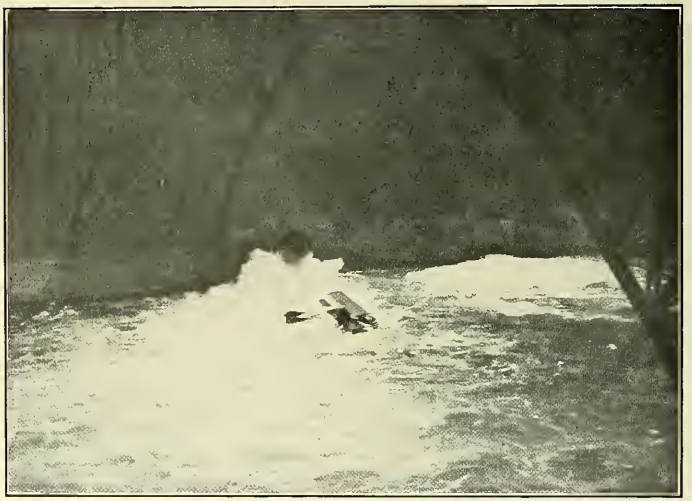
Ladis Lewkowitz has also been doing some fine work with his five-cylinder Anzani-Blériot and on one occasion he flew with it for 55 minutes at a height of about 4,000 feet, remaining up till his fuel gave out and then gliding down. Welch, of the Wright School, and Arthur Stone, of the Queen Aeroplane Co., have also been flying at the aerodrome.

Mineola

Activity still continues at Mineola and on almost any favorable day good flying may be seen at the field. Amongst those who have recently distinguished themselves at the grounds are: Dr. H. W. Walden and William Haupt, a well-known automobile racer. Dr. Walden flies an original American monoplane of his own design, fitted with a 4-cylinder 40 H. P. Hall-Scott motor and Requa-Gibson propeller. The machine has a front control which is interconnected with a flap on the rear of the tail plane (à la Farman). The oper-

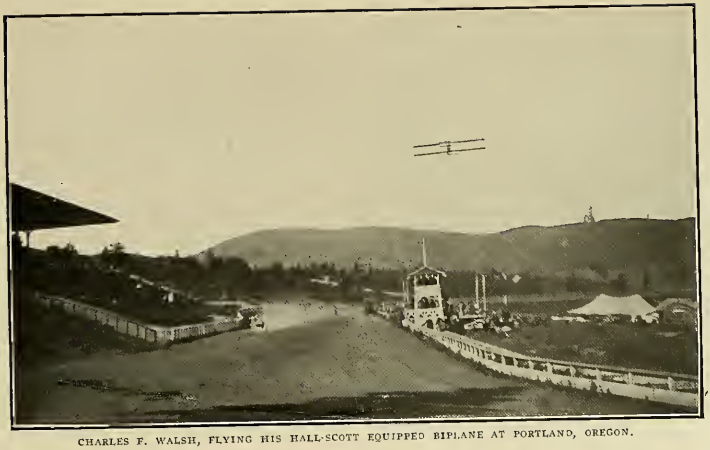


BEACHEY IN CURTISS BIPLANE FLYING OVER NIAGARA FALLS ON JUNE 28TH.

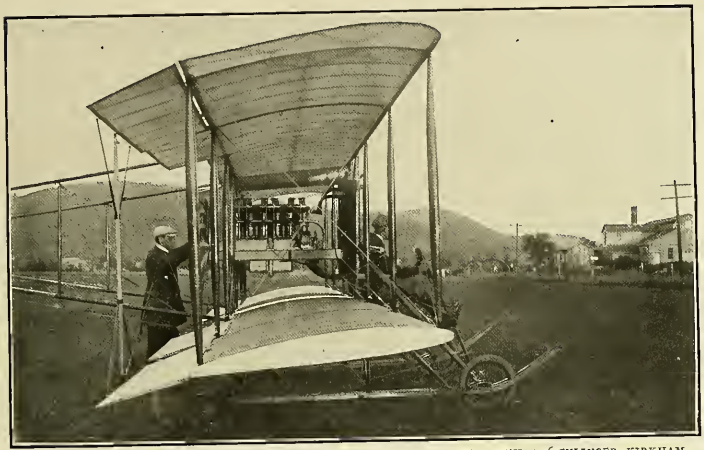


BEACHEY PASSING UNDER THE STEEL ARCH BRIDGE AFTER FLYING OVER NIAGARA FALLS.

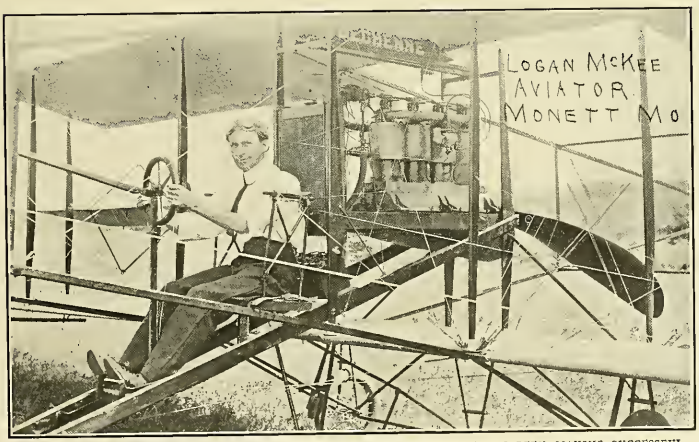
VIEW OF THE NASSAU BOULEVARD AERODROME, SHOWING SOME OF THE HANGARS.



CHARLES F. WALSH, FLYING HIS HALL-SCOTT EQUIPPED BIPLANE AT PORTLAND, OREGON.



SIDE VIEW OF THE THOMAS BROS. HEADLESS BIPLANE, WHICH IS FITTED WITH A 6-CYLINDER KIRKHAM MOTOR.



LOGAN MC KEE SEATED IN THE DE CHENNE AEROPLANE WITH WHICH HE HAS BEEN MAKING SUCCESSFUL FLIGHTS AT MONETT, MO.

ator sits in front and under the main plane, while the engine is situated in the rear and almost in line with the top plane. The landing chassis is of the rigid 3-wheel type, but it is so designed that the front wheel is normally clear of the ground.

One of the most interesting features of the machine is the peculiar curvature of the main wing, which is almost identical with that used on Weymann's Nieuport, with which he won the recent Gordon Bennett Aviation Cup race. This wing curvature was used on Dr. Walden's machine over a year ago. It entirely dispenses with the popular dipping edge and instead has a sharp upturned entering edge.

In recent trials the Walden monoplane has shown itself capable of high speed and also of making extended flights. On several occasions the machine has been flown across country for distances of twenty miles at heights of over 150 feet.

William Haupt has been making some splendid flights with a Blériot type machine made by the American Aeroplane Supply House of Hempstead, L. I., and fitted with a 40 H. P. Roberts motor. At almost his first trial with the new plane and motor he rose to a height of 800 feet and circled the field several times.

Captain Baldwin has been teaching pupils to fly his machine and already Hammond, his star pupil, can handle the machine like an expert.

Hadley and Blood have made alterations in their mammoth Roberts engined biplane and have been making practice flights with it, while Tod Shriver has fitted a new 8-cylinder Hall-Scott motor to his biplane and has been making some extended flights in it.

Roberts Motor Co.

The Roberts Motor Co. report a steadily increasing demand for their motors which have been giving excellent results in various machines throughout the country.

In St. Louis, Tom Benoist did some very nice flying recently with a Roberts motor, with which he expressed himself as being more than satisfied. He is able to rise with a run of 90 feet, which speaks well for the power of the motor.

The first flight made on the Chicago Aero Club's grounds was made with a machine constructed by the International Aeroplane Manufacturing Co., which was equipped with a Roberts motor.

William Haupt has fitted a Roberts motor to Blériot type machine made by the American Aeroplane Co., of Hempstead, L. I. At almost his first attempt with it at Mineola he rose to a height of 800 feet and executed several circuits of the field, which speaks well of these two American products. After only a few days' practice with the machine at Mineola he was out on the road giving exhibitions.

Kirkham Motor

Chas. B. Kirkham has now located in a new plant at Savona, N. Y., where he is employing a large force of men in turning out the new six-cylinder Kirkham motor for which there is a great demand.

The first of the new type motors was sold to Chas. J. Strobel and was used in one of his biplanes with such success that he has ordered two more for immediate delivery. An accompanying photograph shows the Thomas Bros. biplane which has been making successful flights with the new six-cylinder Kirkham Motor.

Notes

Dr. Walden has been making cross-country flights with a Brauner propeller, while Louis Rosenbaum has been flying a Brauner biplane with Brauner propellers at Cardinas, Cuba.

The Goff Aeroplane Company, of Chicago, Ill., reports a lively sale for their model aeroplanes and accessories. Their line comprises scale models of all the successful large machines together with a very complete list of inexpensive flying models constructed on the lines of the Blériot and Antoinette types. In addition to the model aeroplane line they manufacture all kinds of model supplies and accessories and these will be found listed in their fall catalogue, which will be sent to all interested parties.

Mr. P. A. Peterson, of New York, has been experimenting for some time past with models designed after insects. His experiments have led him to believe that insects do not flap their wings, but that they simply move them backwards and forwards obtaining their lift, owing to each edge of the wing presenting an upturned aeroplane surface.

The Shneider aeroplane, with Aviator Josef Richter, is doing some good flying at Belmont Park, L. I. Richter soared to a height of 2,000 feet, circled the field, made several figure eights and then flew cross country over Hempstead Plains and the surrounding towns, alighting again at Belmont Park. Richter is a pupil of the Shneider School. Mr. Shneider will have three machines ready within two weeks, which will also be sent out on exhibition work.

Amongst the recent successful aviators and firms who have purchased Requa-Gibson propellers are the following: Geo. H. Cove, Bridgeton, N. J.; W. C. Fairchild, Mineola, L. I.; L. Casser, Fort Bliss, Texas; M. F. H. Gouverneur, Wilmington, N. C.; International Aviation Co., Chicago, Ill.; Johnston Tractor Co., Sunnyvale, Cal.; Mathewson Auto Co., Denver, Colo.; Andrew Smith, Traverse City, Mich.; J. F. Smith, Fort Wayne, Ind.; Walden Dyott, Mineola, L. I.; C. B. Harmon, New York; Capt. Thos. S. Baldwin, Mineola, L. I.; J. J. Frisbie, New York; W. Evans, Kansas City; A. H. Williams, Douglas, Ariz.; W. W. Gibson, Victoria, B. C.; Louis J. Bergdoll Philadelphia, Pa.; N. J. Slavin, Los Angeles, Cal.; G. Schmidt, Rutland, Vt.; Aeronautical Supply Co., St. Louis, Mo.; C. A. Augustine, Traverse City, Mich.; A. F. W. McManus, San Antonio, Texas; S. S. Morrison, Newport, Ky.; W. E. Somerville, Coal City, Ill.; E. Blake, Boise, Idaho; J. J. De Praslin, St. Louis, Mo.; G. W. Thompson, Denver, Colo.; Hamilton Aero Mfg. Co., Seattle, Wash.; E. C. Hall, Plainfield, N. J.; Chas. Morok, New York City; Dr. Wm. Green; Mr. Hubbard; Hadley & Blood, Mineola, L. I.; Sellinger, Mineola, L. I.; Kimball, Mineola, L. I.; William Haupt, Philadelphia, Pa.; Queen Aeroplane Co., Fort George, N. Y.; Lewkowitz, Mineola, L. I.

H. K. & J. F. Sandell have constructed a monoplane of the German "Grade" type, but improved in the construction details. The frame is made entirely of special treated bamboo and is held together by peculiarly constructed clamps and joints on which they hold U. S. Patent No. 990,599, involving nine claims each of one basic in principle. They have subjected these joints to 2,000 lbs. tensional strain and they stood up perfect. The monoplane has 225 square feet surface, including the elevators, and without the motor weighs but 130 lbs. A very simple one lever control and an automatic stability or equalizer device, with a low center of gravity completes is used. The copyrighted name of "Touroplane" is used for trade mark. They are building a five-cylinder star shaped motor of the Anzani type, which will be ready soon. It will weigh about 130 lbs. complete. They are also building propellers of a special design to order, which have shown exceptional efficiency and are being used by such flyers as Mr. Otto W. Brodie, using a Gnome motor. Associated with them are Messrs. Champlin & Schoen, pattern and model makers of Chicago, and Mr. Eucil A. Stromberg.

The Vaniman Expedition

It has been definitely announced that Melvin Vaniman, chief engineer of the "America," in which Walter Wellman first essayed to reach the North Pole and which later was lost when he attempted to cross the Atlantic Ocean in it, will again attempt to fly across the ocean and this time in a ship which is being built according to his own ideas.

Perhaps no other man is more capable of accomplishing this stupendous feat than Vaniman, who a few days ago embarked for this country after completing his arrangements abroad. For twelve years he has been working with big dirigible balloons in connection with the different Wellman expeditions, exnerimenting with various types of engines and balloon fabrics, and this will be his first opportunity to apply his wide knowledge according to his own ideas.

His new dirigible, the parts of which are already being built, will be constructed of gas tight waterproof fabric made by the Goodyear Tire & Rubber Company, of Akron, O., and it will be equipped with two 105 H. P. sleeve valve Knight engines, designed by Charles V. Knight, formerly of Chicago. The expedition is being financed by Frank A. Seiberling, president of the Chamber of Commerce of Akron and of the Goodyear Tire & Rubber Co., as well, but he is assuming this obligation purely in the interest of science and it is a personal venture in no way connected with his other varied business interests. The total expense of the venture will be approximately $150,000.

A. SEIBERLING, PRESIDENT OF THE GOODYEAR TIRE AND RUBBER CO., WHO IS FINANCING THE VANIMAN DIRIGIBLE EXPEDITION.

The balloon is to be 268 feet long by 47 feet wide, approximately the size of "America," which was abandoned in mid-ocean by the members of the Wellman expedition last October. Its gas capacity will be 350,000 cubic feet and it will be capable of lifting 25,000 pounds.

Maximotor

Maximotor Makers, Detroit, report a large demand for their six-cylinder high powered engines from speed boat enthusiasts. These aviation engines are said to be unusually efficient for launches and hydroplanes. Their special campaign on the 40-50 h. p. motor put it within the reach of many more aviation initiates. The response in orders was very gratifying.

This firm took advantage of the recent International Aviators' Meet to install an instructive exhibit in the principal downtown street of Detroit, which attracted many thousands of visitors.

P. O. Parmalee, the Wright aviator, was out at Maximotor Makers' factory again to investigate the model 2. It is understood that Mr. Parmalee is planning to put two of this type Maximotor in his new Blériot monoplanes as soon as his contract with the Wright Brothers expires. He is an enthusiast on the remarkable economy shown in Maximotor construction.

Thomas Longo, well-known manager of the Longo Balloon & Biplane Co., of Danville, Ky., is delighted with the success of his new 'plane equipped with 40-50 h. p. Maximotor, in several recent flights. Mr. Longo, who for a long time has been heavily interested, with his eight or ten performers, in balloon exhibitions, is said to be contemplating going out on the road with an aeroplane troupe.

G. E. Schaefer, connected with the firm of F. A. Schaefer & Co., of Honolulu, H. I., importers, has his biplane all ready and waiting for the model 3, 50-60 h. p. Maximotor now on its way to him over the Pacific Ocean. Mr. Schaefer is understood to be the only Hawaiian to own an aeroplane.

Success of the E. J. Willis Company

The E. J. Willis Company in conversation with one of our representatives seem very well pleased with the business that is coming their way and are very optimistic about the future growth of the flying machine industry. Their sales in the six months from January 1st, 1911, to July 1st, 1911, aggregate five times the total amount since they entered the aeroplane supply field. They have always advocated the individual building his own machine and on these lines they have this year supplied the entire parts and fittings to a large number of private builders throughout the country. In addition they have also supplied many of the largest aeroplane building companies not only in this country but have shipped goods both to Europe and the Orient. They have issued a most complete catalog of aeroplane supplies, each article numbered so that the builder using their fittings and supplies is able to telegraph at any time or from any place the catalog number and receive immediate shipment to replace broken or missing parts, thus avoiding the very vexatious delays and anxiety occasioned by accidents, etc., that befall to the lot of the average aviator.

The Curtiss Aviators

Among the new pupils who have undertaken the task of learning to fly under the direction of Mr. Curtiss, of Hammondsport, is Lieut. John W. McClaskey, of the U. S. Marine Corps. Lieut. McClaskey has been on the retired list for some time, but recently re-entered active service on recruiting duty. He became deeply interested in the Curtiss aeroplane during the past winter on the Pacific coast, and determined that if he could so arrange matters to be relieved from active duty, he would learn to fly. He has joined the Curtiss camp at Hammondsport, and will take up the task of learning to fly immediately. Another pupil is Charles Norman, of Syracuse, N. Y.

Eugene Ely has been flying in a number of cities in the State of Montana recently. At Butte, which is some 5,000 feet altitude, Ely attracted an immense crowd, as his exhibition was the first ever seen in the great mining camp. He made flights on two days, ascending one day to a height of 4,000 feet above the ground, or 9,000 feet above sea level.

Glenn H. Curtiss has just sold another machine to the Army, to be used for a practice machine at College Park, Washington, D. C. The two machines sold to the U. S. Navy were delivered to the Government recently.

The official trials of the hydro-aeroplane which Glenn H. Curtiss built for the U. S. Navy, took place June 23rd and 24th on Lake Keuka, at Hammondsport, N. Y. There was quite a distinguished little party present to witness the trials, and also to see Lieut. T. G. Ellyson make the official test for his pilot's license from the Aero Club of America.

Capt. Washington I. Chambers, head of the Aeronautical Bureau of the U. S. Navy, together with Dr. F. A. Zahm, a noted authority on aeronautical subjects, and also president of the Aero Club of Washington, D. C., witnessed the demonstration and also saw the flight of the first Navy aerial pilot.

The flights of Lieut. Ellyson, both on July 1 and 2, were successful, and he fulfilled all requirements of the Aero Club for a pilot's license which was granted him by the club of New York. He covered a course of about ten miles on the Saturday evening, laid out in the form of a figure eight, and about fifteen miles on the Sunday, over the same course.

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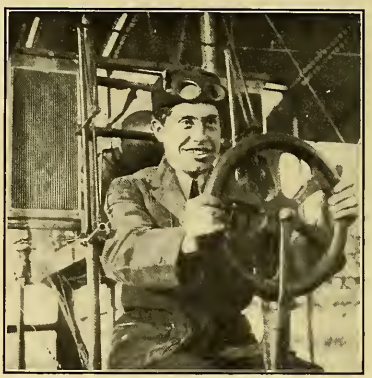

Thompson at the wheel of the Mathewson
Headless Bi-plane, Denver, Colo.

CHICAGO AEROPLANE MANUFACTURING COMPANY.

Elbridge Engine Company,
Rochester, New York.

CHICAGO, June 24th, 1911.

GENTLEMEN:—After a severe trial of your engine, extending over a period of three weeks, we beg to inform you that we are extremely pleased with its performance.

It should be of no little satisfaction to you to learn that the first cross-country flight in a Chicago-built aeroplane was made possible by the Elbridge motor. Flying with a four-cylinder Aero Special, our aviator, Harry E. Cowling, made a flight of nine minutes, covering over seven miles, an account of which you will find on the back page of AERO of June 24th; also a clipping from a Chicago paper enclosed herewith.

On June 18th, he made another flight of nearly fifteen miles over the city of Benton Harbor, Michigan, and surrounding towns.

We are pleased to advise you that if the motor continues to stand up and deliver the goods, we will adopt it as the standard of the Chicago School of Aviation, and will make it the regular equipment of our planes. In the assurance that we will not be disappointed in its future performances, we are this day placing an order for a second motor to be shipped at once.

Wishing you and the Elbridge Motor every success, we are, Very cordially yours,

CHICAGO AEROPLANE MANUF'G. COMPANY,
(Signed) B. E. ADAMS, *President.*

THE MATHEWSON AEROPLANE CO.

Elbridge Engine Co.,
Rochester, N. Y.

DENVER, COLO., June 21, 1911.

GENTLEMEN:—Thinking you might be interested in what we are doing with our new headless biplane, equipped with an Elbridge Engine, we are sending you to-day a clipping from the Denver "Times" entitled "King of High Altitudes," etc.; also a couple of photographs of Thompson in flight, which you may be able to use to your advantage.

We will give our next public exhibition at Gillett, Wyoming, on July 3rd and 4th, and will wire you direct from there our success.

Yours very truly,
THE MATHEWSON AEROPLANE CO.,
(Signed) E. L. MATHEWSON, *President.*

Write to-day for complete catalogue of Elbridge Aero Engines and copy of booklet, American Amateur Aviation

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AIRCRAFT

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On July 8th, Lewkowicz, with 50 H. P. Anzani, left Nassau Boulevard, L. I., and flew all over New York at an altitude of 9000 feet (this is the first time an aeroplane flew over this City) landing in New Jersey because of lack of gasolene.

On July 31st, at Mineola, de Murias won his pilot's license with a 1911 type 3-cylinder 30 H. P. Anzani Motor.

Miss Harriett Quinby, the first woman aviator to get a pilot's license in this country won it with a 1911 type 3-cylinder 30 H.P. Anzani, at Mineola, July 31st.

The 1910 Michelin Cup was won by M. Tabuteau with a Renault Motor. Distance 363 miles in 7 hours 45 minutes.

The Michelin Grand Prize was won by M. Renault with a Renault Motor. Distance 225 miles in 4 hours 56 minutes.

The Gordon Bennett Cup Race was won by Weymann with a 100 H. P. Gnôme Motor.

The Daily Mail prize was won by Lieut. Conneau with a 50 H. P. Gnôme.

On August 9th, Vedrines with a 50 H. P. Gnôme flew 496 miles in 7 hours 56 minutes, breaking the record for a single long distance flight.

On July 27th, St. Croix Johnstone broke the American record for distance and duration by a flight of 4 hours 2 minutes with a 50 H. P. Gnôme.

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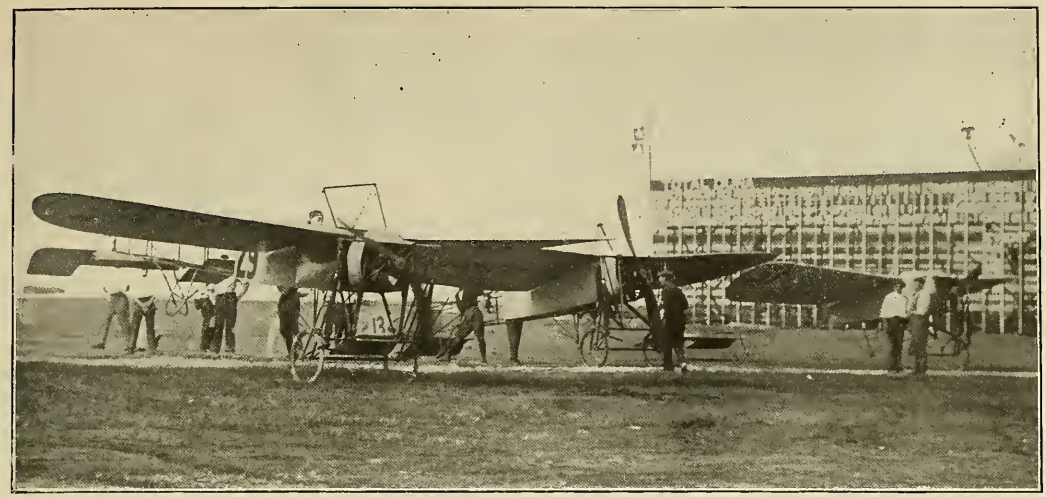

A MONOPLANE RACE AT CHICAGO: SIMON STARTING, OVINGTON AND SOPWITH AWAITING THE SIGNAL.

CONTENTS—SEPTEMBER, 1911

AIRCRAFT

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AIRCRAFT

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THE CHICAGO AVIATION MEET

THE Chicago Aviation Meet passes into history as one of the greatest affairs of the kind ever held in America, or perhaps the world.

Conceived by Horace Wild, and made possible by the great generosity and influence of Harold McCormick and the hard work of a score of his able assistants, the Meet was a success in almost every particular except financially, and as the object was not to make money, but to advance the science of Aviation and introduce to the people of Chicago the adaptability of flying machines, the purposes for which Meet was organized were attained.

Never before in the history of Aviation in America were so many able flyers gotten together, nor performed better than on this occasion, and never before did so many people witness flying as here; it being estimated that from 2,000,000 to 2,500,000 people witnessed the Meet during the entire nine days. In mentioning these figures, repeaters are not included, for during no day were there less than 300,000 people present, and it ran as high as 600,000 people on the best days. Of course, the most of these were free spectators.

The organizers of the Meet, on the whole, did splendid work.

The work of James S. Stephens, Chairman of the Grounds Committee and Chief Engineer of the Meet, was stupendous, and too much credit cannot be given to him for the great work he accomplished in making the field at his disposal a fit place to fly from.

HAROLD F. McCORMICK, CHAIRMAN OF THE FINANCE COMMITTEE INTERNATIONAL AVIATION MEET ASSOCIATION.

Grover F. Sexton, Chairman of the Co-operation and Attendance Committee, did admirable service, while James E. Plew, Chairman of the Executive Committee, worked heroically from the beginning to the end of the Meet.

There could have been no better work accomplished than that by B. J. Mullaney, General Manager of the Meet.

One man who did a great deal to help make the Meet a success was George F. Campbell Wood, Secretary of the Aero Club of America, who not only acted as one of the judges, but whose advice and work went a long ways toward making the entire program a success.

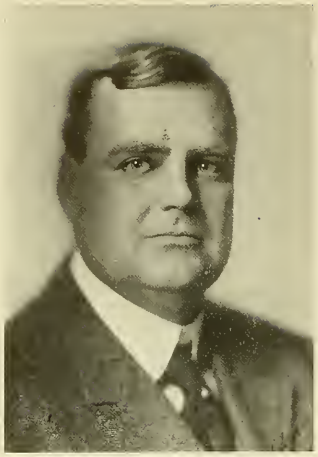
Major Samuel Reber, Chairman of the Contest Committee of the Aero Club of America, and James A. Blair, Vice-President of the Aero Club of America, were much in evidence and did splendid service.

What threatened to be an interruption to the meet in the beginning—an injunction by the Wright Company—was probably averted by the diplomacy of Alfred W. Lawson, who, after all negotiations between the Wright Company and the International Aviation Meet Association had been broken off, succeeded in arranging matters whereby the Wright aviators became participants of the Meet on the same terms and conditions that all the other aviators were entered. The Wright Company, however, did not relinquish their rights to bring suit against any member of the Meet Association or aviators whom they might consider offenders. This they did on August 16, when summons were served on the members of the Executive Committee to appear in court on the first Monday in October.

This action could have been avoided by the Executive Committee, through the acceptance of a very liberal offer made by Mr. Lawson for the Wright Company, whereby a reasonably small sum of money—exclusive of the aviators' prize money—would have been put in escrow until the full status of the Wright patent claims were decided by the courts.

The majority of the members of the Executive Committee of the Meet Association refused to consider the proposition, however, and decided to abide by whatever consequences might result from their action. However, whatever the outcome, the Meet itself was a decided success, and will do much to stimulate interest in Aviation throughout America.

H. W.



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IMPRESSIONS OF THE BIG MEET

By G. F. Campbell Wood

THE greatest aviation meet ever held came to a close at Chicago on August 20th, and as the final cannon boomed the closing hour a monoplane leaped skyward from the starting enclosure and, for a few last laps, swept around the course at fifty-four seconds to the mile, bearing the meet's greatest victor—Tommy Sopwith—as pilot, and the man who made the meet possible—Harold McCormick—as passenger.

A few moments later a biplane, barely discernible in the waning light, glided silently into the lower reaches and grounded before the sheds; from it stepped the cleverest flyer of the day—Lincoln Beachey—and between its planes hung the instrument with the proof that it had carried him into the sky higher than any motor-driven craft had ever climbed and, with fuel exhausted, had slid through these eleven thousand, six hundred feet of air with nothing but its own design and the brain within it to counteract the ruthless call of outraged gravity.

It was a great meet, and there was hardly a thinking human among those present at its finish who did not realize that he was witnessing the close of another brilliant chapter of the far-from-finished history of America's share in giving man wings.

The meet cost its organizers some fifty or sixty thousands of dollars, and this they cheerfully paid, satisfied they had furthered the education of their fellow-citizens and helped to maintain the speed of mechanical flight's uninterrupted progress.

And now, leaving generalities aside, what were the results and lessons of Chicago? The first point which stands out is that on a course a mile and a third in perimeter, three to four hundred feet wide with an infield but six hundred feet across, thirty-two men competed in machines of various makes and speeds and in winds from every direction and of every quality.

A year ago the combination of this small track, narrow course, sharp turns, large entry and big prizes would have made anything like safe flying impossible; that not a man sustained a bruise or a scratch attributable to any one of these danger factors means Progress with a capital P—progress in design, progress in motors, progress in handling.

The elongated heptaginal course brought out a great struggle between speed and control; in the early days of the meet Beachey and Simon both beat competitors swifter than they, through their sterling work at the pylons, but as the meet wore on the speed men did better and better until in the final races on the last day Ovington, Sopwith and Ely were reeling off laps between 1′ 21″ and 1′ 24″, Ovington finally negotiating the circuit in 1′ 20⅔″—practically a mile a minute officially!

The open speed races proved of exceptional interest, the banking of the Curtisses almost making up for the extra speed of the "seventy" Blériots and repeating the lesson of the Gordon Bennett Cup-race, so well set forth by Grover Cleveland Loening in his recent remarkable contribution to the *Scientific American*. In the over-water races the monoplanes had it, of course, their own way; of the two "seventies"—Sopwith's and Ovington's—the latter's appeared to be a shade the faster; he gave Sopwith a practical fly-over in several of the events. gave Sopwith a practical fly over in several of the events.

Simon's flying on his old Belmont Park "fifty" was, as expected, one of the features of the meet, and it is certainly a pity that illness kept his teammate, Barrier, from giving a similar exhibition of perfect airmanship.

Of the other monoplanes, the Queens did not appear to be properly tuned up for the fray, the Morane was new to its driver, Cummings' Blériot was well flown by Ovington and the record-holding Moisant was creditably flown by Johnstone until his tragic fall.

When it comes to biplanes, let it first be understood that at Chicago there were between three and four biplanes to every monoplane. When the weather was half-way good, the sky was literally full of Wrights and Curtisses; looking upwards the great twin screws of the former could be seen on every side glittering in the sun hour after hour as Rodgers, Beatty, Brindley, Welsh, Gill, Parmelee, Turpin, Coffyn and others tenaciously strove for duration or altitude, while Beachey, Ward, Ely, Beck, Witmer on their swifter machines were in constant evidence and McCurdy, Frisbie on their Gnôme-driven biplanes and Captain Baldwin, Mars, Hammond and poor Billy Badger on the Hall-Scott engined "Red Devils" also contributed their share of flying.

Because they did not fly on Sundays the regular Wright men were hopelessly beaten for duration by the newly-fledged independent Wright flyers, three of whom—Rodgers, Beatty and Brindley—finished in the lead in this order.

Beatty's, Welsh's and Parmelee's main contributions to the sporting success of the Chicago meet can be found in the list of records made there.

Ovington and Ely had the swiftest monoplane and biplane respectively, and Sopwith and Beachey were the most consistent prize winners. Sopwith studied his programme carefully and with two machines (both of which he was entirely unfamiliar with one week before the meet) ran up his winnings to $13,520.

As to Beachey—believers in "safe and sane" flying would naturally feel prejudiced against a man who would fly over the falls and down the gorge at Niagara, but the man compels one's unstinted admiration by his admirable control, and his precision and accuracy give one a glimpse of what the future may have in store for all of us when machines are to present-day machines what Beachey as a flyer is to the open-mouthed thousands gazing at him from below.

Beachey's final flight, when he broke the world's altitude record, was, without question, one of the finest performances in the annals of aeronautic competition, and this is not saying little at a time when wonderful air feats are the order of the day; to put the matter bluntly, Beachey succeeded in staying off the ground for two hours with gasoline for but one and three-quarter hours' flying.

He left the ground at 5:03 P. M. and immediately began a steady climb, hastening to reach the record height before his fuel ran out. This he just succeeded in doing, reaching Captain Félix's great altitude two minutes before his tank ran dry. His motor stopped just an hour and forty-five minutes after he had left the ground and while the Curtiss was still climbing strongly; in fact the gradient of the line of the barograph record at this point indicates that this machine and motor are good for fourteen thousand feet or more.

Beachey came down from this height of nearly two and a quarter miles in just fifteen minutes, which, by necessity, is, of course, the longest glide on record. It is probable that if his engine had been going he would have come down considerably faster, as Beachey is a man who uses his motor more to help gravity than to counteract it when descending from great heights.

When all corrections for temperature, air humidity, latitude and altitude of starting point had been made to the barographic record it was found that Beachey had reached a point 11,642 feet above the aerodrome—which means about 12,300 feet above sea-level.

Lincoln Beachey thus becomes the holder of the world's altitude record with 3,500 metres (this record, as is well known, is only recognized for even hectometres).

(*Continued on page* 232)

J. C. Mars, the popular Baldwin biplane pilot, about to start on one of his many speedy flights around the course. It will be noticed that Mars is now using a very heavy head gear which becomes a great protection in case of an accident. Mars will shortly leave America for another tour of Asia with Captain Tom Baldwin. The above picture certainly proves the falsity of recent sensational newspaper reports to the effect that Mars had been killed while flying.

Miss Cecil McLean waving a pleasant adieu to Oscar Brindley, who has just started up for an altitude flight. Brindley flew a Wright machine and finished third in Total Duration. He had just graduated as an air Pilot a few days before the meet. The large number of beautiful women who attended the meet and begged to be taken up for air trips were quite noticeable.

Andrew Drew, one of the latest recruits among the Wright biplane pilots. Mr. Drew owns his own machine and works independently of the Wright Company. He is a most promising young recruit to the ranks of air pilots. Mr. Drew gives Walter Brookins credit for teaching him almost all he knows about flying. He hopes to become as great a driver as his teacher in the near future.

Upon Atwood's arrival at the Chicago Meet during his remarkable flight from St. Louis to New York, he was accorded a hearty reception by not only the great crowd of spectators but also by the leaders of the meet. This picture shows him held high in the air upon the shoulders of Harold F. McCormick and Alfred W. Lawson, who carried him from the place where he landed to the front of the grand stand and judges box.

The above picture gives but a faint idea of the great crowd which was in daily attendance at the meet. This is but a very small portion of the stands which were built to seat 70,000 people, including of course, the 26,000 free seats which it was necessary to give to the public owing to the meet being held on public property. At the southern end of the field, where the free seats were located, was a hill upon which fully 100,000 people were stationed each day. It is estimated that from 300,000 to 600,000 people watched the flights daily.

This picture shows the crowd in one corner, the seating capacity running in a northerly direction from this point as far as the eye can reach. To the right will be noticed the sky scrapers along Michigan avenue, the windows and roofs of which were invariably crowded with spectators.

Mrs. Eugene Ely and Mrs. J. C. Mars watching their celebrated husbands maneuvering in the air. These ladies were always present during the flying hours of the meet.

A Curtiss hydroaeroplane being made ready for a flight. This machine was flown almost exclusively by Hugh A. Robinson, who did some exceptionally good work both on the water and in the air with it. From a sportsman's standpoint this type of machine no doubt will become immensely popular in the future.

Arthur Stone about to start with a passenger in his two-seated Queen monoplane. Mr. Stone was much in evidence during the meet and did some very spectacular work.

A group of well-known aviators photographed upon their arrival in Chicago. Reading from left to right: Horace Wild, Lee Hammond, John J. Frisbie, René Simon, Chas. K. Hamilton, William R. Badger, J. C. Mars, René Barrier.

View showing the great activity in front of the hangars during the course of one of the flying days at the Chicago Meet. Only the aviators, their mechanics and those belonging to the inner circle of the aeronautical movement generally, were permitted within this enclosure. The rear of the hangars, however, were so arranged that the public, by paying an admission, could look through and observe what was taking place within the hangers. This style of hanger was originated by James S. Stephens, the Chief Engineer of the meeting.

List of Aviators, Machines and Prize Winnings

Number.	Name.	Machine	Motor	Total Duration H.	M.	S.	Duration Money at $2.00 per min.	Amount won in prize money.	Difference due aviators.
1	Badger, Wm. R.	Baldwin biplane	60 H P 8 cyl. "Hall-Scott."	2	28	00	$ 296.00		$ 18.63
2	Baldwin, Thos. S.	Baldwin biplane	60 H P 8 cyl. "Hall-Scott."		28	02	56.07	$ 400.00	
4	Beachey, Lincoln	Curtiss biplane	60 H P 8 cyl. "Curtiss."	14	33	05	1,746.17		56.07
5	Beatty, W. G.	Wright biplane	30 H P 4 cyl. "Wright."	24	21	58	2,923.93	11,162.00	
6	Beck, Capt. Paul W.	Curtiss biplane	50 H P 8 cyl. "Curtiss."	1	03	53	127.76	6,625.00	
7	Brookins, Walter	Wright biplane	30 H P 4 cyl. "Wright."	2	38	11	316.37	400.00	
8	Bonney, Leonard	Wright biplane	30 H P 4 cyl. "Wright."		9	19	18.63		316.37
9	Coffyn, Frank T.	Wright biplane	30 H P 4 cyl. "Wright."		58	56	117.86	150.00	
11	Drew, Andrew	Wright biplane	30 H P 4 cyl. "Wright."		17	13	34.43	150.00	
12	Ely, Eugene	Curtiss biplane	70 H P 8 cyl. "Curtiss."	7	28	13	896.43	4,172.00	
13	Ovington, Earle L.	Curtiss & Blériot	60 H P Curtiss & 70 H P Gnôme.	5	04	49	609.63	5,400.00	
14	Frisbie, John J.	Curtiss biplane	50 H P 7 cyl. "Gnôme."	2	49	43	339.43	1,500.00	
15	Gill, Howard	Wright biplane "Baby"	30 H P 4 cyl. "Wright."	3	45	17	450.56	1,950.00	
16	Hammond, Lee	Baldwin biplane	60 H P 8 cyl. "Hall-Scott."	1	51	46	223.53	550.00	
18	Johnstone, St. Croix	Moisant monoplane	50 H P 7 cyl. "Gnôme."	4	56	36	593.20	300.00	293.20
19	Mars, J. C.	Baldwin biplane	60 H P 8 cyl. "Hall-Scott."	2	44	08	328.27		328.27
20	Martin, Jas. V.	Grahame-White biplane	50 H P 7 cyl. "Gnôme."	2	03	43	247.43	250.00	
21	McCurdy, J. A. D.	McCurdy biplane	50 H P 7 cyl. "Gnôme."	2	55	55	351.83	1,900.00	
22	Mestach, George	Morane monoplane	50 H P 7 cyl. "Gnôme."	3	53	48	467.60	450.00	17.60
23	Brindley, Oscar A.	Wright biplane	30 H P 4 cyl. "Wright."	23	44	54	2,849.80	2,851.00	
24	Parmelee, Phillip O.	Wright biplane	30 H P 4 cyl. "Wright."	5	04	08	608.26	3,951.00	
25	Lewkowicz, Ladis	Queen monoplane	50 H P 7 cyl. "Gnôme."		55	51	111.70		111.70
26	Robinson, Hugh A.	Curtiss hydroaeroplane	70 H P 8 cyl. "Curtiss."	27	00	16	3,240.53	10,785.00	
27	Rodgers, C. P.	Wright biplane	30 H P 4 cyl. "Wright."	9	55	47	1,191.56	4,550.00	
29	Simon, René	Blériot monoplane	50 H P 7 cyl. "Gnôme."	9	14	56	1,109.86	13,520.00	
31	Sopwith, Thomas	Blériot & Wright	70 H P Gnôme & 30 H P Wright	1	01	28	122.93		122.93
32	Stone, Arthur	Queen monoplane	50 H P 7 cyl. "Gnôme."	4	21	07	532.23	450.00	72.23
33	Turpin, J. C.	Wright biplane	30 H P 4 cyl. "Wright."	20	36	34	2,473.13	2,913.00	
34	Ward, James	Curtiss biplane	60 H P 8 cyl. "Curtiss."	19	49	46	2,379.53	5,621.00	
37	Welsh, A. L.	Wright biplane	30 H P 4 cyl. "Wright."			18	.60		.60
38	Lewkowicz, Ladis	Queen monoplane	60 H P 8 cyl. "Curtiss."		13	38	27.27		27.27
39	Witmer, Chas. C.	Curtiss biplane	50 H P 7 cyl. "Gnôme."						
				206	31	18	$24,782.53	$80,000.00	$1,364.87

American Records Made at Chicago

SPEED.

Time on a given distance.

Aviator and one passenger.

Kilom.	Holder.	Date	Machine.	Time.
10	T. O. M. Sopwith	August 17, 1911	Blériot	7 min. 50 sec.

Aviator and two passengers.

5	T. O. M. Sopwith	August 15, 1911	Wright	6 min. 56 2-5 sec.

Greatest speed obtained, whatever the length of the flight.

Aviator and one passenger.

Holder.	Date	Machine.	Miles per hour.
T. O. M. Sopwith	August 17, 1911	Blériot	57.785

Aviator and two passengers.

T. O. M. Sopwith	August 15, 1911	Wright	31.497

GREATEST DURATION.

Aviator and one passenger.

Date.	Holder.	Machine.	Duration of flight.
August 12, 1911	A. L. Welsh	Wright	2 hrs. 04 min.
" 12, 1911	G. W. Beatty	"	2 hrs. 11 min. 35 sec.
" 19, 1911	G. W. Beatty	"	3 hrs. 42 min. 22 1-5 sec.*

Aviator and two passengers.

August 12, 1911	F. T. Coffyn	Wright	4 min. 20 sec.
" 13, 1911	T. O. M. Sopwith	"	1 hr. 10 min. 26 sec.
" 13, 1911	G. W. Beatty	"	1 hr. 18 min. 22 sec.

GREATEST ALTITUDE.

Aviator alone.

August 18, 1911	P. O. Parmelee	Wright	10,837 feet
" 20, 1911	Lincoln Beachey	Curtiss	11,642 feet*

CLIMBING.

Aviator alone.

Metres.	Date.	Holder.	Machine.	Time.
500	August 13, 1911	T. O. M. Sopwith	Blériot	4 min.
500	" 19, 1911	René Simon	"	3 min. 35 sec.*
		T. O. M. Sopwith	"	3 min. 35 sec.*

WEIGHT CARRYING.

(*More than one minute.*)

Date.	Holder.	Machine.	Weight.
August 19, 1911	P. O. Parmelee	Wright	458 lbs.

* WORLD'S RECORD.

Order of Flyers in Totalization of Duration

Program number.		
27	Rodgers	27 hrs. 00 min. 16 sec.
5	Beatty	24 hrs. 21 min. 58 sec.
23	Brindley	23 hrs. 44 min. 54 sec.
34	Ward	20 hrs. 36 min. 34 sec.
37	Welsh	19 hrs. 49 min. 46 sec.
4	Beachey	14 hrs. 33 min. 05 sec.
29	Simon	9 hrs. 55 min. 47 sec.
31	Sopwith	9 hrs. 14 min. 56 sec.
12	Ely	7 hrs. 28 min. 13 sec.
13	Ovington	5 hrs. 04 min. 49 sec.
24	Parmelee	5 hrs. 04 min. 08 sec.
18	Johnstone	4 hrs. 56 min. 36 sec.
33	Turpin	4 hrs. 21 min. 07 sec.
22	Mestach	3 hrs. 53 min. 48 sec.
15	Gill	3 hrs. 45 min. 17 sec.
21	McCurdy	2 hrs. 55 min. 55 sec.
14	Frisbie	2 hrs. 49 min. 43 sec.
19	Mars	2 hrs. 44 min. 08 sec.
7	Brookins	2 hrs. 38 min. 11 sec.
1	Badger	2 hrs. 28 min. 00 sec.
20	Martin	2 hrs. 03 min. 43 sec.
16	Hammond	1 hr. 51 min. 46 sec.
6	Beck	1 hr. 03 min. 53 sec.
32	Stone	1 hr. 01 min. 28 sec.
9	Coffyn	58 min. 56 sec.
26	Robinson	55 min. 51 sec.
2	Baldwin	28 min. 02 sec.
11	Drew	17 min. 13 sec.
39	Witmer	13 min. 38 sec.
8	Bonney	9 min. 19 sec.
38	Lewkowicz	18 sec.
	Grand Total	206 hrs. 31 min. 18 sec.

(*Continued from page 229*)

The hydraeroplane was the great attraction it deserved to be; the future of this type of air-craft becomes more obvious every day, and its demonstration is not the least point on which Glenn H. Curtiss can pride himself at a meet at which his biplanes covered themselves with glory.

In referring to accidents here, the writer fears he is not following the emphatic precedent set by some Chicago newspapers, which *headed* every account of the flying with a "Summary of Accidents" and followed this with a detailed description of each and every one, all of them, of course, being "narrow escapes from death."

There were extraordinarily few accidents at Chicago: Badger's machine broke in the air when he imposed an unnecessary strain on it, and St. Croix Johnstone, it is thought, was unable to glide when his motor stopped, and plunged headlong into the Lake, both accidents being of course fatal. Outside of these two tragedies which, coming within two hours of each other, were certainly unnerving, not a single man was injured or even bruised, and the hospitals did not see a single aviator, if only for a moment, throughout the entire length of the meet.

The usual proportion is about nine men injured to one killed, so Chicago's ill-fortune in seeing two men fly to their death will be appreciated.

Without being brilliant performers, Badger and Johnstone were both good flyers: their fine qualities as men made their loss all the more keenly felt.

Some Things Not Generally Known About Aviation Death Rates

By Henry Woodhouse

EVERY time a flyer has an accident; every time a life is lost on the aviation field; every time a pilot fails to accomplish a task or retires from the field, a sensational newspaper story is bound to appear concerning the excessive danger in aviation. These stories are usually ingeniously written,—gripping, convincing,—but hopelessly misleading. It has become a habit with certain papers to give in full the aviation death roll every time they report an accident, speculating that if the injury proves fatal in this case, it will be the —*th* life lost in aviation since the death of Lieutenant Thomas E. Selfridge on September 17th, 1908, the first victim of power-driven flight. Some papers go further and deal with the matter editorially, expressing their opinion that aviation will never be more than a hazardous sport in which only acrobats and people of daring will indulge.

Some of the very best papers go a step further and use the ingenuosity of the cartoonist to carry out their ideas—with telling effect. I have such a cartoon before me now. It is by a famous cartoonist. There is depicted a desolate plain, overhung with a dark murky sky. On one side of the field, occupying most of the foreground, stands Death, tall and grim, one hand resting on the ominous scythe, the other outstretched in the act of knocking over an aeroplane. The caption reads: "His Newest Pastime."

It is a weird, appalling picture. Death is the dominating figure; its long, bony arms compass the plain and reach far up in the sky, ready to knock down the fragile machines, three of which are in the air, speeding onward towards the doom. It may be an appreciation to the artist's art to say that it brings lurid suggestions and makes one shudder, but it is not genuine art, for Art's purpose is not to mislead, which this picture does, as it creates the impression that aviation is an ultra-dangerous profession, which trustworthy statistics tell us it is not.

In dealing with aviation accidents the press is not always fair. As it confines itself to reporting only the most important news, it necessarily follows that only the very best and original achievements of aviators are reported, which are only abstract cases, and convey to the reader only the importance of each feat separately. From this the general public gathers that there are at best only about two scores of flyers, and that their volutions constitute practically all there is worth mentioning in the aviation field. That these are but a fraction of the actual activities of the aviation world, and not the most important, being only the demonstrations; that behind closed doors, in arsenals, factories, experimenting grounds, inventors' shops, schools, training and military fields, there is a tremendous activity going on; that hundreds of people, of whom the world in general has never heard, are working incessantly, inventing, draughting, constructing, testing, flying; that all this activity exists and makes aviation a positive science and an industry in which is invested a capital of over fifty million dollars, employing at least thirty thousand persons—of all these things the general world, especially in America, is entirely ignorant. Thence the man in the street doubtfully repeats with some editors, the query: "Do you think aviation will ever be more than a hazardous sport?"

One does not hear such queries in Europe. In France the newspapers have ceased enumerating flights of from one to three hours' duration, being too numerous. A sporting paper that gives the report of the most notable flights reported recently 125 good flights made by as many aviators in one single day—a holiday—in France alone

The aviation world being cognisant of the true conditions, does not become hysterical over the matter. Ask: "What of the danger and the martyrs?" and the aviation world will echo—What? but will not pause to answer. The fact is, the aviation world loves its heroes no less than the outside world loves them; it always admired them and was enthusiastic over their feats; but it is too busy with big works and problems of far-reaching importance to spend time crying over them. Why bring back this or that accident that caused the death of this or that aviator a month or a year ago? It was an accident, it happened long ago—for a month is a very long time in the aviation field, where each day brings forth wonderful surprises. It happened, and may happen again, they suppose, nay, they expect it to be so, for do not these things happen in every field and profession over and over and over again? What about the mines, the railways, the automobiles, the ships, almost every sport and profession? Do they not have their accidents and deaths same as aviation has? Do not many of them pile up their dead stories high?

It is objected that the death rate is larger in aviation—is it? *The death roll of aviation from* 1903, *when the first power flight was made, up to date includes seventy names. That is for the whole world. The number of persons who have made flights is over ten thousand, including about* 950 *licensed pilots.* Seventy deaths out of the above number is surely not a sensational percentage. It actually compares well with the death rate of trainmen, which is a fraction less than one per cent., and of miners, which is only a fraction less. It compares well with automobile racing, which goes up to ten per cent., and with mountain climbing, which claimed over ninety victims in one year. The death rate in aviation seems larger because the accident to an aviator is reported in the news columns of the papers of the world, and in many cases columns of particulars and sensational comments are given. On the other hand, the casualties of railways, mines and others are mentioned only in exceptional cases. For instance, the reports of the Masssachusetts Highway Commission emphasize the great hazard attending automobiling, and reports that last year there occurred in that State 1,182 collisions, in which 963 persons were injured and 77 killed. The United States Bureau of Mines gives the number of deaths due to accidents among coal miners in the United States as 2,450 in 1908 and 2,412 in 1909. The railroad deaths for last year run close to 10,000. The general world does not know of this, for the newspapers report but few of these cases—and who reads official reports? Why don't we reckon the mortality in aviation in a general way, without sentiment, as we reckon the mortality in other professions? *The martyrs of aviation are numbered, their names, achievements and characteristics are made public and their fate is lamented;* all that is well—*but if we were to consider the fatalities of mines, railways and automobiles in the same way, would it not seem a veritable carnage?*

The element of danger in aviation is not excessive. Considering everything—the limited knowledge of meteorology, the youth of the science, the mechanical limitations, the eagerness of beginners to attain the ranks of good aviators and reap honors and prizes without adequate training, with self-made, crude creations; considering all this, one has rather reason to be enthusiastic over the big prospects of aviation. And one may suggest that if newspapers must give the totalization of the death roll each time they report an accident, they may, too, give the totalization of the number of persons engaged in the flying profession.

THE development of the industry in the last few months has been remarkable. In Europe the increasing demand for aeroplanes and aeroplane material for sport and military use offer an especially good outlook for the near future; and while, of course, it is expected that the end of the season will see a decrease in the demand for speedy machines, we anticipate that the demand for improved machines for the Army, especially in France, Germany, Russia and Italy, will offset the loss.

We rather believe that the change will be advantageous to the trade. Developing speedy machines to take part in circuits and races has been an unprofitable business for most of the manufactures, for in these contests there were prizes for the winners only, and were all won by a few men representing two or three concerns.

Temporary indisposition and mistakes of aviators; carelessness and oversight of mechanics; petty motor troubles, and other contingencies in no wise reflecting on the excellence of machines, forced good, reliable aeroplanes out of the races and caused big losses in money and prestige to the concerns who had entered them.

One alluring side of the demand for military machines is that it promises steady, substantial returns for the near future. The military authorities are leaving their stand of observers and critics, and having realized the potential value of the aeroplane are advising its introduction as an auxiliary to nearly all of the units of the military system for general use, extending from carrying messages to making reconnaissances. That means that thousands of aeroplanes will be needed by each nation—and that is a bright outlook.

A no less alluring side of this development is that the demand being for machines of enduring and weight carrying capacity, the inducement is for development in the most practical direction, the kind of development that will take the aeroplane near to the perfect stage and give it a claim for consideration as a speedy carrier of mail and light merchandise in places where physical barriers prevent quick delivery by the usual means of transportation.

It is this promise of extensive demand for military aeroplanes that is attracting the attention of the big men of allied trades. They have experience and have better idea than aeronautical manufacturers of just how big the future of the aeroplane manufacturing industry is. For that reason the fact that they are trying to establish themselves in the new industry has special significance, for they would hardly connect themselves with anything that has not a big future.

In America a big improvement is also noted over the condition that existed in the beginning of the year, although things are yet rather unsettled, due principally to the industrial world being still a sort of house divided. But the demand for aeroplanes and general supplies has increased greatly, and there are indications that the Fall will see an increased activity in the shops, preparatory for a big season for the coming year.

The volume of the increase depends in large part on whether the Wright patent suits are settled. That is what has held the whole industry back in the last year; hope and fear are playing an equal part in holding manufacturers to half action and keeping capital waiting outside of the industry's doors. A settlement, whichever side may win, will no doubt start the business at a brisk pace.

Unfortunately, we cannot offer the assurance that our Government will contribute toward the increase of business, as much as we would like. We know, of course, that the Army and Navy will need at least fifty aeroplanes for next year, and we hardly see how, in the face of the progress that has been made and the exceptional increase of value of the flying machine for general military use, the Government can possibly shirk the issue, but past experience has taught that the Government does not always supply things when they are needed. On the other hand, should the Government decide favorably, it is quite possible that the outcome would be greater than we now can realize, as the support would be moral as well as material, and would afford a moral assurance to dubious manufacturers and capitalists. It is quite likely that it would have as big an effect on the industry here as the support of the governments of France, Germany, Russia and Italy had on the European industry last year. Needless to add, assurance and capital are the essential needs of the industry at the present stage of development. It is very possible, too, that the example of

our Government would be followed by the countries south of us who, not having millions to spend in Dreadnoughts, would undoubtedly be glad to avail themselves of the opportunity to acquire aerial fleets at a small cost. That would open a new market and give the industry a broader scope.

While we warn against relying too much on support from the Government, we urge manufacturers and dealers to turn their attention towards the South American countries— not only with the hope of supplying the armies of those countries, as we have already mentioned, although that is also worthy of consideration,—but to develop the aviation business there, first, with the inevitable exhibitions, then as a sport, just as it is being developed in the United States.

It is a big field waiting to be developed and offers alluring promises. The people there are enthusiastic about aviation, and seem to be willing to support it. That and the fact that there would be no competition, rather make the time most propitious for the establishment of the new industry, an opportunity that American manufacturers cannot afford to overlook.

THE report that Graham-Gilmour, the well-known English aviator, has been suspended by the Royal Aero Club of England for flying over the regatta course at Henly, during the boat races, has created no little criticism. Graham-Gilmour is a popular aviator and some people feel that the Royal Aero Club was unduly severe. That involves one of the biggest problems of today. The crowd is eager to see flights and encourages flyers to take foolhardy chances. They say that Graham-Gilmour made a good flight. Quite true, but it might have had a tragic ending, and, not only the authorities, but the whole aviation fraternity would have reaped criticism. We have many examples of such cases, too many in fact; and there are proofs that the very best aviators are no less liable to accidents than the beginners, since their experience is offset by the fact that they undertake to do more. Only recently Olieslaegers, the famous Belgian aviator, fell while making a flight at Leeunwarden, Holland, and injured four persons; the Train accident at the start of the Paris-Madrid race killed the French Minister of War, M. Berteaux, and injured Premier Morris. In a repetition of the same accident at Augsburg, Germany, in May, one person was killed and two were seriously injured. For this reason, while we quite see the point of view of enthusiasts who deplore restraint of any kind, we do not approve unlimited freedom—not while the majority of aviators is made up of persons of limited experience, and while aeroplanes are still nothing more than wooden frames covered with cloth, trussed with wires. We realize that at first it seems that flights made over cities and inhabited localities would tend to popularize aviation, but past experience has taught us that it works the other way. Every little accident that happens in public is magnified many times and has the tendency of creating the impression that aviation is unsafe and to make successful feats appear like acrobatic stunts performed by dare-devils at the risk of their own lives. For the public does not realize that the problem of human flight has really been solved and we only lack better constructed aeroplanes and experienced men to handle them. The best way to convince the public of the practicability of the aeroplane is not by flying over dangerous zones, but rather the opposite. If one must do something unusual let him take a passenger along with him in a town to town flight or carry parcels or anything else that may tend to show the maximum practicability of the aeroplane at minimum risk.

THE cover illustration of this number of Aircraft is, we think, an exceptionally fine one. Give a good critical look at it—at that vigorous, intellectual specimen of manhood standing above the globe, above the clouds, supported by the air, master of the elements, indomitable and forceful, extending his arms towards uncharted space, forging onward, as it were, with genius as a light bearer.

Is this not a masterly group? Look again at that tense, forceful figure. Can't you see in it the genius, the tireless brain, the muscles of steel, the indomitable spirit, the surging blood, the youth—the combined elements that are behind aviation and are making it a stupendous monument? Can't you see in him the aviators, inventors, manufacturers, mechanics—all the figures you see in the aviation fields and shops—anxious faced and perplexed, it is true, but enthusiastic, vigorous, young—and all working tirelessly over problems of immense value, problems which when solved will revolutionize the things of to-day and bring about an amazing to-morrow?

We have seen a number of groups and trophies intended to represent aviation allegorically and otherwise, we have seen the works of a number of sculptures and designers on that subject, but we believe that the real spirit of aviation was never so well portrayed as in this case.

The sculptor who has been prevailed upon to execute this remarkable group is the celebrated Signor Leopold Bracony, who was called to New York for the Fulton Monument Project, the development of which he is now awaiting.

THE Aero Club of New York has made a meteoric progress and is making Nassau Boulevard the hub of the Eastern aviation world. It is a pleasure to visit their aerodrome. One finds there the best fliers of this section of the country, nearly two scores of standard machines in as many newly built hangars, and, above all, an enthusing, inspiring activity and interest. With a club of this kind in each State, America would be pylons ahead of all nations in aviation.

THE GORDON-BENNETT OF 1912

By Henry A. Wise Wood

WHILE its entry of a French machine in the Gordon-Bennett aviation contest of 1911—made necessary by the failure of American designers to produce apparatus having sufficient speed—enabled the Aero Club of America to recover the international trophy, the enforced reliance of this country upon the products of foreign makers was not at all to the liking of the national club. Nor was it in harmony with the club's theory of what the most important yearly event in the sport of flying should express; nor with its view of its own national responsibilities. The Aero Club of America has assumed the position that this contest, which has been universally accepted as the sport's blue-ribbon affair, should be international in the broadest aspect; that it should be inter-national with respect to machines as well as to men. And, acting upon this theory, it proposed to the International Aeronautic Federation that it should be required of pilots competing in this event that their machines be wholly the product of their respective countries. Upon this proposal, which the last conference of the Federation failed to consider, it is hoped the next may act. Whether or not the suggestion will be acceptable to the national clubs of other countries it is too early to say; nevertheless, in conformity to the principle which it has declared, the Aero Club of America is determined, if it be possible, to go into the Gordon-Bennett aviation contest of 1912 with none but American aeroplanes and motors. Contained in the final report of the Gordon-Bennett Challenge Committee of 1911 is the following recommendation, which was accepted by the governors of the club, and has become its policy: "We are of the opinion that the representatives of the Aero Club of America in the Gordon-Bennett race of 1912 should, if possible, drive exclusively American machines, fitted with American motors." Further: "As this will entail the development of apparatus much speedier than any now procurable in this country, the year ahead is not too long a time for its preparation. It is therefore recommended that the Gordon-Bennett Defense Committee of 1912 be appointed at once."

In order to put the substance of this recommendation into effect there was promptly appointed a committee of one to take up with American constructors the defense of the cup in 1912. Upon the writer, who was acting chairman of the Challenge Committee of 1911, the responsibilities of this assignment have fallen, and by way of preparation for the work ahead he deems it advisable, even at this early date, to concentrate public attention upon the subject. While it is too soon to forecast the nature of the changes which the next conference of the Federation will make in the conditions surrounding the race, it is fair to assume that there will be a substantial increase in their severity. A lengthening of its distance to 200 kilometers or more is not too much to expect and prepare for. From England comes the suggestion that the race be converted from a track into a cross-country event; while Mr. Wilbur Wright proposes that each contesting machine be limited to the employment of 50-horsepower, and the race be flown over a smaller rather than a larger track. While the writer is a firm believer in the incomparable importance of cross-country work, and the wisdom of the policy of eventually developing whichever may happen to be the lagging "organs" of the aeroplane, by the tethering of such other of its "organs" as may be in advance, still he is not prepared to believe the Federation will adopt either suggestion for the race of 1912. Nor does he think the time has yet arrived for so greatly changing the nature of the Gordon-Bennett contest. We have not sufficiently ascertained the limitations of the aeroplane to warrant us in applying to it the hobble, even in the slightest degree; nor have we sufficiently solved, as yet, the problems of turning in the air to warrant us in eliminating this difficult feat from among those of which a man must prove himself master in order to wear the blue-ribbon of aviatics. If a new feature is to be added to the conditions which surround the contest, the writer believes it should be such as shall increase rather than curtail its rigors,—providing, of course, it serves to promote a further useful development of the flyer and his mount. For instance: were a contestant required within his flying time to make a given number of landings and get-aways it would add to the sporting difficulties of the race, and thereby serve to raise the skill required to compete; while a safe, though speedy, landing carriage would quickly be forthcoming. Other proposals aside, the regulations of the Gordon-Bennett should be changed in one respect; they should no longer permit a man to use any but the machine in which he first crosses the line.

But to return to the requirements of the moment. These compel us to begin the work of defending the cup by preparing the necessary apparatus, and training flyers in the severe work that will be required of them. If America is to rely upon its own resources there are two courses open to it: it may depend upon its manufacturers to supply machines and men for the contest, for the advertisement to be got out of it; or it may look to such of its patriotic sportsmen for the defense of the cup as are financially able to build or buy speedy American machines, and, if necessary, to command others competent to fly them. The latter course, if it be practicable, will be the healthier one, for it will raise the sporting status of the event, by lessening its use for commercial purposes, and will serve to develop the generous amateur support to which flying is entitled, and which flying must have if it is to survive as a sport, using the last word in its exact sense. Indeed, it is greatly to be hoped that the coming Gordon-Bennett will serve to arouse to action the sporting instincts of such Americans of means as are interested in aviation; for the apathy of these has been one of the very potent causes of America's falling behind other nations in general aviatorial progress. As the military exigencies of this country are not great, as are those of France, Great Britain or Germany, the support of its government cannot be depended upon to furnish the mainspring of its aeronautic industry; therefore the average citizen must view the sport in the spirit of optimistic generosity and contribute to its prosperity as liberally as his means will permit, or neither sport nor industry can thrive. As each is necessary to the other, and especially because of the detached position which our government occupies, the responsibilities of our national club are very great; and these can be discharged only by its directing the sport into channels which shall supply those engaged in the construction of aeroplanes, motors and appurtenances with sufficient encouragement to warrant them in developing their respective fields with energy and enthusiasm. And it is because of the necessity which compels the enlistment of the interest and purse of the amateur on behalf of the American industry, as well as a wise and far-seeing patriotism, that the Aero Club of America wishes to cast its lot with that of our native builders, and stand or fall with them in what has become the most important of international contests. Of the constructors it is expected that they will reciprocate, and that there shall result, between themselves and those who are charged with the control of the sport, earnest co-operation in the development of such apparatus as, from time to time, the national interests of the sport shall require.

To return, in conclusion, to the particular event in hand, it is well to point out, as having a vital bearing upon its outcome, that in all probability the speed of the winner of the next Gordon-Bennett will have to exceed a hundred miles an hour, flown straightaway; that the designer of the victorious machine, doubtless, will be found to have combined least head resistance with greatest power; that in this, the eighth year "after flying," America is still without a monoplane, and that, of motors, the so-far-invincible Gnôme has no rival in this country.

THE LATE ST. CROIX JOHNSTONE IN HIS MOISANT JUST BEFORE BREAKING THE AMERICAN RECORD FOR DISTANCE AND DURATION.

CLUB NEWS

Aero Club of America

At a recent meeting the Aero Club of America passed the following resolutions regarding flying over large cities:

"*Resolved*, That the Aero Club of America strongly deprecates the practice of flying over large cities at this stage of the development of aeronautics; that this practice presents in many cases danger to the public and offers no particular good or utility, from a scientific or any other standpoint, and that any accident brought about thereby at this time would greatly discourage the progress of the art by arousing popular prejudice against it.

"*Further Resolved*, That the Aero Club of America while fully realizing the large margin of safety attending flights over cities when made by experienced aviators in standard machines at a height sufficient to glide to a safe landing should the motor fail, finds it difficult to make distinctions between flyers and machines and to enforce flying at an altitude of safety, which in itself varies with the breadth of the dangerous zone flown over, and that therefore it urges upon all its licensed pilots and those desiring to become such to refrain from over-city flying."

The following is a list of licensed American pilots and foreign pilots holding American licenses on August 9th, 1911:

1 Glenn H. Curtiss.
2 Lieut. Frank P. Lahm.
3 *Louis Paulhan.
4 Orville Wright.
5 Wilbur Wright.
6 Clifford B. Harmon.
7 Thomas S. Baldwin.
8 *J. Armstrong Drexel.
9 Tod Schriver.
10 Charles F. Willard.
11 J. C. Mars.
12 Charles K. Hamilton.
13 xJohn B. Moisant.
14 *Charles T. Weymann.
15 Arthur Stone.
16 Harry S. Harkness.
17 Eugene Ely.
18 J. A. D. McCurdy.
19 Walter R. Brookins.
20 xRalph Johnstone.
21 xArch Hoxsey.
22 J. C. Turpin.
23 A. M. Welsh.
24 J. J. Frisbie.
25 P. O. Parmelee.
26 Frank C. Coffyn.
27 Lincoln Beachey.
28 Lieut. P. G. Ellyson, U. S. N.
29 Lieut. H. N. Arnold, U. S. A.
30 Lieut. P. Z. Milling, U. S. A.
31 Howard W. Gill.
32 Edson F. Gallaudet.
33 Harry N. Atwood.
34 Lee Hammond.
35 W. Redmond Cross.
36 x Wm. Badger.
37 Harriet Quimby.
38 Ferdinand E. de Murias.
39 Paul W. Beck.
40 Wm. C. Beers.
41 Geo. W. Beatty.
42 Hugh Robinson.
43 Cromwell Dixon.

The sign * indicates a foreign certificate. The sign x indicates the death of the pilot.

Aeronautical Society

At the last bimonthly lecture Mr. A. F. Thompson gave an interesting if technical lecture on "Vanadium and Its Relation to Machine Design, and Its Uses in General." The Society continues to hold the interesting bi-monthly public lectures and weekly members meetings which are always fairly well attended.

Aero Club of New York

A number of contests were held at Nassau Boulevard during the past month under the auspices of the Aero Club of New York and a number of cups presented by different parties, were given as prizes to the winners of the contests.

The cup given for duration by AIRCRAFT magazine was won by A. L. Welsh on July 22nd, while the cup given by the Farman Company of America was won by Beatty on August 5th, also for duration.

Below we publish a list of those now occupying hangars at Nassau Boulevard:

Ladis Lewkowicz—Blériot.
George Russell—Curtiss.
S. M. Moore—Curtiss.
A. A. Williams—Curtiss.
Albert Fileux—Queen monoplane.
Queen Aeroplane Company—Queen monoplane.
T. O. M. Sopwith—Howard Wright, American Wright.
T. O. M. Sopwith—Blériot.
Dr. Northwood—Curtiss.
W. Irving Twomhly—Blériot type.
Alex. Hamilton—Hamilton monoplane.
F. P. Shneider—Shneider.
Earle L. Ovington—Blériot.
Earle L. Ovington—Curtiss.
A. N. Ridgely—Curtiss.
Wright Company—Wright.
A. L. Welsh—Wright.
W. C. Beers—Wright.
Redmond Cross—Wright.
Robert Collier—Wright.
Raymond Brown—Wright.
G. W. Beatty—Wright.
Glenn H. Curtiss—Curtiss.
Jas. V. Martin—Farman.
Cromwell Dixon—Curtiss.
C. K. Hamilton—Curtiss.
Mrs. Jas. V. Martin—Baby Grahame-White.

Most of the above mentioned aviators made flights during the month. August 5th was undoubtedly the biggest day. George W. Beatty, W. Redmond Cross, Thomas Sopwith, flying Wright machines, and Earle L. Ovington, flying the new Curtiss machine, contested for a number of cups offered for the best flights.

Redman Cross won the first leg on the Rodman Wanamaker trophy offered for the longest flight. He was up 56 minutes, 10 2-5 seconds. The cup must be won three times.

Sopwith, driving a Wright biplane for the first time, got the cup for accurate landing. He came within fifteen feet of the mark after twelve trials.

Ovington, in the new Curtiss machine, carried off two cups for speed. The other cup was for a cross-country flight from the aerodrome to Belmont Park and return.

Beatty made a new America record for altitude with passenger of 3,080 feet, taking Percy Reynolds, another aviator, up to that altitude. He also made a moonlight flight and won the cup for total endurance.

Orville Wright was one of the fliers at Nassau Boulevard on the evening of August 7th, making a trip over the surrounding country.

St. Croix Johnstone in a flight at Mineola broke all American endurance records for both distance and time in the air on July 27th. He remained in the air for 4 hours 1 minute 53 4/5 seconds and covered a distance of 176 miles. He had planned to fly for seven hours, but a leak in the lower tank compelled him to descend after he had made thirty-nine laps of the four and a half mile course.

Ralph Cole, of Norwalk, Conn., has been making some successful flights with a new monoplane of his own construction, which is fitted with a 50 H. P. Roberts motor.

Aviation Meet Planned

On August 16th plans were announced for an aviation meet at the Nassau Boulevard, from September 23 to October 3 next, under the auspices of the Aero Club of New York. If present plans are carried out the meet will be on a large scale. As the Aero Club of America shares the grounds here with the Aero Club of New York, the parent organization probably will take an active part in the meet.

The meet will probably last five days and cross-country flights will be an important feature. It is expected the prizes will average seven to eight thousand dollars a day. Most of the flyers having sheds at Nassau Boulevard are expected to take part in addition to several others. It might here be noted that the flyers at Nassau Boulevard won 38 per cent. of the prizes at Chicago. They include: T. O. M. Sopwith, E. L. Ovington, J. V. Martin, G. W. Beatty, A. L. Welsh, L. Lewkowicz, J. A. D. McCurdy, Cromwell Dixon, Arthur Stone, etc., etc.

Aero Club of Illinois

What with the Chicago Meet and the local interest, the Aero Club of Illinois has been kept exceptionally busy during the past month.

Dan A. Kreamer fell from a height of 75 feet and was killed on July 13 while flying for his license on the field of the Aero Club of Illinois. In making a short turn with an old Curtiss type machine he banked too much and the machine turned over and dived down. The engine fell on his back, crushing him.

Buffalo Y. M. C. A. Club

Fourteen members of the Central Y. M. C. A., Buffalo, met recently for the purpose of organizing a club for the study and practice of aeronautics.

After preliminary discussion, a temporary organization was effected with Frank Limpert as Chairman and Harry C. Myers as Secretary. Committees were appointed to outline a general plan of organization and to determine questions of policy. Frequent meetings are to be held for general discussion relative to the organization.

Three papers were read at the meeting—"Bird Flight," by R. C. Worden; "Envelope Materials for Balloons and Dirigibles," by N. E. Corrin; a talk on "Construction Details of Heavier than Air Machines," by F. Limpert. On May 18th a meeting of the club was held in Central Y. M. C. A. for the formation of a permanent organization. The meeting was called to order by the Chairman, F. Limpert. A report of the committee on the affiliation with the Y. M. C. A. was unanimously accepted by the club. It was decided to call the club the Aeronautical Research Club of the Buffalo Y. M. C. A.

The following directors were elected: F. E. Limpert, C. L. White, Norman E. Corrin, Ralph C. Worden, C. L. White, J. Steller, E. Marks, E. E. Fleming.

The officers elected are: President, N. E. Corrin; Vice-President, James Stellar; Treasurer, N. E. Marks; Secretary, H. C. Myers; Consulting Engineer, C. L. White.

At a special election and in consideration for services rendered the organization, Mr. C. L. White was chosen honorary President and Carl Strattford first honorary member.

If interest and enthusiasm are any indication a successful future of the club is assured.

Aero Club of Ohio

The first international aviation meeting in Ohio will be held September 27th, 28th and 29th. In the neighborhood of $50,000 will be expended. Canton is the home of the Aero Club of Ohio, a pioneer organization in aeronautics and one of the greatest balloon cities of the world. The affair will be under the auspices of the Aero Club of Ohio.

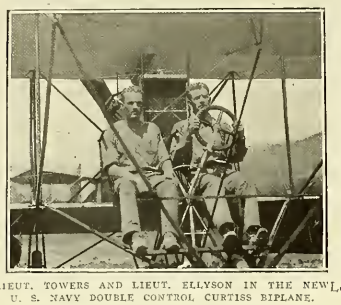
NEWS IN GENERAL

Navy Notes

The Wright machine purchased by the Government for the Navy was delivered on July 9th. Orville Wright demonstrated it, making an hour's flight alone and a 24-minute flight with Capt. W. I. Chambers, in command of naval aviators.

Lieutenants T. G. Ellyson and J. H. Towers, the two officers detailed to study the Hydro-aeroplane, are still on duty at Hammondsport.

Lieut. Ellyson is an expert aviator; Lieut. Towers is making excellent progress; in their flights over Lake Keuka, not always have they been favored by wind and weather conditions. But since an important part of their task was to ascertain what could be done with the Hydro-aeroplane under adverse circumstances, they have made some of their most notable flights when the weather was threatening.



LIEUT. TOWERS AND LIEUT. ELLYSON IN THE NEW U. S. NAVY DOUBLE CONTROL CURTISS BIPLANE. NOTE THE PIVOTED CONTROL WHEEL, WHICH CAN BE PASSED FROM ONE TO THE OTHER WHILE IN FLIGHT.

They have attained high altitudes, have flown long distances and have demonstrated the feasibility of team work in connection with the new Curtiss system of double control.

Captain W. I. Chambers, the officer having supervision of navy aeronautics, recently visited Hammondsport to see test flights made by the Triad. He saw performed some wonderfully accurate work; in making a test for accuracy, the hydro-aeroplane alighted exactly on the mark. In the course of his investigation Captain Chambers made several flights and for a while he held the wheel of the hydro-aeroplane. He found that the Triad could be steered beautifully; in fact, he reported that the hydro-aeroplane built by Curtiss for the United States Navy fulfilled all the requirements of the contract.

It has been said that the United States, from a military point of view, has been backward in developing the possibilities of the aeroplane. But the proven success of the hydro-aeroplane is something that cannot be ignored. In the utilization of these important accessories of naval equipment, a good beginning has been made and ere long the United States Navy will have a number of competent hydro-aeroplane operators.

New England News

By Denys P. Myers.

Many of the foremost aviators of this country and several from France and England, including the three men who in as many years have won the Gordon Bennett aviation trophy, will take part in the Harvard-Boston aviation meet, which will take place at the Harvard aviation field at Squantum, August 26th to September 4th.

Amongst those who are expected to take part are: Charles Terres Weymann, Claude Grahame-White, Maurice Tabuteau, Harry N. Atwood, Charles F. Willard, J. A. D. McCurdy, James V. Martin, Mrs. Martin, W. H. Longfellow, J. A. Cummings, A. A. Merrill, Glenn H. Curtiss and several of his flyers, while the majority of the flyers who competed in the Chicago meet will also take part. These aviators include Tom Sopwith, Earle Ovington, Arthur Stone, Ladis Leckowicz, René Simon, René Barrier, St. Croix Johnstone, Capt. Baldwin and Lee Hammond. One notable feature of the technical side of the contests will be the division of competitors into monoplane and biplane classes and the introduction of power handicaps. These innovations will put the contestants more on a par and emphasize skill rather than the mere possession of extra powerful engines. The prizes will amount to $50,000.

William Hilliard, of Boston, first known as a driver of racing automobiles and later as an aviator, is back from England, where he qualified as a pilot under the rules of the Aero Club of Great Britain.

Although he had flown machines long before he left for England, he had never fulfilled the requirements of the Aero Club of America. In England he studied for a time under Marcelle Blondeau, the Frenchman, and on July 9 was awarded certificate No. 102 of the Aero Club of Great Britain.

The Curtiss Aviators

The New York-Philadelphia Air Race.

The first big cross-country aeroplane race to be held in this country took place on August 5th under the auspices of the Curtiss Exhibition Company and Gimbel Brothers, for a prize of $5,000 offered by the Gimbel concern. The prize was for the fastest flight between the Gimbel store in New York and their store in Philadelphia.

The aviators entered were Charles K. Hamilton, Hugh Robinson and Lincoln Beachey, but at the last minute Hamilton withdrew from the race and Ely had to take his place.

The aviators left Governor's Island in the following order: Beachey first at 2:40; Ely second, 2:41; and Robinson third, 2:42. Each aviator described a circle over the island and then headed up the North River to 33rd street, where they turned and swept across town to Gimbel's store, where they were timed for the official start to Philadelphia as follows: Beachey 2:47, Ely 2.48, and Robinson 2:50.

Leaving New York the aviators steered toward Bergen Hill across the Hudson and continued on toward Elizabeth, which place they passed in the following order: Beachey 3:05, Robinson 3:06 and Ely 3:08. Beachey continued to Philadelphia, where he arrived first, having made only one stop at Trenton for gasoline. He passed over the Gimbel store in Philadelphia at 4:47:22. Robinson did not arrive till 5:25, having been delayed at New Brunswick through lack of gasoline. Ely was compelled to abandon the race near New Brunswick owing to a plugged feed pipe.

Earle L. Ovington, one of the foremost operators of the Blériot monoplane in the United States, has joined the Glenn H. Curtiss band of birdmen and will not only fly the Curtiss biplane, but will also have charge of the Curtiss school for aviators at Nassau Boulevard Aviation Field, Garden City, Long Island.

Army Notes

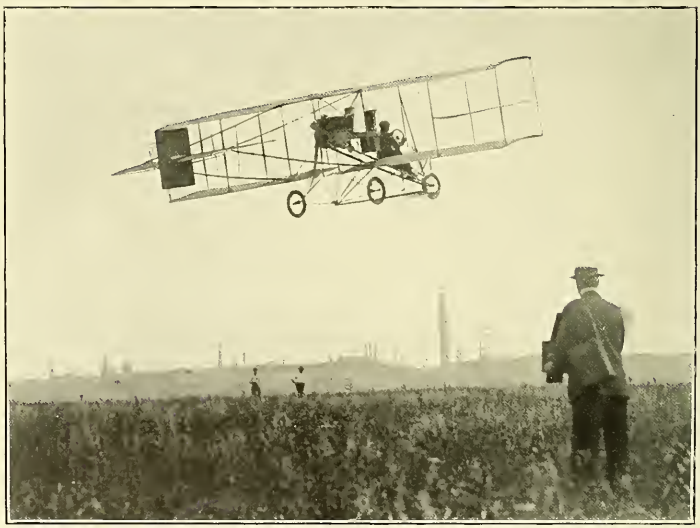
The Army flyers at the Signal Corps Aviation School, College Park, Maryland, have been exceptionally busy making over one hundred flights, half with passengers. So busy, indeed, that at headquarters it was thought advisable to issue orders confining the officer flyers within certain distances so as to preclude the chance of officers taking joy rides over the Capital. Another new regulation makes it compulsory for military flyers to wear uniforms on the field and in the air.

The school is in charge of Capt. De Forrest Chandler, a veteran balloonist, having been the aid of J. C. McCoy in the 1907 flight from St. Louis to Chesapeake Bay in the Gordon-Bennett Cup contest. The officers assisting him are Capt. Paul W. Beck of the 18th U. S. Infantry, formerly head of the aero squad at San Antonio; Lieuts. R. C. Kirkland, H. H. Arnold and I. DeWitt Milling, all aviation enthusiasts.

Capt. Paul W. Beck who pilots a Curtiss machine, made a number of clever flights recently, among which one on August 8th from College Park to Fort Myer and return, distance of twenty-four miles in thirty-nine minutes. During the flight he maintained an altitude of 2,800 feet, the highest flight ever recorded over the Capital. Soon after he landed at Fort Myer his fellow officers, Lieut. Arnold and Capt. Chandler, flew the Wright biplane in his path and followed him over the same course. Lieut. Arnold was pilot.

Capt. Beck asked for and was granted leave of absence by the War Department which he employed to advantage at the Chicago Meet.

Lieut. Arnold's recent feats include two records for altitude. On July 17th he made a flight of 27 minutes 35 seconds duration in which an altitude of 4,167 feet was reached. He thus improved on his own record for altitude of 3,260 feet, made July 7th. A few days later he made a new record of 4,886 feet 9 inches, registered by the new army barograph which registers both temperature and height.



BEACHEY STARTING FROM GOVERNOR'S ISLAND IN THE GIMBEL NEW YORK-PHILADELPHIA RACE, WHICH HE WON. BEACHEY'S MACHINE WAS ONE OF THE LATEST HEADLESS TYPE CURTISS BIPLANES WHICH LATER MADE SUCH A FINE SHOWING

$10,000 for Monoplane Race

On August 9th General Charles M. Taylor, publisher of the Boston Globe, offered a prize of $10,000 for an interstate aeroplane race at the coming Harvard Aero meet, which opens at the Squantum aviation field at the end of this month.

The race, which promises to be the big event of the meet, will be restricted to monoplanes. It will start on the flying field at Squantum on Labor Day, the last day of the meet, and will take in the cities of Nashua, N. H., Worcester, Mass., and Providence, R. I. Each of the cities named is about forty miles in an air line apart on the course, which is diamond shaped, making a total distance of 160 miles at least.

Arrangements are also under way to hold another race over the same course for biplanes on the Saturday preceding Labor Day for a prize of $7,500. As all of the contestants in the monoplane race fly biplanes, an equally large field of flyers is expected in the biplane race. The aviators will be permitted to make hour stops in the cities selected as the turning points.

In the Interstate race, the $10,000 will be divided into first, second and third prizes, $7,500, $1,500 and $1,000 respectively. In the biplane race the prizes will be $5,000, $1,500 and $1,000.

Burgess Aviators

Dr. Percy L. Reynolds has been appointed an instructor at the Burgess School at Atlantic. He received his instruction from Harry N. Atwood and has become an expert flier. Albert Adams Merrill and Phillip W. Page who have been taking a course in flying at the Wright school, will probably join the Burgess Company and Curtisz after qualifying for their licenses.

The Company has been conducting experiments with a view to cutting down head resistance and have designed a new seating arrangement, in which the passenger sits behind the pilot.

Connecticut News

By S. H. Patterson.

The first official test for an aero license in this State was conducted at Charter Oak Park at Hartford early in July by State Commissioner A. Holland Forbes of Fairfield. William Nelson was the applicant, but was unsuccessful in securing a license, as he had engine trouble and was unable to complete the test. The machine used is one he constructed himself and is of the Curtiss type. A week afterward Mr. Nelson gave an exhibition flight in Middletown, Connecticut, at Fisher's Field, before 2,000 inmates of the Connecticut State Hospital for the Insane, and made a fine flight, going about two miles away from the field. As he was returning he struck an "air-pocket," and in attempting a quick landing one of his planes hit a telephone wire, throwing him out and badly damaging the machine. There was nothing left but the engine when the souvenir hunters left the wreckage.

Charles K. Hamilton, of New Britain, and Edson P. Galeandette, of Norwich, have been granted licenses to fly in this State.

John M. Doehrer, of Bridgeport, has nearly completed his "Featherweight" aeroplane. The machine is made of aluminum and is 32 feet long, 16 feet wide and 5 feet high, and possesses many unique ideas. Mr. Doehrer has incorporated in his engine the same principles as found in the crossbeam engine of a ship. From this he claims that he can get 10 revolutions out of one explosion. There are four propellers, two at the sides and two directly in front. A telescopic balance pole adjusted to suit the desire of the operator is believed to do away with any trouble from which the exhaust from the engine is conveyed through a pipe keeping the bag constantly filled with hot air, and thereby giving buoyancy to the aeroplane.

Washington News

By Mrs. Lulu Wells Smith.

Paul Peck, of the Rex-Smith school, made a record by a flight into Washington after only fourteen days of flying, covering a distance of twenty-five miles in twenty-six minutes. He started from College Park a little before seven o'clock on the evening of August 5th, and after one circle of the field, headed for Washington, following the B. and O. railroad track, he entered the city at Fifteenth and H streets, headed directly toward the Capitol, where he circled the dome, and flew down Penn avenue, over the Willard Hotel across Market space to the Monument. About fifty feet above the Monument he cut off his engine and made a spiral glide to earth, straightened out and flew over the Potomac to Arlington, and as it was then quite dark he turned and came back, landing on the speedway exactly upon the white canvas which had been speard out for him as a guide. The machine was left on the speedway all night, and Peck returned to fly it back to College Park Sunday afternoon, which was made impossible by the crowd that had gathered in the largest proportions ever known to have assembled on the speedway in its history. So great was the crowd that it was impossible for Peck to gain headway enough through the masses of people to get off the ground, and after several attempts had to give up until the following morning, when he made the return trip from the speedway to College Park in just 12 minutes.

Flying Around San Diego

By W. D. Waterman.

San Diego, Cal., had its fifth aviation meet this year, which was held at the Coronada Polo Grounds during the Ground Breaking Carnival for the Panama-Pacific Exposition, to be held in 1915. Aviators Glen L. Martin and Beryl Williams were participants. As is usual with the weather in San Diego, conditions were perfect, there being only a slight wind blowing on all of the days.

The meet was opened the first day with a short hop by Williams. This was followed by three flights by Martin and two more by Williams. They ranged from ten to twenty minutes. Martin contented himself with staying near the grandstand, doing an occasional "Dutch Roll" and turning sharp, well-banked turns. Williams, on the other hand, flew out over the bay and ocean. The three days of flying were much the same. On the last day Williams "hatched out" a new stunt in the racing line. At the same time the meet was going on a motor boat race was being held in which the boat built for Harry S. Harkness was entered. This boat is the fastest on the Pacific coast, and is now owned by H. H. Timkens. While flying over the bay Williams was attracted by the sun shining on her highly finished mahogany decks. Since the boat is equipped with the 120 H. P. Emerson motor that Harkness intended for one of his Antoinettes, it is very fast. The boat, however, was no match for the fleet biplane of Williams, and was soon left in the rear. Both Martin's and Williams' machines are much the same. They are enlarged Curtiss types. In Martin's there are extensions on the upper places and the tail is shortened, while in Williams' machine the elevator is placed farther forward. In both machines the Goodyear fabric is attached to the under side instead of the over-side of the ribs. Strips are sewed over the beams and ribs, forming pockets. In both cases 60 H. P. Hall-Scott motors are used. The absence of tinkering and adjusting was very noticeable. Another thing of interest was the way in which the motor throttled down. It could run so slow that at times Aviator Martin was able to leave the machine in the middle of the field with no one near it and nothing blocking the wheels with the motor running. As far as flying is concerned, the meet was entirely satisfactory, and too much praise cannot be given to the aviators who took part in it.

California News

By Ernest Ohrt.

The Aero Club of California has begun a campaign looking toward bringing the next international aviation contest to the Pacific coast.

The California National Guard is going to have an aviation squad, and it will be headed by the noted aviator, Eugene Ely. This became certain when Ely came to Sacramento and successfully passed an examination for first lieutenant in the proposed aviation squad. George Loose, a member of this squad, has a biplane of the Farman type with which he has made several trial flights.

Jack Hamilton has made many practice flights in a Blériot type monoplane near Palo Alto. S. R. Tymothy, of Burlingame, Cal., is making short jumps in a monoplane of his own construction. Byrle Williams recently made a splendid flight of 15 minutes over the orange groves at Riverside, Cal., in a Curtiss type biplane. Glen Martin recently flew at Imperial, Cal., in a Curtiss type biplane, using a Hall-Scott motor. Louis Fortney, of Oakland, Cal., has his monoplane at the Ingleside Coursing Park, where he has made several fights; the machine is of the Antoinette type equipped with an automobile engine. L. T. Strover, of Oroville, Cal., is building a Curtiss type biplane.

The Hall of Fame

ATWOOD, (H. N.)—Among the things he has not done or planned are: crossing the Atlantic and flying to the North Pole. Possibly he could go there, too.

BALDWIN (THOMAS)—"I understand why they call him 'Red Devil' ventured the fair one, "he is up to so many tricks—is it?" No one tried to disillusion her.

BEACHEY (L.)—"The B is a mistake," said a Philadelphia belle; "it should be P!"

BROOKINS (WALTER)—Glad to see you back; we surely missed you!

CHAMPION (FRANK L.)—There's something in a name.

ELY (EUGENE)—He was right there with the goods.

WILLIE HAUPT is getting to be a wonder.

KEARNEY (H. F.)—Is still practising the shoot the chutes game but he is falling from heights now and that means that he is reaching them, too.

BUD MARS had a very narrow call but that is not a reason for London "Flight" to say "late" Mr. Mars. Incidentally, it is up to Mars to show them how much alive he is.

MOISANT (MATILDA)—Bound to fly; all angels do.

"QUIMBY on Pike's Peak," (Gimbel Lunch Menu—'Twas a delicious peach!

SCOTT (BLANCHE STUART)—A clever woman should have no trouble to master a "Devil" no matter how red he may be.

SINCLAIR (RICHARD R.)—Busy? That's putting it mild. Fellows wake him up nights to ask about hangars.

SOPWITH (THOMAS)—Can't say anything too good about him.—General opinion.

ST. HENRY ain't no saint, even if he's trying the angel stunt. He's a cowboy.

STONE—Is a rather misleading name when the owner of it can rise on the face of the winds like a feather.

WELSH (A. L.)—Remember what they say about small packages? Small but good!

WILLARD (C. F.) and McCURDY (J. A. D.) —Reads rather natural, don't it? Had seen both names together for ages, it seems.

WITMER (C. C.)—Is on the field again looking better than ever. Congratulations, old man!

WOODRUF (TIMOTHY L.)—A born Master Builder. Took a field and a pile of lumber and presto! turned it into an aviation center.

NEW (w) RIGHT FLYERS—Beatty, W. G.; Brindley, O. A.; Gill, Howard; Drew, Andrew; and *some* more.

OVINGTON (EARLE L.)—Tell us not in mournful numbers you are going to fly no more!

ROBINSON (HUGH A.)—"Come on, boys, the water's fine!"

LEWKOWICZ (LADIS)—Wanted to *do* Chicago, but didn't have the wings. Too bad!

Wright Fliers

Activity both in the Wright factory and at their training grounds at Simms Station is on the increase and many new pupils are being taught and new machines tested. Orville Wright recently tried out the new machines built for the United States Navy and successfully put it through all the tests required by the Government.

A new speed record in learning to fly was made at the Wright School in Dayton by O. J. Simmons. After only ten lessons, making a total time in the air of 96 minutes, he developed into a capable pilot.

Simmons' record follows:

July 18, two flights, 9 and 13½ minutes.
July 19, one flight, 14 minutes.
July 20, one flight, 11 minutes.
July 22, one flight, 16 minutes.
July 26, one flight, 13 minutes.
July 27, five flights, 1½, 7, 2, 5 and 4 minutes.

On July 29 Simmons took up C. W. Bonney, a Wright aviator, for three flights of 5 minutes each.

J. Clifford Turpin was the instructor. The five flights on July 29 were made with Turpin as a passenger, to practice landings.

On August 3rd P. O. Parmelee and J. C. Turpin gave an exhibition on Wright biplanes at Colorado Springs.

Frank Coffyn, flying with Russel A. Alger at Detroit, met with a slight accident owing to his motor stopping when he was about 200 feet up and compelling him to make a hasty descent with the result that part of the landing gear was broken.

George W. Beatty, who was licensed August 4th, flew one of the new Wright machines from Nassau Boulevard to Long Beach on August 6th, with a lady passenger. He landed on the beach, stayed awhile, then flew back to Nassau Boulevard.

On July 30th, F. L. Cahmpion, driving Earle Remington's Blériot machine, made a wonderfully fast flight from Dominguez Field to San Piedro. He had a strong wind behind him and traveled at a speed of close on to 80 miles an hour.

On August 1st Harry N. Atwood flew over Baltimore and did stunts while he was directly over the heart of the city.

Dr. J. J. de Praslin has been making some successful flights recently in a biplane of his own construction. At almost his first attempt he succeeded in flying two miles at an altitude of 75 feet.

Albert Carter, a dirigible balloon pilot, has just completed a small dirigible of tne Baldwin type, which he is fitting with a 50 H. P. Gnôme motor.

On June 24th Walsh flew in Vancouver, Wash., and tried out an automatic device designed to make aerial navigation safer, the invention of D. G. Ellsworth. The invention is designed to control the lateral guidance of the plane and to preserve the equilibrium of the aeroplane at any angle. It is controlled by electricity, two wheels turning in opposite directions on opposite sides of a moving pair of electro magnets governed by a brake connection, are affected by the least tilting of the machine. Mercury is used in making this connection. The inventor claims that the equilibrator will right the machine if the controlling lever is left at neutral in any gale. Walsh was quite well satisfied with the experiment. Walsh flew on July 3rd and 4th at Moscow, Inado, before one of the largest crowds ever known to have been in Moscow.

On July 14th Mr. J. C. Mars met with a bad accident while flying at Erie, Pa., when he lost control of his biplane through running into an air hole.

Atwood's St. Louis—New York Flight

A new world's record for a cross-country flight was made by Harry N. Atwood on his Burgess Wright machine when he flew from St. Louis to New York, a distance of 1,265 miles, in ten days. The start was made on August 14th.

Below we give a table of this flight, showing his progress stage by stage:

Aug. 14—St. Louis to Chicago, 283 miles, 6 hrs. 32 min.

Aug. 15—Chicago to Elkhart, Ind., 101 miles, 2 hrs. 16 min.

Aug. 16—Elkhart to Toledo, O., 134 miles, 2 hrs. 41 min.

Aug. 17—Toledo to Cleveland, 123 miles, 2 hrs. 20 min.

Aug. 18—Cleveland to Swanville, Pa., 84 miles, 2 hrs. 07 min.

Aug. 19—Swanville, Pa., to Buffalo, N. Y., 106 miles, 2 hrs. 23 min.

Aug. 20—Buffalo, N. Y., to Lyons, N. Y., 104 miles, 2 hrs. 14 min.

Aug. 21—Lyons to Belle Isle, 40 miles, 1 hr. 28 min.

Aug. 22—Belle Isle to Fort Plain, 95 miles, in 2 hrs. 10 min.

Aug. 23—Fort Plain to Castleton, 66 miles, in 1 hr. 32 min.

Aug. 24—Castleton to Hook Mountain, 2 hrs. 33 min. Expected in New York, August 25.

CORRESPONDENCE

NASSAU AERODROME,
LONG ISLAND, N. Y., July 20.

To the Editor of AIRCRAFT:

DEAR SIR: I have just read Mr. D. E. Conner's article in July AIRCRAFT entitled "Airswirls and Their Relation to Aviation." As an electrical engineer and one interested in meteorology I cannot allow this article to pass without comment.

As an aviator let me say in the first place that the average "airhole," so called, is not "swirling," but is simply the result of convection currents in the atmosphere. The sun strikes the earth with equal intensity over say a certain aviation field, or portion of ground over which an aviator is flying. It is well known that dark colors absorb heat more readily than light ones, the later reflecting a greater percentage of the long heat rays. As the color of the ground constantly changes the absorption of the heat is never the same in any two places, with the result that the temperature of the air above the ground varies according to the heat received. In passing in my aeroplane from a wooded country to a flight over water, for instance, I usually encounter "airholes" or the "swiss-cheese" atmosphere until I am well over the water. If the breeze comes from the water the flying soon gets good, while if it is from the land the chances are the disturbances are blown out to me to a considerable distance. "Airholes," then, are not usually of a swirling character, fortunately for the bird-men, but are rapidly moving convection currents in a vertical position except as shifted from the vertical by prevailing breezes. When I strike a rising current of warm air I get a "puff" which lifts me and my Blériot according to the velocity of the rising current of air, the thickness of the column of air, and the velocity with which I may be travelling.

I am surprised that Mr. Conner should make such a laborious effort to bring electricity into the phenomenon of "swirling air-holes," as he calls them. He jumbles electricity, physics, and meteorology together in a manner unintelligible to even the physicist; what the lay reader of AIRCRAFT can get out of it is an infinitesimal quantity.

Air, under ordinary circumstances, is practically a non-conductor of electricity, and there is no "free electricity" in it whatever, as Mr. Conner states. Furthermore assuming that such electricity existed, it would not cause "airholes," swirling or otherwise, unless present in quantities sufficient to produce decided heating effects.

Very truly yours,

EARLE L. OVINGTON.

THE CHALET,
NEWPORT, R. I., Aug. 6, 1911.

MY DEAR SIR: I beg leave to draw your attention to the fact that, with my permission, Mr. Curtiss is using my "patent horizontal rudders" on all his machines. Yours truly,

HUGH L. WILLOUGHBY.

CLARKSVILLE, Tenn., July 25th, 1911.

DEAR SIR: I enclose herewith an extract out of my letter to you of January 22, 1911. You will see from this extract that in my letter I expressed the same ideas which you now publish in AIRCRAFT for August, 1911, in the article "Dynamics of the Flying Machine," and on page 196 at the end of article "Problems That Remain." Yours very truly.

THEODORE GIBON.

Copy of Mr. Gibon's letter:

DEAR SIR:The cause of Hoxsey's death will be better understood by considering the following: In your valued paper, AIRCRAFT, of December, 1910, page 356, in the article "A Remarkable Demonstration," it reads: "They (Johnstone and Hoxsey), started to lose ground, and the higher they went the faster they went backwards!"

To this I have to say: In the wind all forward motion of the aeroplanes was lost, the aviators depended entirely on the wind keeping on blowing as it did, otherwise swift forward motion of the aeroplanes was the only thing to keep them afloat. If an aeroplane, having lost all forward motion, is caught by a change of the wind, as is, for example, to be expected in the "swiss-cheese atmosphere," then as all forward motion of the aeroplane is gone and forward motion being the only thing to keep floating, the aeroplane plunges suddenly downward, and all this occurs so instantly that the aviator hardly knows what struck him and he loses all control of the aeroplane, can never regain the control, and plunges to his death. Safety is obtained by speed, which means, of course, speed through the disturbed atmosphere. Automatic control is needed. Yours truly,

THEODORE GIBON.

CLARKSVILE, Tenn., January 22, 1911.
New York, N. Y., August 12th, 1911.

Dear Sir:

I have read with much interest the article, "Dynamics of the Flying Machine," by J. S. Stephens, M. W. S. E., which was published in the August issue of AIRCRAFT, and agree perfectly with the conclusions arrived at by Mr. Stephens in his paper.

I have given this subject consideration some time ago, and after looking over all remedies, picked out one as being the safest, and simplest of application, and present it to you in case it may interest some of your readers.

My suggestion is, that the aviator install in his machine a reliable air speed indicator or anemometer, and mark off a safety limit (of low speed on one side, and high speed on the other) on the scale or, if the scale is enclosed, and cannot be so marked, that he note same mentally.

A little careful experiment, in comparatively calm air will suffice to show the safety limit of low speed by slowing down the motor gradually, and noting with the aid of the anemometer at which speed the machine becomes unstable, and difficult to handle.

This experiment should be repeated several times, both in turns and straightaway flights, and the results checked off. The limit of safe high speed would, of course, be the highest normal speed of the machine.

To apply the system, the speed indicator should be watched as carefully as possible, when making a turn or change of course, and, as soon as it nears either of the safety limits on the scale, the rudder should be brought back to neutral position and held there until the indicator shows that the machine has settled down to normal speed, at which point the turn may be continued.

The complications brought about by the laws of inertia and momentum, which the foregoing suggestion attempts to remedy, were explained fully in the article mentioned and it is not necessary to repeat them here.

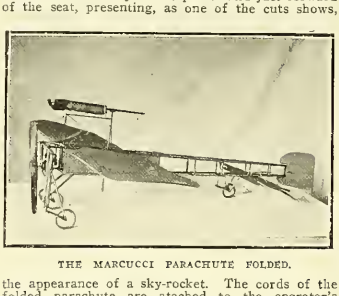
In case any of your readers are in a position to try out the system, I should be pleased to hear how it worked out as I cannot spare any time to try it myself at present.

I remain,
Yours faithfully,
ARCHD. BLACK.

The Marcucci Parachute Attachment for Aeroplanes

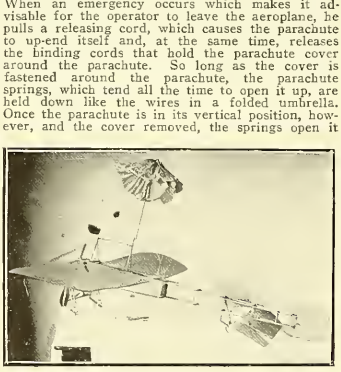
The subjoined illustrations show the new parachute attachment invented by Messrs. Marius and Julius Marcucci, of 242 East 116th street, New York City, for use in preventing loss of life when an aeroplane to which it is secured losses its buoyancy or becomes unmanageable. The illustrations show the parachute in both its inoperative or folded position and in the position in which it is ready to disengage itself from the aeroplane, lifting with it the seat of the operator.

In its inoperative or folded position, it is horizontally disposed above the central line of the machine in the vicinity of the planes and just forward of the seat, presenting, as one of the cuts shows,



THE MARCUCCI PARACHUTE FOLDED.

the appearance of a sky-rocket. The cords of the folded parachute are atached to the operator's seat, being led down thereto as shown in the cut. When an emergency occurs which makes it advisable for the operator to leave the aeroplane, he pulls a releasing cord, which causes the parachute to up-end itself and, at the same time, releases the binding cords that hold the parachute cover around the parachute. So long as the cover is fastened around the parachute, the parachute springs, which tend all the time to open it up, are held down like the wires in a folded umbrella. Once the parachute is in its vertical position, however, and the cover removed, the springs open it up; and upon the downward movement of the aeroplane it fills and lifts itself free from the standard upon which it is mounted. All this occurs automatically upon the operator's pulling the releasing cord.



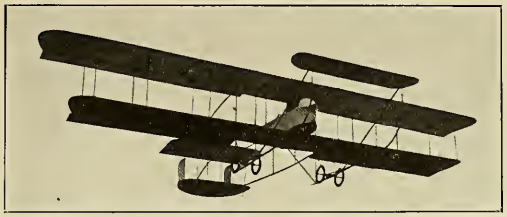
THE MARCUCCI PARACHUTE OPENED.

When the descent becomes sufficiently rapid, the parachute, which as before stated is attached to the operator's seat through the medium of the parachute cords, lifts the operator's seat from its bearings in the aeroplane, that is, it permits the aeroplane to drop but retains the seat. Thus the operator is gradually borne to the ground by the parachute, notwithstanding any accident to the aeroplane. Instead of attaching the parachute cords to the operator's seat, as just explained, they may be attached to the aeroplane itself in such a way that when the parachute opens upon the descent of the machine it will tend to right the machine, that is, restore to it its proper balance for gliding.

The Cause of "Air Pockets"

By Thomas Preston Brooke

Science has thoroughly established the fact that warm air shows a tendency to rise, and that these same rising currents will fall again when their temperature drops below that of their surroundings. This phenomena always occurs in a closed room. I have frequently watched small particles of dust traveling regularly between the floors and ceilings of rooms in which there was no heating apparatus and in which all the doors and windows were tightly closed. These floating particles of dust seemed to pursue the same general course in each ascent and decent and proved to my mind that there existed cool downward currents between the warm ones traveling upward. I have also noticed the same phenomena out of doors. On days when no air seemed to be stirring, a feather or bit of paper would sail up into the air in an almost perpendicular line and often to the height of a hundred feet or more; it would then drift horizontally for fifty feet or so and would again drop toward the earth. On the downward trip the speed always exceeded that of the upward motion by fully 50%. This difference in velocity can, in a measure, be accounted for by the force of gravity, but it is undoubtedly true that this greater downward motion was caused by a strong falling current of cooled air. Frequently the object would turn when near to the earth and again ascend. To prove that surrounding trees or houses did not create these opposite air streams, I have carried bits of lint and light feathers to the centre of level meadows, far from any trees, fences or buildings, and found that when I released these fluffy bits they sailed upward with even greater speed than when near to trees or houses. It is absolutely certain that these vertical air currents do exist on all days when the air is comparatively quiet and the sun is shining brightly. These vertical air streams are rarely ever near to each other, and I have frequently walked a mile over level ground before locating one with an upward trend. They also vary greatly as to their width. Some of them I found to be but a few feet wide, like the draught from a fissue in the earth, while others appeared to have a width of several hundred feet. These upward streams generally exist in pairs, with a downward stream between them. Where I found a down stream with an ascending stream on each side of it, the velocity of the falling lint was greater than when there was but one ascending stream. These vertical air streams undoubtedly extend to considerable heights, and I believe that in them is found the cause of the so-called "air pockets" so often met with by aviators. When an aeroplane leaps out of the still air, or gently ascending currents, into one of these down moving air streams, but one thing can result, the aeroplane must drop. How far it will drop depends upon three conditions. (1) The forward speed of the aeroplane. (2) The downward velocity of the air stream. (3) The width of the air stream. While the aviator has the impression that he is falling in a vertical line, his forward movement is but slightly checked and the actual movement of an aeroplane falling into a "pocket" is that of making a glide at an abrupt angle on an "even keel." Were this not true the aeroplane would continue to fall until it struck the earth. Indirectly, these air pockets have undoubtedly been the cause of numerous accidents. However, there should be no danger in them if the aeroplane has the slightest inherent stability and does not carry a revolving motor or a motor with a high flywheel velocity, for it is the brutal gyroscopic force in these motors that causes all the havoc. Even with the motor containing gyroscopic force the drop is not necessarily fatal, but it is always attended with great danger. Should the aviator become startled by the unexpected falling of his machine and, in his excitement, suddenly change his angle of flight, no matter how slight the change, he would awaken the gyroscopic force in his motor, and instantly the nose of his aeroplane would be thrust violently downward and the press of the world would chronicle another "unaccountable accident." With a properly built aeroplane and equipped with a motor having no gyroscopic force, one can glide across air streams, or "pockets," with perfect safety, and these "hoog-a-boos" of the air will simply add to the exhilaration of flying.



THE MAURICE FARMAN BIPLANE USED BY EUGENE RENAUX IN HIS RECENT WORLD'S RECORD DURATION FLIGHT OF 12 HOURS 12 MINUTES.

FOREIGN NEWS

Algeria

Aviator Edonard Paillole fell to his death from an altitude of 150 feet on July 14 at Maison-Carree, Algeria. As he was starting for a flight the machine turned turtle.

Austria

On July 26th Sablatnig on a new biplane made a cross-country flight from Wiener-Nieustadt to Fischamend and return. On the same day Lieut. Miller accomplished a cross-country passenger flight of 100 kilometres on an Etrich monoplane. Leaving Wiener-Nieustadt with Lieut. Riedlinger, he rose to a height of about 500 feet, and passed over Gramat-Neusiedl, Bruck, Ebergassing, and Fischamend, which place he was approaching at a height of 2,500 feet when he met Sablatnig returning. He immediately turned round and returned with him to Wiener-Nieustadt.

A Bavarian and Austrian circular flight, touching Munich, Stuthgart, Nuremberg, Salzburg, Linz and Vienna to take place during May next year, is being arranged. The Bavarian Aero Club has been entrusted with the organization work.

Belgium

On July 18th at Kiewit, Jean Olieslagers, the famous Belgian pilot, made a new world's record for distance of 388 miles (625 Kil. 200). Last June this flyer made a tentative flight for the $4,000 Grand Prize of the Aero Club of Belgium and made a Belgium record for distance of 219 Kl. 500. This was beaten on July 7th by Verrept who made a record of 338 Kil. 550 in 4 hours, 19 m. 42 seconds, establishing new Belgian records for both distance and duration. Olieslagers tried again with the aforementioned results. The record was made on a Blériot monoplane, the flight occupied 7 h. 18 m. 26 2-5 s.

Lanser made a good cross-country flight July 24-25. Leaving Berchem at 7.30 in the evening on the 24th, he landed half an hour later on Mont Cesar at Louvain, where he decided to spend the night. At 3.30 the next morning he was away again, and landed at 4.30 at Kiewit.

As we go to press the Belgian Circuit is in progress. There are seven stages as follows:

August 6—Belgian Circuit, 1st stage: Brussels-Mons.

August 8—Belgian Circuit, 2nd stage: Mons-Tournai.

August 10—Belgian Circuit, 3rd stage; Tournai-Blankenberge.

August 13—Belgian Circuit, 4th stage: Blankenberge-Antwerp.

August 15—Belgian Circuit, 5th stage: Antwerp-Liege.

August 17—Belgian Circuit, 6th stage: Liege-Namur.

August 20—Belgian Circuit, 7th stage; Namur-Brussels.

Canada

The aviation meet at Hamilton, Ontario, where J. A. D. McCurdy, Charles F. Willard and James V. Martin flew for four days, was closed on August 2nd with a race from Hamilton to Toronto between Willard and McCurdy. Willard left the Hamilton aviation field at 6 o'clock sharp and McCurdy followed in ten minutes. McCurdy's time for the 45 miles was 32 minutes. Willard made the trip in 45 minutes. McCurdy was using his new McCurdy racing biplane and Willard was using the Willard passenger carrying machine, both machines being equipped with Gnôme motors. It was the intention of the aviators on reaching Toronto, where the aviation meet opened on August 3rd, to land at the aviation field at Donland's Farm, but owing to adverse climatic conditions and a heavy smoke from the city, they were compelled to alight before reaching the field. McCurdy alighted at Fisherman's Island in Toronto harbor; Willard landed in the Toronto Exposition Grounds. McCurdy's altitude in this flight was at an average of about 3,000 feet. Willard did not go so high. This is the first city to city race between aeroplanes on the American continent, and the speed that McCurdy got out of his little racing biplane in this flight surprised himself.

China

Messrs. Koong and Haang, officers of the Chinese Army who have just concluded their training at the Brussels military school, have been ordered by their Government to go to the military aviation school, Paris, to learn aviation.

England

Morrison, the well-known English aviator, flew from Paris to Paris on July 7-8. After leaving Issy he lost his way, but finally landed near Calais. The day after he started again, followed the mail boat across the Channel, landed near Eastbourne for fuel, then flew to his destination, Shoreharm.

The "Daily Mail" Circuit of England

The biggest aviation event ever held in England, the Circuit, started on July 22d. The winner was to receive the $50,000 prize offered by the London *Daily Mail*. (Map and details of this Circuit occur in AIRCRAFT for May.)

The list of entrants was as follows:

1. André Beaumont (monoplane Blériot).
2. H. J. D. Astley (monoplane Birdling).
3. R. G. Fenwick (monoplane Handley-Page).
4. Lieutenant J. G. Porte, R. N. (monoplane Deperdussin).
5. Ronald C. Kemp (biplane Avro).
6. G. Compton Paterson (biplane "Baby" Grahame White).
7. Jules Vedrines (monoplane Morane-Borel).
8. James Radley (monoplane Antoinette).
9. G. Blanchet (biplane Breguet).
10. Lieutenant R. A. Cammell (monoplane Blériot).
11. E. Audemars (monoplane Blériot).
12. James Valentine (monoplane Deperdussin).
13. X. (Aeroplane Bristol).
14. R. C. Gordon, England (aeroplane Bristol).
15. C. P. Pizey (aeroplane Bristol).
16. C. Howard Pizton (aeroplane Bristol).
17. Pierre Prier (monoplane Bristol).
18. S. F. Cody (biplane Cody).
19. M. Tabuteau (aeroplane Bristol).
20. F. Conway Jenkins (mono Blackburn).
21. Olivier de Montalent (biplane Breguet).
22. Gustave W. Hamel (monoplane Blériot).
23. Lieutenant H. R. P. Reynolds, R. E. (biplane Howard Wright).
24. Robert Loraine (monoplane Nieuport).
25. B. C. Hucks (monoplane Blackburn).
26. C. T. Weymann (monoplane Nieuport).
27. H. Wynmalen (monoplane Deperdussin).
28. Lieutenant H. Bier (monoplane Etrich).

For different reasons de Monlinais, Radley Soraine, Tabuteau, Morison, Prier, Fenwick, Grahame-Gilmour, Kemp and Lieut. Porte did not start.

Brooklands-Hendon; July 22.

The start took place promptly at four o'clock on the 22d. Beaumont starting first, being followed in rapid succession by the rest. The aviators arrived at Hendon in the following order and time:

1. Vedrines, 0:19:48.
2. Beaumont, 0:20:2.
3. Hamel, 0:21:45.
4. Valentine, 0:22:41.
5. Astley, 0:24:16 4-5.
6. Audemars, 0:25:13.
7. Cody, 0:25:18.
8. Blanchet, 0:26:9.
9. Pixton, 0:27:9.
10. Patterson, 0:27:52.
11. Montalent, 0:29:24.
12. Pizey, 0:48:00.
13. Weymann, 0:58:18.
14. Reynolds, 1:41:56.
15. Bier, 2:06:27.
16. Hucks, 2:15:04.
17. Cammell, 3:03:31.

Hendon-Edinburg, July 24.

The next start took place at 4 A. M. Monday, July 24. Beaumont, through a mistake, started first in place of Vedrines at 3:59:36; Vedrines followed at 4 o'clock, the rest following at intervals, Only three reached Edinburgh; Vedrines, Beaumont and Valentine. Their time for the distance was as follows:

1. Vedrines, 7:15:50.
2. Beaumont, 7:33:41.
3. Valentine, 13:03:41.

The others: Weymann broke the chassis of his Nieuport at Leeds; Patterson and Audemars abandoned the race at Hendon; Blanchet broke his machine at Streatly; Pixton broke at Spofforth; Cammell quit at Wakefield; Lieut. Bier rested at Codiget; Reynolds and Cody rested at Harrogate; Montalent and Pizey rested at Melton-Mowbray; Hucks rested at Burton; Ashley rested at Kempton; Hamel abandoned the race at Harrongate.

Edinburgh-Bristol, July 25—

The third leg, Edinburgh-Bristol, was practically a race between Beaumont and Vedrines, Valentine having been forced down at Castle-Cary, between Sterling and Glosgow, owing to propeller breaking on landing to find his way. In this journey Beaumont, who had heretofore taken advantage of the rules that allowed twelve hours rest for each leg and had rested longer than Vedrines, gained first place by skilful piloting.

Vedrines lost nearly one and a half hours through his mistaking the flying grounds of an aviation school for the control. The classification was then:

1. Beaumont, 17 hours 21 m.
2. Vedrines, 18 hours, 45 m.

Bristol-Exeter-Bington-Brooklands, July 26—

This was a close race between Beaumont and Vedrines but Beaumont arrived first at Brooklands, beating Vedrines by 1 hour 8 mintes, 59 seconds, thus winning the $50,000 *Daily Mail* prize. His official time for the 1,010 miles was 22 hours 29 minutes 6 seconds. Vedrines' time was 23 hours 38 minutes 5 seconds.

Lord Northcliffe, the owner of the *Daily Mail,* who offered the prize was at Brooklands to receive and greet the aviators. A large enthusiastic crowd was assembled at Brooklands to receive the aviators and Beaumont was carried shoulder high. Vedrines was presented with a solatium of $1,000 by Lord Northcliffe. Valentine and Cody were the only other two to finish. After fixing his propeller at Castle-Cary Valentine proceeded towards Bristol, but could only go as far as Carlisle; then a new mishap held him up and only finished on August 4th.

Captain Cody first damaged the chassis in landing near Durham and could not proceed again until some days later. He finally finished on August 5th.

On August 6th Miss Trehawke Davies, an English lady, booked a return ticket between Hendon and Brighton at the Hendon offices of the Aeronautical Syndicate, Ltd. The flight took place on August 8th as per schedule. Mr. H. Barber, the famous Valkyrie flyer piloted the machine. (The "Valkyrie" machine was fully described in the March, 1911, issue of AIRCRAFT on page 9.)

France

VEDRINES MAKES NEW DURATION RECORDS

On August 9, Jules Vedrine added a star to his crown by making a world record for duration of 800 kilometres (497 miles). The flight took place near Paris and lasted 7 hours 56 minutes 36 seconds. A height of 1,500 feet was maintained throughout the flight; the machine was a Morane, the same one with which he won the Paris-Madrid race and almost won the Circuit of Britain contest.

On July 14th Alfred Leblanc, the celebrated Blériot pilot Hubert Latham, the famous Antoinette flyer, Captain Bois, pilot of dirigibles, and Captain Secouney, well known expert flyer of military kites, were made chevaliers of the Legion Honneur.

July 25th was the second anniversary of Blériot's cross-channel flight. A monument commemorating the feat which was inaugurated erected on the border of the Calais-Sangatte route was on July 16th. Addresses were made by M. M. de Count de la Vaulx, Edgar Cordier, and M. Dupuis, the mayor of Sangatte. Mr. Blériot, who was present, thanked the Committee, and modestly said the honor was France's, of which he was proud to be a son.

Mme. Denise Moore was killed while flying at Etampes July 21. She was flying at a height of 120 feet when the aeroplane turned turtle. She was pinned under the motor and died instantly.

Another death, that of Henry Jolly, a licensed pilot, took place July 23rd, at the Juvisy areodrome. The weather was unfavorable, the excessive heat having disturbed the atmosphere. Jolly persisted in making a flight with his 70 H. P. biplane racer. At an altitude of 200 feet the pilot lost control and after making two quick turns the aeroplane dashed to earth, killing the pilot instantly.

In the course of some experiments in wireless telegraphy on July 23, Capt. Brenot succeeded in transmitting a message from a Farman biplane, on which he was carried by Lieut. Menard, to the Eiffel Tower, about 35 miles from Rambouillet, above which the aeroplane was flying when the message was sent.

On July 21 inst. a series of experiments with an automatic stability apparatus were carried out at Villacoublay in the presence of General Roques, the Archduke Alexandre, Commandant Renard, MM. Painleve, Eiffel, Leon Barthou, etc. Lieut. Menard was the pilot of a Henry Farman machine while Chevalier was piloting a Nieuport monoplane. Later Nieuport took up a passenger on his new military machine.

French Military Competition

The following machines have been entered for trials to be conducted by the French military authorities:

Antoniette	Goupy
Astra	Guyot
Behin	Hanriot
Bilard	Lasternas
Blanc	Lecomte
Blériot	Legras
Bonnet-Labranche	Lepers
Borel-Moraine	Maurice
Bourgoin et Kessels	Moreau
Breguet	Nieuport
Caille	Paulhin
Clement-Bayard	Pesserat et Radiguet
Collin de Laminiere	Pierre Pons
De Bellet	R. E. P.
Deperdussin	Roissard
Dhumbert	Savary
Dumont	Sommer
Etienne	Timaskian
Fabre	Verdier
Farman (H.)	Zodiac
Farman (M.)	

The makers of engines who have entered include:

Antoinette	E. N. V.
Anzani	Gnome
Aster	Gregoire
Aviatic	Labor
Barjquand et Marre	Lemasson
Berthaud	Nieuport
Canda	Panhard et Levassor
Canton	Péugeot
Chenu	Renault
Clement-Bayard	R. E. P.
Clerget	Unne
Coanda	Verdet
Dansette et Gillet	Viale

Flying at Mourmelon, July 21st, Loridan made a new record, flying aggregate distance of 700 kilometres (465) miles cross-country, over a 100 kil. course in 11 hours 33 minutes. This flight was the first this year for the Michelin Cup. Loridan started at 3.12 in the morning and flew at an average speed of 90 kilometres per hour, stopping every 100 kilometres to replenish the tanks. This gave him two world records, the other being for altitude made July 8th. The machine used was a small Henry Farman biplane.

The Voisin Brothers have made a number of experiments on the Seine with the Canard hydro-aeroplane of late, all successful, the machine rising and landing easily on the water's surface.

Captain Julian Felix, director of the Military Aviation School, made a new altitude record at Etampes on August 5th, of 11,330 feet. The ascent was made with a Bleriot and required sixty-three minutes steady climbing. The descent took but twelve and one-half minutes. This beats Loridan's record of last month by 572 feet.

LORIDAN, WHO MADE AND LOST TWO WORLD'S RECORDS WITHIN A MONTH.

Renaux, the winner of the Michelin prize, made a new duration record of 12 hrs. 12 min. on August 7th. He started at 3 A. M. and flew over a course between St. Cyr and Chartres, covering a distance of 690 Kms. The excessive heat affected part of the covering of the planes and he was obliged to land. This record was made on a Maurice Farman machine.

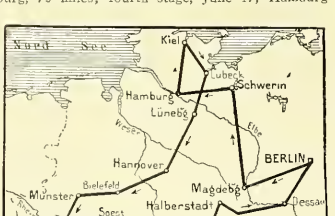
Germany

THE GERMAN CIRCUIT

(By Special Correspondent Stella Block.)

The German Circuit, which is the longest circuit made so far both in distance and duration ended most successfully. The race was divided into thirteen stages as follows:

First stage, June 11, Berlin-Magdeburg, 87 miles; second stage, June 13, Magdenburg-Schwerin, 115 miles; third stage, June 15, Schwerin-Hamburg, 75 miles; fourth stage, June 17, Hamburg-



MAP OF THE COURSE OF THE GERMAN CIRCUIT RACE.

Kiel, 68 miles; fifth stage, June 23, Kiel-Lubeck-Luneburg, 95 miles; sixth stage, June 24, Luneburg-Hanover, 71 miles; seventh stage, June 26, Hanover-Bielefeld-Munster, 112 miles; eighth stage, June 29, Munster-Cologne, 104 miles; ninth stage, July 2, Cologne-Dortmund, 87 miles; tenth stage, July 3, Dortmund Soest-Kassel, 95 miles; eleventh stage, July 5, Kassel-Nordhausen, 63 miles; twelfth stage, July 7, Nordhausen-Halberstadt (over Harz Mts.), 70 miles; thirteenth stage, July 10, Halberstadt-Dessau-Berlin, 126 miles. Total, 1,168 miles.

Eleven pilots started, nine with passengers, but only two completed every stage. The rest remained to fly at different meets.

1. König (bip. *Albatros*, Gnôme 70 H.P.), covered 1.506 kil.+25% for passenger=1.882 kil. 5.
2. Vollmüller (mono. *Etrich-Rumpler*), (Mercédès 70), 1.470 kil. + 25% = 1.837 kil. 5.
4. Lindpaintner (bip. *H. Farman*, Gnôme 70 H. P.), a parcouru 978 kil. + 25% = 1.222 kil. 5.
3. Büchner (bip. *Aviatik*, Argus 100), covered 1.091 kil. + 25% = 1.363 kil. 75.
5. Wittenstein (bip. *M. Farman, Renault*, 65), 840 kil. partiellement 25% = 941 kil. 5.
6. Wienczlers (mon. *Morane*, Gnôme 70), 751 kil. alone = 751 kil.
7. Schauenburg (bip. *Wright*, N. A. G., 50), 457 kil. + partiellement 25% = 941 kil. 5.
8. Thelen (bip. *Wright modifié*, Gnôme 70), 497 ki. seul, 497 kil.
9. Lassen (*Albatros* Gnôme, 70), 255 kil. + 25% = 318 kil. 75.
10. Müller (bip. *Saxon*, Gnôme, 50), 143 kil. seul, 148 kil.
11. Jalmow (mon. *Harlan-Argus*, 65), 83 kil. alone, 83 kil.

All the machines except two were of German construction. The two exceptions were French. Only one serious accident took place, Müller, who came to grief on the first stage from Berlin to Magdenburg.

The first prize goes to Benno König, Albatros, with 1.882 kilometres 50 metres; the second to Vollmüller, Etrich-Rumpler, 1.837 kilometres 50 metres, the third to Büchner, 1.363 kilometres, Aviatik, and the fourth to Lindpaintner, Farman, with 1.222 kilometres. The War office prizes go to König and Vollmüller, the military authorities purchasing likewise König's machines. At the eleventh hour the Crown Prince presented two prizes and there are others to be awarded.

The German Parseval airship ordered by the Russian government went for a long tour near St. Petersburg early in June, carrying a commission from the Russian War office.

An interesting military flight from Vienna to Buda-Pest was carried out recently by Captain Von Umlauft on a Lohner-Daimler monoplane covering a distance of 270 kilometres in 2 honrs 22 mins. On the return, in landing the machine turned over but no damage was done to either man or apparatus.

"Schwaben," the new Zeppelin ordered by the dauntless German Aerial Navigation Co. has been through its trials, the first of which was supervised by Count Zeppelin himself. It is to go to Baden-Baden in due course.

Helmuth Hirth, using an Etrich-Rumpler aeroplane fitted with a 70 H.P. mercedes motor, won the handsome prize of 50,000 marks given by the Kathreines Malt Coffee firm for a journey from Munich to Berlin on June 30th. Starting at 6:30 P. M. from Munich on June 29th accompanied by a passenger, Hirth arrived at Nurembery two hours later, where he remained till 4:20 A. M. on the following morning. He flew to Leipzig, where he made a short landing, reaching Johannesthal at 9 o'clock in the morning. His actual flying time for the 550 kilometres was 5 hours 39 mins.

Italy

On July 9th Manisserro flew on bis Blériot from Turin to Racconigi where the Royal family were staying. As he circled the castle he saw Queen Helena and other members of the Royal family at one of the balconies. Leaning down in the frame of the monoplane Manisserro produced a small Italian flag which he waved with one hand while steering with the other.

Holland

The War Minister of Holland has issued orders commanding the officers in charge of fortifications to notify the police when balloons pass over them, so that upon alighting the balloonists can be searched and examined to ascertain whether photographs or sketches have been made.

Russia

M. Vassilieff, a Russian aviator, won the St. Petersburg-Moscow race on July 24th. The distance flown was over 400 miles and the prizes totaled $50,000.

M. Shusarenkos, one of the contestants in the race, fell near Tsarskoe-Selo on July 25th and was severely injured, while his passenger, M. Shimansky, was killed.

Spain

A military aviation school has been established near Madrid. Osmont, the French aviator, was here for a time teaching five officers of the Spanish Army, who are now instructors in the school.

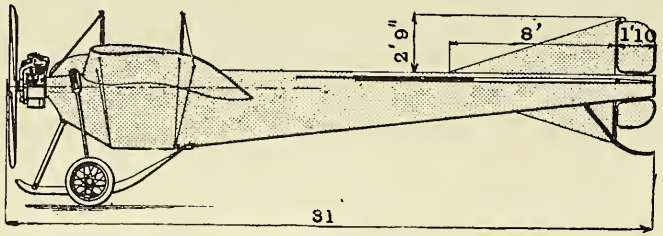
Spain's cross-country race from Valencia to Alicante and back was won by Le Lasseur de Ranzay, flying a Blériot. The outward journey was made on the 29th of July, when the 140 kiloms. which separate the two towns were covered in 1 hour 33 minutes, while at the end of the return trip on Monday last Le Lasseur's time for the complete course of 280 kiloms. is given as 3 hrs. 48 mins.

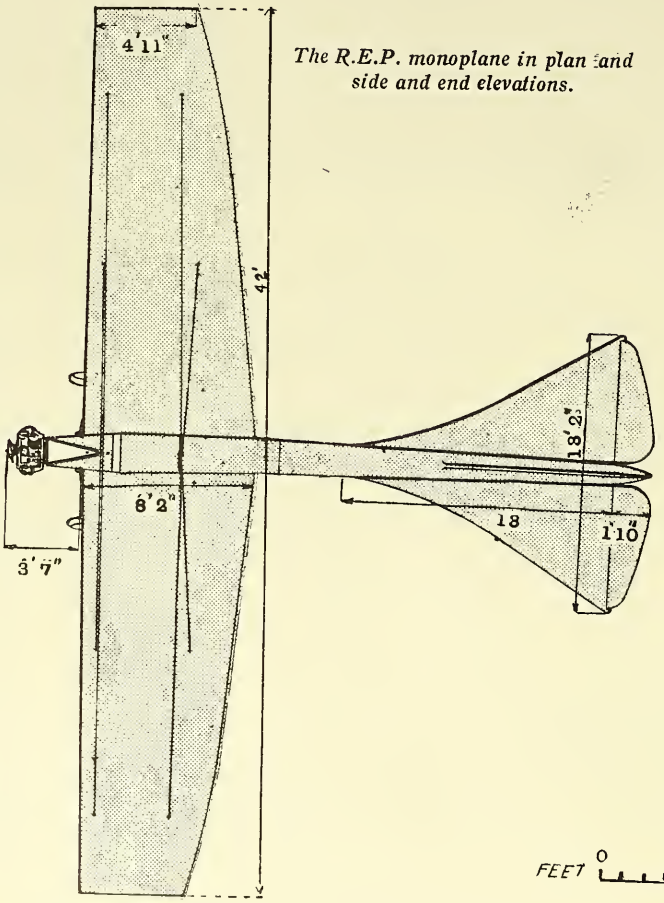
1. Beaumont, the winner of the English Circuit Race. 2. Jules Vedrines, the present holder of the Michelin Cup record, who finished second in the English Circuit. 3. A scene during a duration contest at the Turin meet. The monoplane shown in the foreground is the latest Pivot-Koechlin machine, which was flown by Weiss. 4. Mlle. Marvingt at the wheel of her Antoinette, with which she performed so creditably at the Turin meet. 5. A group of aviators who took part in the Turin meet. 6. Manissero, one of the stars at Turin. 7. The new Vickers-Maxim monoplane, constructed to the design of Esnault Pelterie and which will be used in Dr. Mawson's expedition to the South Pole.

SUCCESSFUL FLYERS DESCRIBED

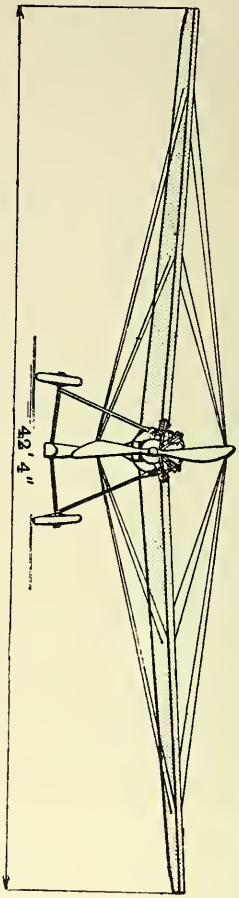
THE R.E.P. MONOPLANE

By W. H. Phipps





The R.E.P. monoplane in plan and side and end elevations.



SCALE

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THE R. E. P. MONOPLANE

By W. H. Phipps

In view of the success attained by the R. E. P. monoplanes in recent European events, particular interest is attached to these machines and we believe the following description will not be untimely.

DESCRIPTION.

The Frame.—This is made entirely of steel tubing joined by autogenous welded fittings; the whole is triangulated; this construction is far stronger than the ordinary wooden one, it cannot become deformed and besides permits building every piece exactly for the weight that it must support. The stern part, which begins at the rear beam of the wings has a lozenge-like section; it diminishes toward the rudder and although very long is light and perfectly rigid.

Landing Chassis.—The apparatus is supported by two parallel wheels, each of them fitted to an independent half axle, connected to the lower part of the frame; a tube running to each side of the frame connects it to springs composed of four bands of india-rubber. A large skid, placed between the wheels under the motor protects the propeller and prevents the machine from turning over and also absorbs any great shock.

Wings.—Each wing is composed principally of two solid beams. The ribs are placed over and above them with light wooden cross-bars interlacing them in order to sustain the canvas. The ends of the beams are fixed to the frame by metal joints.

Seats and Control.—The driver and the passenger sit between the wings in the square part of the frame; their places are roomy and afford a good view. The rear seat is for the pilot and is fitted with controls and levers, which can be connected with double levers for teaching. These can be released by a special device in case the pupil does not follow the instructor's movements. The controls are instinctive; a lever in the left hand operates the rear elevator, and by lateral movements the warping of the wings; a lever in the right hand operates the steering rudder.

Motor.—The R. E. P. 60 H.-P. 5-cylinder motor is fixed upon the front of the frame by four bolts. The magneto is made for double ignition and the motor is started by contact upon accumulators. A speed indicator shows the pilot the number of revolutions of the motor.

Tanks.—These are generally made for two-hour flights and are provided with levels and taps which are placed behind and over the motor. The motor bears an air pump which allows the use of tanks in supplement, placed in the frame under pressure.

Spring Belt.—The R. E. P. Spring Belt absorbs shocks of bad landings and prevents the aviators from being thrown out.

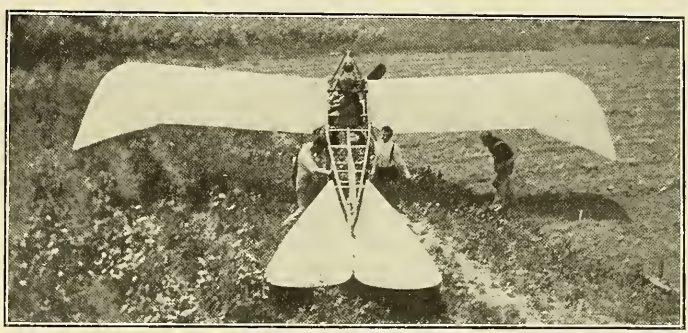
MAIN DIMENSIONS.

Total Length.—31 feet.
Width.—42 feet.
Weight of Apparatus.—500 Kilogs.
Weight with passengers and fuel.—700 Kilogs.
Length of wing.—20 feet.
Width of Wing.—8 feet 2 inches to 4 feet 11 inches.
Motor—60 H.-P. R. E. P.
Speed.—90 kilometres.

THE "HEINRICH MONOPLANE"

By A. Heinrich

The main fuselage consists of a box girder 22 feet long. Four ash spars run the length of the fuselage. The two lower ones being straight, while the two top spars are arched, the fuselage is strengthened out by stanchions placed every 30 inches apart held in place and further strengthened by bolts and steel wire No. 30. The four main spars come together at the stern and are fastened to a stern post of ash 1 inch by 2 inches, to which the rudder, 2 feet by 3 feet is hinged. The four main spars of the fuselage are not of one length, but are joined together in the middle of the fuselage between the stanchions by a sliding fit into square steel tubes, at the front of the fuselage they are 1¼ inches square and taper down to ¾ inch square at the stern. The vertical and horizontal stanchions of the fuselage are oval in shape. The spread of each wing is 13 feet 6 inches and the chord 6 feet 6 inches. The wings are built up on two ash main spars channelled on for lightness and two solid spars. The front main spar is about 18 inches from the leading edge and the next main spar is 2 feet back from that, the other two spars are solid, 1 inch thick, and 2 inches wide at the fuselage, tapering down to 1 inch at the end of the wing. The two front spars of the wings are bolted through the longitudinal members of the fuselage and are braced across the fuselage by a steel tube which keeps it from collapsing. The two front main spars are a sliding fit into a steel tube running around the fuselage. The ribs are of I-beam section made up of three pieces and are spaced 8 inches apart. Lateral stability is obtained by warping the wings. The landing chassis is of the wheel and skid type. The tail is flat and has about 35 square feet of surface, and wings have about 180 square feet. The wings are held up by four No. 33 steel wires fitted with turnbuckles and running to a V truss of steel tubing. The under fastening of the wings is by 3 steel bands in front running from the landing chassis to the wing, two to the front spars and one to the main spar. The warping wires are two in number of flexible steel and run from the rear main spar to the warping quadrant which is on a V truss under the aviator's seat, all three controls are governed by the one steering wheel. The aviator sits a little forward of the trailing edge of the wings. The motor and gas tanks are under a hood much the same as on an automobile.



THE HEINRICH MONOPLANE, A NEW AND INTERESTING AMERICAN MACHINE CONSTRUCTED SOMEWHAT ON THE LINES OF THE BLERIOT.

BOOK REVIEW

CHARTS OF THE ATMOSPHERE FOR AERONAUTS and AVIATORS, by A. Lawrence Rotch, S. B. A. M. and Andrew H. Palmer, A. M., (first edition) 11¾ x 9¼ (John W. Wiley & Sons).

Messieurs Rotch and Palmer need no introduction to the aeronautical fraternity. They are well known and the present book, 24 charts, with as many pages of explanatory text—the results of close study of meteorologic conditions,—will be appreciated by those who want to conquer the atmosphere methodically, especially aeronauts.

FLYING MACHINES TO-DAY. By Prof. William Duane Ennis, of Polytechnic Institute, Brooklyn. (D. Van Nostrand Company.) Cloth, 12 mo.

In this book the author explains to laymen the scientific principles involved in the art of flying, touching on almost all problems of heavier than air flight. In the illustrations, of which there are 123, one is pleased to note a number of the less known American made aeroplanes and motors that do not usually find way in books.

Les lois expérimentales de l'Aviation, par A. Sée, former pupil de l'Ecole Polytechnique. A volume of 348 pages illustrated with 149 drawings. Price 7 fr. 50, Librairie Aéronautique, 40, rue de Seine, Paris.

"M. Sée's work constitutes one of the best works on aviation and worthy to be put in a class with those by Séreau and Ferber," wrote M. Faroux in the Parisian "Auto," one of the great authorities on aéronautics.

The author does not deduct any theory by means of reasoning, for he shows the danger of reasoning a priory in aerdynamics, which leads often to completely erroneous theories; he exposes the serious experiments made on the resistance of the air and the purely empirical laws that follow. Then he applies these laws to the aeroplane and studies the speed, work, useful lift and the drift.

He gives further a general theory of the propeller at a fixed point and the helicopter and the propulsive screw and mostly approves M. Riabouchinsky's laws on the screws, which reverse most of the former laws made by Hiram Maxim, Drzewiecki, Tatin, etc. A very complete study of the bird's different kind of flights, and especially of the "vol à voile" (soaring flight) closes this book, which is regarded as one of the classics of aviation.

The Aeroplane, Past, Present and Future, by Claude Grahame-White and Harry Harper, with contributions from well known authorities on aviation. It is a volume of 318 pages selling for $3.50 and published by J. B. Lippincott Company.

The work is a standard reference for all that has been done or attempted, or is in progress for the advancement of aviation, for some time to come.

The world of pioneers is first described by one who actually witnessed the early flights of Captain Ferber, Santos-Dumont, Wilbur Wright and Henry Farman. The story of the application of the gasoline motor to aeroplanes is told—how it was that a suitable propulsive force made flying possible. This leads to the fascination of men's first flights, and it is explained how the duration of aerial journeys was lengthened from seconds to minutes and minutes to hours. From this the reader is taken to the feats of the present day. All the most notable flights of the world's famous airmen are described. Records in high-flying, speed, cross-country, and over-sea flights are concisely tabulated. It is made possible to ascertain, at a glance, what the most remarkable feats have been. A special section of the book is devoted to an analysis of the aeroplane accidents that have happened. Each disaster is described, and, where possible, an explanation is given. A specially compiled list, alphabetically arranged, gives the Aviators of the World, with the aeroplanes they pilot, and notes concerning their flights. The building of aeroplanes is exhaustively dealt with, and finally come important articles supplied by the most famous authorities upon aviation.

PEUT-ON VOLER SANS AILES? par Paul Collard, In génieur civil, ancien officier de marine. Un vol. in-8 de 108 pages.—Prix:3 francs. *Librairie Aéronautique*, 32, rue Madame, Paris.

Les accidents d'aviation si nombreux, et souvent mortels, qui viennent d'assombrir la fin de l'année, appellent l'attention du public et surtout des spécialistes de l'aviation sur le nouvel ouvrage qui vient de paraitre:

Peut-on voler sans ailes?

par M. Paul Colliard.

L'auteur étudie les diérents modes de sustentation d'un corps pesant dans l'air et démontre la possibilité de réaliser ce qu'il appelle: *La sustentation en vitesse.*

Cet ouvrage donne lieu a un débat sicentifique intéressant, et tous ceux qui s'occupent d'aviation voudront le lire, your prendre parti pour ou contre la théorie de *l'Aéroleт.*

THE SOUTH AMERICAN TRADE

DO you remember the advice Horace Greeley used to give to ambitious men a few decades ago? "Go West, man, go West," he used to say, "there are opportunities worthy of your aspirations." He told them so because he knew the West—he knew of the rich resources, the splendid opportunities and their possible developments. Thousands of men who took his advice were benefited and made big gains.

In urging you to look Southward, to take steps to extend your industrial activities as far as the South American countries, we believe we are advising you to do something that will be highly beneficial to you, and we speak advisedly. Just as Horace Greeley advised men to go West because he had investigated and knew of the opportunities open there for them, we advise you to turn your attention to the South American trade because we have investigated and know that there is the making of a big industry, that the time is opportune, and that it is quite possible, if cared for rightly, that the South American trade will in a couple of years be as important as the home trade. This is your opportunity, don't overlook it.

The Editor.

New Corporations

Sharp Aeroplane Co., Cleveland, O., $10,000. James G. Reyant, K. C. Morris, Amiel Radtke, John Sharp and Hattie Sharp.

Tacoma Aeroplane Mfg. Co., Tacoma, Wash., $50,000. G. W. Stoomer, W. F. Longmire and J. A. Anderson.

Reimers-Mair Biplane Company, Chicago, Ill. Name changed to Standard Aviation Company.

Continental Aero Club, Richmond, Va., capital, $1,000. Incorporators: W. F. Higgins, W. J. Newson, H. R. Tevis and S. E. Norman.

The Pioneer Aeroplane and Exhibition Co. has been incorporated in St. Louis for $12,000.

Utah Aviation Association, $25,000, Salt Lake City. J. A. Kaufman, W. E. Palmer, E. M Cooper, Peter Clegg, William R. Smith, William S. Marks, William Soelburg and Philip Aljets.

The Bridgeport Aeronautical Co., Portland, $100,000. C. E. Eaton, T. L. Croteau.

Chicago Aeroplane Mfg. Co., of Chicago, $100,000. Incorporators: W. J. Mahoney, M. C. Taylor, W. N. Amkers.

McCurdy Aeroplane Co., J. A. D. McCurdy, $5,000, 1780 Broadway, New York.

The **Hall-Scott** motor continues to gain in popularity and machines all over the country are being fitted with it and making successful flights. Amongst those who have recently purchased these motors are: Dr. H. Walden, William Evans, The Rex Smith Co.

Some splendid work has been done with the new model **Kirkbam** motors during the past month and a recent purchaser, H. Angus Conners, has been making successful flights in a new biplane of his own design fitted with one of the 50 H. P. six-cylinder models.

We have received from the **International Oxygen Company,** New York, a catalog that would, we believe, convince many of our constructors that they could use oxygen and hydrogen for soldering, welding, etc., to good advantage.

Leo Stevens, the well known balloonist, is now manager for Harry N. Atwood, America's great cross-country flier.

Maximotor Makers of Detroit report that a 40-50 Maximotor equipped biplane has just been ordered by the Elton Auto Co., of Youngstown, Ohio. Mr. Elton and his assistant, Mr. McQuiston, have arranged for taking tuition at the Wright Brothers' school in Dayton, Ohio. Mr. Elton intends to fly his new machine on Maximotor Maker's field in Detroit. Mr. Elton states that he will have a large monoplane with a 60-75 N. P. Maximotor inside of two months.

Harris Bros., Vehicle Dealers of Columbus, Ohio, have purchased a model E Maximotor for their new "Antoinette" monoplane. This Maximotor will replace Harris Bros. 8-cyl. engine of another make which did not give the required power.

Mr. N. N. Umstead, southern capitalist, Durham, N. C., manager of the Umstead Aviation Co., is equipping his first 'plane with a 6-cyl. 50-60 H. P. Maximotor.

The Roberts Motor manufactured by the Roberts Motor Co., of Sandusky, Ohio, has been giving a very good account of itself and bids fair to become one of the most popular American motors. During the past month several new machines have been fitted with this motor and have made successful flights. This is the first American motor to be successfully used on a passenger-carrying type Blériot.

A new light-weight clutch of exceptionally good design is the Hele-Shaw clutch, which is handled exclusively in this country by the **Merchant and Evans Company,** of Philadelphia, Pa. The clutch is of a new design with V grooved friction plates that the clutch is locked in normal flight but can be instantly released when desired by pushing a hand lever.

Automobile Club Motor Contest

Fifteen entries were made for the $1,000 prize offered by the Automobile Club of America. This contest was to close on July 1st, but was extended owing to the small number of entries. The entries to date are as follows:

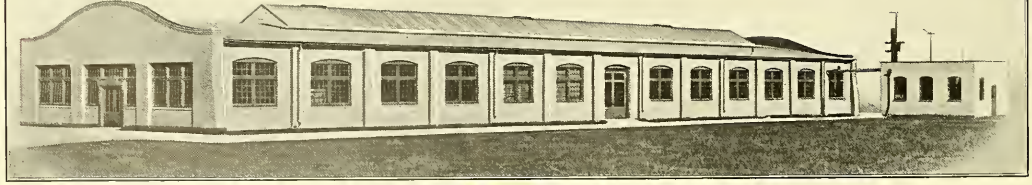
Albatros six-cylinder and Albatros two-cylinder, entered by Albatros Engine Corporation; Anzani, entered by Aerial Equipment Company; Cooke revolving, entered by W. C. Cooke; Gnome, entered by Aeromotion Company of America; Harriman, entered by Harriman Motor Company; Ithaca, entered by Ithaca Motor Company; Kirkham, entered by Charles B. Kirkham; Maximotor, entered by Maximotor Company; Renault, entered by Aerial Equipment Company; Requa, entered by Requa Motor Company; Roberts, entered by Roberts Motor Company; Springfield, entered by Springfield Gas Engine Company; Willard, entered by H. J. Willard; Wright, entered by the Wright Company.

The American Aeroplane House of Garden City, L. I., recently delivered a new type tandem Blériot to Judge J. Albert Bracket of Boston, Mass. The machine is of the latest type, fitted with the new inverse tail and the power plant is a 50 H. P. Roberts motor.

The monoplane was demonstrated by Willie Haupt and at the first attempt, made a straight-away flight across the field. A few minutes before, Ovington, who had tried out Wm. Evan's monoplane, had an accident, running into a ditch, and turning over, pinning him underneath the machine. Haupt, who landed close by, was the first to reach the overturned machine, and freed Ovington.

On Saturday morning, July 29th, Haupt again flew the machine, this time, going up to a height of 800 feet, staying in the air fifteen minutes, and circling the field several times. A half hour later, in the rain, he made a flight of seven minutes, this time carrying a passenger, George McNarra, of Boston, at a height of 100 feet.

The Goodyear Tire and Rubber Co., of Akron, Ohio, announces that the following well known aviators and companies use their fabric: The Wright Bros. and their aviators; Glen H. Curtiss, Ely, McCurdy, Willard, Grahame-White, the Moisant International aviators and Burgess Co. and Curtiss.



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GENUINE Glenn H. Curtiss aeroplane at a bargain. Plane or Curtiss motor separate. Will sell on part payment. Geo. Russell, 1370 Broadway, Room 16, New York.

AEROPLANE FOR SALE—Genuine imported French Aeroplane, monoplane type, French motor 30 H. P., 4-cycle opposed 5 x 5 cylinders, water cooled with French radiator, G. & A. carburetor, French magneto, Chauviere propeller, for $800.00, complete ready to fly. The power plant is high-class in every way and is worth more than what we offer the complete outfit for. Lanier & Driesbach M'fg. Co., 248 Butler St., Cincinnati, O.

CURTISS TYPE BIPLANES, 29 x 4½, guaranteed to fly. Special price for September $375. Complete sets of main beams, uprights and laminated ribs, special for ten days only, for 29 x 4½ Curtiss, $37.50. National Aero Supply Co., Staion A., Indianapolis, Ind.

FULL-SIZE MONOPLANE—Ready for power, $75. Fine flyer, single passenger; 4c stamp for particulars. E. C. Minert Aero Co., 1122 West Locust St., Davenport, Iowa.

CURTISS IMPROVED TYPE—Made very successful flights on three first ones I built. Thousand feet high and 100 miles cross-country. Free flying lessons to buyer. New, complete, $2,500. Buy direct from aviator who flys and builds his own aeroplanes. Ten years' experience. H. C. Cooke, Aviator, 128 W. 65th St., New York City.

FOR SALE—Dirigible balloon 12,000 feet, including gas generators, 300 feet 14-foot side wall, all ropes, stakes and poles. Seven H. P. Curtiss engine, all new ready to fly. Address Bert Brandford, Connersville, Indiana.

FOR SALE—Farman type biplane complete—will teach operation to purchaser; big bargain. Box 741 c-o AIRCRAFT.

FOR SALE—Complete Farman type biplane: 50 H. P. Gnome motor with lots of extra parts. Guaranteed to fly and in perfect condition. Tools and accessories. Will sell separate. Address J. J. de Praslin, LeBlanc Hotel, Lake Charles, La.

FOR SALE—A perfect Santos Dumont monoplane, thirty horse power, fitted with pontons for water and wheels for land. Guaranteed to fly. Just the thing for an amateur. Will demonstrate to purchaser or send photo while in flight. Reason for selling: buying two-passenger machine. Price at Akron, Ohio, $800.00. J. R. Gammeter, Akron, Ohio.

FOR SALE—Two aeronautic motors, 30 and 60 H. P. respectively; weight 130 and 180 lbs. Price low. Address Freed Snelly, R. F. D. No. 2, Bridgeport, Conn.

EXCHANGE

AUTOMOBILE, gentleman roadster, exchange for complete Aeroplane, Plane alone, or engine, not less than forty H. P. Small Dirigible or cash. Particulars first letter. Have photos of car. Fine locker, perfect order, extras. Box, 732, AIRCRAFT.

POSITIONS WANTED

DO YOU wish an extremely light weight young man to assist you in aeronautical work? Great enthusiast. Address W. H. Morton, 358 Laurel St., Hartford, Conn.

WANTED—A position as mechanic's helper by young man 18 years of age. Have had shop experience on automobiles. Want to hear from some aeroplane company or private party. Address: Box 743, AIRCRAFT.

AVIATOR—Trained at Wright Flying School, Dayton, Ohio. Open for position. Address H. V. H., 323 Newport Ave., Milwaukee, Wis.

MECHANIC for all kinds flying machines, wants position. First-class, all round workman. Have held position as foreman. Can furnish best of references. Address Box 742, Aircraft.

YOUNG MAN would like position with aeroplane company or private party. Have made many balloon ascensions. Theo. Blumenfeld, Bloomfield, N. J.

YOUNG MAN (17) wishes position with reliable aeroplane company. Salary while learning $8.50. Franklin Mapes, Lynbrook, Long Island, N. Y.

YOUNG MAN desires position with an aviator as helper or as assistant in aeroplane factory. Address Alex Le May, 10 Bamton St., Yonkers, N. Y.

WANTED—Young man (26) American born of German parents, good education and habits, position as assistant with an aeroplane company or private party in the construction and assembling of aeroplanes or dirigibles, with a view to become an aviator. Have built successful working models, am well read and posted on aeronautical work. Have no end of ambition and interest. I am an experienced operator of high speed electric suburban trains. Address H. Ficka, Box 219, Edgewater, N. J.

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A Word as to Our Policy

We believe in the work we are doing and we know we are getting the results. We believe in earnest study and in honest effort and in the excellence these will bring. We love the zest of honest competition, the pleasure of the problem well solved and the work well done—not just **"well enough,"** but better than we or anyone else has done before. We know what we have done, are doing and can do. We know that our work succeeds and is a pleasure and profit to others. We believe in excellence, in courtesy, in fairness and the friendship these will bring. We are sure that we have the desire, the experience and the ability to **serve** you as others never have.

Mr. Aviator, your engine may be a good one yet go wrong sometimes, but if your propeller is wrong it is wrong **all the time,** and your engine and YOU are badly handicapped. If you have propeller trouble we can turn it into success; if you have success we can make that success greater and surer. One trial will convince.

Write for printed forms on which to describe your machine and ask us anything that you want to know about propellers.

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616 North G Street **Washington, D. C.**

YOUTH CUTS AIR CIRCLE

EARL SLAICK DOESN'T APPEAR NOVICE IN FIRST FLIGHT.

In Aero of His Own Construction, Pupil of Tom Benoist Makes Daring Trip Around Kinloch Aviation Field.

Earl Slaick, the latest novice at Kinloch Park, last night owed a score of spectators by describing a circle in the air on the first day that he succeeded in "flying," as aviators use that word.

The flight was all the more surprising in that it was made after sunset, 8 o'clock, and in the opposite direction of the path of the propeller. Slaick, while yet a prospective student at the St. Louis School of Aviation, did what none of Tom Benoist's pupils after two months at the school have attempted to do.

Among those who witnessed the flight were the pupils of the school, Benoist, and E. W. Roberts, manufacturer of marine and aeroplane motors.

As the boy brought the aeroplane to a stop, Roberts exclaimed, "Isn't that a daredevil for you?"

"Night-flying" had just been introduced by Benoist, who spent all the afternoon repairing his machine. Not until 7:40 o'clock was he ready to go up. In spite of the fact that the sun had set he twice circled the field remaining in the air five minutes. Young Slaick was sitting in the seat of his plane near the hangars as Benoist's machine was being towed towards the shede for the night.

Without going to the regular starting point at the end of the field Slaick asked a bystander to crank his propeller. Then without warning he turned on the power and his machine left the ground after a run of 100 yards

Rising ten feet above the ground, he circled to the left. As this is more difficult than a right turn with a propeller running clockwise, the left end of the plane swooped until it almost touched the ground. Slaick completed a three-quarter circle, landing just beyond a ditch without a mishap.

Not satisfied with this exhibition, he made several more straight flights, and concluded the day's work by stopping his machine at 8:15 o'clock, dark, directly before the hangars.

The machine that Slaick used was built by himself at his home in Indianapolis last winter. He used Curtiss plans and obtained the loan of a Gray-Eagle motor.

RESULTS

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Costing but **$485** Complete

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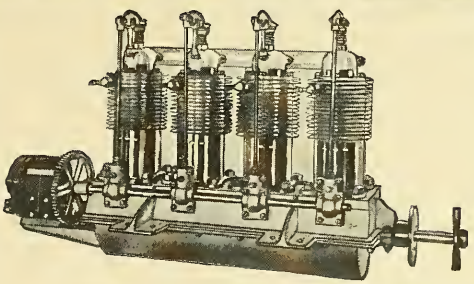

Earl Slaick of Indianapolis, Ind.
D. L. Dennis of Franklin, Ind.
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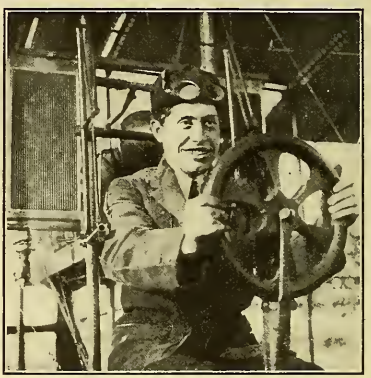

Thompson at the wheel of the Mathewson
Headless Bi-plane, Denver, Colo.

CHICAGO AEROPLANE MANUFACTURING COMPANY.

Elbridge Engine Company,
Rochester, New York.

CHICAGO, June 24th, 1911.

GENTLEMEN:—After a severe trial of your engine, extending over a period of three weeks, we beg to inform you that we are extremely pleased with its performance.

It should be of no little satisfaction to you to learn that the first cross-country flight in a Chicago-built aeroplane was made possible by the Elbridge motor. Flying with a four-cylinder Aero Special, our aviator, Harry E. Cowling, made a flight of nine minutes, covering over seven miles, an account of which you will find on the back page of AERO of June 24th; also a clipping from a Chicago paper enclosed herewith.

On June 18th, he made another flight of nearly fifteen miles over the city of Benton Harbor, Michigan, and surrounding towns.

We are pleased to advise you that if the motor continues to stand up and deliver the goods, we will adopt it as the standard of the Chicago School of Aviation, and will make it the regular equipment of our planes. In the assurance that we will not be disappointed in its future performances, we are this day placing an order for a second motor to be shipped at once.

Wishing you and the Elbridge Motor every success, we are, Very cordially yours,

CHICAGO AEROPLANE MANUF'G. COMPANY,
(Signed) B. E. ADAMS, *President.*

THE MATHEWSON AEROPLANE CO.

Elbridge Engine Co.,
Rochester, N. Y.

DENVER, COLO., June 21, 1911.

GENTLEMEN:—Thinking you might be interested in what we are doing with our new headless biplane, equipped with an Elbridge Engine, we are sending you to-day a clipping from the Denver "Times" entitled "King of High Altitudes," etc.; also a couple of photographs of Thompson in flight, which you may be able to use to your advantage.

We will give our next public exhibition at Gillett, Wyoming, on July 3rd and 4th, and will wire you direct from there our success.

Yours very truly,
THE MATHEWSON AEROPLANE CO.,
(Signed) E. L. MATHEWSON, *President.*

Write to-day for complete catalogue of Elbridge Aero Engines and copy of booklet, American Amateur Aviation

ELBRIDGE ENGINE COMPANY

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AIRCRAFT

Vol. 2, No. 8 OCTOBER, 1911 15 Cents a Copy

ELLEN, THE NEW FRENCH FLYER WHO MADE THE FOURTEEN HOUR RECORD IN THE MICHELIN CUP CONTEST

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The only three standard motors for aviation—

Holding the world records for speed, height, duration and cross country

ANZANI

30 H. P. 50 H. P. 60 H. P. 80 H. P.

On July 8th, Lewkowicz, with 50 H. P. Anzani, left Nassau Boulevard, L. I., and flew all over New York at an altitude of 9000 feet (this is the first time an aeroplane flew over this City) landing in New Jersey because of lack of gasolene.

On July 31st, at Mineola, de Murias won his pilot's license with a 1911 type 3-cylinder 30 H. P. Anzani Motor.

Miss Harriett Quimby, the first woman aviator to get a pilot's license in this country won it with a 1911 type 3-cylinder 30 H.P. Anzani, at Mineola, July 31st.

Miss Mathilde Moisant and number of other students gained their license with the 30 H. P. Anzani 1911 type.

RENAULT

60 H. P.

The 1910 Michelin Cup was won by M. Tabuteau with a Renault Motor. Distance 363 miles in 7 hours 45 minutes.

The Michelin Grand Prize was won by M. Renaux with a Renault Motor. Distance 225 miles in 4 hours 56 minutes.

GNÔME

50 H. P. 70 H. P. 100 H. P.

The Gordon Bennett Cup Race was won by Weymann with a 100 H. P. Gnôme Motor.

The Daily Mail prize was won by Lieut. Conneau with a 50 H. P. Gnôme

On August 9th, Vedrines with a 50 H. P. Gnôme flew 496 miles in 7 hours 56 minutes, breaking the record for a single long distance flight.

On July 27th, St. Croix Johnstone broke the American record for distance and duration by a flight of 4 hours 2 minutes with a 50 H. P. Gnôme.

At the Chicago and Boston meets 60% of the prizes were won with the Gnôme.

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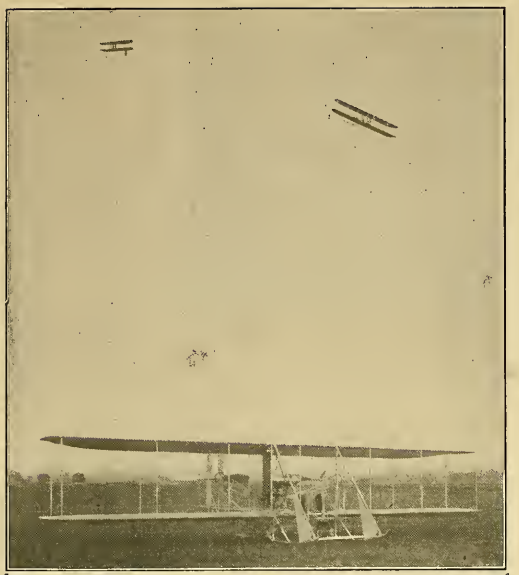

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Learn to Fly an Aeroplane

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Over one thousand flights have been made at our schools this year. While we strongly recommend instruction at our permanently equipped camp at Dayton, training can be secured at New York Aero Club's Aerodrome at Nassau Boulevard, Long Island.

The wonderful work of our Aeroplanes are not experiments. Every part is tested, standardized and made under constant expert supervision *in our own factory*. Manufactured under the Wright Brothers' patents and fully protected.

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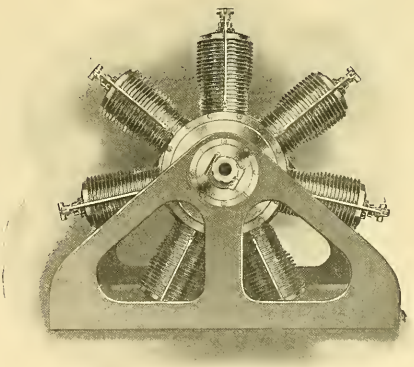

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SPRINGFIELD, MASS.

PARTIAL VIEW OF NASSAU BOULEVARD AERODROME.

CONTENTS—OCTOBER, 1911

AIRCRAFT

ALFRED W. LAWSON, *President and Treasurer*
ERNEST C. LANDGRAF, *Secretary*

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Entered as "second-class matter" February 18, 1910, at the Post Office, at New York, N. Y., under Act of March 3, 1879.

"Aircraft" is registered as a trade-mark by the U. S. Patent Office, under date of August 9th, 1910.

AIRCRAFT

Vol. 2. No. 8 NEW YORK, OCTOBER, 1911 15 CENTS A COPY $1.50 A YEAR

THE NASSAU BOULEVARD MEET

ANOTHER big aviation meet is about to take place in America. It will be held at Nassau Boulevard, Long Island, from the 23rd day of September to the 30th day of September, inclusive excepting Sunday, the 24th. The Meet will be held under the auspices of the Aero Club of New York and with the official sanction and co-operation of the Aero Club of America.

While the arrangements for the Meet were left until a very late hour, still, as AIRCRAFT goes to press, great efforts are being made by the organizers of the Meet to make it one of the most spectacular events of the year. Most of the very best flyers of America and Europe have been negotiated with and many of them have signified their intentions of taking part, and it is given out authoritatively that no less than thirty licensed airmen will compete.

What promises to be an innovation in American air meets will be the contests for women, in which it is expected that the contestants will be Miss Harriet Quimby and Miss Blanche Scott of America and Mlle. Helene Dutrieu of France.

There will also be an attempt made to have the greatest number of machines in the air at one time ever witnessed before. Three Army officers and two Navy officers are expected to give exhibitions during the Meet in scouting, while bomb dropping will also be one of the features of the entertainment. All manner of races around the aerodrome and many cross-country flights will, of course, be part of the programme.

It is the object of the promoters of this Meet to make Nassau Boulevard the recognised Eastern aviation field of this country; the terminus of all great cross-country flights and a place where all official tests and records may be made.

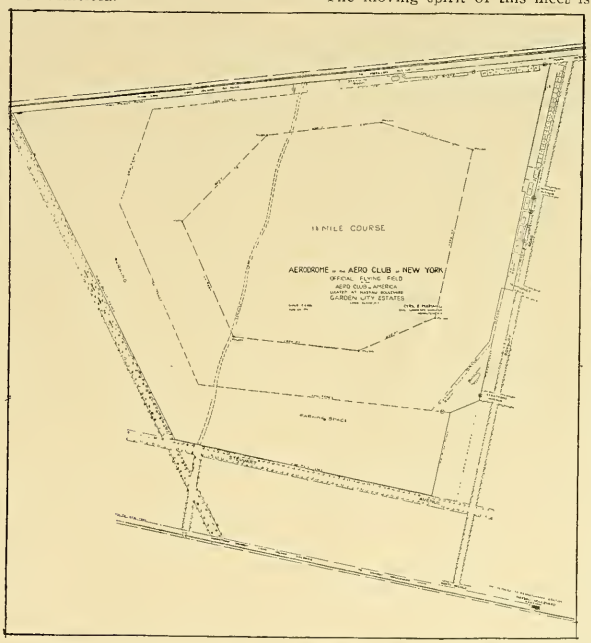


Diagram showing the ground plan of the Nassau Boulevard Aviation Field as it is laid out for the various races which will take place during the international meet. A heptagonal course of one and a quarter miles has been laid out, in which every angle exceeds 100 degrees in obtuseness and the difference at no point exceeds 23 feet. The speed events will be held on this course, the contestants making standing starts from the line: there will be monoplane, biplane and open races both with and without passengers. In flying aviators will leave the pylons on their left; in other words, will circle the course in the direction contrary to that of the hands of the clock.

At the present time there are thirty-one complete hangars on the field and several in the course of construction. Seating capacity for 8,000 people, exclusive of 160 special boxes, is being built, and parking space set aside for ten thousand automobiles. The price of admission will be from fifty cents to two dollars.

The moving spirit of this meet is Timothy L. Woodruff, former Lieutenant-Governor of the State of New York. Mr. Woodruff is a newcomer in the aeronautical movement, but by his great enthusiasm and willingness to back up his enthusiasm with real money, he is beginning to set a pace which is causing some of the old time, "easy chair" celebrities of the movement to gasp in astonishment. About one hundred such newcomers as Timothy L. Woodruff and Harold F. McCormick scattered about the different parts of the United States would, no doubt, put this country far ahead of any other country in the world in aviation, at least from the sporting side of it.

AIRCRAFT hopes that this meet will be a financial success, so that the losses which Mr. Woodruff is prepared to meet will not have to be made, and the opportunity given to Mr. Woodruff to expend the money, which would be required to meet any losses, in the further and more lasting development of aerial transportation through industrial channels.

The Nassau Boulevard is on the Hempstead branch of the Long Island Railroad and can be reached by trains leaving the Pennsylvania Station at Seventh Avenue and Thirty-third Street, New York, or by taking the subway to Flatbush Avenue Station, Brooklyn, N. Y., and there taking the Long Island train.

By Motor—Via Queensboro Bridge and Hoffman Boulevard.

THE CONTROL OF AERONAUTICS

By Denys P. Myers

"WHERE does the Aero Club of America get its authority to grant a license?" asked a friend, who seemed to resent the idea of having any supreme body in control of aeronautics anywhere.

It was explained that in the first instance the club assumed its authority by general consent of those interested and that now it was fortified in its position—especially as toward the world at large—by affiliation with the International Aeronautic Federation; which in turn, by reason of similar acceptances from bodies in other countries, is supreme in all matters aeronautic. But he still wanted to know why. And about the best answer that could be given to his entire series of questions was that the authority had lodged in a certain quarter by the general consent and custom of those concerned, being further ratified by the accumulation of perquisites dependent from the series of organizations.

Such questions are serious for all connected with either the science or the sport of aviation. So long as we all agree to acknowledge the authority of the Federation and the Aero Club there will be no difficulty, but suppose we do not choose to accept the *dicta* of the organizations. Suppose, for instance, I go out and stay up thirteen hours, establishing a record both for duration and distance without landing, but have not taken the trouble to have the flight timed by officials of the Aero Club of America, nor have bothered about procuring a pilot's license under the rules of the Federation. What I have done is a record, and it was timed and gauged by reputable experts. Likewise, let us suppose, I am perfectly capable and have actually done more difficult flying than half of the 800 or so licensees. My record, under the rules, would be rejected, but I am "tetchy" and sue the Aero Club of America for recognition of it. What would happen?

On the one hand, is a series of sporting organizations assuming authority over an entire field of effort, with its fountain head and final court of appeal—the International Aeronautic Federation—without any legal standing in this, or, I believe, any country. The Aero Club of America is incorporated, but in matters of records and licenses it imposes the rules of the Federation. On the other hand, is an individual, capable as any and with an actual accomplishment for which he demands recognition by the world. He claims that no organization has the right to dictate what rigmarole he shall go through to have his ability and feats heralded to the world. He doesn't object to anyone else submitting to the rules, but for himself he just doesn't care to bother, and strenuously refuses to have his light hidden under a bushel by reason of his chosen attitude toward a body not having all the compelling respect of a municipal police force behind it.

To put another case, and to approach a real instance, the Aero Club of America has passed these resolutions:

"Resolved, That the Aero Club of America strongly deprecates the practice of flying over large cities at this stage of the development of aeronautics; that this practice presents in many cases danger to the public and offers no particular good or utility from a scientific or any other standpoint, and that any accident brought about thereby at this time would greatly discourage the progress of the art by arousing popular prejudice against it.

"Further Resolved, That the Aero Club of America, while fully realizing the large margin of safety attending flights over cities when made by experienced aviators in standard machines at a height sufficient to glide to a safe landing should the motor fail, finds it difficult to make distinctions between flyers and machines and to enforce flying at an altitude of safety (which in itself varies with the breadth of the dangerous zone flown over), and that therefore it urges upon all its licensed pilots and those desiring to become such to refrain from over-city flying."

Months ago the Royal Aero Club of Great Britain reached a decision to the same effect, notwithstanding which several aviators followed Henley regatta. A similar thing at the Oxford-Cambridge boat race had inspired the rule. Both were previous to the passage of the Aerial Navigation Act, which invests the government with power to forbid flying over any inhabited place by special order.

Graham Gilmour flew over Henley regatta course, and the Royal Aero Club, following the tenor of its decision on such cases, suspended his license for one month, naming the penalty at such a time as to exclude him thereby from participation in the *Daily Mail's* $50,000 British circuit, scheduled to begin July 22. Gilmour sought an injunction in the King's Bench Division against the infliction of the penalty and its consequent barring him from the race. He failed, and carried the matter to the Court of Appeal.

I quote *in extenso* from a London paper of July 22:

"Mr. Gilmour and the British and Colonial Aeroplane Co., Ltd., the builders of his aeroplane, appealed against the refusal of Mr. Justice Channell, sitting in Chambers in the High Court, to restrain the Aero Club from continuing the suspension.

"Clavell Salter, K. C., for the appellant, submitted that the Aero Club had no power to take away Mr. Gilmour's certificate, as it was granted by the French Aero Club, and further that Mr. Gilmour had had no time to prepare his defence to the proceedings. The British and Colonial Aeroplane Co. had spent some thousands of pounds on Mr. Gilmour's machine, and Mr. Gilmour thought he had a good chance of winning the *Daily Mail's* contest, for which an entrance fee of £100 had been paid.

"Counsel read Mr. Gilmour's affidavit regarding the proceedings before the Aero Club, in which the appellant alleged that he was given no chance of going into the matter and meeting the allegations made against him.

"The affidavit of Roger Wallace, the chairman of the Aero Club, who presided at the meeting, was also submitted. In this Mr. Wallace stated that the Aero Club controlled and regulated the sport of flying in the United Kingdom, and he quoted the rule of the club by which a special committee is given power to inflict penalties on members who, in their judgment, fly over thickly populated places in a manner calculated to involve risks to the public.

"By these rules, argued Mr. Salter, the Aero Club had powers of punishing Mr. Gilmour, but they had not the power to suspend a certificate of the French club. Mr. Gilmour's membership of the Aero Club had nothing to do with his right to fly. As the result of the suspension Mr. Gilmour's name had been struck out of the list of entrants to the *Daily Mail* race, and it was a most serious matter for him.

"Lord Justice Vaughan Williams remarked that it appeared to him that the club were acting as if they were the attorneys of the *Daily Mail.* His view at the moment was that the club acted without giving a proper opportunity to Mr. Gilmour to call his evidence and put before them his view of the facts of the Henley flight.

"T. Mathew, for the respondents, said the committee accepted Mr. Gilmour's own story of the flight, and on that decided that he had flown to the danger of the public.

"After the Judges had consulted together, Lord Justice Vaughan Williams announced that the decision of the Court was contained in the following order:

" 'The Court, for the purposes of this motion, being of opinion that the action of the committee of the club purporting

to suspend Mr. Gilmour's certificate, has not been effectual to suspend the same, does not think fit to make any order.'

"The Judge added that the Court did not disapprove of the rules of the Aero Club in regard to unnecessary flying over towns and populous districts. It was most desirable that the club should use its powers in this direction. He did not know why the special committee of the club had been dissolved, and he hoped that either that body would be re-formed or that there would be such amendment of the rules as to give them authority to deal with breaches by aviators. It was most desirable in the interests of the public that somebody or other should have such powers.

"Lords Justices Fletcher, Moulton and Buckley agreed, the latter stating that he could not see that an English club had the power to suspend the certificate of a French club.

"It was ordered that the costs be costs in the action."

As a result of the dicision, Gilmour was barred from the race, but his French license was not suspended. Since the Royal Aero Club controlled the race, the Court did not see fit to interfere with its orders as to the contestants.

One interesting situation arises from the decision, namely, that while the Royal Aero Club's determination to enforce a rule that has the backing of the Federation was upheld, the Court does not admit that the club had authority to suspend a license granted, not by the supreme Federation, but by an organization on a par with itself, the Aero Club de France. Whether the Court would admit the validity of the British club's acceptance of a foreign club's certificate of fitness is a question that reverses the conditions and should be of general interest.

The pratical point is that not only the present cohesion should maintain between aeronautic organizations, but that they should be so welded together as to constitute an international whole. The Aero Club of America should be nationally incorporated and its articles of incorporation should definitely state that it is charged in this country with imposing the regulations of the Federation. Similar action should be taken in every other sovereign nation possessing a national aero club. Strong organization is the safety of a new science, and the articles of incorporation of a national club should specifically adopt the statutes and regulations of the Federation, past and future, as part of its own guiding principles. At present, if we choose to contemn the rulings, about the only thing we lose is caste in aeronautic circles.

Action such as is here suggested would enable the Federation to strengthen greatly its present statutory rules as to sanctions, which read:

"Art. 23.—The penalties pronounced by the duly authorized body of one of the federations or clubs of the International Aeronautic Federation against one of its own aeronauts or one of its pilots, or against a foreign aeronaut or pilot taking part in a contest organized on its territory, shall be upheld and applied by all the federations or clubs of the International Aeronautic Federation.

"Art. 24.—Every aeronaut or pilot who is disqualified or suspended will be disqualified or suspended from the day when the penalty is pronounced, and all engagements, even those previously arranged, which he shall have contracted, will be annulled without notice (*de plein droit*).

"Art. 25.—All federations or clubs having penalties to announce should immediately notify the secretariate of the International Aeronautic Federation, who will transmit them to the federations or clubs, which should transmit them immediately to their affiliated societies and all their officials."

The language of these articles, it will be noted, rather expresses a desire than gives an order, a condition made more evident by the construction of the original French. They should be stated unequivocally, because club authority should not be subject to any doubts. This is impossible short of international diplomatic agreement—which is unlikely at present—or national incorporation of the Aero Club of America and the cognate organizations in other countries. Happy is that club which has to enforce no punitive measures! But when it does deem it necessary to inflict penalties, or, fortunately more often, grant privileges, every aeronautic organization ought to have the full force of law behind it.

BOSTON 1911

By Henry A. Wise Wood

A FLYING meet best lives in the memory by reason of the pictorial vividness of its events. To come away with the knowledge that one was present when records were broken and made is indeed an intellectual satisfaction; but records in these hurrying days of flight are ephemeral things, for, so far as figures go, there is always a sponge at the slate of the mind, and our impressions are no sooner formed than effaced. But the concrete evidences of progress that are stamped on the mind by the eye form indelible pictures, by the comparison of which we are most easily able to estimate the rate at which the practical development of flying advances. In vivid pictorial representations of what has been gained in the last year the Harvard-Boston Meet, held at Squantum—August 26th to September 6th—was extremely rich. In 1910, Grahame-White's flight to the Boston Light was a feat; in 1911 it had become an event whose unusual interest lay in the participation of a type of machine new to this country. For this in 1910—a flight of 33 miles that is now considered simple and safe—a prize of $10,000 was not thought too much; in 1911 for the same prize-money the winner was compelled to negotiate 160 miles of rough or thickly settled country in which the only prepared landings were 40 miles apart. The fact that the events here compared were flown with similar machines—Gnôme-engined Blériots—suggests the thought that although in the interim flying machinery has vastly improved an even greater change for the better has come in the mental attitude of the world, which has begun to show confidence in the safety and endurance of mechanical flight, as is evidenced by the startling severity of each new task set it. This was illustrated, also, in the complacency with which the public regarded the exhibition flights of the conservatives, Ely and Ovington—who, in Curtiss machines, surpassed the famous aerial antics of Brookins a year ago—and demanded feats of Beachey which no other flyer has attempted. While the picture of Brookins at Boston in 1910 still lingers in mind, as do those of Hoxsey and Johnstone at Belmont Park, nevertheless, this year's work of the Curtiss flyers at Squantum makes the old acrobatic feats we thought so risky seem exceedingly tame. The compact, close-knit, high-powered Curtiss of the present day is an astonishingly staunch and facile aerial vehicle; and one which, the writer is persuaded, is doing in the hands of Beachey pioneer service of the most valuable sort. It is well that there are men who will put the builder upon his mettle, and try out to the utmost the apparatus given them; and it is well that there are constructors who will meet daring with skill, and place in the hands of the courageous airman ever more efficient machines for ever more effective work. It is a mistake to think the "stunt" flyer a man without usefulness to the science of flight; on the contrary he is its most valuable practical experimentalist; he is a discloser of weaknesses in design and materials, a superb discoverer in the realm of manipulation, and he foretells in his work today that which will be expected of all machines and

men tomorrow. Obviously when that which Beachey is doing daily shall have become the conventional requirement of an accomplished flyer and his mount, flight, in any weather, will be attended with but little risk. When Beachey was asked to suggest an event for the meet of the Aero Club of New York he proposed that entrants climb 4,000 feet, shut off their motors and dive; the winner the first to alight in point of time. A shiver ran through those who heard him; nevertheless, there was sound sense in his idea. It suggested that machines be built which can safely drop and be brought up just short of landing, and men be trained to handle them so. The point we have already achieved in airworthiness was curiously impressed upon the writer during the close of a series of spectacular evolutions by Beachey at dusk, when a night-hawk came into the Squantum field after insects. The performance of the bird seemed an astonishingly poor imitation of the work of the man, and the conclusion was unavoidable that, given more power and strength, with added skill in the driving, the aeroplane will outweather even the abler species of what Webster's dictionary quaintly calls "feathered flying animals."

Of Wright machines there were two, flown by Sopwith and Beatty; while of Burgess-Wrights there were enough to mount Lieut. T. D. Milling, Atwood, Coffyn, and Gill. Both varieties of the Wright type gave conventionally conservative accounts of themselves, and left one with a comfortable sense of their inherent safety. Slow but extremely facile they are a tempting craft to the sportsman who loves flying for its own sake, and undoubtedly will introduce more amateurs into the aerial highways than any other existing kind of machine. Sopwith's answer to Grahame-White, when asked how he liked the Wright: "O, it's a jolly fine thing to play the fool in," humorously hit off the degree of affectionate confidence in which all seem to hold the mother of the flock. Of latter-day Blériots there were two-engined with Gnômes of 70-horsepower—Sopwith's and Ovington's. The first had the most speed, while the second showed great endurance in the 160-mile Tri-State race, which brought Ovington $10,000. The last remark also applies to Milling's Wright-engined Burgess-Wright, which covered about 200 miles in the same race without a hitch, and netted the army flyer a tidy $5,000. In the Tri-State race—Boston, Nashua, Worcester, Providence, Boston—neither Sopwith, Grahame-White, nor Ely entered, as they believed the course dangerous, and the prize money not worth the risks; while Stone, who crossed the line in a Queen-Blériot, and Atwood, who, with his father aboard, added novelty to the start, dropped out of the race soon after it had begun. Perhaps the most notable technical feature of the event was the accuracy and steadiness of Ovington's flying. With each of the four legs of the race measuring 40 miles over country he had never covered, he flew the first in 49 minutes, 32 seconds; the second in 45 minutes, 35 seconds; the third in exactly the same space of time as the second; and the fourth in 45 minutes, 40 1-5 seconds. This is indeed a phenomenal record of consistent work, which, doubtless, will stand for many a day; and it assuredly entitles Ovington to a place among the really great flyers. While to have demonstrated that the aeroplane has already reached that degree of perfection wherein, under fair-weather conditions, it is able to pick up its destinations with the precision of trains upon a well-run railway was to do no small service for aviation, by arousing the confidence of the people in its ultimate utility.

We now come to the chief feature of the Harvard-Boston Meet; its introduction to the American flying world of a machine which, in the opinion of the writer, marks the inauguration of a new era in the development of heavier-than-air apparatus. In the Nieuport there is shown the work of a man who masters by instinct those problems of the air the solutions of which have not as yet been reduced to mathematical formulae, and who combines with this extraordinary faculty the highest degree of practical engineering skill that has yet appeared in the new industry. One need only glance at the trim, simple, and powerful features of Nieuport's deep-chested staunch-winged machine to recognize in it the hand of a great constructor. But the real quality of the genius which conceived it is not apparent until, having left the ground, it moves in its own element. Then nothing short of astonishment supervenes, for the impression created is that of a structure partially sustained by gas, which is being forwarded at a pace its bulk and motive-power seem to deny. And its sudden leap from the ground at starting is no more remarkable than the long feather-like float with which it comes to earth when alighting; its ratio of glide to descent, with power off, being 15 to 1. What must have been the sensations of Blériot, himself, during the last Gordon-Bennett race, might easily have been imagined by those who saw the speed contests at Boston, between Sopwith's modern Blériot and Grahame-White's Nieuport. Then, despite the fact that they were engined alike—with new Gnômes of 70-horsepower—the Flying Shark, as Squantum called the Nieuport, developed the habit of swallowing its rival tail first whenever they went into the air together. For instances, take the Boston Light flight of 33 miles—which the Nieuport made in 27 minutes, 35½ seconds, and the Blériot in 30 minutes, 5 seconds; the Figure 8 flight, in which the Blériot's 22 minutes, 59 seconds stood against the Nieuport's 17 minutes, 19 seconds; the Passenger Carrying Speed flight of 18 miles, which Grahame-White negotiated in 17 minutes, 27 4-5 seconds, and Sopwith in 19 minutes 25 1-5 seconds; and the Altitude Speed event in which Sopwith's Blériot climbed 2,000 feet in 5 minutes, 32 seconds, and Grahame-White's Nieuport in 4 minutes flat. The foregoing records furnish sufficient evidence of the fact that in all-'round performance, horsepower for horsepower, the Nieuport outclasses the Blériot; while from the structural standpoint, in which naturally the element of safety is involved, the older machine is a veritable toy in comparison with the staunch new-comer. In but a single respect is the latter machine inferior—its landing carriage is less well adapted to the rough road work of alighting in American fields. For this the Nieuport requires more skill in the handling; nevertheless it can neither nose over and capsize, nor will a too rough landing entirely crumple it up: these mishaps not infrequently occur with the Blériot. The fact that twice in alighting the Nieuport dug a wing and pivoted around its tip, without doing itself the slightest damage, speaks volumes for the strength of the planes its flyer has beneath him in the air. But few further comments are necessary. The Nieuport driver warps with his feet and steers with his hands—the novelty of which placed Grahame-White at a disadvantage during the flights above recorded—, its warp-controls and wing-guys are huge steel cables; its pilot is wholly shielded from wind and oil, and, even with a passenger, it flies tail-high, with an estimated angle of incidence of about one degree. It may now perhaps safely be said that Blériot has finished his work; and that in the relay race of progress—at least so far as monoplanes go—the torch has passed to another hand.

Of events on the field, aside from the performance of the Nieuport, the most novel was the Quick Start contest, among the Wright and Curtiss men. At the sound of a pistol the flyer, stationed at a distance from his machine equal to half the length of one of his planes, would sprint for his seat, while his mechanics, from their stations each at a wing tip, would rush for propeller or propellers and crank up. Beachey got into the air in 8 3-5 seconds, and Sopwith in 9; while Milling's best time was 9 3-5 seconds. Time ran from pistol-crack till wheels were off ground. This gymkhana stunt, as Sopwith called it, was interesting, but dangerous. The "flyer" need only slip and fall before his machine to have it go over him, and onward, without a driver, perhaps into his audience. The aeroplane, with its so quickly attained speed, and its swiftly rotating scythes, is too dangerous a vehicle while aground to be played with in this manner in the midst of crowds. What would be thought of a similar "event" practiced with high-powered motor-cars is obvious. Turning to the flyers themselves, Sopwith at this meet was the man in the air. From Wright to Blériot, from

Blériot to Wright, he was incessantly at work. Out of the 26 contests in which he engaged he fetched 12 firsts and 8 seconds, with $6,022 to the good; while Grahame-White stood next, with 9 firsts out of 11 contests, and $5,224; Beachey, third, with 6 firsts and 2 seconds out of a possible 10, and $3,630. From 5 contests Ovington came with 1 first, 2 seconds, 1 third, and $11,782; while Milling, in 12 contests, earned 4 firsts, 4 seconds, 1 third, and $6,200. Ovington's Tri-State monoplane prize was $10,000, and Milling's biplane prize, $5,000. Among the other flyers Gill's record ran 2, 2 and 1 out of 7, with $534; Atwood's 1, 1 and 1 out of 5, with $296; Coffyn 1, 1 and 0 out of 2, with $200; while out of 8 Beatty got 5 seconds, 2 thirds, and $482. Ely, through having a defective engine, netted but one prize, of $150. But this is no measure of the work done during the meet by this remarkable man, who shared with Beachey the credit of having performed the most remarkable feats of flying seen at Squantum. Perhaps the prettiest display of accurate manipulation was Ely's mark turning in the Figure 8 contest, which he won from the cleverest flyers on the field, but lost upon a technicality. Although his profits were small at the meet, Ely, nevertheless, was one of its greatest assets. In all, $35,520 was won by the eleven participants, which is significant of the fact that there is little pause in the benevolent production of golden eggs by man's new automatic fowl.

PIONEERS OF AVIATION

By Ladislas d'Orcy

I. SIR GEORGE CAYLEY.

"*. . . . I conceive, that in stating the fundamental principles of this art, together with a considerable number of facts and practical observations, that have arisen in the course of much attention to this subject, I may be expediting the attainment of an object, that will in time be found of great importance to mankind; so much so, that a new era in society will commence, from the moment that aerial navigation is familiarly realized. . . . . I feel perfectly confident, that this noble art will soon be brought home to man's general convenience, and that we shall be able to transport ourselves and families and their goods and chattels, more securely by air than by water, and with a velocity of from 20 to 100 miles per hour.*"

THESE words were written, strange as it may seem, one hundred years ago by Sir George Cayley, an English scientist, and published in *Nicholson's Journal* in October, 1809, twenty-five years after the first Montgolfiére appeared in the skies.

Sir George Cayley was the real forerunner of modern aviation, the originator of the twentieth century monoplanes. With an admirable lucidity of mind, he proposed the heavier than air machine while the first locomotive was tested, and as history always repeats itself, his monoplane was just as "complete" as General Meusnier's proposed dirigible. It had a pair of slightly oblique supporting planes, set under an angle of incidence of 9 degrees, a central fusiform fuselage resting on wheeled châssis, while an "explosion-motor" would actuate two propellors fixed at each side of the fuselage. About the direction control Cayley says:

"To render the machine perfectly steady and likewise to enable it to ascend and descend in its path, it becomes necessary to add a rudder in a similar position to the tail in birds. The powers of the machine being previously balanced, if the least pressure be exerted by the current either upon the upper or under surface of the rudder, according to the will of the aeronaut, it will cause the machine to rise or fall in its path, so long as the projectile or propelling force is continued with sufficient energy. . . . From a variety of experiments upon this subject I find, that when the machine is going forward with a superabundant velocity, or that which would induce it to rise in its path, a very steady horizontal course is effected by a considerable depression of the rudder which has the advantage of making use of this portion of sail in aiding the support of the weight. When the velocity is becoming less, as in the act of alighting, then the rudder must gradually recede from this position and even become elevated, for the purpose of preventing the machine from sinking too much in front, owing to the combined effect of the want of projectile force sufficient to sustain the centre of gravity in its usual position and of the center of support approaching the center of the sail.

"The elevation and depression of the machine are not the only purposes for which the rudder is designed. This appendage *must be furnished with a vertical sail and be capable of turning from side to side in addition to its other movements, which effects the complete steerage of the vessel.*"

But Sir George was not only the inventor of the first aeroplane; he also built machines on the principles he enumerated in his savant articles. Of these trials he says in November, 1809:

"I am engaged in making some farther experiments upon a machine I constructed last summer, large enough for aerial navigation, but which I have not had an opportunity to try the effect of, excepting as to its proper balance and security. It was very beautiful to see this noble white bird sail majestically from the top of a hill to any given point of the plane below it, according to the set of its rudders, merely by its own weight descending in an angle of about 18 degrees with the horizon."

In February, 1810, he writes again about his trials:

"Last year I made a machine, having a surface of 300 square feet, which was accidentally broken before there was an opportunity of trying the effect of the propelling apparatus; but its steerage and steadiness were perfectly proved, and it would sail obliquely downward in any direction, according to the set of the rudder. Even in this state, when any person ran forward in it, with his full speed, taking advantage of gentle breeze in front, it would bear upward so strongly as scarcely to allow him to touch the ground, and would frequently lift him up and convey him several yards together."

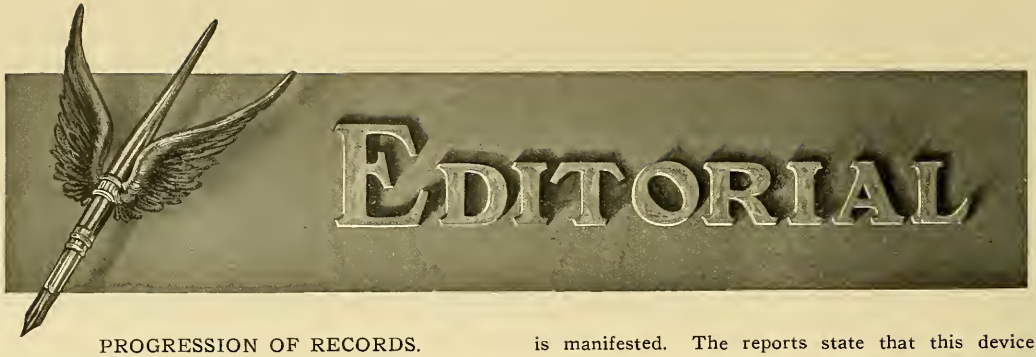
This shows that Cayley built also the first gliders and tested them. But as soon as he wanted to make of these gliders practical flyers, the eternal question of the light motor marred any further progress, and it seems that Cayley foresaw it himself, when he wrote: "The best mode of producing the propelling power is the only thing that remains yet untried toward the completion of the invention." And if Sir George's monoplane did not fly dynamically, and we believe that *it could not* with the mechanical means the world possessed one century ago, it does not lessen the English inventor's merit in the least, for his machine had but one defect and this was irremediable: it was too much ahead of its time!

But Cayley's most valuable contribution to the science of aviation is his formula on the theory of planopteres, which is, with slight modifications, still the basis of the actual dynamical flyers. Cayley's formula reads thus:

"If a plane surface of 20 square meters moves in calm air by a uniform translational movement of 38 km an hour, and has an angle of incidence of one-tenth on the horizontal, this plane will carry 100 kg, and the necessary power for its propulsion will be according the incidence, i. e., 10 kg."

To this formula modern aviation added the following, which completely covers the principle of planopteres:

"The total weight to be carried is proportional to the surface, to the square of the translational speed and (as long as the incidence remains the same) to the inclination of the plane."



PROGRESSION OF RECORDS.

THE last two months have witnessed a most amazing and unparalleled slaughter of records. It has been a rapid and wonderful succession of long, high jumps, splendid and convincing, jumps that have taken the aviator and the movement generally, laps ahead and have made us feel that our most optimistic hopes of the future will be realized.

Hardly a day passes but what some new record is made, either on this side of the Atlantic or the other side, so that it becomes almost impossible to give more than a line or two in ***Aircraft*** each month on these great achievements. We wish to call particular attention, however, to the record made by Ellen (which may probably be outdone before this editorial goes to print), where the newly licensed flyer, covered a distance of 699.911 miles in 13 hrs. 47 mins. and 19 secs., and point out to the reader the fact that after a hundred years of steam-boating, there is not a water craft afloat that has covered this number of miles in the same number of hours.

The greatest record of a steam-ship up to the present time for a twenty-four hour run is 733.63 miles.

It does not require very much of a stretch of the imagination to foresee that within another year or two the flying machine will not only have outstripped the best performance in a twenty-four hour run of the fastest steam-ship in the world, but that it will also eclipse the time made by the fastest railroad train.

AUTOMATIC STABILITY.

IS automatic stability, the dream of inventors, the possible solver of one of the most perplexing problems of aviation, within our reach? That is the question that those interested in the advanceemnt of aviation are asking to-day.

The reports of the successes achieved with the Doutre Stabilizer—an account of which we give elsewhere in this number—have created a sensation. Innumerable devices intended to maintain stability of aeroplanes automatically have been submitted for consideration by inventors in the last few years, but none ever evoked more than passing interest. In the case of the Doutre stabilizer, however, considerable interest is manifested. The reports state that this device worked perfectly mounted on a biplane and that several hundred tests were made, including cross-country flights with and without passengers in the severest kind of weather, one flight taking place in a 36 mile wind. Colonel Bouttieaux, Commandant Renard and General Roques testify that the stabilizer maintained longitudinal stability in the three conditions which often result in the machine plunging to the ground, i. e., strong gusts of winds from the front or behind and sudden slacking of the motor. Nothing is said of limitations. If there are any, it does not seem that they are radical—the preliminary tests have almost proved that much. Beside, the apparatus is very simple and it may be possible to develop further efficiency by a small addition and perfectioning of parts. Likewise it seems that the stabilizer can easily be fitted to monoplanes.

The Doutre stabilizer should advance aviation beyond the threshold of the practical stage. One more successful invention—an automatic lateral stability device—and flying will be as safe for women and children as driving a horse.

AMERICA LEADS IN HYDRO-AEROPLANES.

RECENT developments of the Curtiss hydro-aeroplane have focussed expert opinion on the immediate future of this type of air craft.

The problem of turning out a practical aeroplane which could arise from and alight on water, has proved to be easier of solution than was expected. Fabre, in France, was the first to achieve any degree of success in this line, but, with all due credit to him as a pioneer, it must be said that his machine was unnecessarily complex for the work demanded of it, and that the Curtiss solution, which immediately followed and achieved far greater success, is in every way a better one.

When the extraordinary development of motor boating is considered, one can well look forward with confidence to the hydro-aeroplane as an industrial factor. In an aeroplane which can only alight on land, the chassis used is more adapted to some grounds than to others. The size of the wheels, the breadth and depth of the skids will make one machine better adapted to one kind of landing—such as high grasses or brush-

wood—than to another—such as sand or mud,—but a smooth water surface is the same everywhere, and once a smooth water landing device is perfected the aviator can alight on any sheet of inland water and know exactly how his machine is going to behave on coming into contact with its surface.

When it is remembered that landing is the greatest difficulty of present-day flying and that its uncertainties present no small danger to the driver of aeroplanes, the fact becomes more significant. In fact, it can be broadly stated that as a vehicle for Summer pastime the hydro-aeroplane is much safer and easier to handle than an ordinary aeroplane.

Directly these facts become more generally known, there is every reason to suppose that the aeronautic industry will experience its first real boom, and the attention of builders cannot be too urgently directed to this phase of the movement.

There are thousands of men throughout the country who would gladly take up a new mechanical sport as a successor to motor boating and motoring if they felt they could do so with a reasonable degree of safety to themselves, and adequate assurance that the life of their machine would be commensurate to the price paid for it.

Followers of the sport of motor boating, which has made thousands of converts during the past few years, are already turning to the hydroplane, which skims over the water at much greater speed and less power. The next step will be the hydro-aeroplane, which can skim over the water in exactly the same way and has the further enormous advantage of arising whenever the driver so desires. The sport should develop rapidly next Summer and be in full swing in a few years. Several improvements of detail will have to be made. Ways of housing the craft—of stopping the engine—of quelling the roar of the motor, will be devised; while more comfort for the pilot and passengers will be arranged.

From a smooth water craft the hydro-aeroplane may soon become sea-worthy, and then its significance as a naval asset irresistibly asserts itself.

There is no question that in this particular line of aeronautics, America is now leading: but the experiments recently made in France by the Voisin Canard, which were erroneously hailed by the French press as being the first occasion when a machine had risen from the water with two men, show that the French are not far behind us in this. Other experiments have been made in Europe either by Fabre himself or by the Dufaux brothers on the Lake of Geneva, to say nothing of the flights undertaken by Herbster, the old Farman pilot, on an Astra-Wright at Lucerne, and if the American aeronautic industry does not awaken to the immediate possibilities along this line, it will once more be overtaken by Europeans. The field for the sale of this type of air craft is far better in America than in any other country. It is to be hoped that when the rush comes, as it surely will, the American supply will be equal to the demand and that the foreign output will not have to be called upon.

AEROPLANE TARGET SHOOTING?

THE United States Navy has taken up what they call "aeroplane target practice," which is, by the way, only shooting at box kites attached to the sterns of their ships. Some of the old stagers believe that this practise will enable their gunners to annihilate any flock of menacing aeroplanes in the future. In practice they have fairly riddled the kites with shot. The kites, however, were not only tied to the ships, but, of course, the length of the lines was probably known by the gunners, as well as the angle—which was always less than 30 degrees.

While we have no desire to ridicule the officials in charge of such tests, we would advise whoever is responsible for the reports that shooting at kites can only be considered as "aeroplane target practice" by a considerable stretch of immagination.

THE FLYER'S RESPONSIBILITY.

ELSEWHERE in these pages we publish a letter sent us by an eye witness of the tragedy in which J. J. Frisbie, the popular American flyer, lost his life.

It confirms the statements of the press dispatches in that a morbid, irresponsible crowd had caused what may be considered as little short of murder. It was a most disgraceful affair and the community where it happened has realized that by now. For that reason we will not moralize on that phase of the happening.

We would, however, dwell on the responsibility of the aviator in such cases. Is a flyer justified in doing a thing which he knows to be over dangerous, just because the crowd clamors for it? We say NO! most emphatically. When he does he not only jeopardizes his own life, but he changes the role of the aviator from that of demonstrator who educates, to that of an acrobat or aerial clown who merely exhibits. Thus he turns from a helper in the advancement of the art of aviation to a hindrance. Showing off for a day in front of a mob does not help the progress of aeronautics, and an accident proves a positive detriment to the movement. It takes fifty successful feats today to offset the unfavorable effects created in the public mind by an accident.

Ethically there is also little excuse for his taking chances. He is the man who is supposed to know about the machine, and the dangers involved in flying it under certain conditions. The crowd is not supposed to know anything about it; in a way he is there to teach them. The fact that the crowd is ignorant while he knows, should preclude his taking notice of anything the crowd may say.

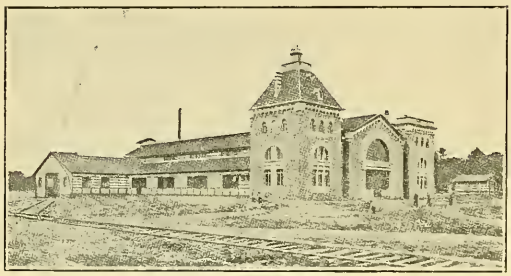
The great teachers of the past, Orville and Wilbur Wright, Curtiss, Bleriot and Farman never allowed the jeers of a crowd of untutored sight-seers to interfere with their own judgment as to when or when not to fly.

THE AERO INSTITUTE OF THE UNIVERSITY OF FRANCE

By Henry Woodhouse

TWO years ago, on May, 1909, Mr. Henry Deutsch de la Meurthre offered to the University of Paris a sum of $100,000 for the foundation of an aerotechnical institute, a place where researches, theoretical and practical, would be made, and tests of material, apparatus and machinery would be conducted for the special purpose of perfecting flying machines and advancing aerial locomotion in general. The founder also offered a sum of $3,000 per year during his life time for the up-keep of the institute.

The offer was readily accepted by the administration of the university, and Mr. Deutsch de la Meurthre set to work and, with the collaboration of Mr. Albert Hugon, the eminent French



MAIN BUILDING OF INSTITUTE.

engineer, brought the institute into being. It was inaugurated last month.

The institute is located at St. Cyr, near Versailles, five kilometres from the Buc aerodrome, near the military camp of Satory, the center of military aeronautics, where Clement Ader made his experiments in 1897.

The area occupied by the buildings and grounds is 72,000 square metres, of which the principal part has been reserved for building purposes. The remainder includes a strip 25 metres by 900 metres, with an additional piece of some 462 metres in length which has been conceded by the Minister of War. Four thousand metres have been set apart for the erection of aeroplane sheds, workmen's houses, etc.

The accompanying plan shows the arrangement of the main building. The central hall, which is set aside for testing purposes, measures 200x65 feet, and is flanked on both sides by laboratories, workshops, store rooms and a lecture room with

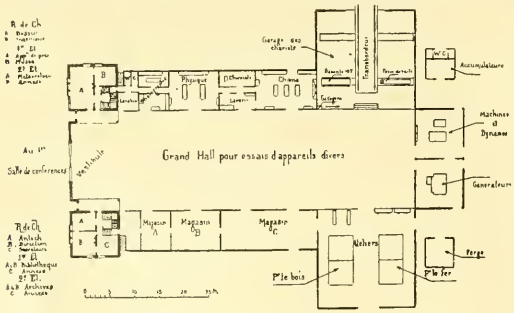
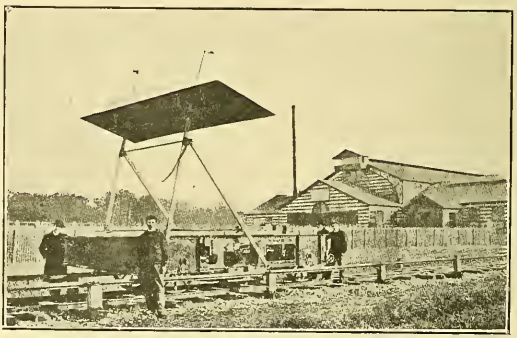


FIG 1
GROUND PLAN OF AEROTECHNICAL INSTITUTE

seating capacity for 200, and the power house. The power is furnished by two vertical compound steam engines, one giving 120-150 H. P. at 425 r. p. m., the other of 30-40 H. P., driving dynamos of 200-300 amperes and 160 amperes respectively. There are also departments for meterology, chemistry, photography, physics, metal and wood-working, and for testing materials of different kinds.

The equipment is most complete, including beside the necessary tools and scientific instruments, a large ventilator, 6½ feet in diameter, fitted with various adjustments and an aerodynamical balance for measuring the pressure of an air current on variously shaped bodies; an air-chamber supplied by a powerful fan giving a 45-miles-per-hour current for the study of the reaction of the air on various surfaces; an aerodynamical balance for determining the resultant of pressure, the value and direction of the pressure components, etc.; a wind tunnel for experiments on the stability of model bulls or planes; an armored turret for testing the resistance of propellers at high speeds; an apparatus for measuring surface friction; a dynamo-dynamometer for testing propellers on the bench; an apparatus for study of helicopters, a testing track for testing aeroplanes; four electric rolling carriages, two for use to measure the components and resultant of air pressure on variously shaped bodies and two for testing thrust of propellers; a whirling table with arm 52½ feet long, fitted with motor power, for testing planes at different stages of construction when the weather does not permit experiments to be carried in open air.

The Deutsch Institute is principally a public test shop, where constructors and experimenters may bring aeroplanes or parts to be tested by experts with the best scientific devices and instru-



TESTING TRACK WITH ROLLING CARRIAGE WITH PLANE MOUNTED FOR TEST.

The track is 1,530 yards long, flat over a length of 1,420 yards, elevating at each end to facilitate starting and stopping of carriage. The carriage is fitted with registering chronograph for the number of turns of the axles; a registering cinemometer giving the speed at every point along the course; dynamometers; and a wattmeter registering the motive power at every point.

ments. By paying no more than the actual cost of the experiment anyone may carry on tests and conduct experiments that would otherwise entail a large expenditure of money for machinery and instruments. Secondarily, it is a public institute where aerodynamics is studied in theory and practice by experts, the results of the works and experiments of which are to be given to the public for the general advancement of the science.

The institute is under the Presidency of M. Liard, Vice-Rector of the Paris University, with M. Appel, Dean of the Faculty of Sciences of the Paris University, and M. Deutsch de la Meurthre as Vice-Presidents. The Council includes the biggest lights of the French aeronautical world, as follows

Armengaud, Leon Barthou, Baumes, Blériot, Bouttieaux, Carpentier, Eiffel, Estienne, Hugon, Janet, Jouquet, Henry Kapferer,

Koinigs, Le Cornu, Loreau, Maurain, Marchis, Painlever, Picard, Sauvage, Soreau, Surcouf, Urbain, Gabriel Voisin and Weiss.

Mr. Maurain, professor of physics at the university, is the managing director, and M. Toussaint is the chief engineer.

The whole organization seems splendidly arranged, and it will undoubtedly prove a valuable asset to the aeronautical institution of France.

The only thing that seems to me to be somewhat critical is the plan to carry experiments for the War Office, the Admiralty and the Ministry of Public Instruction in the institution free of charge. In the first place it seems to me that the institute is not large enough to undertake to conduct experiments in as large a scale as either the War Office, the Admiralty or the Ministry of Public Instruction would find necessary to make. Secondly, supposing that it were large enough, there would hardly be room left for the individual constructors and inventors, for whom the institute is supposed to have been founded. And allowing that only few of these will avail themselves of the facilities of the institution, who will pay for the free experiments? Surely the $3,000 is not enough to begin with—it is doubtful whether it is enough to cover the upkeep expenses.

It is to be hoped that this critical feature will be removed as soon as activity begins; otherwise it may spoil the effectiveness of Mr. Deutsch's splendid plan, which would be a pity.

TABLE OF CHARACTERISTICS OF MACHINES ENTERED AT BOSTON MEET

Compiled by Denys P. Myers

Pilot and Machine	Supporting Area	Weight Empty	Weight Flying	Span	Length	Balancing	Under Carriage: Landing Gear	Under Carriage: Suspension	Control (mechanism of): Elevator	Control (mechanism of): Balance	Control (mechanism of): Rudder	Engine: Make	H. P.	Cycles	Bore	Stroke	Propeller: Make	Diameter	Pitch	Blades	Speed
				Ft. In.	Ft. In.													Ft. In.	Ft. In.		
Arthur B. Stone (Queen Racer)	226	640	950	29 4	24	W	Wh	S	Lever Bleriot	Lever Cl'che	Bar	Gnome	50	7	110	120	Requa-Gibson	8 2	5 3	2	1200
Arthur B. Stone (Queen Tandem Passenger)	226	700	1200	29 4	24	W	Wh	S	Lever Cloche	Lever	Bar	Gnome	50	7	110	120	Requa-Gibson	S 2	5 3	2	1200
Arthur B. Stone (Queen Racer)	226	750	1100	29 4	24	W	Wh	S	Lever Cloche	Lever	Bar	Gnome	100	14	130	120	Requa-Gibson	9 3	7	2	1200
Joseph A. Cummings, Jr. (Blériot)	240	750	1000	29 6	27	W	Wh & s	R	Lever Cloche	Lever	Bar	Gnome	50	7	110	120	Chauviere	S 2	5 9	2	1200
Earle L. Ovington (Blériot)	150	825	1100	29 6	26	W	Wh & s	R	Lever Cloche	Lever	Bar	Gnome	70	7	130	120	Chauviere	S 2	----	2	1200
T. O. M. Sopwith (Blériot)	150	800	950	28	22	W	Wh	R	Lever Cloche	Lever	Bar	Gnome	70	7	130	120	Regy	S	5	2	1200
Claude Grahame-White (Nieuport)	208 (approx.)	800	1000	36 9	26 7	W	Wh & s	S	Lever	Bar	Lever	Gnome	70	7	130	120	Chauviere	8.2	5 9	2	1200
									BIPLANES												
Eugene B. Ely (Curtiss)	219	750	900	26 3	26	ailerons on rear ends	Wh	none	Push post	Shoulder brace	Bar	Curtiss	70	8	4½	5	Curtiss	7 8	7	2	1200
Earle L. Ovington (Curtiss)	219	700	900	26 3	26	ailerons on rear ends	Wh	none	Push post	Shoulder brace	Bar	Curtiss	50	8	4	4	Curtiss	7 4	6	2	1150
Lincoln Beachy (Curtiss)	219	700	850	26 3	26	ailerons on rear ends	Wh	none	Push post	Shoulder brace	Bar	Curtiss	50	8	4	4	Curtiss	7 4	6	2	1150
Harry N. Atwood (Burgess-Wright)	520	900	1100	39 6	30	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	35	4	4⅜	5	2 Wright	S 6	10 6	4	400
Clifford L. Webster (Burgess-Wright)	520	900	1100	39 6	30	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	35	4	4⅜	5	2 Wright	S 6	10 6	4	400
George H. Mannor (Burgess-Wright)	520	900	1100	39 6	30	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	35	4	4⅜	5	2 Wright	S 6	10 6	4	400
T. O. M. Sopwith (Wright)	700	1000	1150	39	24	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	40	4	4½	5	2 Wright	10	8	4	500
Sidney Borman (Borman)	204	300	450	17 9	21	ailerons	Wh	none	Lever	Shoulder brace	Bar	Ford	22½	4	3¾	3¾	Requa-Gibson	6 10	7½	2	1200
George W. Beatty (Wright)	700	1000	1150	39	24	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	40	4	4½	5	2 Wright	10	8	4	500
Howard W. Gill (Burgess-Wright)	520	900	1100	39 6	30	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	35	4	4⅜	5	2 Wright	S 6	10 6	4	400
Lieut. Thos. D. Milling (Burgess-Wright)	520	900	1100	39 6	30	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	35	4	4⅜	5	2 Wright	S 6	10 6	4	400
Frank T. Coffyn (Burgess-Wright)	520	900	1100	39 6	30	W	Wh & s	R	Lever	Lever	Foot Bar	Wright	35	4	4⅜	5	2 Wright	S 6	10 6	4	400

Notes.—W=Warping. F.=Flaps. W & s=Wheels and skids. Wh=Wheels. R=Rubber. S=Springs. P=Pneumatic.

GENERAL TOTALIZATION OF BOSTON MEET

PRIZE MONEY.

Aviators.	1st.	2d.	3d.	Perform-ances.	Amt. won.
Ovington	1	2	1	5	$11,782
Milling	4	4	1	12	6,200
Sopwith	12	8	0	26	6,022
Grahame-White	9	0	0	11	5,224
Beachy	6	2	..	10	3,630
Stone	Consolation				1,000
Gill	2	2	1	7	534
Beatty	0	5	2	8	482
Atwood	1	1	1	5	296
Coffyn	1	1	0	2	200
Ely	0	1	0	1	150
Totals	36	26	6	87	$35,520

BEST RECORDS AT THE MEET.

Quick Starting:	Time.
Beachy	8 3/5s
Sopwith	9s
Milling	9 3/5s

Accuracy:	Distance.
Milling	50 3/10ft.
Coffyn	50 7/10ft.
Gill	57ft.

Figure 8, speed:	m. s.
Milling, 4½ miles	5:57 4/5
Beachy, 7½ miles	9:24
Milling, 9 miles	11.55 2/5
Sopwith	12:52 3/5
Grahame-White, 21 miles	17:19
Sopwith	22:59
Beatty, biplane	23:46

Bombs, five:	Best aver.
Sopwith	13 5/10ft.
Sopwith	15 4/10ft.
Beattey	16 2/10ft.

Bombs, three:	
Sopwith	9 4/10ft.
Atwood	12 6/10ft.
Atwood	18 4/10ft.

Passenger, speed:	m. s.
Grahame-White, 4½ miles	4:32 3/5
Sopwith	7:15
Milling	7:19
Grahame-White, 18 miles	17:27 4/5
Sopwith	19:27 4/5
Beatty, biplane	29:50 1/5
Speed:	
Grahame-White, 12 miles	12: 6 1/5
Ely, biplane	13:19
Sopwith, 4½ miles, biplane	13:48
Milling	23:24
Atwood	36:48

BLUE HILL RACE.

Blue Hill, around observatory, 15 miles:

Beachy, biplane 20:42

BOSTON LIGHT RECORDS.

(30-mile course.)

	m. s.
Sept. 6, 1911, Grahame-White	27:35 1/5
Sept. 1, 1911, Sopwith	31:33
Sept. 1, 1910, Sopwith	31:33
Sept. 12, 1910, Grahame-White	34: 1 1/5
Sept. 1, 1911, Ovington	35:42
Sept. 2, 1911, Beachy, biplane	38:58
Sept. 1, 1910, Grahame-White	40: 1 1/5
Sept. 2, 1911, Ovington	41:21

BOSTON LIGHT, SHORT COURSE.

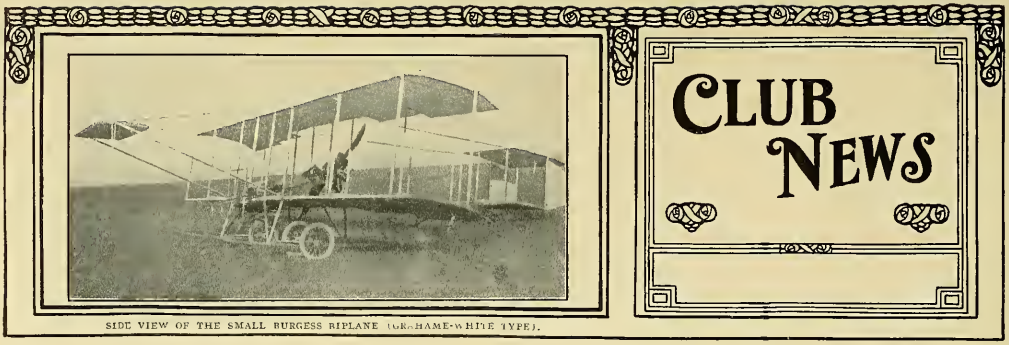
(One lap, pylons omitted, 14½ miles.)

Sept. 5, 1911, Grahame-White	14:09 4/5
Sept. 3, 1911, Sopwith	16:10 1/5
Sept. 5, 1911, Ovington	16:15 2/5

GLOBE TRI-STATE.

Field to Nashau, Worcester, Providence and field; 160 miles:

	h. m. s.
Ovington, monoplane	3:06:22 1/5
Milling, biplane	5:22:27

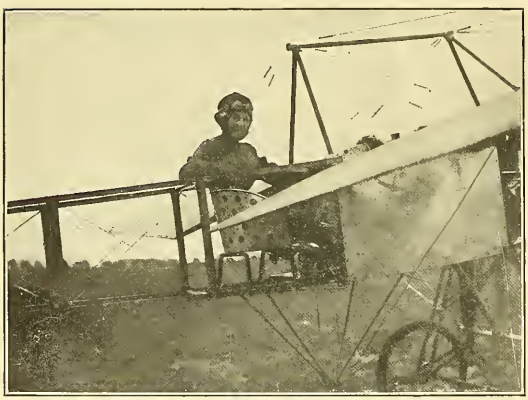


SIDE VIEW OF THE SMALL BURGESS BIPLANE (CURTISS-HAMMONDSPORT TYPE).

Pilots of the Aero Club of America licensed since July 1911.

28.	Lieut. T. G. Ellyson, U. S. N.	July 1st and 2nd, 1911	Lake Keuka, N. Y.	
29.	Lieut. H. H. Arnold, U. S. A.	July 6th	Hammondsport, N. Y.	Curtiss Hydro-aeroplane
30.	Lieut. T. De Milling, U. S. A.	July 6th	College Park, Md.	Wright
31.	Howard W. Gill	July 12th	College Park, Md.	Wright
32.	Edson F. Gallaudet	July 15th and 16th	Nassau Boulevard, L. I.	Wright
33.	Harry N. Atwood	July 3rd	Nassau Boulevard, L. I.	Wright
	" "	July 12th	Governor's Island	Burgess-Wright
34.	Lee Hammond	July 24th	College Park, Md.	
35.	W. Redmond Cross	July 27th	Nassau Boulevard, L. I.	Baldwin Biplane
36.	*William Badger	July 30th	Nassau Boulevard, L. I.	Wright
37.	Harriet Quimby	August 1st	Mineola, L. I.	Baldwin Biplane
38.	Ferdinand E. de Murias	August 1st	Mineola, L. I.	Moisant Monoplane
39.	Capt. Paul W. Beck	August 3rd	Mineola, L. I.	Moisant Monoplane
40.	William C. Beers	August 4th	College Park, Md.	Curtiss
41.	George W. Beatty	August 4th	Nassau Boulevard, L. I.	Wright
42.	Hugh Robinson	August 4th	Nassau Boulevard, L. I.	Wright
43.	Cromwell Dixon	August 6th	Nassau Boulevard, L. I.	Curtiss
44.	Matilde Eleanor Moisant	August 13th	Nassau Boulevard, L. I.	Curtiss
45.	Lieut. Roy Carrington Kirtland, U. S. A.	August 10th	Mineola, L. I.	Moisant Monoplane
46.	Oscar Allen Brindley	August 3rd	College Park, Md.	Wright
47.	Leonard Warden Bonney	August 3rd	Dayton, Ohio	Wright
48.	Lieut. John Rodgers	August 3rd	Dayton, Ohio	Wright
49.	C. P. Rodgers	August 7th	Dayton, Ohio	Wright
50.	Andrew Drew	August 8th	Dayton, Ohio	Wright
51.	Louie Mitchell	August 8th	Dayton, Ohio	Wright
52.	James J. Ward	August 11th	Chicago, Ill.	Curtiss
53.	Charles C. Witmer	August 14th and 15th	Chicago, Ill.	Curtiss
54.	Shakir S. Jerwan	August 26th	Mineola, L. I.	Moisant Monoplane
55.	Norman Prince	August 29th	Squantum, Mass.	Burgess-Wright
56.	Glenn L. Martin	August 9th	Los Angeles, Cal.	Curtiss Type
57.	Paul Peck	July 29th and 31st	College Park, Md.	Rex Smith Biplane

* Deceased.



Miss Matilde Moisant, the second aviatrice to gain her pilot's license in this country. Miss Moisant holds the altitude record for women in this country, having risen over 1,500 feet.

Miss Harriet Quimby, the first American aviatrice to gain her pilot's license. Miss Quimby has made a number of flights, the most notable of which was a cross-country trip from Mineola to Nassau Boulevard on September 10th.

Aero Club of Illinois

On August 13th Victor Lougheed, the well known aeronautical writer and author of "Vehicles of the Air," and one of the organizers of the Aero Club of Illinois, sent in his resignation as a member of that club in an open letter, his main reasons being that the big International Aviation Meet held at Chicago from August 12 to 20, and run under the auspices of the Aero Club of Illinois, was not being conducted in a manner to meet with his approval.

Since then several lengthy open communications have passed between Grover Sexton, secretary of the Aero Club of Illinois, and Mr. Lougheed, in which considerable antagonistic feeling was shown, which may possibly result in Victor Lougheed and his friends starting another organization in Chicago. The friends of both factions, however, feel that perhaps a reunion of the belligerents may take place before such drastic measures are undertaken.

Aero Club of Ohio

The news has been given out that Eugene Ely, H. N. Atwood, M. Rene Simon, Arthur B. Stone and Walter Brookins have signed contracts to fly at the Aviation Meet to be held at Canton, Ohio, September 27th, 28th, and 29th.

NEWS IN GENERAL

Army News

The innovation of the month from army headquarters is the issue of permit which will give government officials a chance to accept invitations to fly as passengers in the army machine. Hon. Ben Johnson, of Kentucky, the first official passenger, took advantage of a lull in the storm this week to benefit by the new order. Lieut. Arnold, the handsome young officer flyer, who goes in for altitude, gave him a lift that would have intimidated an ordinary enthusiast, but Mr. Johnson, after a safe landing, was game, and vowed his intention of making a cross-country trip to Annapolis whenever Lieut. Arnold was ready to take him.

It seems as if College Park is destined to become permanent under the army regime. So far the work of the flying squad has been experimental in a way, but the officers have worked consciously, and the Secretary of War is finally convinced of the practical use of the aeroplane for war purposes.

One of the many experiments made by the army aviators has been tried out by Lieut. Kirtland (with Lieut. Arnold as pilot), who with special camera in long flights over the field and surrounding country exposed an 80 foot reel of film. These pictures are to be developed and shown on a screen in Col. George P. Scriven's office in the War Department, and if successful the government will purchase several such instruments and instruct the aviators to use them in taking pictures of surrounding country, which will thus give them a map of the nearby country and enable them to make cross-country flights without danger of losing their way.

On Sept. 7 Lieutenant John Rodgers, of the Navy, son of Rear Admiral Rodgers, retired, flew in a Wright aeroplane from Annapolis to Washington, a distance of forty-five miles, and paid his respects to Acting Secretary of the Navy Beekman Winthrop. He landed near the White House. The flight was the longest cross-country effort yet made by an officer of the Navy or Army.

Thousands of persons at Benning race track on Sept. 4 watched three aeroplanes maned with officers from the Army aviation school at College Park, Md., circle the field and land gracefully while the band played "Let Me Down Easy." In the aeroplanes were Captain Paul Beck, who flew alone; Lieutenant H. H. Arnold and Lieutenant Kirtland, each of the last two accompanied by a passenger.

As the result of the experiments at the government aviation field, at College Park, Md., near Washington, and the observations of Captain Paul W. Beck, U. S. A., and other army aviators at the Chicago meet, which ended a few days ago, army officers and officials of the War Department are of the opinion that in the next two or three years the air corps of the United States Army will be made an exceedingly important part of the Army and one of the finest of such corps in the world. Congress is to be asked to appropriate more money to furnish machines and places to house them.

Many Senators and Representatives have paid the aviation field a visit, with the result that their opinion of aviation as an offensive power in case of war has been greatly changed, and they are now taking a great deal of interest in the work being done by the officers. There is no doubt that whenever the appropriation for the aviation school is considered it will have strong support.

It is said that America is taking the lead in aviation from a manufacturer's standpoint, and that the machines manufactured here have more than held their own in aviation meets. As fast as the aeroplane is perfected, the government will, as often as the officers think it advisable, purchase new and up-to-date machines.

The first night landing ever made in an aeroplane at the army aviation field at College Park, Md., was accomplished by Lieutenants T. DeW. Milling and R. C. Kirtland, August 21st. Guided by signal fires, the aviators brought their machines down out of the dark to the cheers of the other members of the army aviation school, who awaited them. They had flown from the park to the Chevy Chase Club, four miles distant, where their reception was so enthusiastic that they remained until darkness before they realized that they were forced to report at the aviation field.

Lieutenants Milling and Kirtland started out in the morning of August 21 to fly to Frederick, Md., with Captain Charles DeF. Chandler and Lieutenant Henry Arnold to visit the District National Guard officers encamped there. At Kensington, Md., however, they ran out of cylinder oil and were obliged to land. In alighting their machine was slightly damaged and had to be towed back to College Park, where it was easily repaired for the night's flight.

Captain Chandler and Lieutenant Arnold, after a successful flight to Frederick, were returning to College Park when a strong wind and oncoming darkness compeled them to land at Gaithersburg, Md. They resumed their journey to College Park in the morning of August 22.

The officers covered the forty-two miles between the army aerodrome at College Park, near Washington, and Frederick, in forty-seven minutes. The trip was arranged to demonstrate the practicability of the aeroplane in army manoeuvers in connection with the District of Columbia National Guard encampment here.

EXPERIMENT WITH THE NAVY'S AEROPLANE

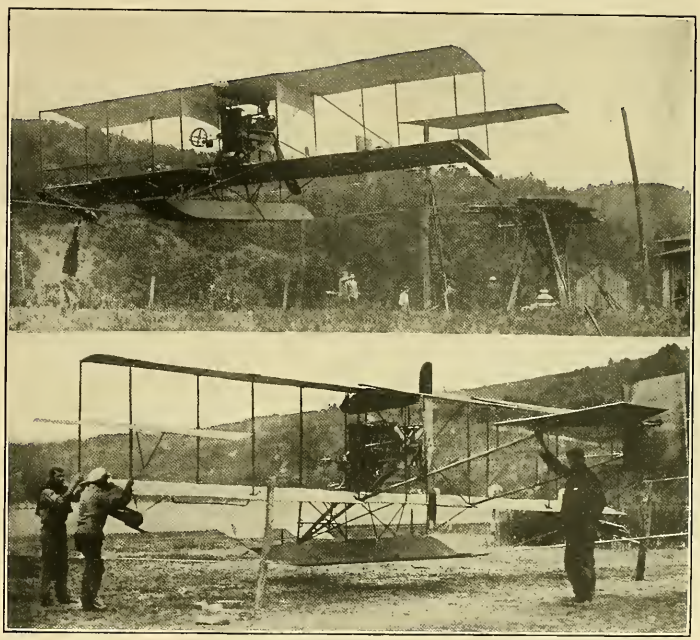
An experiment of considerable importance was conducted by Lieut. T. G. Ellyson at the Curtiss training grounds at Hammondsport, N. Y., on September 7th.

This was the launching of the Navy's new Curtiss hydro-aeroplane from a wire cable stretched from a platform erected 150 feet from the shore of Lake Keuka to the water.

The object of this unique method of launching an aeroplane was to produce further evidence of the practicability of the hydro-aeroplane for use on ships of the Navy, and to demonstrate that it could be launched quickly and easily by means of wire cables available on board any vessel of the Navy, and thus do away entirely with anything in the way of a platform. The successful test carried out thus removes the most serious obstacle which hindered the launching of aeroplanes from warships. By Lieut. Ellyson's methods a hydro-aeroplane may be launched at sea under any conditions without the loss of time in putting it overboard to arise from the water and without delay because of rough sea. Under the new method it will only be necessary to stretch a wire cable from the boat deck of a battleship to the bow, down which incline the hydro-aeroplane can slide. It is maintained in balance on the main cable by two auxiliary wires, one stretched on either side, parallel to the central cable. These two auxiliary wires support the right and left wings until the machine gets up sufficient headway to maintain its own balance by means of its balancing planes.

The rigging for launching the hydro-aeroplane does not interfere in any way with the armament of the ship. It will not be necessary even to remove this rigging. It can be left standing for immediate use, or it can be taken down and stowed away in a few minutes. Previous experiments carried out at San Diego, Cal., last winter in connection with the U. S. S. Pennsylvania showed that the hydro-aeroplane could be landed alongside and hoisted aboard ship in a wind of 10 knots and when a 4-knot tide was running with sea conditions too rough for successful launching. Lieut. Ellyson regarded the getting away from the ship as being by far the most important point in the practical use of the aeroplane in the Navy, since the loss of the machine after the desired information had been secured would be of minor importance.

With the new method it is also possible for the ship to steam ahead into the wind at any desired speed, and thus readily secure the necessary condition of wind for quick launching. Ocean winds are, as a rule, better for aeroplane flying than land winds, for even though often stronger, they are more likely to be steadier than land breezes. Furthermore, there is always plenty of room to manoeuvre over water, once the aeroplane is in the air.



Two views of the Curtiss hydro-aeroplane mounted on a wire runaway, designed to facilitate the launching of aeroplanes from battleships without the use of a clumsy wooden platform. A successful test of this launching device was made by Lieut. Ellyson on September 8th at Hammondsport, when he rose from the wire after a run of only 150 feet.

New England Notes

By Denys P. Myers

A syndicate, consisting of Wesley A. Gove, banker, of Boston, and associates, has purchased the Rockingham Park property in Salem, N. H., at a figure running into the hundreds of thousands of dollars, and contemplate developing this large estate into one of the finest and most up-to-date aviation grounds in the world. It is especially adapted for aviation purposes, and the new owners will spare no expense in making it first class in every respect. There is no timber land or trees in the way, and the property is perfectly level and all underdrained.

The property was originally promoted by the late John W. Gates and John A. Drake as the New England Breeders' Club in 1906. They personally invested in cash $740,000, making a total investment, including all legal expenses, of over $1,000,000. Wesley A. Gove, heading the syndicate purchasing the property, and his associates, are men high in the business and banking world. It is their intention in addition to having an Aero Club to form an automobile and country club; to lay out golf links, put the running tracks into shape and also to have many other amusement features for its members in the summer. In the winter season the mile oval will be flooded. Electric car loops and five steam spur tracks, making it possible to reach it in a six-hour run over from New York City, and making it a run of inside of our hour from Boston. It is a short distance from Lawrence, Haverhill, Nashua, Lowel, Manchester.

Thomas Martin, of Abington, Mass., on a biplane of his own construction, made a flight on August 31st. The framework of the craft is of spruce, while the skids are of white ash. It has a plane area of 264 square feet and carries a 4-cylinder, 30-horse power remodelled Ford engine and weighs 550 pounds.

Norman Prince, flying under the nom du vol of George H. Menner, on August 25th, one of the off days of the Harvard-Boston meet, gained his pilot's license.

CHICAGO APPRECIATES LAWSON

Since Mr. Alfred W. Lawson withdrew from the editorial department of "Aircraft" a few months ago he has been devoting considerable time to the development of the movement in other directions. The following unsolicited letter is certainly a splendid tribute to his work in Chicago.—THE EDITOR.

JAMES E. PLEW, President
FRANK W. WENTWORTH, Secretary

CHARLES G. DAWES, Treasurer
BERNARD J. MULLANEY, General Manager

International Aviation Meet
Grant Park, August 12-20, 1911
Under the Direction of

International Aviation Meet Association
(INCORPORATED NOT FOR PROFIT)

The Auditorium, 64 East Congress Street

CHICAGO, Sept. 11, 1911.

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Scott, Frank E.
Seis, J. Harry
Shaffer, John C.
Shedd, E. A.
Sprague, A. A., II
Starring, Mason B.
Sulzberger, G. K.
Thompson, John R.
Thompson, Wm. Hale
Vopicka, C. J.
Whitney, C. P.
Wisler, T. Edward

Mr. Alfred W. Lawson,
of Aircraft, 37-39 E. 28th St.,
New York City.

Dear Sir:--

It gives me great pleasure to inform you that the International Aviation Meet Association, by its Executive Committee, has spredd upon its records a formal vote of thanks to you for the co-operation and assistance received from you in connection with the recent International Aviation Meet at Chicago.

The time, effort and experience which you so generously placed at our disposal was of great benefit to the Association, and had much to do with making the Meet the success that it was.

Yours very truly,

President.

Lawson's Letter

To James E. Plew, President,
International Aviation Meet Association,
Chicago, Ill.

DEAR SIR—It was with a sense of deep appreciation that I read your letter of the eleventh instant conveying the information that the Executive Committee of the International Aviation Meet Association had spread upon is records a vote of thanks to me.

Recognizing, as I do, that the men of the world today who are giving their work toward the development of Aerial Navigation, whether organizing, building or flying as being in the fore-ranks of all the great men of history who have aided mankind to rise above the mere brute state, and your letter coming, as it did, from a body of such big, progressive and self-sacrificing men as conducted the Chicago Meet—the very flower of that great city—truly I consider it a great honor to be so remembered.

Since entering the aeronautical movement nearly four years ago I have always tried to do my best to help advance aviation along broad and clean lines without taking into consideration time or expense, and what little aid I can give here or there is cheerfully offered. Therefore nothing would please me better than to be called upon again by Chicago aviationists to perform some service that would advance the cause to some extent in your city.

Please express my sincere thanks to the committee for its kind remembrance.

Yours very truly,

New York, September 16, 1911. ALFRED W. LAWSON.

Alaska News

By H. L. Hanlon

Ted Cary, of Seattle, Wash., plans to make a hazardous trip from Seattle to the ice covered shores of Nome, Alaska, in a new hydro-aeroplane of his own construction in company with T. J. Hamilton.

His biplane is larger than the usual Curtiss type and embodies many original ideas. The pontoons are larger and stronger and considerably lighter than those generally used. They are constructed as only a fast boat designer would construct them. Secret trials have proved the success of the machine, and the young aviators hope to reach Nome in it. If successful they will attempt to reach the farthest known point in the Arctic.

California News

By Ernest Ohrt

Lyman Gilmore, an amateur aviator of Grass Valley, Cal., recently made a half-mile flight in a 900 pound machine of his own invention. The machine is driven by a thirty-five horse power engine, and the flight was at an average of 15 feet.

L. E. Holt, an aviator of Dominques Field, Los Angeles, raced an electric trolley car for five miles and was the victor by two car lengths. Holt has made several flights in an effort to qualify for a pilot's license.

George Loose, one of the aviators belonging to the aeronautical detachment of the Artillery Corps N. G. C., has been granted a sixty-day leave of absence in order to visit the different flying grounds. Loose was the first man to build and sell an aeroplane in California, this being in 1907. Before returning to California he will visit aviation fields in New York and Boston.

Aviator Fred J. Wiseman, of Santa Rosa, Cal., while flying at the Sacramento State Fair, had an accident to his aeroplane on Aug. 29th while attempting to alight after his engine had stopped at a height of 200 feet. In the accident he broke his front elevator and outriggers.

Glen L. Martin, of Santa Ana, Cal., has been carrying several passengers lately in his Curtiss type biplane equipped with a Hall-Scott motor.

Maryland News

By Cortland Wrightsen

Howard T. Le Van, a 17-year-old aviator, who holds an aero pilot's license issued by the Aero Club of America, has been giving a number of very good exhibition flights at Bay Shore, one of Baltimore's amusement parks. He has a very good machine of the C. J. Strobel type.

It was two years ago, in September, 1909, that Le Van made his first flight in an aeroplane from Bay View Park, Toledo, Ohio. He had previously been ascending in a balloon from various amusement parks, but he was not satisfied and longed for a more thrilling amusement.

In a hangar at Bay View Park was a biplane belonging to the C. J. Strobel Company, and Le Van, with the help of a few men, rolled the machine to the aviation field. He then got into the seat, and grasping the wheel firmly, gave orders to start the engine, and after a short run along the ground arose into the air like a veteran.

Mr. Strobel hearing the noise of the motor came to investigate and saw the boy in the air. When he alighted Mr. Strobel ran to him and shook his hand, and from that night on he was allowed to fly the aeroplane.

The Hall of Fame

Dutrieux (Mlle. Helene)—Welcome to our fields!

Ely (Eugene)—All the bachelors eny him—and he grins. Lucky dog!

Geary (Ted)—Nothing common about him. He's going to fly to the frozen wilds. Here's good luck!

Hearst Prize Entrants.

Atwood, Harry N., Parmelee, Phil. O.,
Fowler, Robert G., Reyburn, Amadee V.,
Martin, James V., Rodgers, Cal P.,
Ovington, Earle L., Ward, James J.,

You can't all win, but here's good luck to you all.

Martin (A. V.)—Knows all about the heavens. He was one of Harvard's astronomers before he joined the ranks.

Miling (Lieut. F. D.)—Gosh, but you surely can go some!

Moisant (Miss Matilda)—Twinkle, twinkle, brightest star! (You know the rest).

Ovington (E. L.)—Who said you were going to quit?

Quimby (Miss Harriet)—Has crossed the ocean—that is, her picture has. They say she's a queen of the air, and we fully agree.

Sopwith (Thomas)—"He's just like a butterfly"—a fair maid said. Wonder what she meant.

White (C. Grahame)—Confidentially, now, G. W., tell us, please, did you really marry all those ladies—as per reports?

Atwood (H. N.)—Too fast for Fifth Avenue!—his auto was; had to pay $5.

Ellyson (Lieut. T. G.)—A veritable seagull—flies like one!

Stevens (Leo)—Has been in the flying game all his life, but didn't know what real flying was until he tried to keep track of Atwood. That was like tracking the Flying Dutchman. He hasn't caught up with Harry yet. Get a plane, Leo, get in the game!

Welden (H. W.)—Great! Do it again! It may take you one more machine—it took Blériot eleven before he crossed the Channel—but you are bound to win.

Oh Say!

We are waiting to announce an elopement by aeroplane. Will not somebody oblige us? Please!

* * *

An "aviation hat" does not make an aviatrice; nor is a flighty chap a flyer; likewise the fact that a photo shows a fellow sitting in the pilot's seat does not make him a pilot.

* * *

Some flyers have managers; others have wives. What's the difference?

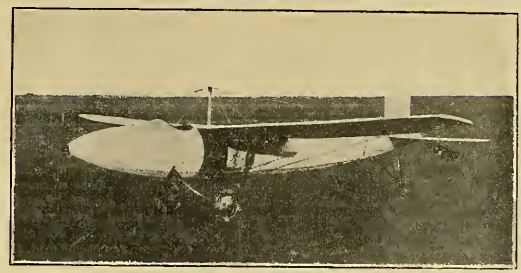
Whichever, it seems that flyers can easier pilot themselves through the air.

Solomon would undoubtedly ask: Is it best to have a manager or a wife?

Most fellows would prefer a sister. And we quite agree. Sisters are so delightfully sweet and human. If you have not any, look around; somebody may have two.

* * *

Evidence that aviation is absolutely dangerous is piling up. The last victim is a chap who fell asleep while the barber was shaving him and dreaming that he was shooting the chute with an aeroplane. He jumped off the chair—and got his ear cut off!



THE PAULHAN-TATIN MONOPLANE.
This interesting machine is being tried at the Rheims aerodrome by the French pilot Gaudart. The body is cone-shaped, minimizing head resistance; the motor is placed in the body of the machine and drives the propeller, which is at the rear, through a gear and shaft transmission.

FOREIGN NEWS

Argentine

Cattaneo, who has been giving exhibitions in Argentina for some time past, will not have matters all his own way in the future, as Paillette, a new arrival, is meeting with considerable success on his Farman biplane. On August 21st he flew over the city of Buenos Ayres for an hour.

Austria

The first aviation meet to be held in Austria is to take place at the Wiener-Neustadt aerodrome, near Vienna, from September 24th to October 1st.

On August 25th Lieutenant Von Blaschke, with General Ulamszky, made a scouting trip of 1 hour 55 minutes from Wiener-Neustadt to Virovititza and return, during the course of which they rose to a height of 2,500 feet.

Belgium

The Belgian National Circuit ended August 30th, the aviators arriving at Brussels in the following order:

1. G. Tyck (Blériot).
2. Lanser (Deperdussin).
3. Hespel (Deperdussin).
4. Contenet (Wright).
5. Parisot (Farman).

The course comprised the following stages:

1. Brussels-Mons.
2. Mons-Tournai.
3. Tournai-Blankenberge.
4. Blankenberge-Antwerp.
5. Antwerp-Liege.
6. Liege-Namur.
7. Namur-Brussels.

England

A new passenger duration record was made on August 17th at Eastchurch by Lieut. Gerrard when he flew with a fellow officer for 4 hours 13 minutes, and on the same day a new British duration record of 4 hours 58½ minutes was made by Lieut. Samson. Both flights were made on Short biplanes.

On August 18th Mrs. Maurice Hewlett gained her pilot's license at Brooklands on a Henry Farman biplane. Mrs. Hewlett is the first lady to gain a certificate from the Royal Aero Club of the United Kingdom and received her instructions from M. Blondeau, with whom, in partnership, she has been conducting a very successful flying school at Brooklands.

On August 19th Mr. Cody set out on his first attempt at the British Michelin Cup No. 2, intending to fly round a course of 125 miles, which is necessary according to the new rules. He started from Laffans Plain, but was compelled by the fog to come down at Reading after going only half-way round the course.

On August 21st Mr. Valentine on a Deperdussin monoplane left Ventnor in the Isle of Wight and headed for Brighton. Upon arriving at the famous English seaside resort he first circled the Palace Pier and then landed safely at Shoreham.

Gustav Hamel left the Hendon aviation field for Windsor about 4:30 o'clock with the first aerial postbag and arrived at Windsor at 5:11 P. M. The mail bag contained missives for all the crowned heads of Europe, a present of a packet of cigarettes for King George from the manufacturers, communications addressed by the Premier to the various Cabinet ministers and foreign ambassadors, the Colonial Ministers and to London editors. The bag weighed twenty-five pounds. Each letter was stamped "First United Kingdom Aerial Mail." About 300,000 letters and postcards have been deposited in the special aerial mailing boxes.

France

On September 5th Roland G. Garros broke the world's record for altitude by ascending to a height of 4,250 metres, or 13,945 feet in a Blériot monoplane at Parame, France.

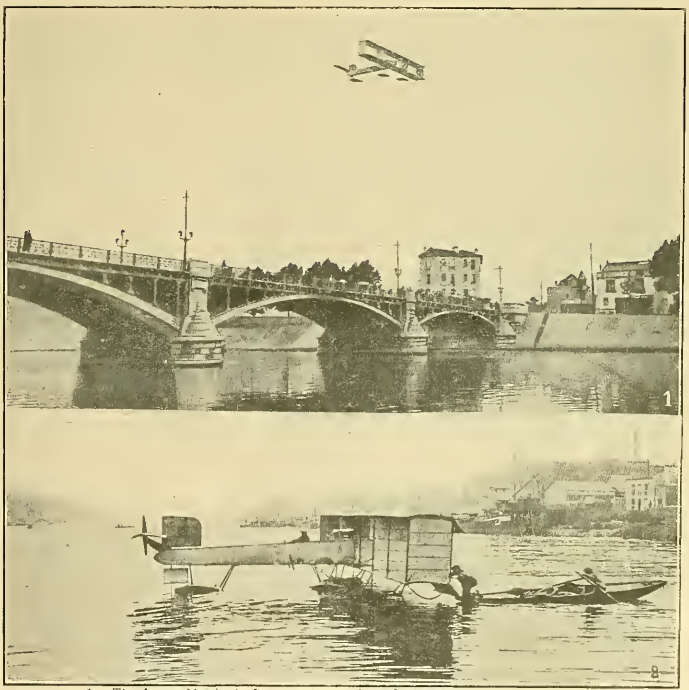
This achievement betters Lincoln Beachy's height record, made at Chicago, on August 20th, by 2,365 feet.

TWO NEW RECORDS IN MICHELIN CUP CONTEST BY A NEW FLYER

Ellen, a newly licensed French pilot, made a new record in the Michelin Cup contest on August 26th, at Mourmelon, France. Flying a Nieuport monoplane with 50 H. P. Gnôme motor, he covered a distance of 699.91 miles in 13 hours 47 minutes 19 seconds, with three stops. The details of the flight are as follows:

Flights.	Time.	Laps.	Kil.	Miles.
First flight	3 hrs. 15′ 41 2-5″	3	307.2	190.885
Rest	24′			
Second flight	3 hrs. 12′ 44″	3	307.2	190.885
Rest	28′			
Third flight	4 hrs. 04′ 25 3-5″	3	307.2	190.885
Rest	15′			
Fourth flight	2 hrs. 07′ 28″	2	204.8	127.256
	13 hrs. 47′ 19″	11	1126.4	699.911

As we go to press a cablegram advises that Ellen made a new record on September 8th at Etampes, France, by flying 1,253 kilometres (776.86 miles). His time was 14 hours 7 minutes.



1. The latest Voisin hydro-aeroplane "Canard" in flight over the Seine.
2. The "Canard" at rest on the Seine preparatory to starting on a flight.

Lieut. Grailly, being entered for the Military Lawn Tennis Championship, recently flew over from Buc to Compiegne to take part in the contests. Having won the championship, the aviator mounted his R. E. P. machine and flew back to headquarters.

Mr. Roger Sommer has lately been working on an automatic stabilizer for his machines. The first experiments with the apparatus mounted on one of his biplanes was made on August 19th and gave very good results during a course of a flight of an hour.

The Michelin Military Prize

Michelin et Cie have placed a sum of $30,000 at the disposal of the French Aero Club to be distributed in four prizes to be known as the Michelin Aero Target Prizes. A prize of $10,000 will be awarded to the aviator who in a single flight on or before August 15th, 1912, shall have dropped the greatest number of projectiles into a circle having a radius of ten metres.

The aviator must fly at a minimum altitude of 200 metres, and drop singly five projectiles, each weighing at least 20 kilogs., while passing several times over the mark.

In the event of several aviators having dropped the same number of projectiles into the circle before August 15th, the winner will be the one whose projectiles are nearest the centre.

Another prize of $5,000 will be given, under the same conditions, to the aviator who, flying at a minimum height of 1,000 metres, shall have dropped his projectiles within a rectangle 100 metres in length and 10 metres in width. In the event of several aviators dropping the same number of projectiles within the prescribed limit, the winner will be the one whose projectiles, as before, are nearest the centre.

Two other prizes will be given on August 15th, 1913, but the Michelin Company reserves the right to alter the conditions while retaining the original idea. Only French civilian or military aviators are eligible to take part.

On Sunday, August 13th, James Radley arrived by boat at Calais at 2 P. M. to take delivery of a new Blériot machine which he had just purchased. After arriving at Les Baraques he decided that the most fitting way to bring the machine over to England was to fly it across the Channel. Leaving Barnes in the afternoon, he crossed over to Dover in 22 minutes and continued on to Folkestone.

The first attempt for the Coupe Femina for 1911 was made on August 19th, at Etampes, by Madame Jane Herveu. On her Gnôme-engined Blériot she was in the air for an hour and three-quarters and covered 101.6 kilms., when she had to come down, owing to the military requiring the ground to be cleared for manoeuvres. The cup was won last year by Mlle. Dutrieu, who covered 167.2 kiloms. on a Henry Farman machine.

The number of officers who have gained the French Army superior aviation certificate is steadily increasing and one of the latest to qualify is Capt. Camine, who made his third test flight on an R. E. P. machine on August 19th. His course was from Buc to Coltainville, near Chartres, and back, the double journey being covered in 1 hour 10 minutes. Capt. Camine was originally an Antoinette pupil, and took his ordinary brevet on a machine of that make last February.

While spending his vacation at his summer home at Hardelot, Louis Blériot has been carefully working on designs of new type of machines and it will come as a welcome surprise to ardent students of aviation to learn that he has just completed a new monoplane of the "tail first" type. It will be remembered by early followers of aviation that M. Blériot believes he has overcome this difficulty in his latest product.

The new machine is designed to use off the water and the steering will be done by resistance alierons while the motive power will be a Gnôme. The pilot will sit slightly in front of the leading edge of the main plane with the body and rudder extending out in front of him. M. Blériot attributes his want of success with the original machine to his ignorance of the art of flying, and feels certain that with the experience he now has he can make the "tail first" type, which he has never ceased to maintain is the most efficient, a success.

Germany

Miss Nellis Beese, a sculptress, qualified for a pilot license on September 8th and gained the distinction of being first woman aviator in Germany.

On September 6th Zeppelin dirigible "Schwaben" left Baden-Baden on a voyage to Berlin, where she arrived on September 9th, after making a stop at Gotha.

Italy

At the manoeuvers of the Italian Army several military officers, who have been trained as pilots, took part and did very useful work. They were under the command of Captain Ginnochio, and the two best performances were made by Lieutenant de Rada on a Farman, and Naval Captain Rossi on a Nieuport.

The Captain of the Italian Army, Alessandro Guidoni, has invented a hydro-aeroplane which he is testing at the naval flying grounds at Spezia. The Captain received his pilot license recently.

Russia

The Minister of War has suggested to the Council of Ministers that a prize of $75,000 be offered to encourage the manufacture of dirigibles in Russia.

On August 20th Von Leiche broke the Russian height record by rising to a height of 1600 metres.

Switzerland

At Berne, recently, Wieland fell in a machine of his own construction and his landing was made easier by falling on a herd of sheep. Five of the sheep were killed, but the aviator escaped unhurt.

AVIATION WORLD'S RECORDS

(IN CLOSED CIRCUIT, WITHOUT STOPS)

Compiled and checked to September 15th, 1911 by G. F. CAMPBELL WOOD

A. SPEED

1. Time on a given distance

(a) Aviator Alone

DISTANCE KILOM.	DISTANCE MILES	HOLDER	PLACE	DATE	MACHINE	TIME
5	3.107	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	2' 18" 2/5
10	6.214	E. Nieuport	Mourmelon, Fr.	June 21, 1911	Nieuport	4' 30" 1/5
20	12.247	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	9' 14" 4/5
30	18.641	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	13' 53" 4/5
40	24.855	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	18' 31" 3/5
50	31.068	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	23' 10"
100	62.137	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	46' 27" 2/5
150	93.205	C. T. Weymann	Eastchurch, Eng.	July 1, 1911	Nieuport	1 hr. 11' 36" 1/5
200	124.274	Ellen	Mourmelon, Fr.	Aug. 26, 1911	Nieuport	2 hrs. 13' 35" 2/5
250	155.342	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	3 hrs. 04' 28" 1/5
300	186.411	Ellen	Mourmelon, Fr.	Aug. 26, 1911	Nieuport	3 hrs. 15' 44" 2/5
350	217.479	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	4 hrs. 17' 26" 1/5
400	248.548	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	4 hrs. 54' 06" 4/5
450	279.616	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	5 hrs. 30' 35" 3/5
500	310.685	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	6 hrs. 07' 07" 4/5

(b) Aviator and One Passenger

5	3.107	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	2' 52" 4/5
10	6.214	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	5' 44" 4/5
20	12.427	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	11' 23" 1/5
30	18.641	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	17' 02" 2/5
40	24.855	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	22' 35" 4/5
50	31.068	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	28' 09" 4/5
100	62.137	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	56' 47" 2/5
150	93.205	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	1 hr. 28' 24" 2/5
200	124.274	R. Level	Chartres, Fr.	July 9, 1911	Savary	2 hrs. 38' 26" 2/5

(c) Aviator and Two Passengers

10	6.214	E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	6' 00"
20	12.427	E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	11' 59" 2/5
30	18.641	E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	17' 53" 4/5
40	24.855	E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	22' 44" 2/5
50	31.068	E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	29' 37" 2/5
100	62.137	E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	59' 08"

(d) Aviator and Three Passengers

10	6.214	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	6' 16" 3/5
20	12.427	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	12' 34" 1/5
30	18.641	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	18' 48"
40	24.855	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	25' 05" 3/5
50	31.068	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	31' 23' 1/5

(e) Aviator and Four Passengers

5	3.107	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	3' 34"
10	6.214	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	7' 08"
20	12.427	G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	14' 00" 3/5

2. Distance in a given time

(a) Aviator Alone

32	19.885	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	15'
64	39.769	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	30'
129	79.539	E. Nieuport	Mourmelon, Fr.	June 16, 1911	Nieuport	1 hr.
167.5	104.079	E. Aubrun	Bordeaux, Fr.	Sept. 16, 1910	Blériot	2 hrs.
252.5	156.896	E. Aubrun	Bordeaux, Fr.	Sept. 16, 1910	Blériot	3 hrs.
325.905	202.508	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	4 hrs.
407.675	253.317	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	5 hrs.
490	304.471	P. M. Bournique	Buc, Fr.	Dec. 31, 1910	R. E. P.	6 hrs.
522.935	324.936	M. Tabuteau	Buc, Fr.	Dec. 30, 1910	M. Farman	7 hrs.
451	280.238	H. Farman	Etampes, Fr.	Dec. 18, 1910	H. Farman	8 hrs.

(b) Aviator and One Passenger

25	15.535	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	15'
50	31.068	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	30'
100	62.137	E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	1 hr.
151	93.827	R. Level	Chartres, Fr.	July 9, 1911	Savary	2 hrs.
234.85	139.715	R. Level	Chartres, Fr.	July 30, 1911	Savary	3 hrs.

3. Greatest speed obtained, whatever the length of the flight

(a) Aviator Alone

HOLDER	PLACE	DATE	MACHINE	SPEED PER HOUR KILOM.	MILES
E. Nieuport	Mourmelon, Fr.	June 21, 1911	Nieuport	133.136	82.727

(b) Aviator and One Passenger

E. Nieuport	Mourmelon, Fr.	June 12, 1911	Nieuport	108	67.11

(c) Aviator and Two Passengers

E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	102.855	63.911

(d) Aviator and Three Passengers

G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	96.308	59.843

(e) Aviator and Four Passengers

G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	87.251	54.215

B. GREATEST DISTANCE

(a) Aviator Alone

				DISTANCE COVERED KILOM.	MILES
J. Olieslaegers	Kiewit-lès-Hasselt, Bel.	July 17, 1911	Blériot	625.2	388.48

(b) Aviator and One Passenger

R. Level	Chartres, Fr.	July 30, 1911	Savary	241.79	150.241

(c) Aviator and Two Passengers

E. Nieuport	Mourmelon, Fr.	Mar. 9, 1911	Nieuport	110	68.351

(d) Aviator and Three Passengers

G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	50	31.068

(e) Aviator and Four Passengers

G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	25.74	15.994

C. GREATEST DURATION

(a) Aviator Alone

				DURATION OF FLIGHT
H. Farman	Etampes, Fr.	Dec. 18, 1911	H. Farman	8 hrs. 12' 47" 2/5

(b) Aviator and One Passenger

Lieut. E. L. Gerrard	Eastchurch, Eng.	Aug. 16, 1911	Short	4 hrs. 13'

(c) Aviator and Two Passengers

J. Mamet	Reims, Fr.	July 9, 1910	Blériot	1 hr. 38' 40"

(d) Aviator and Three Passengers

G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	31' 23" 1/5

(e) Aviator and Four Passengers

G. Busson	Reims, Fr.	Mar. 10, 1911	Déperdussin	17' 28" 1/5

D. ALTITUDE

1. Greatest Altitude

(a) Aviator Alone

				ALTITUDE ATTAINED METRES	FEET
L. Beachey	Chicago, U. S. A.	Aug. 20, 1911	Curtiss	3,500	*11,483

(b) Aviator and One Passenger

O. de Montalent	Brooklands, Eng.	Aug. 8, 1911	Brégnet	2,200	7,218

2. Climbing (Vertical Speed)

(a) Aviator Alone

				ALTITUDE METRES	TIME
R. Simon	Chicago, U. S. A.	Aug. 19, 1911	Blériot	500	3' 35"
T. O. M. Sopwith	Chicago, U. S. A.	Aug. 19, 1911	Blériot		

* The official figures were 11,642 (12,270 feet above sea-level), but in passing on altitude records the F. A. I. recognizes only units of one hundred metres. Beachey's record was, according to cable dispatches, broken on September 4th by R. Garros (Blériot) at Paramé, Fr.; he is said to have attained a height of nearly fourteen thousand feet.

TYPES OF LANDING GEARS

By W. H. Phipps

THE HENRY FARMAN.

The Henry Farman type of landing gear illustrated in figure 1 is perhaps the most widely used of any present day landing contrivance. It is at once so simple and enective that it is hardly to be wondered at that it is found used on machines of nearly all existing types, both monoplanes and biplanes.

It is known as the wheel and skid type, and makes use of four wheels, two to each skid. The axle of the wheels is strapped to the landing skids by rubber bands, which give or stretch on rough landings and permit the shock of alighting to be borne by the skids. Radius rods and springs mounted on either side of the axle allow the wheels to move sideways in the event of the machine landing on one side or being swept sideways by the wind.

MAURICE FARMAN.

The Maurice Farman landing chassis is practically the same as the H. Farman with the exception of the skids, which are much stronger and are continued up to the front elevator and strengthened by sloping wooden members.

BLÉRIOT.

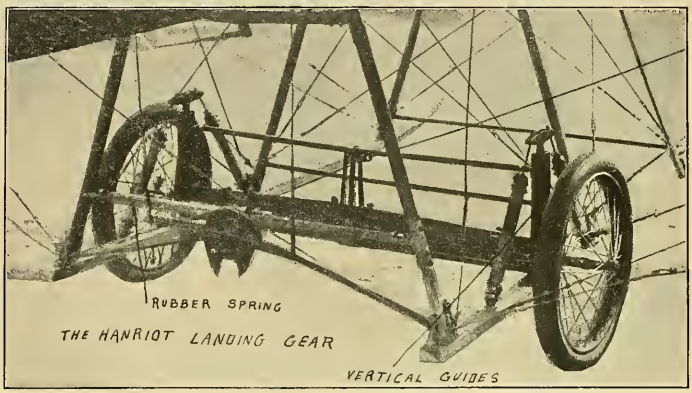
The landing gear illustrated in figure 2 is used on the latest Blériots, and is practically identical with those which were fitted to earlier models. It is hardly as good as the Farman or other wheel and skid arrangements for rough ground and cross-country work, but on the other hand it is quite light and capable of standing ordinary landings as well as any other chassis d'atterissage. The chief drawback to the Blériot landing carriage is the fact that owing to the construction of the springing arrangement, the wheels move backwards when absorbing shocks, thereby throwing the weight of the machine forward and often pitching the machine on its nose. A study of figure 2 clearly shows the construction and the working of the Blériot chassis, and it will be noticed that steel tubing is used largely in its construction.

THE WRIGHT.

Perhaps that which has done most to popularize the Wright biplane has been the fitting of wheels and the subsequent doing away with the clumsy and expensive starting rail. The Wright chassis as it exists to-day (see fig. 3) employs the regular skid used on the early models, with the exception that Farman type shock absorbing wheels have been attached to them, as shown in fig. 3. This arrangement, owing to the low position of the machine and the length of the skids, makes the Wright biplane a splendid machine for cross-country flying.

SOMMER.

The Sommer landing chassis shown in figure 8 is a modification of the Farman arrangement in which two wheels mounted on one long axle are used instead of four. The axle is strapped down to the skids by rubber bands and acts in the same way as the Farman. On the Sommer biplane, however, the skids are continued up to the front elevator for greater protection.

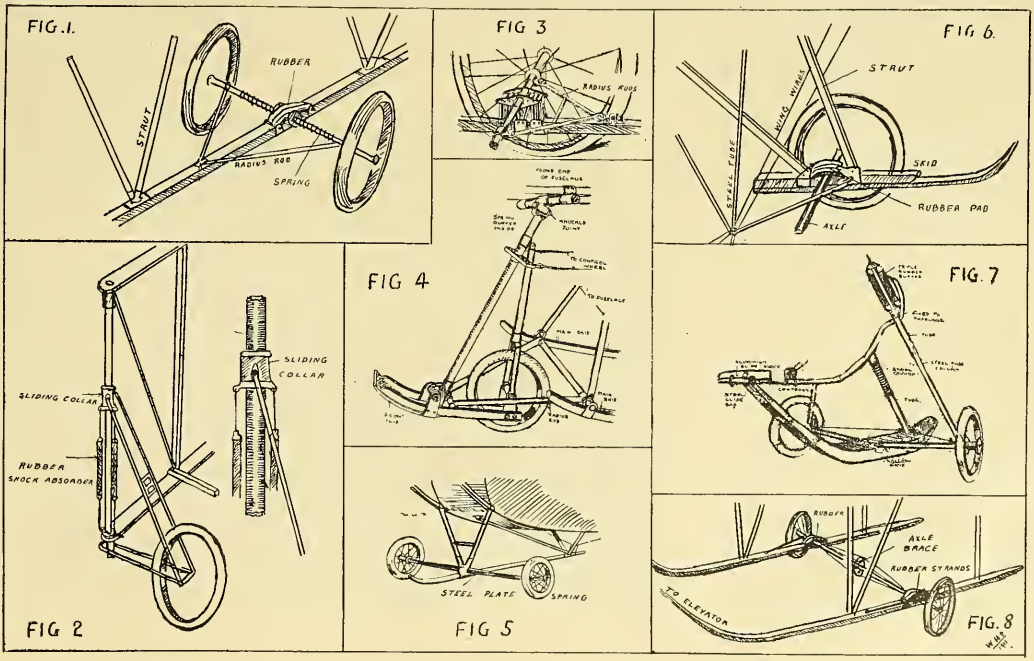


HANRIOT.

The Hanriot chassis illustrated in an accompanying photograph is another example of the wheel and skid type. Although on the general principle of the Sommer device, the Hanriot landing arrangement has embodied in its construction several new and novel ideas, the chief of which are the use of a wooden axle and guides. The axle is free to move vertically in suitable guides and held down by rubber springs. On a normal landing the wheels take the shock, but on very hard landings the wheels rise in their guides sufficiently to allow the skids to come in contact with the ground

BREGUET.

One of the most novel but none the less practical landing carriages is that which is fitted to the Breguet biplane (fig. 4). It is unique in having a combined front wheel and skid, which is connected with the rear rudder and steers the machine when on the ground. There are two main skids, each fitted with a wheel, which are supported from the chassis by diverging steel pillars fitted with heavy compression springs. In front these skids are joined together with a distance piece, from the ends of which a couple of steel tubes join the small front skid, which is forked to hold the front wheel, as shown in the drawing. The tube which runs between the front skid and the fuselage is telescopic and contains a compression spring and is furnished with a brazed on bracket, to which is attached the fork which carries the front wheel. The main column is fitted with a cross bar from the extremities of which wires pass to the control-wheel, which operates the rear vertical rudder, so that the front wheel is steered like that of a tricycle.



NIEUPORT.

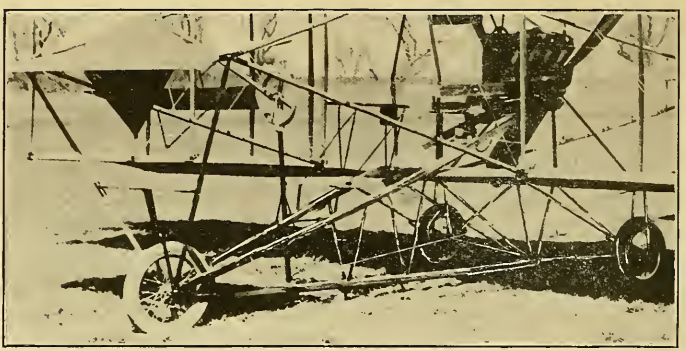
The Nieuport landing chassis illustrated in fig. 5 is of the new single skid and wheel type, and is an extremely neat piece of work, which, in spite of its weak appearance, is quite capable of standing all ordinary landings, but it is doubtful if in its present form it is able to withstand cross-country landings, except, perhaps, in the hands of an expert. The chassis consists of a pair of wheels mounted one on either end of a flexible axle consisting of a multiple-plate spring, which is fixed to the single centre steel skid, just at the point where the V formed struts from the fuselage join the skid.

CURTISS.

The Curtiss landing chassis illustrated in an accompanying photograph is one of the few rigid landing arrangements found on present day machines, but evertheless it is capable of standing all ordinary landings. This is due to the use of large tires and the distribution of the shock over such a large area. In landing head on the front wheel has the brunt of the shock to bear, and it is remarkable the way in which it stands up without buckling. The reason for this is that the front wheel is simply supported by the skid, seat posts and springy bamboo riggers, and is capable of giving quite a little to the impact, and at the same time owing to its forward position glancing off on striking the ground and shifting the shock to the back wheels.

MORANE.

The Morane chassis shown in fig. 6 represents the latest development in a lightweight landing gear, which offers very little head-resistance and at the same time has certain advantages, but is rather crude and particularly liable to be carried away in the event of rough landings. It is of the wheel and skid type à la Sommer, but the skids, although aiding to a certain extent, are hardly of sufficient length and strength to prevent the machine from pitching over.



THE CURTISS LANDING CHASSIS. NOTE HOW THE 3 WHEELS ARE RIGIDLY MOUNTED AND SPACED QUITE A DISTANCE APART, THEREBY DISTRIBUTING THE SHOCK OF LANDING OVER A LARGE AREA.

THE R. E. P.

The R. E. P. chassis illustrated in figure 7 is perhaps one of the most interesting as well as efficient landing arrangements so far devised for monoplanes. Its peculiarities are the large hollow wooden skid, some 9 inches broad by 8 inches deep, which is a tremendous advantage on rough ground, enabling the machine to slide over places that would wreck most machines—and the fact that no part of the chassis is rigidly attached to the frame, but instead all joints are constructed so as to absorb some shock. The skid is made of ½-inch wood, and owing to the dimensions there is quite a large hollow space inside, which it has been suggested might be used for a tool box if the skid was properly strengthened. This skid is supported by an oleo-pneumatic spring pillar in front and at the rear by a sliding collar, which slides on the bottom member of the triangular steel frame. Attached by joints to the middle of the skid is a sort of split axle made of steel tubes, which carry the wheels, and from these two steel tubular columns run to the side of the fuselage, where they are attached to the sides by means of a triple rubber shock absorber, which acts in much the same way as the rubber spring device on the Blériot.

THE DOUTRE STABILIZER

Judging from the reports of the success attained with the new Doutre stabilizer, it would appear that at last the perplexing problem of automatic stability has, to a large extent, been solved.

Several hundred tests have been made at the Buc aerodrome with this device mounted on a Maurice Farman biplane, and five cross-country trips have been accomplished without the slightest mishap. On most of the flights passengers were carried and permitted to take partial control of the machine. The lateral balance, however, is still in the hands of the pilot, but undoubtedly M. Doutre will be able to devise an automatic control for this also.

The functions required of an automatic stabilizer to make it an effective safety device are:

1. That it shall register, not disturbances of the atmosphere or failure of the motor, but the direct mechanical cause of the loss of equilibrium, in order at the same time to compel automatically the manoeuvre necessary for the re-establishment of the equilibrium, and

2. Command the scope of the elevating plane's movement in such a way, it the aviator desires, that at no moment shall the rudder shift beyond the line of security and assume the excessive downward-pointing position, which is the forerunner of a fall.

The following is a technical description of how the Doutre device which seems to fulfil these requirements works:

The stabilizer consists of three special organs:

1. An anemometer, which registers the relative force of the wind, or the pressure exercised by the wind upon the aeroplane.

2. An accelerometer, which measures the variations of speed in the progress of the aeroplane.

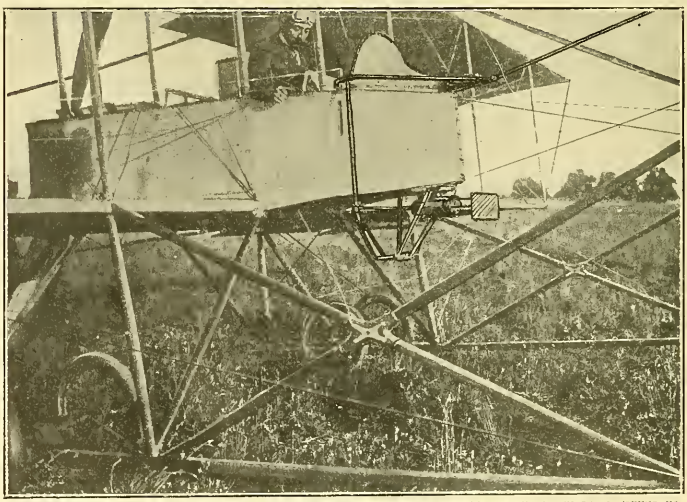
3. A servo-moteur or compressed air cylinder, which transmits the necessary movements to the elevating plane.

The anemometer consists of a pressure disk mounted on springs as shown in the accompanying illustrations. When the relative force of the wind is sufficient or more than necessary for the sustension of the aeroplane the disk moves inward into its socket. This position corresponds to the normal flying position of the elevator. When the wind pressure or velocity is insufficient for sustension the pressure upon the disk diminishes in a proportionate degree and is not strong enough to resist the pressure of the spring the disk is then pushed outward by the springs and each position it assumes corresponds to a given value of wind pressure, thus indicating the correct position the elevator should occupy, and this movement is carried out automatically by the device, as explained hereafter.

Such is the operation of the disk when the aeroplane points at an upward angle. This alone would not suffice when the aeroplane points downward or plunges. In such case the wind pressure might still drive the disk into its sockets and bring about the downward movement of the elevator, which would result in making the aeroplane dive.

Here is where the second organ comes into play to rectify the position of the elevator the instant that the downward dive of the machine becomes dangerous. It is well known that every time an aeroplane shifts its equilibrium the various gusts and forces of wind either increase or decrease the speed of the machine. The shocks caused by these gusts of wind are similar to those which throw one backward and forward in an automobile or other vehicle whose speed is either suddenly checked or increased. It is well before continuing the description of the Doutre stabilizer to understand just what causes these shocks which one feels in an automobile. Suppose you are riding in an automobile or train going 40 miles an hour and an emergency arises which necessitates suddenly jamming on the brakes. What takes place? The car's speed is perhaps suddenly checked to 20 miles an hour, but the passenger sitting in the car has attained an impetus of forty miles an hour, and not being strapped in, the check in the speed of the machine is not entirely transmitted to him; the result being that he continues forward and is often thrown from his seat.

It is upon this principal that M. Doutre has devised a counteracting accessory in the form of movable weights, which are capable of being thrown backward and forward in the same manner as the passenger in an automobile. This organ consists of two heavy movable blocks or weights on springs, see accompanying drawings, which act independent of the disk. The weights are so arranged as to be insensible to the action of gravity, yet at the same time are able to be thrown backward or forward according to each and every variation of the speed of the machine. If the aeroplane slows up the blocks move forward with an impetus corresponding exactly to the shock received, execute the necessary corrective movement of the elevator and slide back to their normal position. If, on the other hand, the aeroplane should be impelled to a sudden spurt of speed the blocks move backward corresponding exactly to the speed of the spurt, operate the necessary corrective



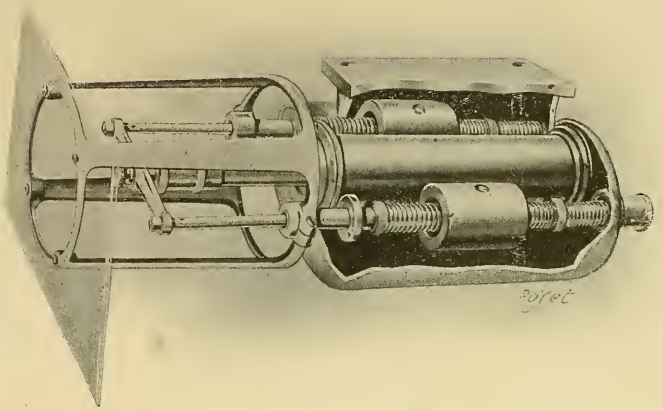
THE DOUTRE STABILIZER MOUNTED ON A MAURICE FARMAN BIPLANE. NOTE HOW THE DEVICE IS FITTED TO THE CABIN AND ALSO THE TUBULAR STEEL ARMS WHICH TRANSMIT THE CORRECT MOVEMENT TO THE ELEVATOR.

movement of the elevator and then slide back to their normal position, where they are held by the springs until another change in the speed of the aeroplane takes place. Thus it will be seen the two organs, disks and blocks work together automatically, rectifying the variations registered by their respective displacement. It should be borne in mind that the force exerted by the disk and blocks is not sufficient to operate the necessary movements of the elevating rudder. In order to operate the elevating rudder the third organ, a compressed air-cylinder, is brought into play. This cylinder is charged by the aeroplane's motor in exactly the same manner as the air brake cylinder on trains and is governed by the actions of the disk and blocks, which automatically allows the requisite amount and pressure of air to enter the cylinder and accomplish, through a single shaft mounted on the piston, the corrective movement for ascent or descent. This is accomplished without any intervention whatever on the part of the pilot, as has been proven in recent tests, the accounts of a few of which we give below.

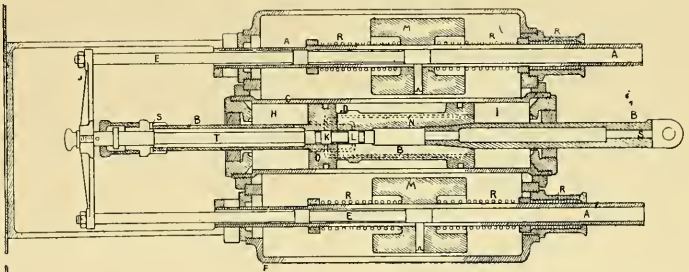
This stabilizer was experimented with by the inventor at Juvisy on a Henry Farman biplane during the months of February, March and April, 1911, and although only in the experimental stage was found to be of great value. In May last, after further improving the device, M. Doutre installed it on a Maurice Farman military type biplane. Its pilot, M. Didier, who has been conducting the experiments right along, had had practicaly no experience on the Maurice Farman biplane, but was able to accomplish many passenger flights, and the following cross-country trips:

May 12—Juvisy-Buc.
May 15—Buc-Juvisy.
May 25—Juvisy-Villacoublay.
July 7—Villacoublay to the Plateau de Milly.
July 8—Plateau de Milly to Villacoublay and return.

This last flight both on the outward and return trip was officially controlled by Lieut. Saunier, of the Chalais-Meudon Laboratory. During the course of the flight the aeroplane traversed ravinous and wooded country on the border of the Essonne Valley and encountered very violent gusts, which were successfully coped with by the automatic stabilizer. Other tests in June and July were made before Colonel Bouttieaux, Commandant Renard, Lieut. Dorand and Lieut. Saunier, who were charged to examine and report upon the actions of the device. During these tests it was quite noticeable that the lateral equilibrium which was in the hands of the pilot was far inferior to the longitudinal equilibrium, which was controlled by the stabilizer. Following these experiences and the reports which were made by the officers of the Chalais-Meuden Laboratory, a demonstration was arranged on July 21st before General Roques, who after seeing the machine manoeuvre did not hesitate to make a flight of a quarter of an hour over the surrounding country, in the course of which the control was frequently released by the pilot Didier and handled successfully by the General himself, who upon alighting declared that the apparatus was a perfect success.



THE DOUTRE STABILIZER.



DIAGRAMATIC VIEW OF THE DOUTRE STABILIZER.

A—Tube. B—Piston. C—Cylinder. D—Air Chamber. E—Bars. H & I—Chamber sections. M—Weights. R—Springs.

System of Automatic Balance and Control of the Horizontal Position of Aeroplanes.

By Theo. Gibon.

U. S. Patents: 710,266, September 30, 1902. 730,107, June 2, 1903; 825,881, July 10, 1906.

The sketch herewith reproduced concerns a system of automatic balance and automatic control of the horizontal position of an aeroplane. This system can be added to existing monoplanes as well as biplanes.

The necessity to provide for automatic equilibrium is very great. The reaction (recoil) of explosions (gasoline or other) is employed for this purpose. The exhaust of the engine will hardly be of sufficient force, but a special explosion apparatus for the purpose may be provided.

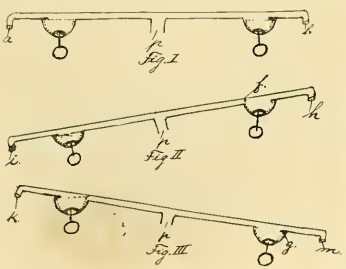
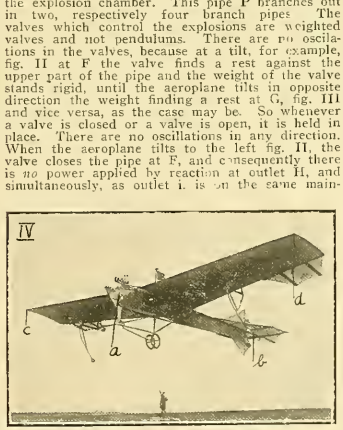


Fig. 1 shows the system of automatic valves in horizontal position. On an aeroplane the outlets A and B for longitudinal, and C and D for transverse stability are located at the spots indicated on the print IV. and V. Two sets of valves, each set consisting of two valves, are used. One set of two valves for longitudinal stability, another set of two valves for transverse stability. In the sketches the pipe P is the main pipe coming from the explosion chamber. This pipe P branches out in two, respectively four branch pipes. The valves which control the explosions are weighted valves and not pendulums. There are no oscillations in the valves, because at a tilt, for example, fig. II at F the valve finds a rest against the upper part of the pipe and the weight of the valve stands rigid, until the aeroplane tilts in opposite direction the weight finding a rest at G, fig. III and vice versa, as the case may be. So whenever a valve is closed or a valve is open, it is held in place. There are no oscillations in any direction. When the aeroplane tilts to the left fig. II, the valve closes the pipe at F, and consequently there is *no* power applied by reaction at outlet H, and simultaneously, as outlet i. is on the same main-

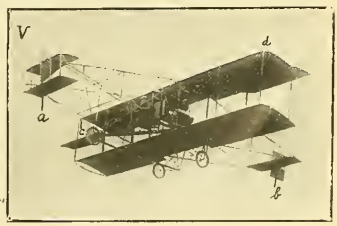


pipe, there is double force applied at i, causing the aeroplane to come back to the horizontal position. If tilted to far in the opposite direction, as shown in fig. III, there is no power applied by reaction at K and *double* power at M.

If a system of four valves is used, two valves for transverse stability and two valves for longitudinal stability, the horizontal position of the aeroplane will be automatically ensured and at a very small tilt. The angle of attack will be kept very constant, and consequently less head resistance and greater speed. There is a way to make these valves act full force at a tilt of less than one degree. In an aeroplane provided with this system of balance *anybody can fly!*

An aeroplane provided with this system of balance may even be sent up *unmanned*, for example, for meteorological purposes. The rudder could be set to make the aeroplane soar upward on a spiral course. If the aeroplane had risen high enough the horizontal rudder could be set by clockwork to make the aeroplane perform a spiral downward glide in safety.

In the future development of aeroplanes the outlets for explosions to apply power by reaction will be set at an angle of about 45 degrees to the horizontal, and in that manner provide for propulsion and balance at the same time.



DYNAMIC SOARING

By A. P. Herff

To see the vulture circling on motionless wings, gaining elevation with every revolution, brings to the human mind involuntarily the comparison between man's wasteful and power-absorbing means of air locomotion, and Nature's graceful and economical method of accomplishing the same results.

Man can never hope to rival Nature in the wonderful fuel-economy that is a part of the animal's vitality, but man may adopt the same cunning plans that Nature adopts to secure results from her immutable laws. In following a course suggested by Nature man can hardly fall into error, since the existing Creatures are all the results of unnumbered centuries of experiment. Thus adopting the hints, a true understanding of the principle of soaring by birds will unquestionably aid greatly the search for more available human flights.

Many theories have been advanced in explanation of soaring flight, and seemingly the most popular is that of gliding in air currents with an upward trend. That such currents exist there is no gainsaying, but that soaring flight depends wholly upon this phenomenon is most improbable. We must therefore look towards other means for a complete solution. One is usually impressed with the peculiarity of the soaring bird to fly in great circles. I have noticed that during exceedingly quiet atmospherical conditions the vulture exerts much energy in the form of wing beats.

On one occasion, while on the summit of a hill, of perhaps 350 feet elevation, I noticed circling below me a vulture of the turkey buzzard variety. There was blowing at the time a very light and exceedingly irregular breeze. Still the bird gained elevation at every revolution, until he was lost to view in the sky above me.

During the entire time he bird gave not the slightest indication of a wing beat, the only perceptible motion being a warping thereof, probably for the purpose of maintaining equilibrium.

On other occasions I have watched two or more vultures flying abreast, when they would simultaneously commence their peculiar orbiting. They did not always make these orbits in the same direction, but they did make them at the same time, and the orbits that they made were practically of the same size and duration. It seemed that the birds were taking advantage of some particular atmospherical conditions.

Many have contended that these birds circle in search of food, but this seems absurd to one who has seen that vultures can detect carrion many miles away. At sunset, when going to roost, great flocks of vultures may be seen flying to their destination, but on such occasions they flap and soar alternately. If the vulture could soar continuously in a straight line it is conclusive that he would do so on these occasions, for it seems that he is not over fond of exertion.

That soaring is possible with or against the wind for long unbroken stretches at a time cannot be denied, but this is accomplished with constant descent, so slight as to be almost imperceptible.

From the above considerations I have come to the following conclusions:

In fig. 1 let F E H G represent part of a puff of air traveling in the direction of the arrow X at a speed of 10 miles per hour in relation to the earth and surrounding still air. The oval A D C B represents the small arrows. Again let us conceive the gliding speed of the bird from B to A to be 30 miles per hour in relation to the earth and calm air and that the bird is descending at a very slight angle.

Since the air resistance increases as the square of the velocity, we may assume the lift imparted big gravity as 30^2=1 lb per sq. ft. of the bird's wings.

At the point A the bird will encounter the moving mass of air traveling at 10 miles per hour in the opposite direction. At this point the bird's speed will still be 30 miles per hour in relation to the earth, but in relation to the moving particles, in the puff, it will become 10 miles plus 30 miles: equals 40 miles per hour. The lift that could now be exerted by the impact at this point could be represented as 40^2-30^2x1 lb.=1 7/9 lbs. to sq. ft.

BRAKE FITTED TO THE LATEST ETRICH-RUMPLER MONOPLANES.

This excess of energy is, however, converted into elevation by the inclined plane of the bird's wings. During its flight from A to D, its momentum will gradually become spent against the air pulse until its velocity at the point D will again be 30 miles per hour (in relation to the moving particles in the puff). That is, it will again resume

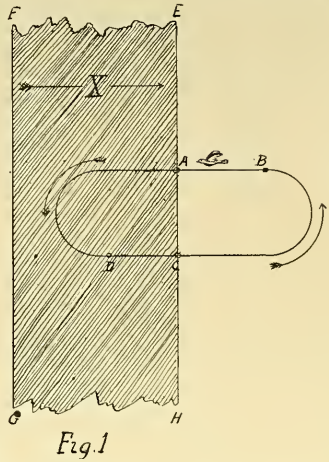


Fig. 1

its normal gliding flight with the same slight descent per unit of time.

In its flight from D to C, it is gliding with the wind, hence its speed will be 10 miles plus 30 miles=40 miles per hour (in relation to earth and still air). As the bird's speed is 30 miles per hour faster than the air pulse, it gains on the receding crest E H, overtaking it at C. It must not be overlooked that the path of the bird would not appear exactly as shown in the figure, the crest E H having moved considerably to the right during its flight from A to C.

This fact, however, does not alter the above hypothesis, since all comparisons must be made in regard to the air body, in which it is flying. At the point C the bird again enters calm air, to which its velocity is 40 miles per hour. We see, therefore, that the impact with the calm air is exactly the same as the impact caused during its flight from calm air into the puff, with the same rise in elevation.

During its flight from C to B it again gains elevation until its speed gained in the puff becomes spent against the calm air, whence at B it again resumes its normal gliding flight of 30 miles per hour.

In flying from B to A the bird would be descending, for it would be gliding normally, but it must be again remembered that the rapidly moving crest E H would, again, have moved considerably to the right of the figure during the bird's flight from C to B. So that the distance between B and A would be very small if the points did not actually coincide. The drop from B to A would, therefore, be very small, if any.

At A the normally gliding bird again encounters the moving pulse, with the same results as mentioned before. From the foregoing it seems apparent that at every circuit the bird may gain elevation until it has reached sufficient height that it may fly with or against the wind, constantly descending, but using the force of gravity stored up in elevation.

A vulture may derive a considerable lift when colliding with an air pulse of small velocity, as his speed is naturally great and his angle of descent small during his normal gliding flight. If a bird, gliding at a speed of 30 miles per hour, could support 1 lb. per sq. ft it could, when colliding with an oppositely moving wave of 10 miles per hour, support 1 7/9 lbs. per sq. ft. That is, it would be capable of lifting 7/9 lbs. more per sq. ft. at the point of impact with the wave than it could during its normal gliding flight.

Here the bird not in motion, however, the life imparted by the pulse would only be 1/9 lbs. per sq. ft.

It becomes apparent, therefore, that the greater the gliding sneed of the bird the greater will be the impact with an air pulse of a given velocity. This is probably why the vulture can actually soar, when to the motionless observer there appears to be air almost perfect calm. He can plainly see that the pulsating air now so bitterly opposed by the aviator becomes an actual necessity for soaring flight.

In figure 2 let us conceive an aeroplane traveling from C to D with a velocity of 30 miles per hour, in the direction shown. At C it wil collide with the air puff, whence its velocity will become 30 miles plus 10 miles=40 miles per hour in relation to the air. If the puff is of sufficient magnitude the speed of the aeroplane, while traveling from C to B will again become 30 miles per hour in relation to the air puff, but 20 miles per hour in relation to the earth and surrounding still air. At B it will again encounter still air, to which its speed is 20 miles per hour, a velocity insufficient to support it. Whence we have the so-called "holes in the air."

As these pits must be crossed, we must conclude that they must be met with an increased angle of incidence at a safe elevation. In flying into the teeth of a gusty breeze we must always remember that the elevation gained in entering the puff must be lost when emerging at its rear. Who knows, but as the art of aviation advances, we may see aeroplanes soaring with clutch thrown out, and propeller revolving idly, to minimize resistance, the pilot having at his command a pedal ready at

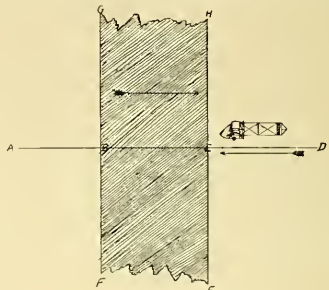


Fig. 2.

a moment's notice to connect the rapidly revolving screw with that of the engine, thereby starting the latter, just as the soaring bird has at his command the muscles of his wings.

Dr. Walden Makes Good Flight

On September 13th Dr. Henry W. Walden made a successful cross-country trip from the Mineola aviation field to the Nassau Boulevard aerodrome on his original type monoplane, which was described briefly on page 204 of the August issue of "AIRCRAFT." By this flight Dr. Walden demonstrated the worth of his novel monoplane and earned for himself the distinction of being one of America's successful aeroplane builders.

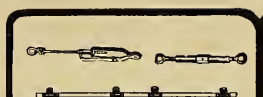
Romme Makes Flight

On August 23rd, Romme at the wheel of the McCormick-Romme monoplane, made several successful short flights at Chicago. The machine, which is a large copy of Mr. Romme's circular model, flew at a height of 15 feet and maintained a perfect balance.

SPRING OF HOLLOW TUBING.

The value of a light, yet strong, spring in the construction of aeroplanes is too evident to need setting forth.

The above cut shows a spring made of hollow tubing, invented by Mr. Francois Ernoult, a French engineer, which is said to have not only the advantage of being lighter than the solid spring but also of being more elastic and flexible.



THE TRADE

THE motor's the thing! While a good motor will not make a good flyer any more than good clothes make a good man, a faulty motor will surely spoil the flyer's chances.

As the motor is the principal factor and costs practically two-thirds of the cost of an aeroplane, the flyer is justified in complaining if it is faulty.

Do you, Mr. Motor Maker, realize what such a complaint means? Of course you do. So do we. Flyers come to us daily to tell us of their experiences and the principal subject is usually motor—their experiences with this or that motor. You know them; they praise the reliable heartily—and are surely loud about the unreliable.

Get on the right side; concentrate; turn out a good one, then keep improving. Then your sales will increase. The inducement is big. Look at the motor boat engines, for instance: last year there were sold nearly 75,000 marine engines. Needless to add, there will soon be as many aeroplanes as there are motor boats.

We are pleased to note that within the last year tremendous strides have been made in point of efficiency of the American made motors and feel sure that before long we will be sending aeroplane motors from this country to every quarter of the globe and that American motors will be considered the equal, if not the superior, of any make in the world.

Mr. B. C. Scott, of the **Hall-Scott Motor Car Company,** of San Francisco, California, visited New York recently and spent an hour in the offices of "AIRCRAFT." Mr. Scott is very enthusiastic about the future of the aeroplane industry and is especially gratified over the progress made along the Pacific coast, which he says is the liveliest aviation section in the United States at the present time. Mr. Scott has been making a tour of the United States in the interests of his company and reports a lively sale of his motors everywhere. The Hall-Scott Motor Car Company has branch offices in most of the important cities of the United States.

The New York Aeronautical Supply Company report an exceptionally brisk trade during the past few months, and say that the range of their orders not only extends to the boundary lines of the United States, but in foreign countries as well. Mr. Walter E. Watts, the president of the company, assures us that his company is not only in a healthy condition and here to stay, but that he is preparing to expand business far beyond anything he has yet undertaken.

The Hendee Manufacturing Company of Springfield, Mass., has just completed a new rotary aero motor which they have named the *"New Indian."* A neat little catalogue called "Booklet No. 11" has been issued giving full information in detail concerning the same which will be sent upon application free of charge.

A concern which is proving that the aeronautical industry is here to stay and is showing by good business methods its capability of becoming a permanent and reliable institution, is the **American Propeller Company** of Washington, D. C. From a modest beginning about a year or so ago, it has now grown to a point where it must be considered as one of the most substantial concerns of its kind in the world. This company makes the well-known *Paragon Propeller,* which is gradually becoming a national name among the aeroplane constructors of this country. To Spencer Heath belongs most of the credit for the excellent showing already made by the American Propeller Company.

The looming up of the **Roberts Motor Company** of Sandusky, Ohio, as a strong factor and bidder for patronage in the aeroplane motor trade has become quite noticeable. The Roberts Motor Company has been manufacturing marine engines for several years and Mr. B. L. Roberts, the head of the concern, who recently visited New York, anticipates doing even a larger business in the aeroplane motor building in the future than he expects from his marine engine trade. He says that the *Roberts* aeroplane motor is giving universal satisfaction to its users who are scattered all over this country and in many cases abroad.

The E. J. Willis Company, of New York, informed one of our representatives recently that their business has been increasing lately in a most remarkable manner. They say that from January 1st they have done at least five times as much business as they did in the corresponding period 1910. Citing an instance of the rapid growth of the aeronautical industry, they inform us that they received five hundred and sixty-nine replies to their one-half page advertisement appearing in the August issue of AIRCRAFT, which certainly proves that aviation is moving ahead with rapid strides.

The Goodyear Tire and Rubber Co., of Akron, Ohio, have reason to be proud of their aeroplane tires and fabric, for no less than three world's records were made within a week by machines equipped with their product. During the Chicago Meet, Lincoln Beachey, on a Goodyear equipped Curtiss, broke the world's altitude record by rising to a height of 11,640 feet, while Beatty, on a Goodyear equipped Wright, made a new endurance record for a flight with two passengers. Following on the heels of these two events was the successful flight of Atwood, who flew from St. Louis to New York, a distance of 1,265 miles, on a Goodyear equipped Burgess-Wright biplane.

Burgess Co. & Curtiss, of Marblehead, Mass., makers of the Burgess, Grahame-White and Burgess-Wright biplanes, has met with great success during the past month, and two world's records were made within a week on machines of their construction.

Since this concern's modest beginning as a part of the W. Starling Burgess Co.'s yacht factory, they have gradually increased their aeroplane department until it now has a separate works, which includes an administration building containing offices and drafting rooms, a principal wood-working shop, a machine shop and an additional assembling and wood-working shop.

On September 1st, 1911, Alfred W. Lawson resigned his position as President and Director of the **Farman Company of America,** and in his place was elected Baron L. d'Orcy. Mr. L. Blouet was elected Secretary to take the place of Baron L. d'Orcy.

The International Aeronautic Construction Company, incorporated, of Jamaica, Long Island, has established its factory at Hollis, near Nassau Boulevard. The company is composed of John B. Merrill, George J. Schultz, Martin Mager, John T. Higgins, Daniel E. Morrell, Jr., and John R. Carman.

Its principal business is the manufacture of Blériot, Curtiss and Farman type aeroplanes with latest modifications.

The American Aeroplane Supply House, of Hempstead, L. I., recently delivered a two seater machine, a duplicate of the 1911 cross-country Blériot monoplane, equipped with a Roberts motor, to George McNamara. At Norton, Mass., McNamara made several successful flights in it.

They have also delivered another two-seater to Mr. A. V. Reyburn, of St. Louis, Mo. Mr. Reyburn has equipped this machine with a 100 H. P. motor.

A third machine, a single seater racing Blériot, has just been completed, and will be fitted with a 70 H. P. Gnôme motor. This machine was constructed for Mr. A. C. Menges, of Memphis, Tenn., and will be tried out by Willie Haupt, and a flight over New York will probably be attempted in it.

C. E. Conover Co., of New York, makers of the well-known "Naiad" aeronautical cloth, report a steadily increasing demand for their coverings. This company issues a neat sample book, including data and prices, which will be sent free to all interested parties.

R. O. Rubel, Jr. & Co., of Louisville, Ky., report that they have sold 17 of their gray Eagle motors within the last three months, and that all of them gave a good account of themselves. In addition to their motor and aeroplane department they have a supply department, where 16 men are kept busy filling orders for supplies alone.

The Western Aviation Company, of Denver, Colorado, announces the opening of their "Rocky Mountain" school at Denver. Mr. James E. Helpling is the president of the company; the aviators are Messrs. George Reed, Frank King, Max Hohmann, Lawrence Fleckenstein, "Slivers" Boyd, Ed. Schwartz. On August 28th Mr. Helpling made a flight of 27 minutes over the outskirts of Denver with Mrs. Helpling as passenger.

Charles B. Kirkham, manufacturer of the **Kirkham** aviation motor, of Savona, New York, reports a steady, substantial increase in the sale of his motors.

The Wright Company, of Dayton, Ohio, manufacturers of the Wright aeroplane and Wright motor, reports more business than can be actually attended to. They are capable of turning out two machines a week at their manufacturing plant in Dayton. They say that orders for Spring delivery are now being taken.

J. A. Weaver, Jr. & Co., of New York, one of the largest constructors of aeroplane wheels in this country, are busy these days shipping their product to almost every town or village in this country where aeroplanes are being constructed.

Fred P. Shneider, of New York, who begun about three years ago as a manufacturer of aeroplanes, is still in the business and apparently is here to stay for many years to come. His business shows a healthy, gradual growth that is most encouraging.

CLASSIFIED ADVERTISING

10 CENTS A LINE ✍ SEVEN WORDS TO LINE ✍ CASH WITH ORDER

FOR SALE

IF you want passenger balloons, dirigibles, captives or aeroplanes; large stock; immediate shipment; any size built to order. Teach purchaser to operate. Exhibitions furnished throughout United States and Canada. G. L. Bumbaugh, builder and operator. Indianapolis, Ind., U.S.A.

FOR SALE—Elbridge engine, same that George Schmitt used in wonderful flights at Mineola and in exhibition work. 19 miles in 22 minutes. First check for $500 takes it. Perfect condition. Charles Schmitt, 839 Sixth Avenue, New York City.

FOR SALE—A 80 H. P. 8-CYLINDER HALL SCOTT MOTOR THAT HAS NEVER BEEN USED, TOGETHER WITH TWO PROPELLERS FOR THE SAME, AND RADIATOR. PRICE $2,100. Address Box 744, Aircraft.

FOR SALE—Eight-cylinder Curtiss engine, 60 H. P. Never used on account of lack of time and capital. Been run about thirty minutes on testing stand. Good as new. First check for $750 takes it. Hankey, 3025 Olive St., St. Louis, Mo.

POSITIONS WANTED

DO YOU wish an extremely light weight young man to assist you in aeronautical work? Great enthusiast. Address W. H. Morton, 358 Laurel St., Hartford, Conn.

YOUNG MAN, twenty-eight years old, weighing 130 lbs., and a practical mechanic who has had one year with Curtiss, wishes opportunity to drive plane. Address "Enthusiast," care of Aircraft.

A YOUNG MAN, nearly 18, desires position as an aviator's assistant, with prospects of learning to fly. Address: Louis Fenouillet, 132 West 47th St., New York City.

CO-OPERATION WANTED

CAPITAL WANTED—Wanted party to finance the building of new and patented machine; has been tried and proven very successful. Will give one-half interest to party who will furnish capital to put it on the market. For particulars write to: Inventor and builder, Paul Meissner, 312 Smith St., West Hoboken, N. J.

TO INVESTMENT SEEKERS—Capital wanted for the manufacturing and marketing of the latest and best two-cycle motor, patented, the result of nearly ten years of careful work. This is an exceptional opportunity to connect with a great money-maker. This motor will rank in the two-cycle field in a class by itself, just as the Knight motor does in the four-cycle field. When marketed it will certainly immediately lead the motor industry, for aviation, automobile trucking and marine. It is the ideal truck motor of the world; it is simple, powerful, flexible, economical and practically fire proof. Will be demontsarted to interested parties. We desire the strictest investigation by, and we will require the same from prospective investors. Box 745, Aircraft.

AFTER TWO YEARS scientific study and experiment with full-size machine and many models, I have developed a distinctly new type monoplane having inert stability and perfect starting and alighting gear. Though of compact size, machine accommodates four persons. It is a much more practical, safe and durable machine than any now in existence. Working drawings for building same are about completed. Desire capital to patent and build. Herbert L. Prout, 2076 East 109th St., Cleveland, Ohio.

CORRESPONDENCE

To the Editor of Aircraft:

Norton, Kansas, Sept. 2nd, 1911.

DEAR SIR—It is my sad duty to inform you of J. J. Frisbie's death.

The machine was the Curtiss machine used at San Diego, Cal., as hydro-aeroplane, the machine that first rose from and returned to the water. On the first days the flights did not come off as per schedule, as the express company did not deliver the machine. One flight took place on August 31, but the machine, without the pontoons, was tail-heavy, and Frisbie could not get it to balance properly and "made wood" on alighting.

Friday he made his getaway at 5:45 after being jeered and bandied by the crowds, who called him "Piker" and "Cheat." He had held off until then owing to a puffy wind and advice of his manager, Scott, and his wife's pleadings. His takeoff was excellent, when at from one hundred and one hundred and fifty feet he was struck by some side gusts that the valley had masked and turned to bank against the southwest wind. While banking a gust hit him, but with perfect control of the heavy racer he continued his banking. When nearly over the turn the gusts got under his left wing. He tried to control his machine and was to land in an alfalfa patch of about ten acres back of the racing stables, and was within five feet of clearing safely when his right lower plane struck the roof of a racing stable, his machine turned "turtle" and pitched him out on his head and arm. His injuries consisted of left arm, three ribs, and head broken, and bruised. He was attended by four physicians and taken to hospital, but died at 7:30 P. M. without regaining consciousness. The body was shipped to Rochester, N. Y. He is survived by wife and two children, who were with him at the time and witnessed the accident.

F. R. CARY.

Brooklyn, N. Y., August 25, 1911.

DEAR SIR—Mr. Atwood has astonished the whole country by his wonderful flight from St. Louis to New York, and much stress is being laid by himself as well as by others upon the fact that he has "smashed" the world's record for long-distance flight. It is more doubtful if he now holds the world's record. There is considerable difference in the way in which you calculate the distance and in the way in which it was calculated during the big race in Germany—the longest cross-country flight ever undertaken in a race by more than twenty men. As I am in possession of the complete records, you will perhaps permit me to furnish you with some data which will, I think, show you where the discrepancies arise in comparing these two races.

Mr. Koenig, the winner of the race in Germany, was credited with 1,882.50 kilometers, or 1,169 miles; but this does not mean that the number of miles he actually covered was not very much more than that. When the race was planned and mapped out the number of miles between each day's start and finish was given exactly calculated by the airline, that means, without taking into consideration lakes, woods, mountains and other obstacles that could interfere with the aviators. *The race was planned not to make or to break any records*, but to show how men can cover a certain mapped out route in aeroplanes and which machines and motors would prove best. The aviator is not supposed to follow railroad tracks, his machine is supposed to make him entirely independent of the earth, and therefore *only the shortest route can be credited to him.* It was, of course, permitted every man in this race to choose his own route; only two things were necessary to be considered by him: that he had to touch at certain cities on his day's trip, and that any deviation from the shortest possible way—the straight line—would count against him. Even if he covered two hundred and fifty miles, having lost his way by having followed a railroad line to make his more certain, and the shortest distance which he had to cover was only one hundred and seventy-five miles, not one mile more than that, went to his credit. Here you can see the difference in the way in which the mileage was figured in Germany and in Mr. Atwood's flight.

Mr. Atwood's achievement is figured by the mileage the railroad covers from one place to the other in spite of the fact that he left this route several times and went by a much shorter one, crossing a lake or flying over woods, avoiding the serpentines a railroad often is compelled to make. In this way the greater number of miles counts in his favor, even if he took the shorter road, following the direct airline from time to time.

The question whether Mr. Atwood really broke the record can only be decided, if the shortest distance between his start and stop each day he taken, without considering *where* he sailed and if *this number* of miles he then compared with the 1,169 miles credited to Mr. Koenig. There is still another matter which has to be considered in comparing these two races. Some papers stated that Mr. Atwood required only eleven days in which to accomplish this task, as compared with thirty days the "former" holder of the world's record needed. This can only be stated by men who do not know the conditions of the race in Germany, because Mr. Koenig took exactly thirteen days, as covered to twelve taken by Mr. Atwood. As I before mentioned, the race was mapped out by aerial societies and there were strict rules which had to be followed. One of these requirements forced the aviators to fly only on certain days, devoting if they so desired the remainder of the time to spectacular flights in the various cities where they had to stop to wait for the other men. Mr. Atwood, too, could choose his time for flying as he desired, while the aviators in Germany had to start in the morning at about four o'clock. But if all this does not count, if even the miles between the various cities measured by airline would amount to more than the 1,169 miles credited to Koenig, which seems more than doubtful, the latter would still hold the world's record, as he made the entire trip carrying a passenger with him.

It seems to be a peculiarity of the American people that there must be some record "smashed" before the man accomplishing something great realy gets credit for it. Not so on the other side of the ocean, where practical results are more favored than tricks of all kinds such as were only recently performed at Chicago. But as long as your people want to hear about breaking a record it ought to be carefully investigated whether this is really the case before any positive statements are made. Mr. Atwood's flight is a wonderful achievement, and certainly everyone wishes him success. And even more honors will come his way if he attempts to break the world's long distance record for a flight with a passenger, which is still and will be for some time to come held by Koenig, who has the 1,169 miles (airline) to his credit.

If you or anybody else would be interested in seeing the records they are at your disposal at any time. Yours very truly,

ARTHUR WIENER.

Boston, Mass., August 29.

DEAR SIR—According to the latest publications there will be another attempt to cross the Atlantic. I do not doubt it that Mr. Vaniman will reach the other side of the ocean, provided the weather conditions are favorable. But I think it would be comparatively easier accomplished in an aeroplane, but not with the type we have now. Nearly every builder of a machine uses his brains and energy to increase the speed instead of the safety.

An aeroplane not requiring so much space to rise and to alight, being able to come down when the operator chooses or is compelled to do so, has probably more chance to reach its destination than the present dangerous, fast going machines. Safety first. Everybody seems to be under the impression that speed means safety. Why not an example of the automobile? Did we have our mankilling racers first? Was not every effort made to create a power propelled vehicle that would replace the horse?

The future aeroplane need not take up more than 100 sq. feet of space to the utmost to carry 3 to 4 persons, and enough fuel to remain aloft for 12 hours. With an aeroplane like this it is possible to cross the ocean, because within 12 hours the aviator is bound to sight a ship to come down, take fresh fuel and rest himself. A flat space of 100 sq. feet will be on every ship. Even in fog it should not be very difficult to locate an ocean liner, provided the aeroplane has a wireless outfit. What could be accomplished with a machine like this you can picture yourself. The future aeroplane builder has only one thing to consider—Safety. Then, and not until then, the aeroplane will have any commercial value. Of course there has been and always will be men, daring, ambitious and fame-thirsty, trying to break every record, but we now should try to construct safe aeroplanes, as we know by now that flying is possible.

The biggest prize money should be given to the builder of the first Safe aeroplane.

W. VON KAMP.

Safer in an Aeroplane

For once circumstances would make it appear that riding in a parlor car on one of the "Best equipped railroads in America" is more dangerous than flying in an aeroplane. At least so much is shown by the experience of Beckwith L. Havens, the Curtiss aviator who had the ill fortune to be hurt in the wreck of the "Pennsylvania flyer" near Fort Wayne two weeks ago. When caught in the railroad accident near Fort Wayne, Havens was on his way to give exhibition flights at Salisbury, Maryland. The injuries which Havens received on his hands and arms, while not very serious, kept him in the hospital for several days, and Cromwell Dixon, the young Curtiss aviator who recently flew very successfully at Binghampton, went to Salisbury in place of Havens.

While in the hospital Havens had plenty of time to muse on the comparative safety of flying in an aeroplane and riding in a train.

I. D. Goldie, of New York, has the distinction of being an aid in the organization work of more big aeronautical meets in the United States than any man we know of. He was connected with the Chicago, Belmont Park, Los Angeles, Detroit and several lesser meets. Mr. Goldie is surely a live one.

THE TRANSCONTINENTAL FLIGHT

By the time this magazine comes off the press it is quite probable that four or five aviators will have made the start in what will be the greatest test of aeroplane endurance and adaptation to real aerial transportation ever undertaken during the entire history of the movement.

Several months ago Mr. William Randolph Hearst offered a prize of $50,000 to the first man crossing the American continent under the following conditions:

That the contestants start from either Boston or New York and alight in either Los Angeles or San Francisco, or *vice versa*, the route taken either way leading via Chicago; that the entire flight must be made within thirty consecutive days, and the start of the flight made prior to October 10th, 1911, notice of the intention to start being given at least fourteen days prior to the start.

Contestants are given the right to fly in either direction they might elect; fly as many miles daily as they please; stop as often and wherever they feel disposed. There are no limitations to the number of stops they may make nor to the time they may stop in any one place. They may repair and rebuild their craft so often that they are practically flying new machines by the time the goal is reached.

The first man to accept these conditions and agree to undertake the task was Robert G. Fowler, of San Francisco, Cal., and he was followed, according to the *New York American*, which apparently is conducting the race, by Cal. P. Rodgers, James J. Ward, Harry N. Atwood, Phil. O. Parmelee, Amadee V. Reyburn, Jr., Earle L. Ovington and James V. Martin.

Most of these aviators are well known and have had some experience in cross-country flying, so that it is just possible that one of them may win the coveted prize.

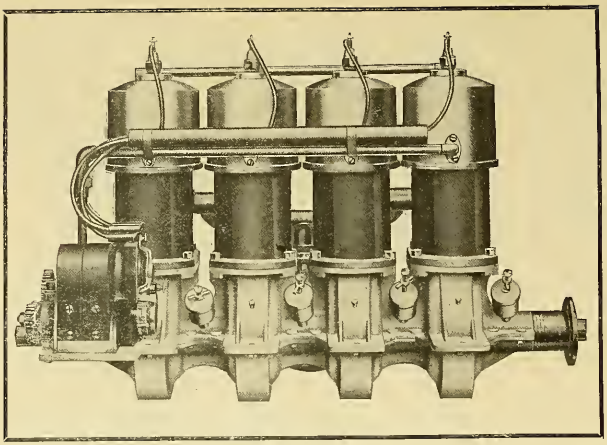
A committee of ten men was appointed as general supervisors of the race with full powers to settle any disputes which may arise. This committee includes two men elected in each of the cities in which Mr. Hearst owns newspapers. They are: B. F. Yoakum, Hudson Maxim, of New York; Mayor John F. Fitzgerald and Thomas W. Lawson, of Boston; Brig. Gen. Ramsey D. Potts, U. S. A., and Rear Admiral Ross, U. S. N., of Chicago; Fred L. Baker and Robert Marsh, of Los Angeles, and C. C. Moore and Joseph Rolph, Jr., of San Francisco.

AIRCRAFT hopes that in its November number it may be able to record the fact historically that this great feat was performed in the year nineteen hundred and eleven.

A three-day aviation exhibition by well known flyers was given at Brigton Beach, September 8th, 9th and 10th. Those who took part in the events were Grahame-White, Sopwith, Atwood, Beatty and Ely.

This was farther continued until September 17th; the above mentioned aviators making a number of flights with and without passengers on different days. A noticeable addition in the last two days was Dr. H. Walden, who took part in the flying and performed some creditable flights in the Walden machine.

Fred White, of Joplin, Mo., has completed a Curtiss type biplane fitted with a 50 H. P. Holbrook engine, and has succeeded in getting off the ground after a run of only 110 feet.



4-cyl. "Aero Special" 40 H. P. Wt. 160 lbs.

The 4-cylinder "Aero Special" illustrated above is only one of the many models that we make for aviation.

The "Aero Special" is made in 4 and 6 cylinders and the "Featherweight" in 1, 2, 3, 4 and 6 cylinders. From ten to sixty horse power.

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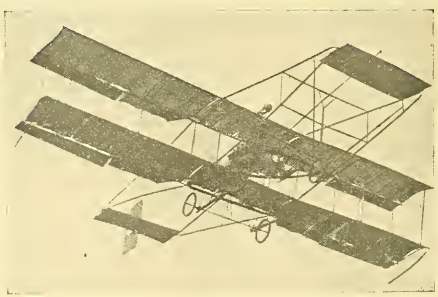

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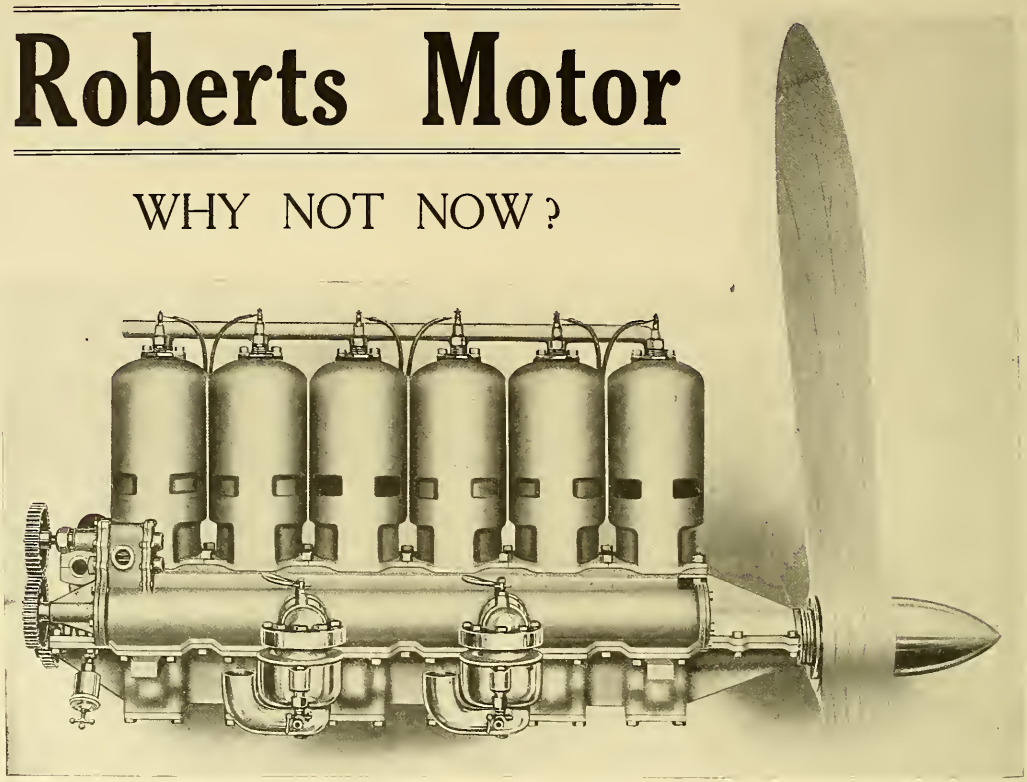

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AIRCRAFT

Vol. 2, No. 9 NOVEMBER, 1911 15 Cents a Copy

LIEUT. SCOTT ADJUSTING HIS BOMB DROPPING DEVICE BEFORE STARTING ON A TEST FLIGHT IN AN ARMY BIPLANE, WITH LIEUT. MILLING AS PILOT

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ANZANI

30 H. P. 50 H. P. 60 H. P. 80 H. P.

On July 8th, Lewkowicz, with 50 H. P. Anzani, left Nassau Boulevard, L. I., and flew all over New York at an altitude of 9000 feet (this is the first time an aeroplane flew over this City) landing in New Jersey because of lack of gasolene.

On July 31st, at Mineola, de Murias won his pilot's license with a 1911 type 3-cylinder 30 H. P. Anzani Motor.

Miss Harriett Quimby, the first woman aviator to get a pilot's license in this country won it with a 1911 type 3-cylinder 30 H.P. Anzani, at Mineola, July 31st.

Miss Mathilde Moisant and number of other students gained their license with the 30 H. P. Anzani 1911 type.

RENAULT

60 H. P.

The 1910 Michelin Cup was won by M. Tabuteau with a Renault Motor. Distance 363 miles in 7 hours 45 minutes.

The Michelin Grand Prize was won by M. Renaux with a Renault Motor. Distance 225 miles in 4 hours 56 minutes.

GNÔME

50 H. P. 70 H. P. 100 H. P.

The Gordon Bennett Cup Race was won by Weymann with a 100 H. P. Gnôme Motor.

The Daily Mail prize was won by Lieut. Conneau with a 50 H. P. Gnôme

On August 9th, Vedrines with a 50 H. P. Gnôme flew 496 miles in 7 hours 56 minutes, breaking the record for a single long distance flight.

On July 27th, St. Croix Johnstone broke the American record for distance and duration by a flight of 4 hours 2 minutes with a 50 H. P. Gnôme.

At the Chicago and Boston meets 60% of the prizes were won with the Gnôme.

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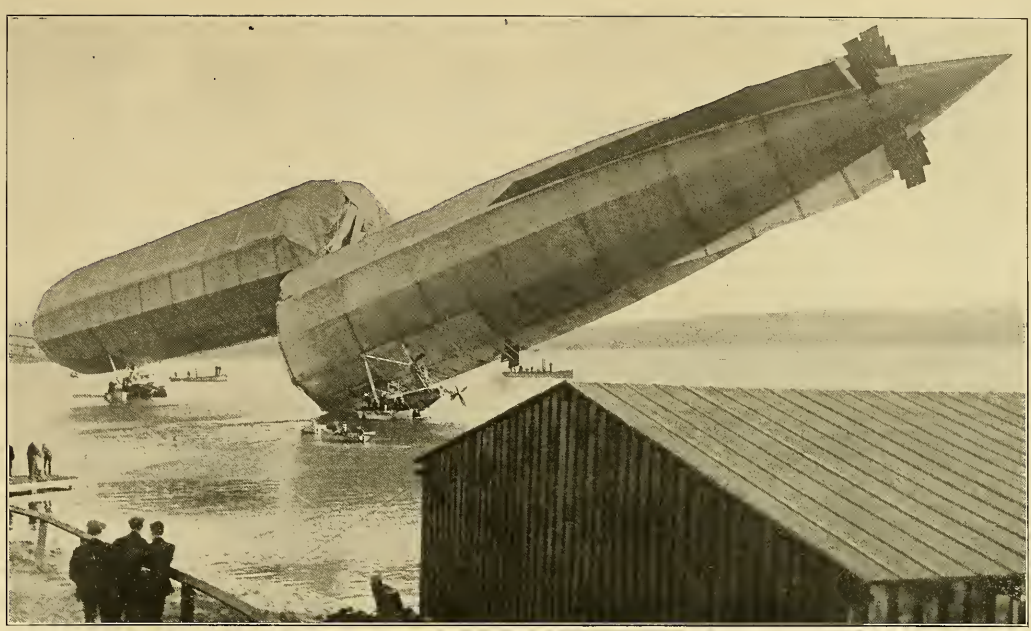

THE DISASTER TO THE BRITISH NAVAL AIRSHIP "MAYFLY." THIS VIEW SHOWS THE GIANT AIRSHIP SETTLING ON THE WATER AFTER IT HAD COLLAPSED IN THE CENTRE.

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AIRCRAFT

ALFRED W. LAWSON, *President and Treasurer*
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AIRCRAFT

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The Value of the Aeroplane and the Hydro-aeroplane to the Navy and the Policy of the Navy in Their Development

By Hon. George Von L. Meyer, Secretary of the U. S. Navy

THE only use of the aeroplane seriously contemplated, as yet, by the Navy is as an aid in scouting, in reconaissance and in communicating between ships, or between ships and a co-operating force on shore.

The French fleet on its way to Egypt, seriously encumbered by the army that was transported, could not have escaped the watchful Nelson, as it did, had he been supplied with efficient aeroplanes and trained airmen. By the use of aeroplanes, Cervera's presence at Santiago could have been discovered in time to have materially simplified our operations and communication between Shafter and Sampson would have been greatly facilitated. The Japanese base at the Elliott Islands would have been discovered and constantly watched if the Russians had been provided with aeroplanes and if the Japanese had been provided with them, communication between Japan and their advanced base would have been greatly facilitated.

It is also probable that many of the blockade mines planted by both Russians and Japanese off Port Arthur could have been located by aeroplanes in time to have saved some of the ships that were destroyed by these mines. In the Pacific, last year, a Curtiss Aviator readily located one of our submerged submarines and the French have recently had a similar experience. If bomb dropping from an aeroplane is ever practiced by the Navy it will probably be done to locate or destroy an enemy's submarine mines or his submarines.

The average aeroplane of to-day, however, is more suitable for army uses than for naval purposes and the great number of aviators that have been sacrificed in the pioneer work, so far, bears grim testimony to the fact that there is need for conservatism in the development of aircraft for naval work, as the Navy can ill afford to lose its trained personnel in this way. Large money prizes to cover risks are not available to naval airmen, but this fact will not deter them from risking their lives in anything that gives fair promise for improvement in our weapons. We are therefore constrained to "make haste slowly" in adapting this new and popular science to our uses.

The aeroplane that we want is one that can be conveniently stowed on board ship and quickly assembled for use. It should be capable of being sent in flight from the deck of a ship without requiring the use of any clumsy devices that would hamper the use of the guns or that would require being thrown overboard when the ship is cleared for action. Above all it should be reliable. Until a satisfactory device for automatic control is developed and probably even after that it should be capable of carrying an additional operator or observer and in any case it should be provided with a wireless telegraph outfit for communicating with the ships of the fleet while at an altitude of 3,000 feet or more and while out of sight at a distance of 30 miles or more. It should also be provided with means for the safety of its crew when obliged to alight on the water and it should be capable of being hoisted on board like a ship's boat.

Although it was demonstrated last year, on board the BIRMINGHAM and the PENNSYLVANIA, for the purpose of encouraging the art, that under certain circumstances an aeroplane could be made to leave a ship and return to it in flight, it has been our chief aim, so far, to develop a machine that will be as

NAVY DEPARTMENT,
WASHINGTON.

October 2, 1911.

Dear Sir:-

In reply to your letter of September 27, 1911, I enclose an article which expresses the value of the aeroplane and the hydro-aeroplane to the naval service and outlines the character of the machines that we desire to develop.

I wish to encourage the efforts of American manufacturers, but I am quite sure that the machines of the present day, although adapted to exhibition purposes and certain classes of contest, do not fully represent the best products of which our scientific engineers and architects are capable.

Very respectfully,

Secretary of the Navy.

Mr. Henry Woodhouse,
Editor of "Aircraft,"
#37-39 East 28th Street,
New York, N.Y.

nearly independent of a ship's deck and of the land as possible, particularly on rising into the air, not only for possible service in war but for the more frequent demands of training at all times, for of course its development must be accompanied by the training of the personnel to its use, care and repair.

The hydro-aeroplane, or "Triad," developed at San Diego, Cal., and at Hammondsport, N. Y., by Mr. Glen Curtiss, while in cordial co-operation with the Navy, meets this demand fairly well, but is regarded as capable of further improvement in respect to the practicability of using it in the comparatively rough water of a harbor. Its principal uses for the present will be confined to training and experimental purposes, it being confidently expected that this training will eventually proceed as a regular rountine from the ship as a base.

One of our latest requirements for this machine is a self-starting attachment that will enable it to be started, without difficulty, in deep water and the combination of an electric self-starter with the power plant of a wireless telegraph equipment gives fair promise of success.

A recent experiment, at Hammondsport, N. Y., has demonstrated the practicability of sending this machine in flight from a ship over a single wire cable stretched from either the bow or the stern to the superstructure of a battleship. The wire cable can be rigged and unrigged for this purpose in a very short time. But it is anticipated that further experiments, which are contemplated, will demonstrate the practicability of a plan which will be even more convenient than this.

The use of the hydroplane attachment is not always necessary and it is undesirable under certain circumstances because it adds considerable weight and resistance, thereby cutting down the speed. When these machines are actually used in service work at sea, they will probably be equipped with light pontoons only, these being already supplied with the one now owned by the Navy.

The chief aim of the experiments in contemplation is not to obtain a high speed at the expense of safety and reliability, but to proceed along conservative lines towards obtaining the greatest factor of safety and efficiency in architecture combined with the most reliable and efficient propelling power. It is desired to test and compare different makes of motors and propellers not only on the block at the Engineering Experiment station, at Annapolis, but in the aeroplanes themselves at the aerodrome already established.

It is not intended to make any large purchases of aeroplanes for the Navy until we are fully satisfied that they will fulfill the exceptional conditions required by their use from shipboard, but it is confidently expected that within the next year their development will have reached such a stage as to justify the purchase of a number sufficient to enter largely into the training of the Navy personnel to their use.

Among the important subjects under consideration, and not minor in any respect, is the adaptation and installation in our aeroplanes of the most efficient and convenient instruments required in air navigation. In this respect satisfactory progress has been made. Something more serious than exhibition flights is contemplated by the Navy, although the educational value of the flights that have been made for exhibition purposes is regarded as incalculable.

FIRE RISK IN THE AIR

By Henry A. Wise Wood

A GASOLINE fire high in the air aboard a rushing thing of wood and canvas is not beyond the normal possibilities of present day flight." When the writer, in the January, 1911, issue of "Aircraft," called attention thus to the need of protecting the airman from fire there had been a few suggestive accidents, but no fatalities. A pilot, driving a biplane at Hamburg, had effected a safe landing after his engine, aft, had taken fire; while Bleriot had had a narrow escape in his E. N. V.-engined No. XII, which caught fire and was completely consumed after a mishap in which it had capsized. It will also be recalled that twice previously Bleriot was burned by ignited gasoline, and that he had not wholly recovered from these accidents when he crossed the English Channel. In the Spring of this year, however, fatalities due to fire began to occur: In May, Bournique and Dupuis, aboard a 100 horse-power Déperdussin, were overturned by a gust and burned to death on the ground by their own gasoline. During May and June three other men met a similar fate while pinned beneath fallen machines—Cerri and Princeteau in Bleriots, and Landron in a De Pischof. And de Grailly, on September 2nd, fell with an R. E. P. and lost his life when his machine took fire upon striking the ground. The foregoing deaths occurred in fires which resulted, doubtless, from collapsing power-plants. Of an entirely different order, however, were the fires aloft which during September cost the lives of four men. On the 4th a Bleriot, driven by Leforrestier, caught fire aloft and fell to the ground in flames; on the 7th Newmann and Leconte lost their lives in an Aviatik which had taken fire in the air; while on the 27th Miller was killed in an American biplane which took fire while in flight.

Here we have two classes of accident that must now be added to the other risks of the air with which flyers, and conscientious builders, should immediately concern themselves. Aviation has reached a point where it is no longer enough that a machine be produced which can fly; it must fly both well and safely. Daily the responsibility of the builder grows: he no longer need only send a man into the air to discharge his part of the bargain; he must protect him there as well. If to insure the safety of the man who is up there be anything left undone that is within the knowledge, skill, or reach of the constructor, the latter can not escape condemnation on the ground that a flyer takes all the risk. Therefore, in many kinds of accident the builder must expect to be thought an accessory before the fact. This doctrine should rigorously be applied where fires occur in flight, and only in somewhat less degree where they occur upon the collapse of a power-plant following a fall. While it is extremely difficult to diagnose flying accidents, it would seem that those which have to do with fire, either before or after impact, lend themselves to simple explanation. There are but two sources aboard an aeroplane from which fire may arise—the electrical system, or the ignited charge of gas. Those who have had to do with power-boats are familiar with the combination of poorly insulated or connected ignition wires and leaking gasoline vapor, which so often results in disaster; while every frequenter of the flying field has seen after dark the flaming exhausts of the still mufflerless aeroplane motor. Broadly speaking, both are sources of danger against which the flyer must be safeguarded; but each type of motor or aeroplane calls for an individual solution of the problems presented. For instance, in a monoplane fitted with Gnôme motor danger may arise from the absence of proper metallic sheathing over so much of the body and wing as have to take the blast of the exhaust-ports; or from the ignition of leaking gasoline below or within the fuselage by the flaming discharge which sweeps by it. In either case the remedy is a properly sheathed and sealed fuselage, sound and durable gasoline connections (under no circumstances should these be of rubber) and proper drainage of such gasoline as may happen to collect. A more

troublesome problem is presented when it is sought to guard against the possibility of internal combustion. As the cylinders of the Gnôme are fed from its crank case through self-opening valves in its piston heads, a broken or stuck-open intake poppet will permit the explosion of the mixture in the crank case, and its backfire through the gasoline-and-air intake into the body of the machine. Here the ejected gasoline, even if the fuselage be clean, may set a disastrous fire. Safety, therefore, requires that the present practice of housing the inspirator of the Gnôme engine within the body of an aeroplane be abandoned, and the safer one be adopted of connecting it with the open air by means of a metallic conduit, which has no opening into the fuselage. As the intake of a Gnôme frequently spews on starting, this precaution will serve to keep the machine free of accumulated gasoline. And whatever be the type of motor used, safeguards similar to those described should be provided.

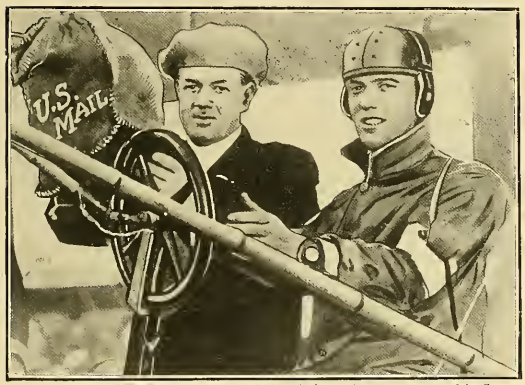
A biplane, however, by reason of its open construction, should be less subject to fire aloft. Nevertheless, the close proximity of exhaust—ports and gasoline-tank, or rubber lead, which is characteristic of some American machines is justly open to criticism, and should be condemned. And a more generous use than is customary of metal sheathing should be made at all points subject to gasoline wetting. Where a Gnôme, or similar motor, is employed the inspirator should be housed in a conduit whose open end is below the lower plane and is well surrounded by sheathing, or some other equally effective precaution should be taken to guard against the dangers of backfire.

Generally speaking, with respect to all types of aeroplane, stored gasoline should be so completely isolated from all sources of ignition—by bulkheads, partitions, or distance—that even in the event of a collapsing machine it shall not be spilled upon the engine, or a magneto, which may be making a last turn, or within reach of an intake which may be afire. There is little doubt that once the matter is given general attention many effective ways of wholly ridding the airman of risk from fire will promptly be devised, and it is for the purpose of arousing the interest of those who are competent to undertake the work that the writer has opened the subject.

THE NASSAU BOULEVARD MEET

By Henry Woodhouse

WHAT makes the Nassau Boulevard Meet an epoch marking event is not that the flying at the meet was unusually spectacular nor that the attendance was phenomenal or that the enterprise was a financial success. As a matter of fact these three elements of success were lacking. While the general programme, as originally planned, included many original features, as carried out, it had little of special value. The realization of the plans was made impossible by different factors, especially the weather. That explains also why the attendance was small and the financial results unsatisfactory.



Postmaster-General Frank H. Hitchcock just about to start with Capt. Paul Beck with a bag of mail from Nassau Boulevard to Mineola. The trip was made on September 20th and the machine used a Curtiss.

What gives the meet a claim for a prominent place in the history of American aviation is that here were made the first experiments at carrying mail by aeroplane ever made in America. This was really the main feature of the meet and was such a splendid demonstration of the actual value of the aeroplane for practical purposes that it is not too much to say that in itself it was worth more to the movement than an exceptionally big meet would have been.

And the experiment was a thorough success. Mr. Timothy L. Woodruff, the president of the Aero Club of New York, who planned and managed the meet, succeeded in interesting Postmaster General Hitchcock in the matter and he authorized the establishment of a Post Office station on the aerodrome—"Aerial Station No. 1." A score of letter boxes were placed at different points on and near the stands to receive the mail and were labelled "Aerial U. S. Mail." From these boxes the mail went to the Post Office tent on the field where the matter was assorted and stamped. Then it was put in bags and these were carried from the field to Mineola by aeroplane. At Mineola the aviators dropped the bag in a field where the postmaster was waiting for it, who finally transferred it to a railway post office car.

The "Aero Post" was popular from the very beginning. Thousands of cards, letters, photos and programmes were sent daily. On Sunday, Sept. 24th, there were sent from the field by aerial mail 6,165 post cards, 881 letters and 55 other pieces of mail. Each piece of mail was cancelled with a round stamp bearing the inscription: "Aeroplane Station No. 1, Garden City Estates, N. Y.," and a long stamp reading: "Aerial Special Despatch."

Scene in front of the hangars at the Nassau Boulevard meet. The machine in the foreground is George W. Dyott's 50 H. P. 2-seater Deperdussin monoplane which was seen in flight in this country for the first time at this meet.

Earle L. Ovington was the principal mail carrier. Starting on September 23d. the first day of the meet he made deliveries of mail at Mineola regularly twice per day. in his Blériot machine for nine days. Captain Paul W. Beck, of the U. S. Army, also carried the mail bags on a number of instances. On Sept. 27th. the fourth day of the

meet, Postmaster General Hitchcock was on the field to watch the experiment and took part in the mail carrying, taking a trip in Captain Beck's Curtiss machine, carrying a bag of mail. As this event will undoubtedly go down in history and may be referred to years from now, it may be well to be specific and state that the bag was carried by Mr. Hitchcock himself, contained 162 letters and 1,400 post cards. and was dropped to the ground at Mineola, to the awaiting postman by Mr. Hitchcock himself.

Mr. Hitchcock was greatly impressed by the demonstration. He realized at once that the aeroplane's capabilities of going over land and water obstructions makes it an ideal means for carrying mail in places where mountains, woodlands and bodies of water make a long detour necessary to trains, the present means of conveyance. The result was that a few days after the experiment Mr. Hitchcock in making up his estimate for the Post Office appropriation for the coming year included an item of $50,000 for experiments at carrying mail by aeroplanes. This is such a big step towards utilizing the aeroplane and gives such an assurance for the commercial future of the aeroplane making industry that it is ot too much to say that by this the Nassau Boulevard Meet has contributed more towards the general advancement of aeronautics than any meet held heretofore.

Another unusual event that had more than passing value was a demonstration of aerial scouting, which took place on the opening day of the meet, September 23. For this demonstration General Frederick D. Grant, Commanding General of the Department of the East, authorized the attendance at the meet of a body of infantry. For the demonstration this body concealed itself in the wooded land adjoining the field, and the flyers, acting as aerial scouts, went out to search for it. Harry N. Atwood won the event being the only flyer to discover the troop.

The only objection to this was that it was not an appropriate thing for a meet as the spectators, being unable to see anything more than the starting and landing of the air-scouts, could not appreciate the actual value of the demonstration; and the flyers having to take part in the events that preceded and followed the demonstration were too pressed for time to do full justice to themselves.

Most conspicous among the flyers who took part in the meet were Captain Paul W. Beck, Lieut. H. H. Arnold, Lieut. F. De Milling of the U. S. Army and Lieut. G. T. Ellyson of the U. S. Navy. Their conspicuousness was twofold: it was the first time that four U. S. officers had taken part in public flying and they flew well. Their feats were equal in every way to the feats of the professional flyers and rather proved a revelation to most people, for few had heard of the officers' previous records. Lieutenant De Milling was one of the most active flyers on the field. On September 25th he made a new world record for duration with two passengers staying the air 1 hour 54' 42 3-5". This won him the $1,000 prize offered by the Hotel Knickerbocker for the first aviator to make a flight of one hundred minutes with two passengers beside himself.

One of the plans which did not realize in full was to have regular contests between the four aviatrices—Miss Harriett Quimby, Miss Matilda Moisant, Mlle. Helene Dutrieu and Miss Blanche Scott. Had it succeeded it would have been great, especially as a novelty. As it was, the first three made flights at different times, but not in competition. Miss Quimby made a fine flight on the first day and won a first prize of $600; Miss Moisant made several flights, including a record for altitude for women of 1,200 feet, which made her the second winner of the Rodman Wanamaker trophy. Mlle. Dutrieu made three flights in all, the last of which was a record breaker, lasting 1 hour 4' 57 2-5". That won her the Yves de Villers prize, a purse of five hundred dollars to be awarded to the woman-pilot making the longest flight in point of time during the meet.

As usual, T. O. M. Sopwith and Claude Grahame-White were the biggest winners during the meet. The first carried away exactly one quarter of the total prize money, the second only little less. That was inevitable as their machines were the fastest and they, very business-like, "took in" every opportunity to win prizes.

For that reason it is not surprising that the American flyers did not win much despite their excellent flying.

It is a big pity that the bad weather prevented a larger attendance, as the management had gone to considerable expense and trouble not only to arrange for the accommodation of the crowd and flyers for the occasion, but also to make the aerodrome a permanent one.

It is to be hoped that the deficit which is around $20,000 will not effect this plan. The aerodrome is a good one and too valuable an asset to American aviation to be given up.

Prize List of Aviators and Their Winnings at the Nassau Boulevard Meet

	PRIZE.	EVENT.	DAY.	AMOUNT.
C. Grahame-White	Prize	6th	1st	$ 50.00
	½ 1st prize	2nd	2nd	300.00
	1st	5th	2nd	600.00
	1st	1st	3rd	600.00
	1st	3rd	5th	600.00
	1st	4th	4th	600.00
	1st	4th	6th	600.00
	1st	1st	8th	600.00
			Total	$3,950.00
$900.00 won on Second day.				
Lee Hammond	½ 3rd prize	2nd	2nd	$ 50.00
	2nd	4th	3rd	300.00
	2nd	3rd	4th	150.00
			Total	$ 500.00
$50.00 won on Second day.				
Lieut. T. De Milling	3rd	1st	1st	$ 100.00
	1st	3rd	1st	300.00
	Prize	6th	1st	50.00
	3rd	Extra	2nd	50.00
	3rd	2nd	3rd	50.00
	Prize	2nd	4th	1,000.00
	3rd	3rd	5th	50.00
	Prize	2nd	6th	500.00
	1st	3rd	6th	300.00
	2nd	2nd	8th	150.00
			Total	$2,550.00
$50.00 won on Second day.				
Lieut. H. H. Arnold	Prize	6th	1st	$ 50.00
	½ 2nd prize	2nd	2nd	150.00
	2nd	3rd	5th	150.00
			Total	$ 350.00
$150.00 won on Second day.				

	PRIZE.	EVENT.	DAY.	AMOUNT.
Capt. Paul W. Beck	2nd	1st	2nd	$ 300.00
	3rd	4th	3rd	100.00
	1st	1st	6th	600.00
	2nd	3rd	6th	50.00
	3rd	4th	8th	100.00
			Total	$1,150.00
$300.00 won on Second day.				
George W. Beatty	1st	1st	1st	$ 600.00
	Prize	6th	1st	50.00
	2nd	Extra	2nd	150.00
	2nd	2nd	3rd	150.00
			Total	$ 950.00
$150.00 won on Second day.				
Lieut. T. G. Ellyson	Prize	6th	1st	$ 50.00
	1st	4th	3rd	600.00
	3rd	2nd	8th	50.00
			Total	$ 700.00
Eugene Ely	Prize	6th	1st	$ 50.00
	1st	Extra	2nd	300.00
	1st	1st	2nd	600.00
	½ 2nd prize	2nd	2nd	150.00
	2nd	4th	8th	300.00
			Total	$1,400.00
$1,050.00 won on Second day.				

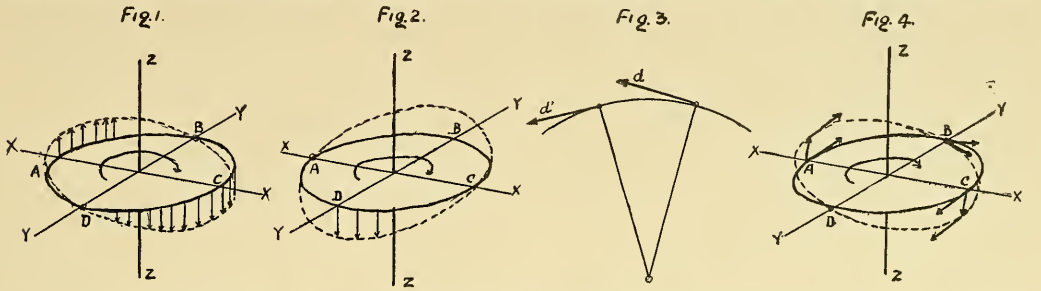
Miss Harriet Quimby	Winner 3rd 8th			$ 600.00
Disbrow—Winner Automobile-Aeroplane Contest				$ 600.00
T. O. M. Sopwith	2nd	1st	1st	$ 300.00
	Prize	6th	1st	50.00
	3rd	1st	2nd	100.00
	½ 1st prize	2nd	2nd	300.00
	2nd	5th	2nd	300.00
	2nd	1st	3rd	300.00
	1st	2nd	3rd	300.00
	2nd	1st	4th	300.00
	1st	3rd	4th	300.00
	2nd	4th	4th	300.00
	Prize	1st	5th	300.00
	1st	3rd	5th	300.00
	2nd	3rd	6th	150.00
	2nd	4th	6th	300.00
	2nd	1st	8th	300.00
	1st	2nd	8th	300.00
	1st	4th	8th	600.00
	2nd Automobile Aeroplane Race			400.00
			Total	$5,200.00
$700.00 won on Second day.				
Grand Total.....$20,800.00				
	PRIZE.	EVENT.	DAY.	AMOUNT.
Harry N. Atwood	1st	2nd	1st	$ 300.00
	½ 3rd	2nd	2nd	50.00
			Total	$ 350.00

A Popular Explanation of the Motives of the Gyroscope and Its Application in Aviation

By Emil Büergin

The number of applications of the gyroscope in mechanics has grown enormously during late years, while the comprehension of its real motive of action has not kept step in proportion. The cause of this condition is the lack of literature concerning the theory of the gyroscope and the fact that the few books pertaining to this subject display such a collection of higher mathematical formulas that even technically educated men are not prone to tackle them. The consequence is a great waste of time and money in its misapplications. There is, however, a possibility to explain in a more comprehensive way the peculiar action of the gyroscope. By applying only the fundamental laws of dynamics, omitting mathematical formulae it is still sufficient to judge the effect of the gyroscope in any case in which it is applied.

In fig. 1 A B C D shall represent the ring of a gyroscope revolving around a spindle Z. X and Y are two axes perpendicular to each and lying in the plane of the ring. If we turn the revolving gyroscope slowly but steadily around the axis y, each of the particles of the ring will receive an additional velocity, but vertical to the plane. Near A and C it will be the greatest and zero in B and D. Representing these velocities by arrows, the connecting line of their points will be an ellipse lying in a plane through the axis Y. Hence a revolving particle of the ring will endure on its way from A to B a reduction of its speed produced by turning the z round the axis y It will be zero in B and reversed in C, then diminishing and changing its direction in D to have again the original velocity in A. To do this the particles have to receive accellerations downwards on the way from A to C and upwards from C to A, which necessarily produces a reaction in the opposite direction, that is from A to C upwards and from C to A downwards. It is the strongest in the points B and D. Representing each element of reaction by an arrow in proportion to its force and of the same direction we again receive an ellipse by connecting their terminals which is however, turned at 90 degrees to the former one and goes through the axis x (fig. 2).



But we find that according to the laws of dynamics there is still another power acting on the gyroscope. If a particle of mass moving in a certain direction shall change this direction even within a small angle, this has to be originated by a force acting vertically to the former. We observe that daily. An element of a fly wheel may have at a certain moment a velocity in direction D fig. 2. The next moment it has the direction A. The tendency of this element to keep its initial direction we call centrifugal force. Its reaction is the force that changes this direction, and is equal to the strain on the different parts of the rim of the wheel. If the wheel bursts this reaction ceases. As nothing is preventing the detached pieces from following the course they have at that moment, they fly away tangentially, but not radially as it appears. It is similar with the gyroscope where the centrifugal forces compensate each other within the fly wheel itself. But if the gyroscope is making said revolutions around axis Y, all elements of the wheel perform this same angular rotation around axis Y. By this an element parting from point B intending to follow the circular course will suffer a change of direction. It is brought downward by a force vertical to it. which produces a reaction upwards but of the same magnitude. There is a similar one in point D in opposite directions. On both sides of B and D the forces decrease and are zero in A and C, these vectors of velocity being only removed parallel. The total reaction produces again a moment of torsion around axis x and is of the same direction and proportion as the one that resulted in the beginning.

These reflections show that the resistance of a gyroscope to any change of the direction of its axis depends only on the weight and the velocity of the rim of the wheel. Further the moment of torsion acts perpendicularly to the direction in which the gyroscope receives its inclination and therefore it cannot oppose this motion.

Now those having experienced with gyroscopes will find this latter result entirely contrary to their observations. They shall, however, not be reproached for this, for even in scientific literature one can read about the stable axis of the gyroscope which resists to every change of direction. All applications, however, that were based on this assumption proved to be a failure.

Let us see how the gyroscope will act according to these stated facts: The inclination around the axis Y creates a moment of torsion around the axis x, which makes the gyroscope turn around axis x within the same angle as the original movement around Y. This second motion creates, however, again a perpendicular moment which has Y as axis, and this one opposes the original motion

If we hold a revolving gyroscope in our hands and want to turn it we have indeed the impression that the axis is stable. It is because we do not realize the small perpendicular moment to which we yield and which induces the reaction in the first direction. If, however, we fasten the gyroscope in an apparatus which prevents any moving of the gyroscope sideways, the turning in the first direction will be just as easy as if the gyroscope were not running. These results also show that the gyroscope does not ignore gravity. A gyroscope in horizontal position, the axis of which is only supported on one end will not drop, but it will begin to rotate slowly around its point of support. In induced forces and the slower therefore the gyroscope can rotate around its support in order to counteract the influence of gravity. This horizontal motion of the gyroscope around its support is called precessional. If we increase it the gyroscope will rise, and if we prevent it the gyroscope will drop, as if the fly wheel were not revolving. These are the laws the gyroscope is subjected to, and their comprehension enables us to consider where and how gyroscopical forces are acting.

The wheels of a fast speeding train act like gyroscopes. In a curve the wheels are turned around a vertical axis. This produces a moment of torsion around a horizontal axis lying in the plane of the wheel. It tends to lift the car on one side. More dangerous is the elevation of outside rail, in a curve. This is equal to a turn of the wheel around a horizontal axis through its plane, producing a moment around the vertical axis. If the elevation of the outside rail begins before the curve this tries to place the axle of the car in an oblique direction to the rail. Hereby the wheels will have the tendency to leave the track towards the side of the lower rail. This tendency makes itself noticeable with the high speed electric railroad cars where the motor is placed directly on the axle of the wheels, thus producing great kinetic energy due to rotation.

The interest in the qualities of the gyroscope has become more general since the development of the flying machine. It is hoped that this apparatus, resisting practically to every turning motion, might give the floating aviator a point of support in order to keep his machine in a voluntary direction as a compensation for the one he cannot have from the earth. Until at present, however, we are glad to succeed in eliminating or counterbalancing the existing gyroscopic influences on an aeroplane. The gyroscopical forces of a rotary motor especially are extremely great. When an aeroplane desribes a horizontal curve these forces tend to direct it upward or downward. It has been tried to eliminate this influence by the installation of two motors revolving in opposite direction. But should one propeller suddenly cease to work the aeroplane would receive an eccentric driving action, which would make it turn horizontally. Then the gyroscopic influence of the other still revolving motor comes to its full and often fatal effects.

To steady an aeroplane hy means of a gyroscope we can consider three possible ways:

1. Entirely stable.
2. Entirely free, and
3. Half free

1. The entirely stable suspension has been tried the most. While this method proves very successful with torpedoes, it cannot be applied to aeroplanes. There it would have the same effect as the gyroscopic forces of the propeller and the rotary motor, twisting the aeroplane and producing great strain in the framework.

2. The entirely free suspension. This method is applied in the Whitehead torpedo. The gyroscope is supported by two rings which can swing in directions perpendicular to each other by this permitting the gyroscope to swing in any direction.

If the torpedo, installed in this way, makes a turn, the gyroscope will keep its original direction A lever hinged to one of the two rings will act on the valve motion of a pneumatic servo motor which changes the position of the rudder. But even this small resistance changes gradually the original direction of the gyroscope, and therefore also influences the torpedo in its course.

3 The half free suspension. The gyroscope is built in such a manner into the framework that it is obliged to follow the motion it is to correct but can swing in a direction vertical to it. It only should be powerful enough that this secondary motion can easily overcome the resistance in governing a servo motor.

With the flying machine there are three directions perpendicular to each other, in which we desire to prevent an involuntary turning. To do this we need for each direction a gyroscope for itself. It is the most important to prevent the aeroplane from descending suddenly that is from an involuntary turning around the horizontal axis through the planes which would produce sudden falls. For this purpose the gyroscope can be placed either with its rotating shaft in the direction of the The most important is the prevention of an involuntary turning around the horizontal axis through the planes which would produce sudden falls. For this purpose the gyroscope can be placed either with its rotating shaft in the direction of the course of the aeroplane, allowing it to swing horizontally, or it may be suspended vertically, allowing it to swing in a vertical plane, which is, however, perpendicular to the direction of the motion of the aeroplane.

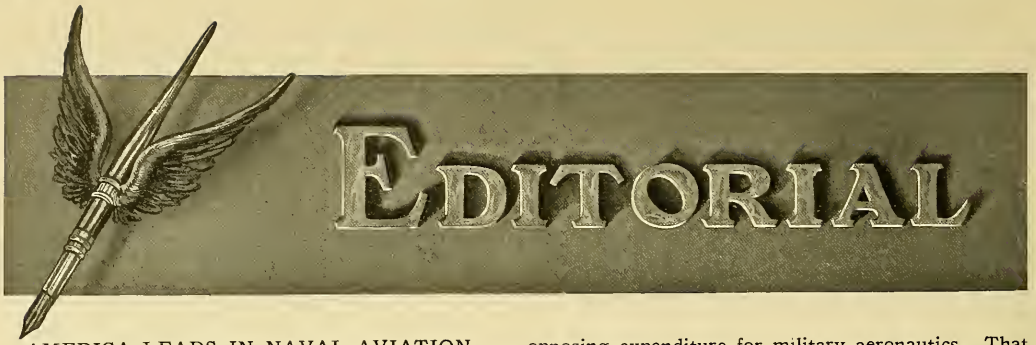
If we wish to ascend or descend we simply change the angle of the plane in which the gyroscope can move in relation to the aeroplane. Thus the gyroscope will influence the servo motor, and by this the rudder until we have the desired direction.

Any other turning motion of the aeroplane will be of no influence on this gyroscope, the friction of the governor being sufficient to bring it also into the new position because the gyroscope is stable in the direction perpendicular to this motion, and therefore cannot produce any gyroscopical reaction. This was proved above.

A second gyroscope can be used for keeping the lateral equilibrium. This gyroscope acts similarly to the first one upon a servo motor It has to follow the lateral swaying of the aeroplane, but can swing liberally in the longitudinal direction.

The control of the vertical rudder in the rear may be left to the aviator.

It might still be desirable to limit the speed of the aeroplane in ascending or descending. Ascending at too steep an incline, the power of the engine will not be sufficient to produce the necessary speed to support the aeroplane and it will drop backwards. Descending too rapidly, the framework cannot resist the air pressure. If, however, we connect the gyroscope which controls the rudder for steering up and down with a transverse vertical plane pivoted to a horizontal shaft the increased or decreased air pressure upon this plane will change the inclination of the gyroscope to the axis of the aeroplane, and thus influence its course.



AMERICA LEADS IN NAVAL AVIATION.

A SPECIAL article by Secretary of the Navy George Von L. Meyer, on the value of the aeroplane and the hydro-aeroplane to the Navy and the policy of the Navy in their development, appears in this month's AIRCRAFT. In connection therewith we think it well to mention that America actually leads in Naval aviation.

As matters stand, no other nation has yet introduced aviation in the Navy. France, the most advanced, has not yet an organization, nothing more, in fact, than two officers learning to fly at Pau and Etampes, and a few individual officers who are flying on their own account. None of the nations have naval aviators trained to fly hydro-aeroplanes. As a matter of fact, none of the nations have a hydro-aeroplane that has passed the initial experimental stage.

America, on the other hand, has already an organization and a number of well trained naval officers, all of whom have earned their pilot licenses in a hydro-aeroplane. We have also a hydroaeroplane that has passed the primal experimental stages.

The ultimate leadership of America now depends entirely on the aeroplane maker. Secretary Meyer practically states that the Government will acquire machines as soon as they are improved enough to afford service. This is a double incentive and the aeroplane maker surely ought to apply himself to turning out suitable machines.

THE FIZZLE OF THE "MAYFLY."

MAYFLY, (a very appropriate name), the British Admiralty's first airship, the latest and heralded as the best dirigible ever built, has gone the way of the Deutschland, the Zeppelin II and many others—that is, it met with disaster at the beginning of its career.

Unlike the others, however, which nearly all came to grief through not being manned properly, the Mayfly was wrecked on account of weak framework. As the ship was being taken out of its shed at Barrow-in-Furness, in a nine-mile breeze, it listed to leeward, then collapsed, breaking in the centre.

It is most unfortunate that this has happened for many reasons, principally that it will give an excuse to the antagonistic element of the British War Office for opposing expenditure for military aeronautics. That element has in the last two years opposed every proposal for the establishment of a military aviation corps in the British Army. As a result, England's aeroplane forces consist of a half dozen machines, mostly old numbers; and no organization.

Incidentally, we cannot help regretting that the $400,000 spent in the Mayfly—which may be considered as little more than an experiment—was not spent in aviation. That sum would have covered the full cost of the establishment of aviation corps in both the Army and Navy and for equipping and maintaining them for a number of years.

THE NEED OF LICENSE REVISION.

MR. A. J. PHILPOTT, of the "Boston Globe" has brought up a question as to whether the present form of granting licenses to aviators is adequate for the purpose, and suggests that two classes of licenses should be adopted.

The present license requirements are merely tests of a man's or a woman's management of an aeroplane in respect to its mechanics. They involve knowledge only of how to operate the controls to get certain results while flying, but in no manner is it necessary for the candidate to pass an examination in the scientific principles of aeronautics.

Mr. Philpott's suggestion is that closed circuit and cross-country flyers should be recognized by separate licenses, and that the competing circuit airman should be distinguished from him who has simply demonstrated his ability to take an aeroplane into the air and back again safely under favorable conditions.

We are of the opinion that a series of graded licenses should be put into force and that aviators should be granted them according to their general scientific knowledge as well as their ability to handle a machine. Such distinctions must be recognized as the aeronautical movement advances toward a practical state.

When the present "Figure Eight Tests" were inaugurated by the International Federation, the Aeronautic Press of France cried out against the great difficulties and danger of such tests, although, six months later, the French army found the F. A. I. license requirements inadequate for proving the ability of the practical military airman, and officers are

now given service licenses only after passing a much harder test, that includes, not only the management of a machine in the air, but proof of mechanical knowledge of its construction as well as map reading, etc.

Not only do we believe that the French army requirements should be made part of the license tests in this country next year, but we believe that a pilot's license should only be granted to those who have given considerable study to meteorology. In this way the man of the air will be compelled to know something of the elements in which he travels.

No man should be permitted to start on a trip of several thousand miles duration with the official sanction of the controlling body, unless he can prove that he knows something of the topography of the country over which he intends to fly and has a considerable knowledge of the atmospheric conditions through which he must pass. It is the height of absurdity for a man to start on a three thousand mile trip, for instance, and before he has gotten ten miles away from the starting point lose his way and fly fifty to one hundred miles out of his course.

We outline, therefore, the following conditions for consideration of the committee who will have charge of revising the rules for aviator licenses as follows:

1. A DRIVER'S LICENSE, similar to the present license shall allow the holder to fly over private grounds and enter competitive meets in closed circuits.

2. AN AIRMAN'S LICENSE, shall permit the holder to take part in either closed circuits or cross-country meets with the right to carry not more than one or two passengers.

3. A PILOT'S LICENSE, shall grant all the privileges aforesaid with the extra privilege of carrying as many passengers as the pilot himself might consider safe. No pilot's license shall be granted to the man who cannot pass an examination in mechanics, topography and meteorology.

THE DEATH OF NIEUPORT.

WHILE making a landing during the military manoeuvres at Charny, France, Edouard Nieuport, the builder and designer of the Nieuport monoplane, met with an accident, which resulted in his death shortly afterwards. After having made a successful flight in unfavorable weather, the machine upset on landing and was wrecked.

It is obvious to those who have made a study of the Nieuport monoplane, that the landing chassis is its weakest feature. The addition of a double skid arrangement to the chassis of this splendid machine would probably have saved the life of this great inventor, but apparently in that particular, he sacrificed safety for speed, although an extra skid would have added but very little extra resisting surface.

THE MAN WHO TUNES THE PLANE.

THE man who tunes the plane, like the man behind the gun, is the man from whom much is expected but to whom few thanks are given.

Writers as a rule do not consider him good "copy." For he is no hero, there is nothing romantic or sensational about him; and dressed in greasy overalls and cap he does not look like a pink tea idol. The fact that he is a good fellow, can work like a slave and is in a way the Keeper of the flyer's life is not deemed of enough interest to justify publicity, and so they let him go unmentioned and confine their "write up" to the much feted and rewarded flyer. The man who tunes the plane gets no share of glory for what he contributed to make the flight a successful one.

Aside from a modest salary the man who tunes the plane gets nothing except extra work when the machine has met with grief. Then, of course, if he is faithful he'll work overtime to get it in shape. The flyer may thank him for his trouble or he may not—it often depends on how famous the flyer is. Fame has a tendency of spoiling one's sense of appreciation.

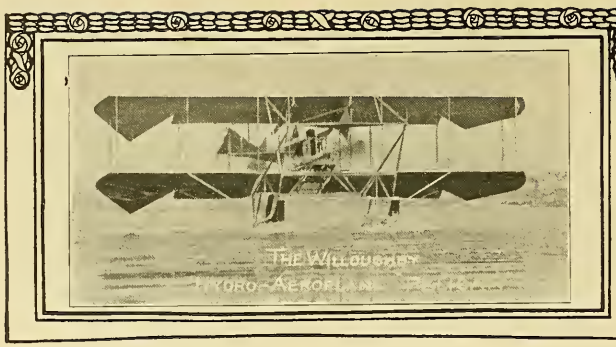
But if the man who tunes the plane is ambitious and will take advantage of opportunities, there are big rewards for him.. He is the best fitted man to make a flyer; his training in the hangar gives him a practical knowledge of the aeroplane which the flyer who learns to fly at a school never acquires; and that knowledge enables him to do things which the other may not do.

What enabled Vedrine to fly successfully was in large part the knowledge he had acquired while being mechanic to Robert Loraine and Emile Aubrun; and Legagueux, who now lives like a grand seigneur, owes a large part of his success to the apprenticeship he served, first in the Antoinette factory, then under Captain Ferber. And that is true also of Paulhan, he owes much of his success to his early training as a mechanic.

The man who tunes the plane may not receive much remuneration for that kind of work, but substantial rewards are within his reach if he will only take advantage of his opportunities.

THE development of aviation has apparently been so rapid that a great many newspaper men have not yet learned to differentiate between an airship and a flying machine, many writers using the word "airship" to mean aeroplane, which is almost about as correct as if they called a two or three passenger motor boat a steamship.

In case there is a reader of "Aircraft" who is not acquainted with aeronautical terminology sufficient to know the difference, we call attention that the term "airship" is appliable only to "lighter than air" crafts, such as the Zeppelin dirigible, and all "heavier than air" craft, such as aeroplanes or helicopters, should be referred to as "flying machines."



CLUB NEWS

Aero Club of America

Conditions of the race for the Coupe Internationale d'Aviation in 1912 occupied the attention of the Executive Committee of the Aero Club of America. The matter will come up for decision at the seventh statutory conference of the Federation Aeronautique Internationale in Rome next month, at which Messrs. E. W. Mix, Hart O. Berg, W. S. Hogan, Robert Graves and W. Redmond Cross will represent America.

Mr. Cortlandt F. Bishop is now vice-president of the International Federation and the American delegates will be instructed to seek his re-election.

New Licenses Issued

58. Harold H. Brown, Sept. 13, 1911, Nassau Boulevard, L. I., N. Y., Wright.

59. Capt. Chas. de F. Chandler, Sept. 20, 1911, College Park, Md., Wright.

60. John D. Cooper, Sept. 20, 1911, St. Louis, Mo., Curtiss type.

61. A. B. Lambert, Sept. 20, 1911, St. Louis, Mo., Wright.

62. Lieut. J. H. Towers, U. S. N., Sept. 28, 1911, Hammondsport, N. Y., Curtiss.

The Aeronautical Society

On October 12th, a very interesting meeting was held by the Aeronautical Society at their rooms on 54th street, New York. Discussions and lectures were indulged in by the members, and two aviators, Mr. James V. Martin and George W. Dyott, spoke on their experiences at the European aviation grounds. The Club rooms of the Society are being used Saturday nights by the New York Model Aero Club and the Society is considering affiliation with this club as well as with a proposed ladies' aviation club which will be launched as a separate club or as a section of the Aeronautical Society.

New York Model Aero Club

BY RALPH KAYE.

A MODEL ENDURANCE CONTEST—BEST TIME 48 4-5 Seconds.

The contest held by the New York Model Aero Club, at Van Cortlandt Park, on Saturday afternoon, September 16th, 1911, was a most interesting occurrence, and witnessed by about 200 enthusiastic spectators. There were 17 entrants.

These flights are held every Saturday afternoon, weather permitting. Each contestant is limited to three entries, each entry has three trials, not to be official unless of 20 seconds' duration. Mr. Percy W. Pierce, former champion, entered three different models. One of the models entered by Mr. Cecil Peoli, America's champion model maker, won to-day by a flight of 48 4-5 seconds, the second time was made by Percy W. Pierce in the time of 38 3-5 seconds.

The winner of this contest, if successful in the next contest, will receive a gold medal presented by Mr. W. C. Collins.

This is the first endurance contest for medals held in America. It was arranged for by Mr. Edward Durant, son of the first American aeronaut. Mr. Durant is in all probability father of the model contests in the United States.

The winner of the gold medal of these contests for this year will probably be sent to Europe next year to compete against the model clubs of the continent.

The afternoon was perfect with very light winds. The spectators showed a very great interest, and on every side were comments on the skill and originality of the entrants.

The distance record is also held by Cecil Peoli, as his model made a flight of 1,691 feet 6 inches. As this distance is measured straight of way from the point of launching to the point of landing, irrespective of curves or circles, the distance of this flight is wonderful and shows the skill and perseverance of the holder of the record. At least two more flights will be held before winter sets in, and they will be most interesting for both contestants and spectators.

Aero Club of Connecticut

The members of the Aero Club of Connecticut got into aviation actively from September 28th to October 2nd, as they secured Mr. Welsh, of the Wright Co., who took up members and their friends in a Wright machine at the Lake Aerodrome, Bridgeport, Conn. He was kept busy taking up passengers for three days. A number of women were taken up as passengers and not a single accident occurred in any of the numerous flights which Mr. Welsh made. The duration of the flights given was from 5 to 10 minutes, and the altitude 200 to 300 feet. The meet was very successful in every way.

Aero Club of New York

Despite Bishop Burgess, the Sheriff, the few peevish residents of Garden City estates and the elements, aviation is flourishing at Nassau Boulevard. The score of flyers who have been on the field ever since the aerodrome opened, are still there and fly constantly.

First American aeronautic map recently completed for the Aero Club of America by the Automobile Blue Book Publishing Co. This relief map shows clearly the location of the various aerodromes on Long Island and also the best flying courses. The second from the left white oval is the aerodrome of the Aero Club of New York at Nassau Boulevard.

NEWS IN GENERAL

California News

By Ernest Ohrt.

September 18th saw Frank Champion fly in Earle Remington's Blériot monoplane from Dominguez field (near Los Angeles) to the Sawtelle Home, a distance of twenty-three miles. As he came down in a field in front of the Sawtelle Home he was blown against the topmost branches of a eucalytus tree and narrowly escaped a bad fall. After repairing minor injuries to the machine caused by the mishap he circled the buildings of the home several times and then flew back to his hangar at the aviation field.

Harry Edwards, a San Francisco newspaper man, had a narrow escape with his life when he fell near the Dumbarton cut-off in a Curtiss biplane owned by Fred Swanton. When he rose to a height of fifty feet the planes could not withstand the strong wind, and the biplane tipped dangerously to one side. Suddenly at the height of the tree tops he lost control and the biplane crashed headlong to the ground, wrecking the machine and slightly injuring the operator. Two weeks later Edwards got a bad ducking in the waters of the Pacific at Santa Cruz while flying about 200 yards off shore at a height of 40 feet. He was rescued by a rowboat and the machine, which landed in fifteen feet of water, was brought to shore considerably damaged.

Frank Bryant, a San Francisco aviator who is flying for Norman De Veux, the representative for the Curtiss biplane, has been making many successful flights in a 50 h. p. Curtiss biplane. These flights have taken place at the Presidio military reservation on the Calvary flat and have all been without serious mishap. C. C. Bradley is completing his Farman type biplane upon the grounds and will soon have it ready for trials. The machine is of excellent workmanship and will be equipped with an automobile engine. Another aviator upon the field is P. L. Criblet, who has a standard Curtiss biplane with a Maximotor. Criblet and Sergeant Seely of the Signal Corps have made several flights, but Seely has had several smashups in landing.

W. C. Tunison, of San Rafael, Calif., is completing a large monoplane of his own design which he intends to try out shortly. The machine is designed to carry two persons and has a spread of 59 feet and a length of 54 feet. The engine is of 125 horsepower.

W. G. Murray and nearly 40 men are rapidly working on the huge dirigible invented by Murray and backed by several San Francisco millionaires. The dirigible is of the rigid type and has six helicopters driven by three motors each of 60 horsepower. The entire length is 140 feet and the width is 72 feet. Murray proposes it to carry 15 passengers, including a crew of five men. Aluminum is by far the most used material. The dirigible is being constructed at the Ingelside race track.

The Pacific Coast is recognized as an ideal flying ground all through the Winter Season, and professional flyers have made it a point for the past few years to flock to that section during the cold season.

A number of aviation schools have been established in and around Los Angeles, for some time past, and they are all preparing for a large enrollment of students this winter.

The Aeronautical Society of California have established their flying grounds at Dominguez Field, have a large number of hangars completed, together with their shops, training quarters, etc. This Company operates with Genuine Blériot monoplanes, and biplanes of latest types and construction. They are using Gnôme motors in the larger size Blériots, and Hall-Scott equipment in the smaller type Blériot and the biplanes. E. L. Holt is operating a Hall-Scott Curtiss type, and with this outfit recently obtained his pilot's license. Just to show what speed he could get he has raced with the electric interurban cars running alongside of Dominguez Field, and won out with a good many lengths to spare.

The Ray Cage Aviation School, with a beautiful flying field within three or four miles of Los Angeles, has been kept busy all summer with half a dozen pupils. They are using a most efficient type of headless biplane of original design, equipped with Hall-Scott Type A-1, 40 H. P., power plant. They start work between six and seven o'clock in the morning, and keep the plane going all day. Just as soon as one pupil has run around the four mile course, or flown around the course, depending on the length of time he has been in the school, another pupil gets in the operator's seat and starts off. The machine requires no handling as the flexibility of the motor allows them to turn it on the ground under its own power, and the motor can be started by the pupils without the necessity of any one holding the plane.

Eaton Bros. Company also have a flying field within a few miles of Los Angeles, and are teaching their pupils the use of Curtiss Type machines equipped with Hall-Scott A-2, 60 H. P. power plants.

The Curtiss Aeroplane Co. is soon to open their Winter training school at San Diego, and already a number of students have enlisted and great things are expected of the experimental department.

New England News

By Denys P. Myers.

Among the New England young men who have built aircraft of their own design, either in model or full size, are: George H. Jackson, of South Boston; Royal Laurie, of Lowell, Mass.; Herman Lawchowsky, of Manchester, N. H.; Frank Warren, of Bedford; Ray Belyea, of Gardiner, Me.; Augustine Johnson, Robert Piest and William Smith, of Clinton, Mass.; Lothrop H. Wakefield, of Dedham, Mass., and Guy Fogan, of Waltham, Mass.

A biplane which was built by two young men of Quincy, Mass., Charles N. and Henry W. Kolstadt, was given a trial recently, but came to grief owing to the left wing stirking a tree as it was rising.

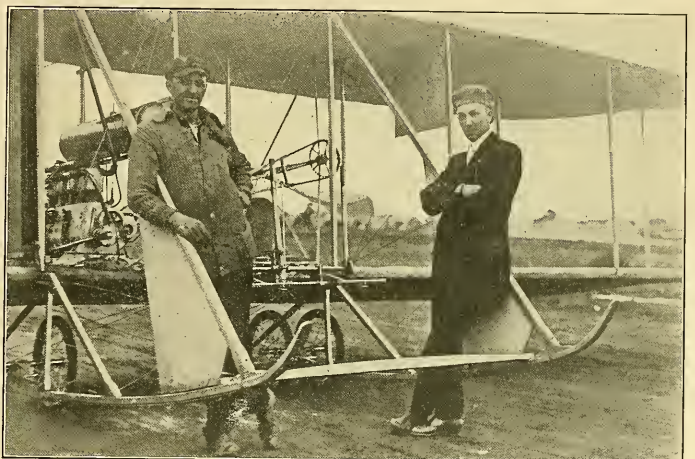
H. P. Shearman, the Williams College aeronaut, experienced a thrilling flight on his balloon trip which started from Pittsfield on September 12th and ended at Auburn, Me., 200 miles distant. Soon after ascending from Pittsfield the aeronaut noticed that the appendix of the balloon was tied, and realizing his danger, he climbed up the netting of the balloon with a knife in his mouth, which he used to cut the cord tying the appendix. The ensuing rush of gas nearly asphyxiated him and he fell unconscious into the basket, recovering only in time to be able to effect a rough landing at Auburn.

Connecticut News

By S. H. Patterson.

Six licenses have now been granted in Connecticut for aviators. Mr. A. Holland Forbes, president of the Aero Club of Connecticut, who was appointed chairman of the Aeronautical Commission for the State of Connecticut, is empowered to pass upon the ability of all applicants for licenses to operate either lighter or heavier than air machines in this State. Mr. Forbes is the only commissioner appointed at the present time, and is eminently qualified, through his knowledge of aeronautics and personal experience in the balloon world, to pronounce judgment on all applicants. The tests are made at Lake Aerodrome, in Bridgeport, and Charter Oak Park, in Hartford.

J. M. Murphy, of Bridgeport, Conn., has opened an aeronautical school in Milford, Conn. Mr. Murphy is the inventor of a new aeroplane which embraces several new and unique features. The machine is fitted with two independent power plants and three sets of propellers, with a propeller under the machine to assist in elevating. Lateral balance is automatically preserved by the means of a pendulum which operates the stabilizing planes. Mr. Murphy has formed a company known as the Bridgeport Aeronautical Company, and several machines are under construction and expect to be tried out before snow flies.



J. W. Beatty, right, and his mechanician, left, standing in front of the former's Wright biplane. Beatty is one of America's most successful Wright pilots, who after only three weeks' training, got his license and went to the Chicago Meet, where he captured second place for totalization of duration and broke the then existing world's record for a flight with two passengers. Mr. Beatty has now been flying for about two months and has never had an accident, which speaks well for his skill as a pilot, the reliability of the machine he flies and the care exercised by the mechanic.

Washington News

By Mrs. Lulu Wells Smith.

Sept. 30th.—The Rex Smith machine No. 3 has been finished and after a phenomenal flight at the Harrisburg (Penn.) meet, with Aviator Paul Peck, met with an accident, completely demolishing it, in a ten-minute soar over the exhibition field. In trying to make a landing, after he had circled the field a few times and cut several figure eights, and also had essayed the Dutch roll, the crowd surged in front and to avoid them he attempted to make a sudden ascent over their heads and circle the field again. He flew over the hangar, but struck a tree at the back about two feet from the top, which threw him over an eighty-foot precipice into a creek. Peck was not hurt, but the machine was badly smashed. As this was practically the maiden flight of the machine, much regret was expressed over the accident. Peck was enthusiastic over the possibilities of the new machine, being even greater than No. 2, in which he finished his engagement at the meet, flying over the city the next afternoon, circling the capitol, and on the third day going up in a rain storm rather than disappoint a crowd of twelve thousand people who remained out in the pouring rain a couple of hours hoping to witness a flight. The smashed machine was shipped back to the factory at College Park, and in about ten days was ready to be sent to Cleveland, Ohio, where Paul Peck is to start with it again on an exhibition tour.

No. 3 machine differs from No. 2 in that the curves of the planes are all the same, and there is no dihedral angle and it has a monoplane tail. Two other machines have been started in the Rex Smith factory, to be finished before the end of October. No. 2 machine has also been shipped back from the Harrisburg meet and after some adjusting of the Hall Scott motor will be ready for school work, which promises to keep up pretty steadily the rest of the flying season. Among the pupils enrolled is Stanley James, the actor, now doing stock work in Baltimore, but who intends to give up the stage to become a flyer.

The Shneider machine demonstrating the Tarbox safety device has been doing pretty steady flying through the month, with Joe Richter as aviator. It was practically the only machine in the air during the last two weeks of September, when the officer flyers were at Nassau and the Rex Smith machines at the Harrisburg meet.

Dr. Christmas completed his machine about a week ago, but in the first skim over the rough ground broke a propeller, and with this delay, together with bad weather, has not been able to fairly try out. This machine evolves some new principles, not altogether radical, and much interest has been taken in it. It is an attractive looking machine, presenting graceful lines, and if Dr. Christmas succeeds in adjusting a new propeller he expects to be flying again soon.

Form 2089

NIGHT LETTER

THE WESTERN UNION TELEGRAPH COMPANY

INCORPORATED

25,000 OFFICES IN AMERICA CABLE SERVICE TO ALL THE WORLD

ROBERT C. CLOWRY, PRESIDENT BELVIDERE BROOKS, GENERAL MANAGER

RECEIVER'S No.	TIME FILED	CHECK

SEND the following NIGHT LETTER subject to the terms on back hereof which are hereby agreed to

New York September 14, 1911.

William R Hearst.
℅ New York American, New York

Published reports authorized by your representative several months ago stated conditions aerial coast to coast race to be begun within one year from October tenth 1910. Aviators world over generally understand it that way. Several anxious to enter under those conditions. In name of true sportsmanship will you not settle misunderstanding quickly by allowing aviators to begin before October tenth instead of ending that date. Will thank you for early reply.

Alfred W Lawson

PRESIDENT LAWSON PUBLISHING COMPANY.

New York American

Sept. 15th, 1911

Mr. Alfred W. Lawson, Pres.,
Lawson Publishing Co.,
37 East 28th St. City

Dear Sir:

In acknowledging receipt of your telegram, would say that Mr. Hearst has been in Europe since May and may not return here for several weeks. I will hand your telegram to the Managing Editor.

Very truly yours,

H. O. Reilly

Secretary to Mr. Hearst

Dear Sir:

Replying to your letter to Mr. Hearst, there should be no difference of opinion as to the terms of the offer of the prize of $50,000 for a coast to coast flight. The original publication called for a flight to be begun and ended between the 10th of October, 1910 and the 10th of October, 1911. No other statement to the contrary was authorised. It is to be regretted that any different construction should be placed upon the offer.

There is no one in this country who is authorized to change the original offer.

Very truly yours,

C. M. Van Hamm

Managing Editor.

The Hearst Prize Misunderstanding

GARDEN CITY ESTATES, L. I.
Oct. 2, 1911.

Alfred W. Lawson,
37 East 28th St., New York.

DEAR SIR:—As there seems to be some misunderstanding as regards the Hearst $50,000 flight, will you be kind enough to advise me your understanding of the conditions of this contest and let me have any official data and copies of the correspondence on the subject which you may have had with Mr. Hearst or his representatives.

Thanking you in advance, I remain,
Very truly yours,
EARLE L. OVINGTON.

During last April "AIRCRAFT" received so many inquiries in reference to the conditions of the William R. Hearst prize of $50,000 to the first aviator who would fly across the American continent that we decided to publish them for the benefit of our readers and in order to get them, as we thought, exactly right, we wrote to Arnold Kruckman, the aeronautical editor of the New York American and the following are the printed conditions, which were sent to us and which we published word for word in the May AIRCRAFT:

"The conditions of the competition for the Hearst prize are simple. The flight must be made over the breadth of the continent in any self-propelled aeroplane. The contestant may start at Boston or New York and alight either at Los Angeles or San Francisco. The route must lead via Chicago. It is optional with the competitor to start either on the Pacific or Atlantic coast. He may fly as many miles daily as he elects; he may stop as often as he pleases, wherever he pleases. There is no limit to the number of stops that may be made, nor to the time the aviator may stop in any one place. The man who flies is the sole judge. He may repair and rebuild his craft so often that he is practically flying a new machine by the time he reaches his goal.

The only condition is that he make the entire flight within thirty consecutive days—720 consecutive hours—and start on the flight within one year from October 10, 1910: Notice of intention to start must be given the Aeronautic Editor, The New York American, William and Duane streets, New York City, fourteen days prior to the start."

Along about the 14th of September James V. Martin, the aviator and inventor, called upon us and complained that there was a misunderstanding concerning the conditions of the Hearst prize, he stating that he understood the start could be made prior to October 10th, 1911, whereas the New York American claimed that it was necessary to end the race prior to October 10th, 1911. He also stated that both he and Phillip Parmalee were anxious to enter the race on condition that they could start prior to October 10th instead of finishing before that date.

On the night of the 14th, therefore, Alfred W. Lawson, President of the Lawson Publishing Company, sent the following telegram to Mr. Hearst:

NEW YORK, September 14, 1911.

"William R. Hearst,
New York American, New York.

Published reports authorized by your representative several months ago stated conditions aerial coast to coast race to be begun within one year from October tenth, 1910. Aviators world over generally understand it that way. Several anxious to enter under those conditions. In name of true sportsmanship will you not settle misunderstanding quickly by allowing aviators to begin before October tenth instead of ending that date. Will thank you for early reply.

ALFRED W. LAWSON,
President Lawson Publishing Company."

and two days later he received the following letters from Mr. Hearst's secretary and the managing editor of the New York American:

NEW YORK, September 15th, 1911.

"Mr. Alfred W. Lawson, Pres.,
Lawson Publishing Co.,
37 East 28th St., City.

DEAR SIR:—In acknowledging receipt of your telegram, would say that Mr. Hearst has been in Europe since May and may not return here for several weeks. I will hand your telegram to the Managing Editor.

Very truly yours,
H. O. REILLY,
Secretary to Mr. Hearst."

"Mr. Alfred W. Lawson,

DEAR SIR:—Replying to your letter to Mr. Hearst, there should be no difference of opinion as to the terms of the offer of the prize of $50,000 for a coast to coast flight. The original publication called for a flight to be begun and ended between the 10th of October, 1910, and the 10th of October, 1911. No other statement to the contrary was authorized. It is to be regretted that any different construction should be placed upon the offer.

There is no one in this country who is authorized to change the original offer.

Very truly yours,
C. M. VAN HAMM,
Managing Editor."

There will be no wininng of the Hearst $50,000 coast to coast prize this year, that is a fore-

gone conclusion, but it is unfortunate that the whole thing should terminate in a misunderstanding.

AIRCRAFT was never very enthusiastic over this prize, not because we felt that the winner would not receive the money but because we realized that there was only about one chance in a thousand for an aviator to accomplish the task. We believe, however, that this task can be accomplished within another year and nothing would please us better than to know that Mr. Hearst made the same offer to hold good until October, 1912. In this way it would settle all question as to the sincerity of the offer in the beginning, for surely when one is sincere in offering a prize for a great feat, he is anxious to have it won and, therefore, the difference in a month or even a year should not stand between the accomplishment of such a wonderful performance as a transcontinental flight within thirty days and a prize which will make it possible.

The London Daily Mail offered $50,000 for a flight between London and Manchester, a distance of only one hundred and seventy-two miles, and after this prize was won by Paulhan, the London Daily Mail immediately offered another prize of $50,000 for a race around England, which was won by Beaumont (Lieut. Conneau). In both cases the prizes were offered in the hopes that they *would* be won and the conditions were made such that they *could* be won and the proof of the sportsmanlike offers of the London Daily Mail was that both prizes *were* won.

Progression of Transcontinental Flyers

Since the last number of "AIRCRAFT," three aviators started out in an attempt to win the Hearst Prize, all of whom failed in the undertaking.

Robert C. Fowler started the trip from San Francisco on September 11th and was unable to cross the Sierra Nevada Mountains and abandoned it a few days later, after flying less than 200 miles.

James J. Ward started from Governor's Island, N. Y., on September 13th, and after a series of mishaps, he reached Addison, N. Y., where he likewise gave up the trip.

Cal P. Rodgers started from Sheepshead Bay, N. Y., Sunday, September 17th, and at the time "AIRCRAFT" goes to press, he had covered over one-half the distance of the journey and was still flying.

The route taken by Rodgers was from New York to Chicago to Kansas City, and he was making good time through the State of Oklahoma as "AIRCRAFT" forms close.

Birdman Raids a Gambling Game

Becoming an aid in the suppression of gambling, is the latest exploit of Aviator St. Henry and the incident is destined to become history in the State of Montana, where the games of chance are considered solely as diversions.

It happened at Billings, Montana, where St. Henry, in his Curtiss biplane, was filling a date on September 23rd at the Yellowstone Valley Fair.

Owing to the poor condition of the fair grounds, he had to make his landings in a nearby field, and in each instance the big crowd would desert the attractions inside the enclosure to follow the aviator and witness his descent.

A trio of gamblers, following the fairs, sized up the situation accurately after his first flight, and set up their roulette outfit in the landing field, prepared to do a land office business when he made his second landing. To facilitate their business they chose a smooth, level spot, and soon the little ivory ball was clicking merrily and good coin of the realm was changing hands briskly.

This same level, smooth bit of greensward also caught St. Henry's eye, as he sought to come to earth in his second flight. He beaded for it, volplaned neatly and easily downward, and showed a warning to the gamsters and the gamblers around the spinning wheel. It took but one look on the part of those devotees of the muse of chance to convince themselves that a pair of fast heels and need of distance from the rapidly descending flying machine was the proper thing right then. They decamped to a man, without even picking up their money or the green cloth.

St. Henry came down at a good clip and bowled over the roulette wheel in a ten strike, scattering its wares to the four winds. A crest-fallen and disgruntled trio of gamblers surveyed the splinters, the crowd gathered in the scattered money, regardless of ownership, and for the first time in history an aviator and biplane had been a factor in the suppression of gambling.

President Taft's trip through the West was marked by a new and unique manner of greeting his arrival at a city. At Sedalia, Mo., on September 30th, where the President was a guest of the State Fair, he was met by Aviator Hugh Robinson, flying a Curtiss biplane, several miles outside of the city, who escorted the train to the fair grounds.

First Army Plane Now Junk

The first aeroplane, a Wright, bought by the U. S. Government in 1909 at a cost of $30,000, has been condemned from active use and is to be sent to the National Museum for exhibition alongside of the first locomotive that was ever run in this country.

CORRESPONDENCE

Clarksville, Tenn., Oct. 15.

Dear Sir:—In the French aeronautical magazine, *Aerophile*, September 1, 1911, I see an article on page 409, "La Securite par la Vitesse." The author of that article says that the late Mr. Octave Chanute had some experiments executed with propulsion by direct reaction of explosions, jet propulsion, for aeroplanes, but that unfortunately there were only insufficient records of these experiments.

To this I would like to say that the experiments which Mr. Octave Chanute had made were ordered by Mr. Chanute on *my suggestion* and that I have a copy of the records of these explosion tests.

I have many other important facts, which are all unknown even to scientists, not because I want to keep them secret, but because the matter was premature and even publishers of scientific papers did not catch on to the importance of the matter and persistently refused to publish important facts, saying their columns were not available for that material. This was very much to be regretted.

By the way, I would like to call attention thereto, that the drawing No. 8 in the *Aerophile* in the above mentioned article, on page 411, showing the aviator entirely enclosed and held in place by a suitable enclosure (ceinture), that this ceinture is already shown in my American patents, Fig. 6, Patent 710,266, Sept. 30, 1902; Fig. 2, Patent 730,107, June 2, 1903.

I may add that Mr. Chanute's experiments with explosions were made with an apparatus which was *not* under forward motion, the apparatus standing (essai au point fixe), and that I pointed it out to Mr. Chanute in my letters, of which I have a copy, that the experiments had to be made while the apparatus was under *swift forword* motion, which would give entirely different and still better results.

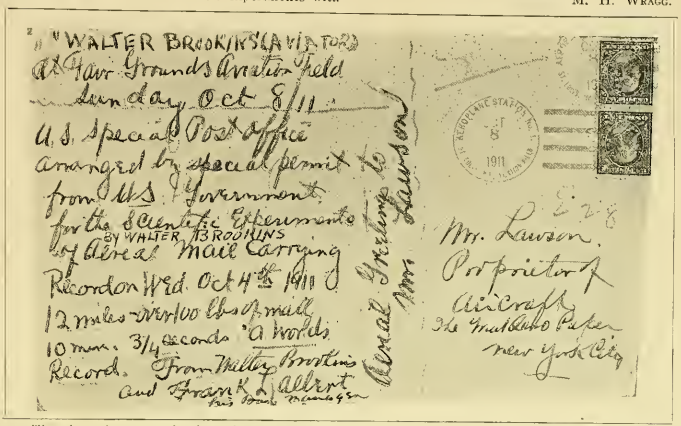
Yours truly,
(Signed) THEODORE GIBON.

Springfield, Mass., Oct. 5, 1911.

Dear Sir:—Being interested in aeronautics, I have read with much interest the letter (in October AIRCRAFT) from W. Von Kamp. As an answer to what he says regarding safety building, I claim that I have solved that problem and have succeeded in working out the details of an absolutely NON-COLLAPSIBLE flying machine, which can be operated without any engines; that will alight at the place desired and will (or can) remain suspended in the air motionless or very nearly so, without falling down.

Now, I am anxious to meet with some people interested enough to furnish funds to build a machine after my type and I guarantee that it will be a success. Should be glad to hear from anyone who will assist me to reach those whom my invention will benefit and encourage in the efforts being made to make flying absolutely safe.

I am, dear sir,
Yours faithfully,
M. H. WRAGG.



The above is a reproduction of a post card received by "AIRCRAFT" by Aerial Mail. Apparently the card was made up from the cover of a box sent by aeroplane to an aerial station, from whence the United States Government transferred it by rail; a historical document, the value of which will increase as time and progress move along.

A Letter from Ignatz

DEAR EDITOR:

The following may be appreciated by some of your readers:

It happened at Maxim's, about 1 A. M. The party was in the best of humor and was the center of friendly smiles from the Spanish dancer down, or up, as you see fit.

All at once a commotion was noticed at the door, low and behold, "Silk Hat" Harry appeared on the scene; with drooping head he crawled up the stairs and approaching our table, whispered in a breathless tenor:

"If Wilbur Wright owes Glenn Curtiss $5.00, who does Blériot?"

Then one by one we became a regular "Tad"?

If Dr. Walden plays cards with Miss Scott does Baldwin?

If Bud Mars is young is Arnold

If Sopwith is English is Al Welsh?

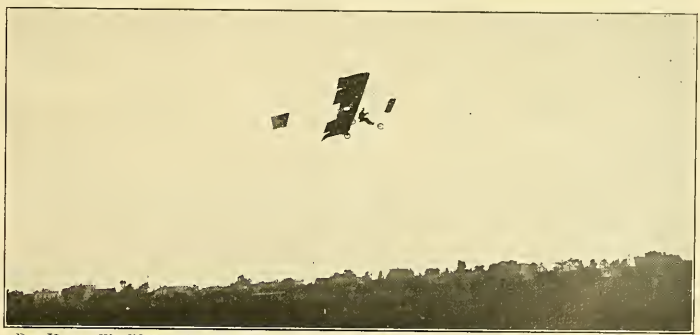
If Hammond's machine is made of steel is Atwood?

If Miss Quimby makes a good landing how does Kirtland?

If Ovington drinks coffee does Beatty

If Capt. Beck flies to the North Pole would Ely?

"IGNATZ."



Dr. Henry W. Walden in his Hall-Scott equipped monoplane, making a flight over the housetops in the vicinity of Coney Island, N. Y.

GORDON BENNETT BALLOON RACE

Kansas City, October 5th, 1911

BALLOON	MANNED BY	TIME OF START	LANDED AT	TIME OF LANDING	DISTANCE
Berlin II. (Germany)	Lieut. Hans Gericke, pilot S. O. Dunker, aide	Oct. 5th, 6:11 P. M.	Ladysmith, Wisc.	Oct. 6th, 6:40 A. M.	468 miles.
Buckeye (United States)	Lieut. F. P. Lahm, pilot J. H. Wade, Jr., aide	Oct. 5th, 6:01 P. M.	La Crosse, Wisc.	Oct. 6th, 2:50 A. M.	365 miles.
Berlin I. (Germany)	Lieut. Leopold Vogt, pilot Lieut. M. Schoeller, aide	Oct. 5th, 5:53 P. M.	Austin, Minn.	Oct. 6th, 10:02 A. M.	345 miles.
Million Population Club (United States)	John Berry, pilot Paul McCullough, aide	Oct. 5th, 5:56 P. M.	Mason City, Ia.	Oct. 6th, 5 P. M.	300 miles.
America II. (United States)	William F. Assman, pilot J. C. Hulbert, aide	Oct. 5th, 5:42 P. M.	Emittsburg, Ia.	Oct. 6th, 1:30 A. M.	290 miles.
Condor III. (France)	Emile Dubonnett, pilot Pierre Dupont, aide	Oct. 5th, 5:35 P. M.	Linby, Ia.	Oct. 6th, 9 P. M.	240 miles.

LAHM CUP

Kansas City II.	Capt. H. E. Honeywell, pilot John Watts, aide	Oct. 5th, 6:18 P. M.	Kennan, Wisc.	Oct. 6th 9:20 A. M.	460 miles.
Buckeye II.	Lieut. F. P. Lahm, pilot J. H. Wade, Jr., aide	Oct. 5th, 6:01 P. M.	La Crosse, Wisc.	Oct. 6th, 2:50 A. M.	365 miles.
Topeka II.	Frank M. Jacobs, pilot W. W. Webb, aide	Oct. 5th, 6:20 P. M.	Dunnell, Minn.	Oct. 6th, 8:30 A. M.	325 miles.
Million Population Club	John Berry, pilot Paul McCullough, aide	Oct. 5th, 5:56 P. M.	Mason City, Ia.	Oct. 6th, 5 P. M.	300 miles.
America II.	William F. Assman, pilot J. C. Hulbert, aide	Oct. 5th, 5:42 P. M.	Emmettsburg, Ia.	Oct. 6th, 1:30 A. M.	290 miles.

SPECIAL ALTITUDE FLIGHT

Pennsylvania	Arthur T. Atherholt, pilot E. R. Honeywell, aide	Oct. 5th, 5:13 P. M.	Buffalo Centre, Ia.	Oct. 6th, 6:20 A. M.	300 miles.

Ballooning In New England

Pittsfield continues to be one of the ballon centres of America. Several trips were recently made from the Aero Park of the Aero Club of Pittsfield. On October 7th Jay B. Benton and William Van Sleet made a trip which ended the following day near Freehold, N. J. On October 11th Leo Stevens, accompanied by Walter de Mumm and Mrs. Van Rensimer, ascended from Pittsfield in a Stevens balloon at 11 o'clock and drifted back and forth until 3 o'clock in the afternoon, when they landed near West Hawley, Mass., about forty-two miles from their starting point. On October 12th H. S. Clayton, president of the Ned England Aero Club, and James Benton and Frank C. Bowken of Boston laned on a farm in East Hartford after a balloon trip from Pittsfield which consumed a little less than two hours.

The Curtiss Aviators

Charles F. Walsh, the aviator who joined the Curtiss staff at the international meet at Chicago, has proven one of the most capable aviators on the Curtiss staff. Since he was provided with a Curtiss biplane, Walsh has filled engagements throughout Nebraska and Montana, and recently flew at the Utah State Fair at Ogden. Walsh has been wonderfully successful in flying in high altitudes. At Ogden, where the atmospheric conditions are particularly bad, owing to the conformation of the country and the high altitude, there had never been any successful flights previous to those made by Walsh.

Lindsey Hopkins, an automobile dealer of Atlanta, Ga., has purchased two Curtiss aeroplanes, which he intends to use in exhibition work throughout the south. They will be operated by Aviator Andrews.

The Canton Meet

EARLE O. GUNTHRE.

On account of the crowds that would be in their city attending the Stark County Fair, the Aero Club of Canton, Ohio, held an aviation meet September 26, 27, 28.

The flyers were Seligman, Ely, Brookins, Atwood and Drew. On the first day of the meet Brookins made an accurate landing record, by landing exactly on a designated spot. Atwood and Brookins made several exhibition and passenger carrying flights. Seligman, Drew and Ely made short flights.

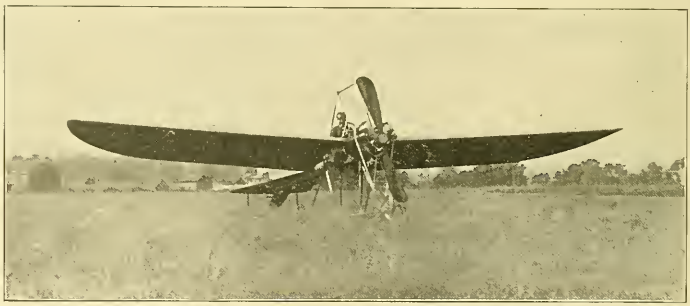
September 27th. All aviators flew. Atwood and Brookins did passenger carrying. Ely had a slight wreck caused by making a bad landing and mashed one of his wheels and part of his chassis. Owing to the lack of repair parts Ely did not fly the rest of the meet.

September 28th. Almost the first thing that happened, Seligman started for a flight, and tried to climb at too steep an angle, and lost his headway, having to come down, and to avoid alighting on the crowd came down on a fence at the edge of the field almost completely wrecking his Anzani-engined Blériot monoplane. This left Brookins, Atwood and Drew the only remaining aviators. Brookins and Atwood did their usual passenger carrying, among those carried by Atwood were Mrs. Ralph Rex, of Cleveland, Ohio, Mrs. Seligman (wife of Aviator Seligman), F. A. Seiberling, son of the President of the Goodyear Rubber Co., and Miss Mildred Laiblin, of Canton, Ohio. Most enthusiastic was Mrs. Ralph Rex, who made a special trip from Cleveland to get a ride in an aeroplane. Her first greeting to her husband and friends was: "Now I know what Toyland looks like." She was up about 600 ft. and was taken cross-country to Meyers Lake, where they circled a cottage which is her summer home.

Among the passengers carried by Brookins were Mrs. H. H. Timkins, Mr. William Timkins, of Canton, Ohio, and Mr. Seiberling, of the Goodyear Rubber Co.

Drew did not fly. Atwood gave the crowd some thrills in the way of spiral glides and dives that were almost perpendicular. Brookins also did some sensational flying.

Fully fifty thousand people saw the flights this day and showed great enthusiasm. The meet was thoroughly successful in every way.



The Johnson Brothers, of Terre Haute, Ind., have designed and constructed a new type of steel tube monoplane, which, with Louis Johnson at the control, flew successfully at its first trial.

The machine is constructed throughout of steel tubing and aluminum, with the exception of the planes, which are built up in the usual way. The motor fitted is a 60 H. P. V-type, 2 cycle motor weighing 160 pounds, with a solid chrome nickel steel crank shaft. The planes have a spread of 36 feet and a chord of 8 feet, and the total length of the machine is 34 feet. A non-lifting balance tail is fitted. A special shock-absorbing landing chassis is fitted employing a central skid, built low, to protect the propeller in case of the wheels breaking. A special feature of the construction is the using of the frame as a radiator, tank and engine bed in one. The total weight of the machine is 700 pounds.

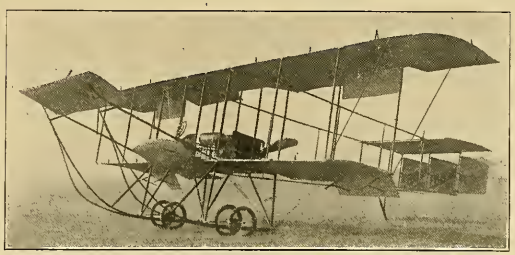
Book of Models

The Second Boy's Book of Model Aeroplanes, by Francis A. Collins (The Century Co.) cloth, 1.20. Postage 11 cents.

This book supplements Mr. Collins' earlier and more elementary publication on the same line "The Boy's Book of Model Aeroplanes." The new book deals with the following:

Model Aeroplanes of 1911—Model Aeroplane Tournaments—Parlor Aviation—Tools and Materials—Theiry and Practice of Plane Construction—Scientific Propeller Building—Assembling the Motors— Curiosities of the Air—Directional Control—Model Aeroplane Designs—Designing the Skids—Geared Motors—Lessons of the Man-carrying Aeroplanes—Selected Questions for Beginners—Among the Model Builders—Rules for Conducting Model Aeroplane Contests.

There are helpful working drawings and photographs of over one hundred new models, and detailed instructions for building fifteen of the newest model aeroplanes.



THREE-QUARTER VIEW OF THE GERMAN ALBATROSS BIPLANE WHICH WAS RECENTLY SENT TO BRAZIL.

FOREIGN NEWS

Argentine

On September 12th Cattaneo, deciding to attend the horse-races at Buenos Ayres, flew over from the aviation grounds and landed on the race course, where he was enthusiastically received by the crowd. Paillette, who had also started to fly to the meet, soon came to grief and fell into the water, but both machine and aviator escaped with little injury.

Belgium

In spite of the inadequate material at their command, the Belgian officers of the aeronautic corps are determined to do their best. Although there is only one Henry Farman biplane at the Brasschaet Military Aviation school, no less than eight officers have been trained to fly it in less than three months.

England

The British naval airship "Mayfly," which was illustrated and described in the April number of AIRCRAFT, page 43, came to an untimely end on September 24th as it was being drawn out of the shed at Cavendish dock, Barrow. We publish a photograph of the wreck on page 297 of this issue.

The framework of the dirigible broke in the centre and the airship collapsed. It is supposed that the general structure was weak and that the accident was hastened by the rupture of the central gas bag, which removed all local support at this point and caused it to break. The airship fell into the water, but fortunately no one was seriously injured, the crew of the gondola swimming to shore.

The dirigible had been undergoing tests for some time past and had just been accepted by the Admiralty.

The new two-engined short biplane was given its first trials recently and in the hands of Mr. Frank McClean at Eastchurch made many successful flights with and without a passenger.

The new monoplane constructed by the Bristol Co. to the designs of Pierre Prier, the former well known Blériot flyer, has been put through its paces and has proven itself to be a capable flyer. The most noticeable peculiarity of the machine is its short length and the small flat fan-shaped elevating surface, which is balanced in such a way that it operates as a stabilizing damper and elevator combined. There is no fixed stationary surface in the rear, the elevator alone acting as a stabilizer.

France

On September 12th Mdlle. Dutrieu regained her lead over Mme. Herveu for the Coupe Femina by flying 230 kiloms. in 2¾ hours at Chalons. This flight more than doubles Mme. Herveu's record of 101.6 kiloms.

Tests have been going on recently at the Deperdussin grounds to ascertain the climbing qualities of the Deperdussin monoplane and it has been found that this interesting machine can climb 1,700 feet in less than 6 minutes.

The first aviatrice to gain her pilot's license on the Hanriot monoplane is Mme. De Rick, who successfully made the flights for her brevet on September 5th.

It is reported that Robert Esnault Pelterie has turned his attention to the biplane type of machine and will shortly bring out a tractor screw double-decker. The new machine will be similar to the Martin type Queen machine described on page 314 of this issue but will have the usual R. E. P. fuselage. The wings, however, will be set at a slight dihedral angle.

It appears that Maurice Farman's headquarters at Buc are becoming quite a favorite visiting place for celebrities, for almost every week we hear of one or more distinguished personage visiting the school, and being taken for a trip on one of the machines. Quite recently Mr. Gould visited the aerodrome and was taken for a lengthy flight by Maurice Farman himself. Amongst others who have recently flown with Mr. Farman are a Chinese general, the British Minister of Tangier and a number of society ladies and gentlemen.

New Passenger Height Record

On September 22nd Mahieu, carrying his friend M. Fay, succeeded in breaking the height record with a passenger by rising to a height of 2,460 metres in 55 min. The machine used was one of the new Military Voisins. The old record was 2,250 metres made by Montalent on a Breguet at Brooklands, England.

The new mammoth Antoinette monoplane in which the passengers sit inside the body was given its first tests on September 24th and is reported to have given every satisfaction.

Leblanc was out flying the new Blériot single seater racing type No. 27 on September 23rd and was unofficially timed to attain a speed of 130 K.P.H. (81M.P.H.) This machine is the latest of the tractor screw type, but it differs from the regular Blériot practice in that the body is quite sharp in front and does not enclose the engine, which is simply attached to the front in such a manner that the motor is only supported at one end, while this does not look as strong as the regular method it certainly renders the motor very accessible. The fuselage of the machine is built up in such a way that the top and bottom longitudinals spread out and come together in such a manner as to form a very effective and neat pigeon tail.

A new monoplane has been turned out by the Clement-Bayard Co., and in the hands of Dimard, it has been giving a very good account of itself at Chateaufort. At its first trial on September 23rd it flew for over 20 minutes over Buc, St. Cyr, and Guiancourt.

Fourney's New Distance and Duration Record

The report that Geo. Fourny, the chief pilot of the Maurice Farman establishment, broke the world records for both distance and duration has been confirmed. The flight was made on September 2nd. Fourny started at 4:43 A. M. on that day at Buc on a Maurice Farman biplane and flew for 11 hours 1 minute 29 seconds without stopping. He covered a distance of 720 kilometres (447 miles). By this he becomes the holder of the "riterium" prix, a prize of $2,000 to be given to the pilot who has covered the greatest distance over a closed circuit by December 31, 1911.

A New Record for Dirigibles

The French military dirigible "Adjutant Reau" made a wonderful record on September 18-19. It started at Issy-les-Moulineaux at 5:11 P. M. on the 18th, cruised eastward to the French frontier, then returned to Issy, traveling 21 hours 20 minutes without stopping. The distance covered was 989 kilometres, making a new record for both distance and duration.

Portable "Lighthouse" for use in directing aviators in night flights. The light is supplied by an acetylene lamp and the rays are thrown upward through a series of lenses and are prevented from spreading by the use of the four blades which revolve around the lenses. The apparatus is the invention of a French officer.

Germany

The experiences which the officers of the German army gathered when they escorted the aviators in their circuit of Germany in the month of June was put to practical use during the last big manoeuvres which, in view of the critical position in which Germany found herself, was conducted with special seriousness. Two dirigible balloons and eight aeroplanes took active part. Several officers distinguished themselves by the rapidity and the accurateness of their observations, as to the position of the enemy and there is no doubt that the final decision was greatly influenced by the ascending flights of a young officer, the youngest pilot in the army. He succeeded in proving that maps which were placed by means of a trick in the hands of one party by the other were forged, and on returning he directed his aerial report in such a manner that it fell directly at the feet of the Emperor, who was able to formulate his actions accordingly. It has been shown beyond doubt, that the German officers of whose work the world knows nothing, have achieved brilliant results, and have secured for Germany a weapon of incalculable value in case of war.

From several points of view a pamphlet entitled "The Military Airship" and published by one of the fliers, Lieutenant Mackenthum, is of not a little interest. He speaks explicitly of the experience he has gleaned and concludes that the aeroplane—leaving the question be it mono or biplane to be decided later—is the messenger of enlightenment most to be feared in the future and that it will be of immeasurable value to the troops of any country.

Whether the dirigible balloon or the aeroplane is the suitable flying machine for military purposes will soon be practically tested. The Zeppelin airship which is being built by order of the military administration is nearing completion and immediate trials are to be started, to gather practical experience so as to establish which system is preferable, a question which can only be decided by Germany. In dimensions the new giant air cruiser resembles the "Schwaben," which is at present making passenger trips in Southern Germany with splendid success. The ship is about 430 ft. and its diameter is about 45 ft.; an hourly record of about fifty miles is estimated. Three Maybach motors produce the power, which is reckoned at about 150 H. P. At present the men who manipulate the aeroplane are convinced of their absolute superiority but great surprises are anticipated as the Zeppelin cruisers can, in a comparatively short time, ascend to a height of 6,500 ft., in which they can maintain themselves for hours, a feat which for aeroplanes is utterly impossible.

The Kaiser has assured the pilot-officers that the war department will ask for an increase of military funds of the Reichstag as early as possible and it is planned to enter a requisition of five million Marks ($1,250,000) for purposes of aviation to appear in the budget.

While the general postmaster of England decided that the English Post Office authorities will waive the trials with the aero-post, very successful trips for the purpose of transporting daily papers by aeroplane were in operation between Berlin and surrounding cities, and it can be regarded only as a question of time when these trials will develop into a permanent system.

Germany has the bearing of dignified quiet in the matter of its success in the field of aviation that has characterized her on other questions. But it would be well to regard that country more and more in the light of a pioneer in the mastery of the air, for there the work is not done to break records but to achieve practical results. The subject receives the most earnest theoretical and practical work and the achievements are proportionately splendid.

ARTHUR F. WIENER.

Mueller, the pilot who was injured during the German National Circuit, has recovered completely and has left the hospital for his home.

A new Scandinavian record for the distance from Aarlaus to Copenhagen has been set up by the German Wright pilot Thelen, who flew the 110 miles in 2½ hours.

An interesting feature of the annual grand Parade at Berlin on Sedan Day, September 2nd, was the arrival of an Etrich-Rumpler "Taube" monoplane, piloted by Vollmoeller, and an *Albatross* biplane, steered by Eyring. They both circled the Emperor and his staff before leaving, whilst Vollmoeller took a number of photographs from aloft. While flying from Mulhouse to Strasburg in the early morning hours of September 7th, Lieutenant Neumann and M. Lecomte of the Aviatik Company met with a terrible death about half way, as, owing to a stoppage of the motor, the aeroplane came crashing down to earth before they could carry out a vol plané, both men being killed immediately. Lieutenant Neumann was on his way to the manoeuvres of the 29th division, where he was to be entrusted with aerial scouting work. Lecomte was a member of the Aviatik teaching staff. The aeroplane was such a complete wreck that it was impossible to rescue any of its parts, barring the motor, as it was burnt up on the spot. The above is the second dual tragedy of the kind in German aviation annals, the first causing the deplorable death of the recordman Schendel and his mechanician at Johannisthal.

Two days later another fatal mishap robbed German aviation of one of its best men, Raymond Eyring, who came to grief at Stuttgart whilst testing his Albatross biplane preparatory to the Swabian Circuit. He had damaged slightly the top plane in ascending and whilst in the air it gave way unawares to him and hung down to the horror of his comrades watching, who shouted and beckoned to him to come down. In descending the machine suddenly lost its balance and tipped over, the motor striking Eyring on the skull. Although his body was one mass of fractures he did not die until a few hours later, thus one of the best German pilots vanished from the scene.

"MIII.," the Gross military airship which was carrying out scouting trips near Demmin, came to grief on September 13th. The dirigible suddenly became enveloped in smoke and crashed down to earth. The crew, seven officers, had sufficient presence of mind to jump out before the impact occurred, so there was no loss of life.

The aeroplanes that did service during the German Imperial Manoeuvres proved an invaluable assistance, as the commanding general on each side confessed that he based the majority of his operations on the communications made him by the aviators given him for scouting purposes. The Red Army had Etrich Rumpler monoplanes only, the Blue Army Albatross biplanes. The tremendous saving of time is illustrated best by the fact that Lieutenant Mackenthum when sent out to report on the Red Army, flew down its whole front in thirty-five minutes, including the return journey and the report. A cavalry scout would have needed about four hours for the same task. The Emperor thanked each aviator personally and expressed his fullest recognition of their work. The weather was most favorable throughout.

The Swabian Circuit resulted in the first two cash prizes being shared between Vollmoeller (Etrich-Rumpler monoplane) and Jeannin (Aviatik biplane). Aside from the accident during training which cost Eyring his life, nothing occurred, although Bueclines (Aviatik) dropped out owing to his machine being damaged. Jeannin took the King's Cup for the fastest time on the Ulm-Friedrichshafen stretch, 58 minutes and, as he carried a passenger, he also won the prize presented by the War Ministry. The third prize goes to Hirth (Etrich-Rumpler) and the fourth to Hoffmann (Harlan).

STELLA BLOCH.

Holland

The Dutch Government has at last begun to turn its attention to military aviation, and Lieut. Poorteen has qualified for his certificate at the Bronckere School. It is expected that he will shortly be appointed by the Government to start an aviation school in connection with the Dutch Army.

Italy

Italian royalty is taking an active interest in aviation and numerous exhibition flights have been attended by the King and Queen and other members of the Royal Family, several of whom have been taken on flights. One of the latest to take a trip in an aeroplane was Duchess D'Aosta, who flew half an hour with Ruggerone on his Henry Farman biplane.

Russia

The first lady pilot to gain her license in Russia is Princess Helene Schakowski, who recently made the necessary tests in fine style.

The Russian aviator Andriade recently beat the Russian height and duration records on his Gnôme-engined Blériot. He was in the air 2 hrs. 2 mins. and rose to a height of 1,260 metres.

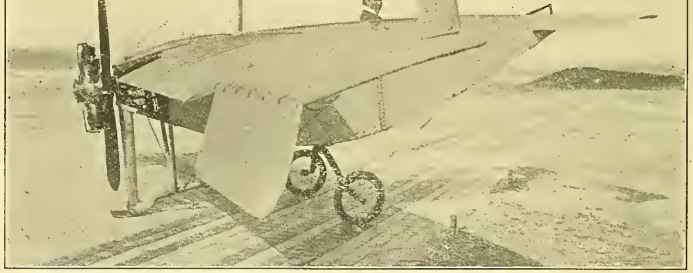
It is reported that the Russian Military authorities are taking a special interest in Military aviation and have ordered nine new aeroplanes which are to be purchased in various countries.

Switzerland

It is proposed to organize a Swiss National Flying Circuit in eight stages. The starting place will be Geneva and the other points Lausanne, Bienne, Berne, Thouve, Neuchatel, Voerdon and Geneva. The event will probably be restricted to Swiss aviators.

Renaux Wins Quentin-Bouchart Prize

The Buentin-Bouchart prize of 40,000 francs for total distance covered in a year has been awarded to Renaux, the Maurice Farman pilot. The totalization of his flying for the year amounted to 6,600 kilometres; Helen, the Nieuport flyer, was second with 5,300 kilometres.



The new front control Blériot "Canard." Note the front elevator, position of pilot and motor, the peculiar landing gear and the ailerons. Although still in the experimental stage this machine has already made several short flights.

An improved type of biplane turned out by the English Bristol Co. Note the skid arrangement running up to the front elevator, the cabin for the pilot and the single tail plane.

The Advance Toward Aerial Law

Communicated by Denys P. Myers

The American Bar Association, at its meeting in Boston August 29, accepted the following adverse report on aviation legislation made by the Committee on Jurisprudence and Law Reform:

The committee cannot recommend the adoption of the resolution. The policy of the Association is not to propose legislation unless it is on a subject of general interest, and about which there can be no reasonable doubt as to the necessity for legislation. The navigation of the air has not become so general as to permit uniform legislation, so as to fix with legal certainty rules for its government. How far the man who "goes up in a balloon" engages in interstate commerce, when he happens to be accidentally blown across an imaginary State line, your committee is not prepared at this time to decide, but it is of opinion that the aviator should not be held to any greater liability than the modern common carrier. Commerce by air has not yet attained sufficient growth on which to justify its regulation by Congress; and even if legislation were desirable, it is not deemed proper to say that while a common carrier by land or water is excused from loss caused by the act of God, that a common carrier by air should be made responsible, whether injury resulted from negligence, or from inevitable accident, or *vis major*. Unless liability springs out of some contract, or arises out of some tort, the carrier should not be mulcted in damages, whether the carrier be by land, sea or air.

The resolution offered in 1910 by Judge Simeon E. Baldwin follows:

Resolved, That no one ought to be allowed to make an ascent in the air in any form of airship, who has not passed a satisfactory examination or been otherwise tested, by some public authority, with respect to his qualifications to make such ascents with reasonable safety to himself and others; nor without having first filed in some public office a bond with surety, to answer to all persons who may suffer damage by his flight in the air, whether such injury result from his negligence, or from inevitable accident, or *vis major*.

Resolved, That each State of the United States should regulate these matters by statute, as respects flights in the air wholly within said State, and as respects police regulation of all flights over its territory.

Resolved, That Congress, under its powers as to commerce, can and should regulate by statute flights in the air between States, or between the United States and foreign lands, or our territories of the United States.

Resolved, That the following project of a bill for such statute is drawn upon suitable lines, so far as its provisions extend:

An Act

To Regulate Commerce by Airships.

Section 1. *Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, that*—

The term *airship* in this act includes every kind of vehicle or structure intended for use as a means of transporting passengers or goods, or both, in the air.

The term *aeronaut* in this act includes every one who, being in or upon any such vehicle or structure, or anything thereto attached, undertakes to direct its ascent, its course or descent in the air.

The verb to *fly* and the word *voyage*, as used in this act, include every kind of locomotion by an airship.

Sec. 2. No airship shall be flown from any point within the jurisdiction of the United States to a foreign country, or from any point within any State of the United States to any other State of the United States, or from any point in any territory of the United States to any other territory of the United States, or any State of the United States, or any foreign country, except under the conditions prescribed in the following sections:

Sec. 3. It must carry and be in charge of an aeronaut, whose competency as such is certified under the authority of the United States.

Sec. 4. It must carry a flag of the United States not less than six feet by ten in size, and display the same while over the territory of any foreign country, or it must have a copy of the flag, of not less size, painted on some part of the airship, so as to be visible to those who may be beneath it.

Sec. 5. It must have a number, in characters not less than three feet in height, painted on some part of the airship, so as to be visible to those who may be beneath it.

Sec. 6. It must be registered by this number in the office of the Collector of Internal Revenue for the district including the residence of the owner or charterer, or if such owner or charterer do not reside in any such district, then in the office of such collector for the district in which the voyage is to be begun by the ascent of the airship; and a certificate of the registry issued by said collector.

Sec. 7. The owner of the airship, or if he has let it to another for such voyage, either the owner or such charterer, shall, before the voyage is commenced, file in the office of such collector a bond to answer for all damages that may result to any person or persons, as an incident of any voyage that said airship may make or attempt to make, either from the descent of the airship, or from the fall of the airship, or any part thereof, or anything that was on board of it, or from the trailing of anything in the nature of a guide rope. Such bond must be a joint and several bond, signed by such owner or charterer and a sufficinet surety, and shall be for such amount, not less than $1,000, as the Collector of Internal Revenue for the district wherein the airship is registered may order, and such collector must also endorse the bond with his approval of the sufficiency of the surety. Such bond shall be payable to the United States of America; but any person claiming damages thereunder may bring suit upon it in any court having competent jurisdiction, whether a court of the United States or of any State or territory of the United States, or of any foreign country, within the territorial jurisdiction of which court he claims that such damages were caused; or, at the option of such plaintiff, in any such court within the territorial jurisdiction of which he can make due service of process on the bondsmen or either of them. If such a suit be terminated by a judgment for the defendant, he shall recover the costs of suit from the party bringing such suit.

Sec. 8. The airship must carry, throughout any trip, a copy of such bond and of its certificate of registry, and of the certificate of the competency of the aeronaut, which copies shall be authenticated under the hand and seal of the Collector of Internal Revenue, in whose office the orginal of each must be filed.

Sec. 9. The aeronaut for the voyage, as an incident of which any damage may be claimed, shall allow any party claiming to be so damaged to make and keep copies of any or all of the papers mentioned in Section 8.

Sec. 10. The certificate mentioned in Section 3 may be granted by the District Attorney of the United States for any judicial district, after such examination and tests as he may think fit to impose, to be conducted by himself or such persons as he may appoint or approve. It shall be signed by the clerk of the District Court of the United States in which he is attorney, and authenticated under the seal of the court.

The expense of such examination, tests, and certificate, shall be paid by the applicant for such certificate, in advance, and if a certificate be refused, the fee for the certificate shall be refunded to him.

Sec. 11. Said bond may be limited to be in force for only one year from the date of filing, or for any other term exceeding one year. If not so limited, it shall be in force during the life of the airship therein mentioned.

Sec. 12. No minor shall receive a certificate of competency.

Sec. 13. Fees under this act shall be collectible as follows:

To the district attorney.

For the examination and tests provided for by Section 10, such sum as he may demand in any instance, not exceeding $25; for granting a certificate of competency, $5.

To the clerk of the district court, for the issue of a certificate of competency under seal, $2.

To the Collector of Internal Revenue.

For filing and recording a certificate or bond, $1; for making, recording and certifying to each registry, $2; for authenticating a copy of either certificate or of the bond, $2; for approving or disapproving every bond offered for his approval, $5.

Sec. 14. Any violation of any provision of this act by the owner or charterer of any airship, or by any aeronaut, shall be a misdemeanor, and punishable by a fine not exceeding $1,000 or by imprisonment for not exceeding thirty days, or by both, at the discretion of the court.

Juridic Code of Aerial Law

The text of a part of an international code of the air adopted by the first Juridic Congress on Aerial Locomotion, organized by the International Juridic Committee on Aviation, held at Paris, at the Trocadero Palace, May 31-June 2, under the presidency of M. Millerand, is now available. The decisions of this congress are entitled to the utmost respect, being the ripe revision of projects which have passed the scrutiny of some of the greatest living jurists. The International Juridic Committee was formed late in 1909 and has been operating since 1910. About 500 of the greatest legal authorities of the world have co-operated in its work, each country represented having a national committee which passes upon projects submitted by the International Committee, which in turn studies these texts and adopts a single codification in harmony with the majority opinion of the national committees. The text accepted at Paris follows:

GENERAL PRINCIPLES OF AERIAL CIRCULATION.

Art. 1. Aerial circulation is free, excepting the rights of subjacent States to take certain measures determined in view of their own security and that of the persons and property of their inhabitants.

NATIONALITY AND REGISTRATION OF AIRCRAFT.

Art. 2. Every aircraft should have one nationality and one only.

Art. 3. The nationality of an aircraft is that of its owner.

If the aircraft belongs to a company, the nationality will be determined by that of the headquarters of the company.

In case of different nationality among the co-proprietors of the aircraft, the nationality will be that of the co-proprietors who possess two-thirds of the value of the aircraft.

Art. 4. Every aircraft will bear a distinctive mark of its nationality.

Art. 5. Every aircraft should carry aboard it a certified document (*document signalétique*) containing all forts necessary to identify it.

Art. 6. Every owner should, before putting it into circulation outside of private aerodromes, have obtained from the public authority, the inscription of this aircraft upon a register of matriculation kept by the competent authority.

Each State will regulate the registration of aircraft within the limits of its own territory.

Art. 7. Every aircraft should carry a distinctive mark indicating the place of its registration.

Art. 8. The registration lists will be published.

LANDING.

Art. 9. Aircraft may land upon unenclosed property.

Art. 10. It is forbidden, save in case of necessity, (*force majeure*) to land:

a. On fortified works and in the vicinity of these works, within a radius determined by the military authorities;

b. Within the boundaries of cities or towns (*agglomérations*), with the exception of places designated by the public authorities.

Art. 11. Every landing makes obligatory for damage done.

However, if there is a fault on the part of the victim, the author of the damage may, in proportion to this fault, be discharged in whole or in part from the reparation incumbent upon him.

JETTISON.

Art. 12. Jettison consists in the voluntary throwing overboard (*toute projection*) of objects, bodies or materials of every kind.

Art. 13. Jettison of all things of a nature to injure, whether of persons or of goods, is forbidden.

Art. 14. In any case, the damage done gives rise to reparation.

WRECKS.

Art. 15. He who finds all or part of an aircraft should make declaration thereof to the competent authority.

Art. 16. The competent authority, duly advised, will immediately take the necessary measures to secure the preservation of the wreck and the discovery of the owner.

Art. 17. The owner of the wreck may reclaim it from the authority who is in charge of it, within a year of the request, by paying the expenses of preservation. He is liable, moreover, to pay to the finder a premium of discovery of 10% calculated upon the value of the wreck on the day of restitution, deduction of expenses being made.

This code has, of course, no official standing as yet and is couched in general terms so as to fix principles. It is expected that individual nations will accept the principles and legislate in accordance with them, adding details to meet national conditions. It is proposed to continue the code in consonance with the following outline, the above text being that of the original first three chapters of Book I. The remainder of the outline accepted follows:

Chapter 4. Exterritoriality in Relation to Aerial Locomotion.

Chapter 5. Expropriation for International Public Utility.

Chapter 6. Diplomatic Treaties.

BOOK II.—PRIVATE AERIAL LAW.

Title I.—Civil.

Chapter 1. a. Property in the Airspace (by analogy with Art. 552 of the French Civil Code, 905 of the German Civil Code and 667 of the Swiss Civil Code).

b. Wrecks.

c. Servitudes.

Chapter 2. a. Rights of Citizens and their Application (by analogy with Art. 1382 of the French Civil Code).

b. Indemnities for Landing and Jettison.

Chapter 3. *Force Majeure* in Civil Matters.

Chapter 4. Terrestrial Common Law and Modifications Applicable.

Chapter 5. Domicile of the Aeronaut.

(*Continued on page 317.*)

THE QUEEN-MARTIN BIPLANE

By W. H. Phipps

Another addition to the rapidly growing list of American made machines is the new biplane built to the designs of James V. Martin, of Boston, by the Queen Aeroplane Co., of New York, who have also purchased the sole manufacturing rights of same.

GENERAL DETAILS.

The machine, although embodying many important monoplane features, is essentially a biplane of the now quite popular tractor screw type, and in this respect somewhat resembles the Breguet, Avro, and Pommier biplanes, which have met with such success abroad. At the time of writing, the Martin biplane has been fitted with a 100 H. P. Gnôme and is being tried out by Mr. Martin himself. Several successful short flights have already been made, during which a speed of over a mile a minute was attained.

It has been the aim of Mr. Martin in designing this machine to evolve not a phenomenal speed creation, but a safe and steady aeroplane that would combine the speed and grace of the monoplane with the strength and stability of the biplane.

Turning now to a description of the machine, the principal dimensions are as follows: Span, 30 feet; length over all from tip of skids to tip of rudder, 29 ft.; length of fuselage, 23 ft. 5 in.; chord of wing, 5 ft. 1 in.; gap between planes, 5 ft; motor, 50 or 100 H. P. Gnôme; propeller, 8 ft. 3 in. diameter.

MAIN PLANES.

The main planes have a total span of 30 feet and a chord of 5 ft. 1 in. They are single surfaced, built up *à la Farman*, with the ribs fitted into pockets in the covering. The two planes are spaced 5 feet apart, the uprights fitting into the special steel sockets shown in Fig. 2, and braced with heavy gauge piano wire. Special interconnected compensating ailerons are fitted at the rear extremities of the upper planes.

FUSELAGE.

The fuselage, constructed of ash in the first half and elm in the rear section, is of the box girder type, somewhat resembling the Blériot, with the exception that the front is greatly strengthened and bent upward, so as to bring the axis of the Gnôme engine more in the centre of the two planes, which are attached to the fuselage, one below and the other above. The seats for the aviator and passenger are situated behind the gasoline tanks, directly between the two main planes, in such a position as to give them an unobstructed view. Special fittings, which are shown in drawings 3 and 4, are used for joining the fuselage uprights to the longitudinals without drilling and weakening them.

CONTROL.

The control arrangement is similar in construction to the gate arrangement fitted to the Burgess "Grahame-White" biplanes. It consists of two universally jointed levers, situated one on each side of the fuselage just in front of the aviator's seat, joined by a cross rod which passes in front of the operator and the whole, so constructed as to enable the pilot to guide the machine with both hands—jointly or separately.

Pushing the cross-rod sideways, operates the special interconnected compensating ailerons and by the same movement, owing to the crossing of the tail elevator wires, the elevator flaps are slightly operated—one up—the other down, thus aiding the ailerons in righting the machine. The ailerons are connected to the control bar by a slack wire, in such a manner that in normal flight they fly straight out in the stream line of the machine, and when in operation, they automatically adjust themselves, owing to the slackness of this wire, in such a manner as to exert an equal pressure on each side of the machine, making it unnecessary to use the vertical rudder to counteract any drag effect. Fig. 5 shows one of the special pulleys round which the aileron wire passes.

Steering to the right and left is accomplished by the usual monoplane practice, namely, by a pivoted foot rest.

RUNNING GEAR.

The running gear is of the wheel and skid type, similar to the Farman. Special attention has been given to strength and safety and in furtherance of this end, the skids have been continued quite some distance forward and braced to the fuselage and also to the biplane framework. In Fig. 6 is shown one of the skid sockets.

TAIL.

The tail, which measures 11 ft. 6 in. across, is semi-circular in shape and of the non-lifting type. In normal flight it floats straight out in the stream line, much in the same way as the tail on the Nieuport, acting simply as a stabilizing damper and not as a supporting surface. This tail is supported when on the ground by a swiveling shock absorbing tail skid.

ELEVATORS.

The elevators consist of two flat semi-circular flaps measuring 4 ft. 10 in.; by 3 ft. 8 in., and are pivoted on hinges as shown in Fig. 1.

RUDDER.

The vertical rudder is of large size measuring 4 feet by 3 feet 6 inches, and is intended to facilitate steering when on the ground and at slow speed.

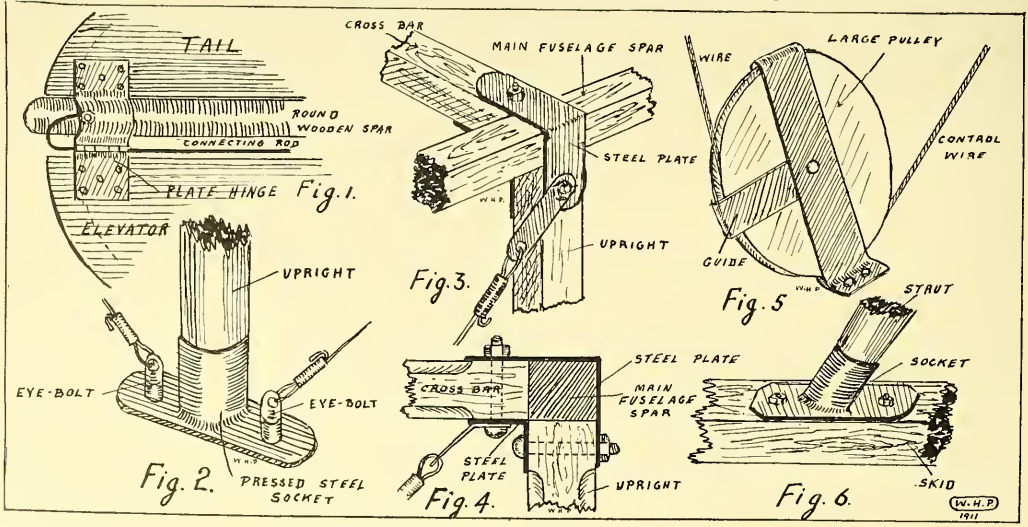
PROPULSION.

Propulsion is furnished by either a 50 or 100 H. P. Gnôme motor driving direct a tractor screw. The engine is mounted directly in the front of the fuselage and is separated from the gasoline tanks by an aluminum shield.

MISCELLANEOUS.

The biplane was designed with a view of producing a touring machine which would fly at a small angle of incidence, and upon the motor stopping, assume automatically a good gliding angle. Piano wire has been used largely for rigid bracing both throughout the biplane cellule and fuselage and every wire is fitted with a turnbuckle. The control wires are of flexible stranded wire of large diameter. The gasoline and oil tanks are extra large and hold sufficient fuel for a non-stop flight of 5 to 6 hours.

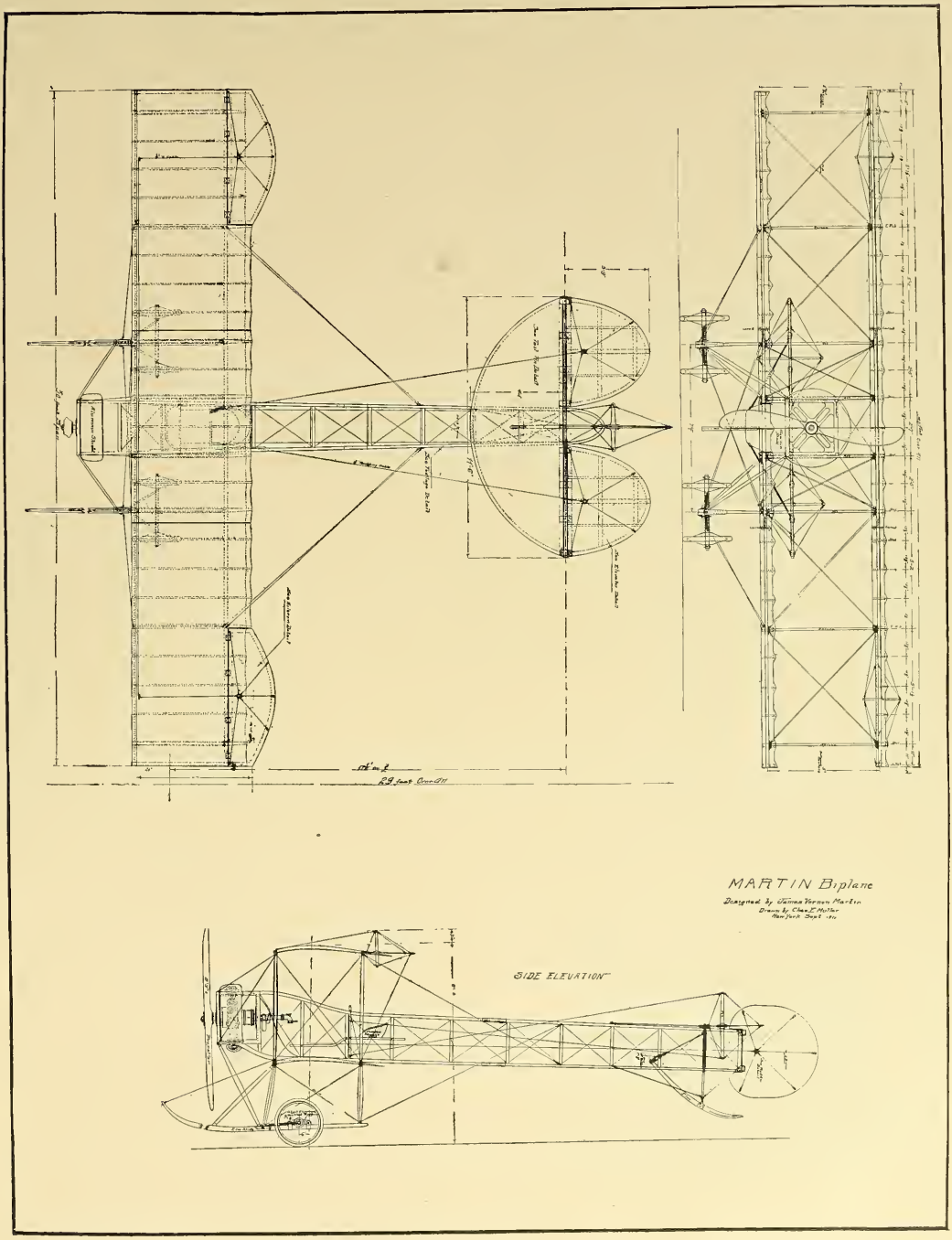
Mr. James V. Martin seated at the control of the new Queen-Martin biplane, which was constructed by the Queen Aeroplane Co. to his designs. The machine is fitted with a 100 H. P. Gnôme and carries sufficient fuel for a non-stop flight of 5 hours. Note the strong landing chassis, position of tanks, ailerons on upper surface and flat non-lifting tail.

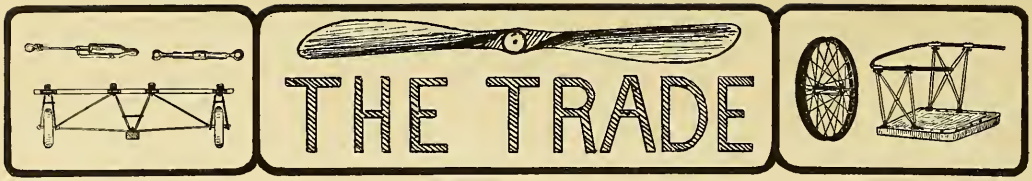


SOME CONSTRUCTION DETAILS OF THE QUEEN-MARTIN BIPLANE.

SUCCESSFUL FLYERS DESCRIBED

THE QUEEN-MARTIN BIPLANE





WE print this month an article by the Secretary of the Navy, George Von L. Meyer. This authority says he is waiting for the aeroplane to reach a suitable stage of practicability to put it in general use in the navy.

Do you get the real meaning of it all, Mr. Manufacturer? He is putting the matter up to you, and telling you what is wanted and that the navy is ready to patronize you if you can deliver the goods.

What are you going to do about it? Are you going to continue to give all your time to building flimsy racers to send on the ephemeral chase after prizes or are you going to concentrate and try to develop an aeroplane with qualities such as are required for practical use and get steady returns?

While we are at it, let us remind you that the present flimsy creation of wood, cloth and wires is not exactly what is wanted, it is too frail for every day use; nor is wanted the machine where the pilot is always in imminent danger of being burnt to death through the nearness of the gasoline tank to the motor, or being crushed to death through the motor being located right behind the pilot's seat: this involves too much danger and, as Secretary of the Navy Meyer says: "they cannot afford to lose good men." Once more, machines are not wanted if it takes the training of an acrobat or all the wit and senses of the aviator to pilot them; for the human element is too uncertain. Reliability is wanted rather than speed.

However, this is your opportunity; it is up to you to make the best of it.

Aeronautical Manufactucturs' Association

MINUTES REGULAR MEETING.

By F. D. Wood, *Secretary*.

Regular meeting of the Aeronautical Manufacturers Association, September 18th, 1911, at the Hotel Cumberland, Broadway and Fifty-fourth street, N. Y. C., called to order at 9:10 P. M. President E. L. Jones in the chair.

Minutes of last meeting read and approved.

Treasurer's report read and approved.

The President opened for discussion the question of the Association's attitude concerning the subject of Aeronautical Shows. The discussion disclosed the fact that at this time there were no proposed shows and inasmuch as it was considered impossible for the Association to attempt to run a show, the matter was laid upon the table to await further developments.

Motion made by Mr. Gibson that Mr. F. A. Sieberling, a man who has for some time been connected with the Aeronautical industry, be approached by a committee from the Association as to whether he would care to accept the position of second vice-president of the Association; seconded and carried. The President appointed Mr. Lawson, Mr. Gibson and Mr. White as members of that committee.

Mr. Jones opened a discussion concerning the advisability of a national law for the licensing and controlling of aeroplanes.

Mr. Gibson moved that Mr. Jones be appointed a committee of one to investigate and report at the next meeting as to the possibility of federal laws for the licensing and controlling of aeroplanes; seconded and carried.

Mr. Wood opened a discussion on the question of testing out the products of various manufacturers in the aeronautical industry, citing as an example the test offered by the Automobile Club of America to the manufacturers of aeroplane motors.

After some further discussion on this question a motion was made by Mr. Gibson that the Association appoint a committee to take up such matters as the testing of the materials included in the aeronautical art; that arrangements be made, with the Automobile Club of America, or such other parties who may conduct tests, to the end, that they will recognize proxies from the manufacturers held by this committee; that members of the Association be notified that said committee is prepared to represent such members of the Association in any matters of tests of their products; that printed forms for application in such tests be immediately prepared and that the Chairman be empowered to appoint such members to his committee, not being members of the Association as may be expedient; seconded by Mr. Lawson; carried.

Motion made by Mr. Maus that Mr. Gibson be made Chairman of the committee; seconded and carried.

Discussion followed as to the advisability of publishing a bulletin which would contain the reports of these tests and such other information and data as would be of interest to members and prospective members.

Motion made by Mr. Lawson that the Secretary be appointed to compile and publish a bulletin from time to time concerning the work carried on by the Association; seconded and carried.

Motion to adjoin seconded and carried. Meeting adjoined 10:50 P. M.

Respectfully submitted,

F. D. WOOD, Sec'y.

The Curtiss Aeroplane Company, of Hammondsport, N. Y., always wide awake and extremely progressive, have decided that there will be no cessation of business during the winter months, and have established a winter training course at San Diego, Ca., where the Curtiss Aviation School opens for students October 20th and will be operated under the direct supervision of Glenn H. Curtiss, assisted by Lieut. J. W. McClaskey and a large staff of competent aviators.

Among the prominent aviators trained at these grounds last year were: Lieut. T. G. Ellyson, U. S. N., Capt. Paul W. Beck, U. S. A., C. C. Witmer, Hugh Robinson, R. C. St. Henry and others.

The Curtiss training course is located on North Island in San Diego Harbor, and contains 1,000 acres of level sand without a tree or a building to interfere with flying.

There is no doubt that a great number of newcomers into the movement, will take advantage of the opportunities this school offers this winter, to become competent and perhaps famous aviators.

The Roberts Motor Company of Sandusky, Ohio, report that there are in use to-day fifty Roberts aeroplane motors and that orders are coming in rapidly and continuously. They have recently started to manufacture a six cylinder motor of 75 H. P., weighing complete with carburettor and magneto 245 pounds. So great has been the success of the Roberts aeroplane motors that the company will soon place upon the market a six cylinder of larger bore and stroke, giving 125 H. P. This they expect to have ready for delivery by the first of the year.

The president of the Roberts Motor Company is Mr. B. L. Roberts, formerly cashier of the Mississippi State Bank of Canton, Mississippi, and the vice-president is Mr. E. W. Roberts, known as an authority on the gasoline motor design and a pioneer in aviation. He was actively engaged with Sir Hiram S. Maxim as his chief assistant on his famous experiments in 1894-95.

The Chicago Aviation Meet has stimulated to some extent the western trade, according to **R. O. Rubel, Jr., & Co.**, the big western supply house of Louisville, Ky., who report during the last month the following sales of their Gray Eagle motors: Mr. T. C. Starr, Stockton, Cal.; Mr. J. C. Westerhoff, Chicago, Ill.; Frank Heitz, Ashton, O.; L. Simmons, Joplin, Mo.; Whittier Aeroplane Co., Danvers, Mass., and Russell Potter, Joplin, Mo.

Mr. Rubel, the general manager of the concern, says that there is considerable activity shown by the builders of aeroplanes in Cincinnati, Dayton, Columbus, and Lima, Ohio; Fort Wayne, Muncie, Anderson and Indianapolis, Ind., towns which he recently visited. While on the trip he sold a Darracq motor to Jack Neider, of Columbus, O., to be used on a Demoiselle monoplane.

Mr. J. L. Morris, superintendent of the factory, is making an extended southern trip in the interests of the firm. He reports that the people of the South are beginning to take a lively interest in the subject of aviation.

Mr. George Kemp, the manager of the Gray Eagle motor factory, will shortly sail for France and England, where he will spend several weeks studying European aeronautical conditions.

The Goodyear Tire and Rubber Co., of Akron, Ohio, have not only taken up the manufacture of aeroplane wheel tires and aeroplane covering, but they are now going into the extensive manufacture of balloon equipment.

The Seiberling-Vaniman balloon is the first of their experiments along this line.

While it probably would have required from three to four months to construct this balloon in Europe, the Goodyear people did the work in exactly twelve weeks.

Mr. F. J. Hemington, advertising manager, and Frederick J. Seiberling, son of the president of the Goodyear Company, are both aviation and aerostation enthusiastis.

The Gibson Propeller Company, of New York, is the development of three years of strenuous work of Hugo C. Gibson in the construction of the well-known Gibson propeller, the business of E. W. Bonson being absorbed.

The company have removed their factory to 197th street and Amsterdam avenue, where they will be near neighbors of the Queen Aeroplane Company, and also have more spacious workshops and up-to-date equipment than heretofore.

Mr. Gibson, who is the president and general manager of the concern, reports that the business has been and is steadily increasing each month and that their former premises were absolutely inadequate and that with the facilities at his command he intends to take advantage of the demands of the ever growing aeronautical industry.

The American Nieuport Aeroplane Company has just been organized as a New York corporation for the purpose of selling the Nieuport monoplanes in this country.

The president of the company is Allan A. Ryan, and the directors are: Mr. Ryan, I. V. McGlone, Kenneth R. Howard, Maitland F. Greggs and John Nordhouse. The new company owns all the American rights of the Nieuport monoplane, so that any machines wanted of that make by purchasers in the United States must be secured through the American Nieuport Aeroplane Company, who have established their offices at 32 Liberty street, New York City.

The capital stock of the new company is $50,000.

The M. L. Oberdorfer Brass Company, of Syracuse, N. Y., are meeting with considerable success in the aeronautical line through the wide distribution of their aluminum circulating pumps for aeroplanes. This is another improved accessory which goes to make the life of an aeroplane driver easier and more successful.

The Queen Aeroplane Company, of New York, have decided to go into the aeronautical business on a much larger scale than they had ever attempted before. They have not only increased to a considerable extent their working forces at their factory at Fort George, but have also decided to employ some of the very best aviators in this country and abroad to demonstrate their machines.

Mr. Willis McCornick, president of the Aeronautical Society, is at the head of the Queen Company, and he believes that the time is now ripe to lay the foundation of a great manufacturing plant equipped to turn out flying machines of various types in large quantities.

Mr. Spencer Heath, the head of the **American Propeller Company,** of Washington, D. C., says that practically all the technical features of the PARAGON propellers are subject of claims in United States patents, either already granted and allowed, or about to be issued.

The X Company, of Detroit, Michigan, have offered $25.00 in cash to the person suggesting a new name for a propeller which they have designed. The money will be paid November 15th, 1911, to the one first suggesting the name that is chosen.

Inquiries regarding the matter can be addressed to "Dept. B.," The X Company, Detroit, Michigan.

Captain Hugh L. Willoughby has met with such good success with his hydro-aeroplane Pelican that he has decided to establish a factory at Sewalls Point, Florida, this winter and build duplicates of the Pelican.

Mr. Willoughby predicts a big spring trade for the hydro-aeroplane and intends to have a quantity of them in stock to meet the demand. Mr. Willoughby claims that his hydro-aeroplane is safer to drive than an automobile or motor-boat and that the pleasure is ten times as great. He knows of no good reason why people fond of sports should not tour the country in hydro-aeroplanes, following the same old water routes frequented by the motor-boat and stop for gasoline at the same old stations. An extra passenger or one hundred pounds of luggage can be carried along.

The International Aeronautic Construction Company, of Hollis, Long Island, are making a new addition to their present factory by putting up an extension that will give them an additional 25,000 square feet of floor space, which will be equipped with the latest improved aeroplane machinery.

The American Aeroplane Supply House, of Hempstead, Long Island, have received an order from the Republica Dominicana, through their State engineer, Z. H. Garcia, for a "Poliplane Type" aeroplane. It is expected the machine will be finished within a month.

Dr. Henry W. Walden has organized **The Walden Company,** of Mineola, Long Island, for the purpose of building and marketing the Walden monoplane, which is no doubt the first successful monoplane designed, constructed and flown in America.

The Walden Company has already two machines of the latest type completed and the third under way. Dr. Walden has also gone into the exhibition business and is making flights in various parts of the United States.

The Hall-Scott Motor Car Company, of San Francisco, reports that the coming of winter means an increase in their business instead of a decrease and that they are not only now working their forces overtime, but have had to make an addition thereto of over ten men during the past few weeks. Their payroll now showing that they have over forty men at work in their shops. These conditions are undoubtedly due to three facts:

First—That the Pacific coast is recognized as an ideal flying ground all through the winter season and professional flyers flock to that section during the cold months.

Second—That interest in flying has been awakened to a large extent in the Southern States, where flying all the year round can be done; and

Third—That orders are pouring in upon the manufacturers of aeroplanes throughout the United States for early spring delivery, which require the manufacturers to fill these orders during the winter months.

The Hall Scott Company have added a number of improvements to their shop equipment lately, so that they feel pretty well satisfied that they will be able to keep pace with their increasing business.

The Maximotor Makers, of Detroit, Michigan, have arranged to put in two 50-75 *maximotors* in an original type aeroplane being constructed by Charles H. Burleigh, of South Berwick, Maine.

The De Berseques Aeroplane Company, of Buffalo, are also installing a 6-cylinder *maximotor* in a new type of an aeroplane with flexible tip automatic stability device, which this company has constructed.

Also L. E. Dare, the veteran aeronautical lecturer, who has exhibited in stores and fairs from coast to coast, is installing a 40-50 H. P. *maximotor* in his "Staggered Biplane" now in course of construction.

The Wilson Company has been formed in Rochester, New York, for the purpose of building and exhibiting aeroplanes. The men who formed the company are: Fred Wilson, Frank Smite, John O'Day and Ray Chism.

H. J. Leighton, of Syracuse, New York, is beginning to attract considerable attention among aeroplane constructors with a new 40-50 H. P. motor, which he has lately produced.

Charles W. Cook, of New York, who has built and flown several machines, has increased his business and is now turning out Curtiss type machines of the latest pattern.

The Burgess Company and Curtis, of Marblehead, Mass., announce that Mr. F. H. Russell until recently the efficient manager of the Wright Co., is now associated with them, and will henceforth assume the management of the Marblehead establishment.

During the recent Nassau Boulevard Meet, twenty-eight prizes were won on Burgess biplanes. The Burgess Company is now busy completing hydro-aeroplanes to be mounted on a regular Model F, the power to fly this combination being furnished by a 50 H. P. Indian rotary motor.

The E. J. Willis Company, of New York, report continued success in the sales and distribution of aeronautical supplies throughout the United States. They are of the opinion that there will be much activity among the inventors and builders of flying machines during the winter. In fact through their splendid system of following up the trade they are in a position to gauge with considerable accuracy its development and their records show that new builders and manufacturers are constantly entering the movement in all sections of the country.

Charles Lateiner, of Brooklyn, N. Y., one of the largest manufacturers of aeroplane models in this country, reports an exceptionally good business during the past six months.

One of the models which he turns out has remained in the air for 48 seconds, while another has flown a distance of 2,000 feet.

Mr. Lateiner supplies the trade all over the United States with model propellers as well as model machines.

The new six cylinder **Kirkham Motor,** manufactured by Charles B. Kirkham, of Savona, N. Y., apparently is meeting with continued and increasing success.

The sales for the Kirkham motor for the past month have been to Pedley & Wilkin, Chicago; D. Eshoo, Buffalo; C. O. Prowse, St. Louis, and A. B. Rohert, Seattle.

Pedley & Wilkin have taken over the agency for the Kirkham motors in Chicago and vicinity.

(*Continued from page* 313.)

Title II.—Commercial.

Chapter 1. Patents and Additions Thereto.
Chapter 2. International Commercial Contracts.
Chapter 3. International Commerce Companies.
Chapter 4. International Pledges.
Chapter 5. International Rental Contracts.
Chapter 6. Seizure and Sale of Aircraft Outside of the Home Ports.
Chapter 7. International Insurance.

BOOK III.—ADMINISTRATIVE AERIAL LAW.

Chapter 1. Highway and Aerial Roads.
Chapter 2. a. Administrative Regulation of Aerial Voyages.
b. Police for Aerial Locomotion above and within the Bounds of Cities and Population Centers.
c. Police for Aerial Locomotion above Terrestrial, Maritime and Feuvial Ways.
Chapter 3. Administrative Regulation of Aerodrome and Aerial Courses.
Chapter 4. Guaranty of Competency of Aeronauts.

BOOK IV.—PENAL AERIAL LAW.

Title I.—Crimes and Misdemeanors Against the Safety of States.
Title II.—Crimes and Misdemeanors Against Individuals.
Chapter 1. a. Abuse of Authority.
b. Hindrances to the Free Exercise of Aerial Locomotion.
c. Attempts Against the Safety of Aeronauts or Pilots and their Machines.
Chapter 3. Damage to Monuments.
Chapter 3. a. Gross Negligence.
b. Involuntary Assaults and Homicides.
c. Disregard of Regulations.
Chapter 4. *Force Majeure* in Penal Matters.

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No. 1, Field Glass, black morocco, high top, 12 lenses, very powerful, objective field 4 deg., 70 ft. field at 1,000 ft. length, closed 5¾ in. Weight 27 oz. Sole leather case with shoulder strap. Price $20.00 and express charges.

No. 2, Field or Marine Glass, black morocco, high top, grand power, the best glass made, objective field 25 deg., 44 ft. field at 1,000 ft.; length closed 7¼ in., weight 34 oz. Sole leather case with shoulder strap. Price $22.50 and express charges. Terms $1.00 with order, balance C. O. D. with the privilege of examining and trying out. Address Silas J. Conyne, 3508 McLean Ave., Chicago, Ill.

MOTORS—2 and 4-cycle aeronautic revolving motors, weight from 2 to 4 lbs. per H. P. Whitehead Motor Works, Bridgeport, Conn. R. F. D. No. 2.

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FOR SALE—Three new 16,000 foot barographs. Box 747, AIRCRAFT.

AEROPLANE ENTHUSIASTS—Send for set No. 1A containing six perfect photographs of prominent aviators, aeroplanes, flights, accidents, etc., at close quarters, with interesting description. 25c. International Photo Specialty Co., Revere, Mass.

FOR SALE—Model Aeroplanes, Nieuport, Blériot, Antoinette or Curtiss; exact reproduction of large machines; 2 ft.; weight 1 ounce. Price $3.00, Curtiss $5.00; knockdown, half price. K. A. Pouch, 83 Tow Terrace, New Brighton, New York.

WOULD like to sell my patent for a dirigible airship, latest construction, or would like a capitalist to build a small or a large airship. The airship consists of 7 aeroplanes and 12 balloons. You can cross the ocean to France or Germany. The aeronaut can land on the water and can also fly against the strongest wind. Model to be seen at G. Scheel, 418 East 9th St., New York City.

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DO YOU wish an extremely light weight young man to assist you in aeronautical work? Great enthusiast. Address W. H. Morton, 358 Laurel St., Hartford, Conn.

YOUNG MAN, twenty-eight years old, weighing 130 lbs., and a practical mechanic who has had one year with Curtiss, wishes opportunity to drive plane. Address "Enthusiast," care of Aircraft.

A YOUNG MAN, nearly 18, desires position as an aviator's assistant, with prospects of learning to fly. Address: Louis Fenouillet, 132 West 47th St., New York City.

WANTED—Position in factory or as chief aviator's assistant, by expert aeroplane designer and mechanic with two years' experience. Have built three machines and made many short flights in two of them. Best of references; age 24. Address, R. M. Kinderman, 115 Clay St., Morgantown, W. Va.

YOUNG MAN would like to get position as helper to good aviator. Will go any place in the country. Great enthusiast that means business. Will work for expenses. My one ambition is aviation. Address H. G. care AIRCRAFT.

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BY MACHINIST—At present employed as expert on gasoline engines; have built two large successful monoplanes; own U. S. Patent No. 964,828, have been experimenting with aeroplanes as far back as 1901, know construction of all present type machines, have been flying own make machine over 25 times—would like to meet party with capital to finance building of one or more machines for exhibition and manufacturing purposes, willing to join established aeronautical company or engine manufacturing concern. Address Box 748, AIRCRAFT.

MADDEN FLYER, style improved helicopter, rises straight from the ground direct lift, automatic balance, thoroughly practical, no visionary scheme; machine of the future. American patents on royalty, foreign patents. For sale very cheap. Correspondence solicited, co-operation desired. E. L. Madden, Cherokee, Okla.

STOP! LOOK! exceptional opportunity offered to a man with two thousand dollars to invest as partner in an aeronautical proposition. Models have proven automatic balancing, speedy, light, and smallest monoplane; looks like a bird. Success assured. Don't write unless you mean business. Address Daniel Stephen June, Suffern, New York.

WANTED—To meet with some one interested in aeronautics who will help me with funds to build a NON-COLLAPSIBLE FLYING MACHINE. Nothing like it on the market. ABSOLUTELY SAFE. No engines to get out of order or explode. A fortune in it for those interested. Write M. W. W., 501-502 Besse Bld., Besse Place, Springfield, Mass.

GOOD INVESTMENT—I have a good novelty pertaining to aviation. Money wanted to patent it. R. M. Madrian, 66 Sumner Ave., Brooklyn, N. Y.

WANTED—Second hand aeromotor, 30 H. P. or up. Must be in good condition and cheap. Address Wesley N. Ensign, Whitestone, N. Y.

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210 LBS MIN. STATIONARY THRUST
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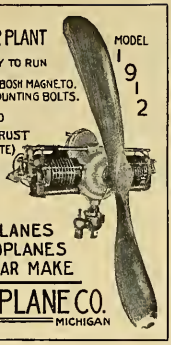
MODEL 1912



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THE Queen Biplane is the latest and greatest of all biplanes constructed up to the present time in any part of the world. This wonderful machine was designed by James V. Martin and built at our factory at Fort George. In its first tests it has shown remarkable stability, weight carrying power and speed. Full particulars will be given to intending purchasers upon application.

The Queen Aeroplanes have flown at the Chicago International Meet, the Boston Harvard Aviation Meet, Nassau Boulevard Aviation Meet and many lesser meets and exhibitions in various parts of the United States.

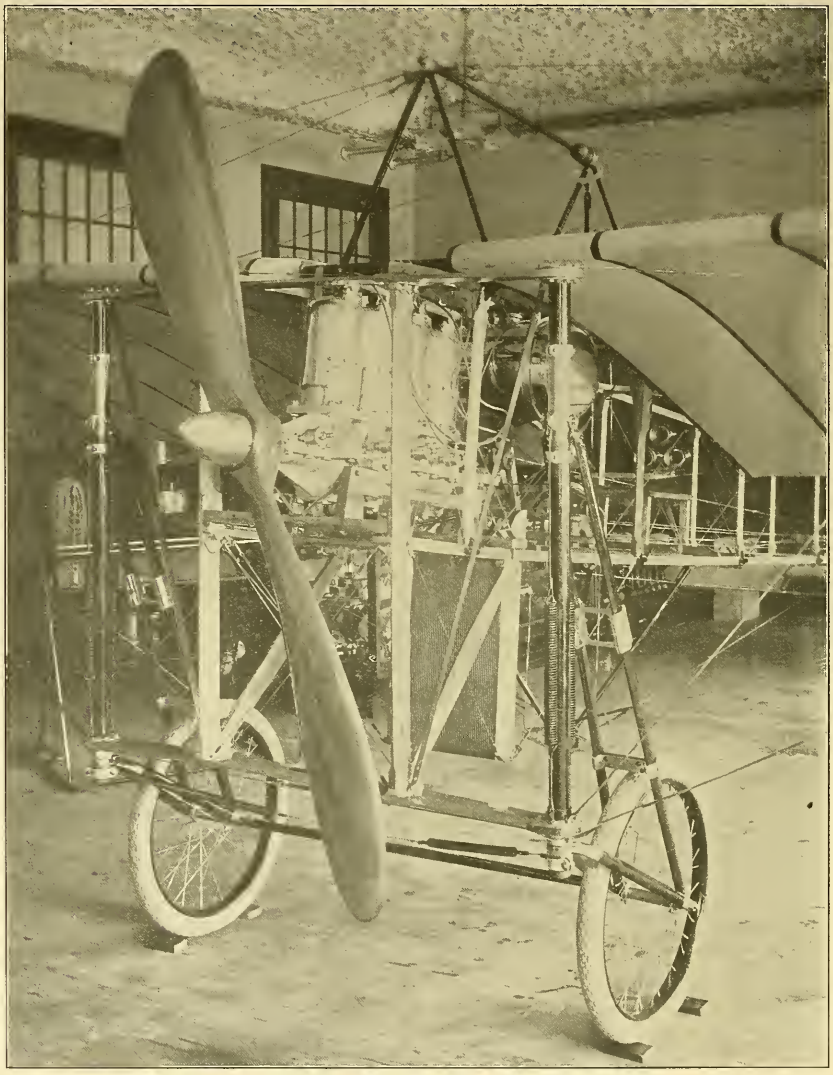
The Queen Aeroplane Company has an Aviation School on Long Island for the instruction of purchasers or others, and the ability and skill to gain an aviator's pilot license from the Aero Club of America is guaranteed to pupils.

EXHIBITION FLIGHTS ARRANGED FOR

TERMS UPON APPLICATION

JUST THE POWER FOR A MONOPLANE

The Roberts Motor



The Roberts Model 4X in the Brooks-Bleriot

The Roberts Motor Co., Sandusky, Ohio. Saginaw, Mich., Sept., 22d, 1911.

Gentlemen:—In connection with the use of your motor in our monoplane; wish to say that we are making daily flights with the same, and apparently have all the necessary power to handle the machine which, with the aviator, gasoline and water weighs considerably over 800 pounds.

BROOKS AEROPLANE CO.,
E. R. Armstrong.

WRITE FOR COMPLETE CATALOG AND PRICES TODAY TO

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1460 Columbus Avenue
SANDUSKY, OHIO

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AIRCRAFT

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CHARLES TERRES WEYMANN, THE AMERICAN, WINNER OF THE FRENCH MILITARY COMPETITION, FLYING THE NIEUPORT MACHINE DURING ONE OF THE TRIALS

DECLARATION OF INDEPENDENCE

When in the course of human events it becomes necessary for a manufacturing concern to initiate a new selling method it is desirable in introducing same, the reasons are given which have lead us to the course taken.

When in the early 1910th, the organizers of the undersigned started to produce an aeronautical engine at a comparative low price, they acted in good faith of serving the public interested in aeronautics, but with modest experience and more or less humble manufacturing facilities, they found themselves soon up against a proposition of thousands of difficulties nd carefully considering the facts, issued an honest but very limited guarantee on their product. They knew that no master ever was born and that besides the technical difficulties they had to fight against a world of prejudice. It was already then a well-known fact that previously a number of French engineers had unsuccessfully experimented on air cooled engines, that the four-cylinder air cooled type of one of the foremost domestic aeronautical engineers was a flat failure and that a number of automobile firms had discarded the system as an unsolvable problem. The hearty reception the little engine found was therefore never dreamed of, and in a short time the limited 1910 output was disposed of. Among the early callers was the Nieuport Company of France, who sent their order through their European representative, Mr. Henry Ducassee, and it was with satisfaction from a scientific standpoint that we noticed their recent record-breaking success with their own two-cylinder air cooled type. The great demand made the issue of a new series necessary five months after the first engine was shipped, but it was not until we had incorporated certain necessary improvements. The result—the 1911 model—was exhibited for the first time at the Philadelphia Aero Show, November, 1910. With increased factory facilities this model was manufactured in an up-to-date method up to November 1, 1911, and sold throughout the world under a broadened guarantee as to power and thrust. This fact would not be worth mentioning but for establishing that we were the originator of a guarantee which since has been adopted by every standard manufacturer—we always lead. Two years' manufacturing and testing experience on hundreds of engines are of educational value to the builders, and when very recently it became necessary again to make up a new series of engines we had gained an experience in air cooling systems unsurpassed by any living individual or firm. Hundreds of testing records were carefully studied, thousands of dollars added in improving the already up-to-date interchangeable manufacturing methods, new designs were laid out, and as a result we marketed and advertised

MODEL 1912

the last word in aerial power plants, the acme of perfection.

In considering this new model, remember that it is neither the product of the green table nor that of the drawing board; nor can a single man be proud to be its creator. It took more than three years, more than thirty thousand dollars and more than a hundred mechanics to develop it. It is the only successful air cooled engine up to date in the world, and it will be it for a good many years. The reason for it: We have forgotten what others have to learn about air cooling; we believe in air cooling and herewith openly pronounce its predominance within the next two years. Do not be alarmed if you see air cooled engines appear on and disappear from the market, and remember that owing to the lack of scientific data the real air cooled engine can never be the product of a design, but only of experience. Therefore, be discriminating in your choice and call on the "Pioneers" if you call at all. Just as we had the mind to introduce the air cooled engine in the United States, and the heart to believe in it and pronounce its ultimate superiority, so we have the hand to transform our ideas into practice and the capital to back us. It was in view of a record output and sale that we reduced the price from $400.00 to $300.00, and in doing so have added voluntarily another service to the public interested in aeronautics. With the decrease in price we increased the power and reliability and broadened the guarantee so as to cover the flying ability of our power plant. Having thus proved our fullest confidence in the new model all we ask for is your patronage, and we hope to obtain same despite the agitation of one of our would-be competitors is demonstrating. This joke in telling you that our engine cannot fly for lack of power, and rather than to wrangle in the courts over a libel suit and throwing our good money to the lawyers, we deal the hardest blow to this inferior liar **in declaring ourselves independent from any former customs recognized by the trade and open an account with any prospective purchaser inside of the United States.** We trust you as we trust our product, and are prepared to show and demonstrate our goods before accepting the money.

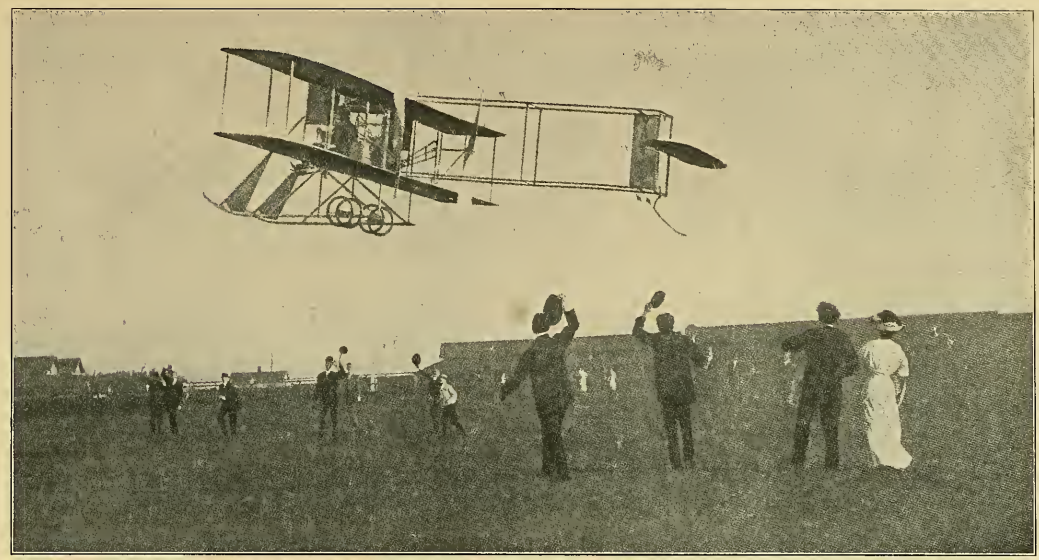
We can demonstrate to you Model 1912 delivering 210 to 260 pounds minimum thrust at 25 to 30 brake horse power at 1,000 to 1,200 R. P. M. We can show it to you turning a seven-foot propeller at the above speed, running smoothly hour after hour less any undue vibration. It is the most perfect balanced type known, and it has less parts than any other aeronautical engine, consequently it is less apt to get out of order, and 158 pounds covers the weight, including magneto, propeller and carburetor. In considering the weight, remember that it covers the outfit ready to run, as we do not need radiator, cooling water or pipes. The weight question is one of our most vital achievements. One does not need to have one ounce of brains to design and build a high price aero power plant, but it is a most difficult task to produce a light weight engine for little money, and for most designers it remains a book closed with seven seals. We have solved this problem with the aid of interchangeable mass production and the purchase of raw material in enormous quantities. Remember that in offering you this power plant for three hundred dollars complete we are not doing a charity act, but are in it for the profit; but this profit is so small per outfit that we have to sell more than a thousand per year to amortize on the capital invested. It is up to you to take advantage of this mass production. All we ask for is not to believe the competitive bogy-men, but to give us a fair chance to demonstrate our 1912 product before buying elsewhere.

Recently we closed a demonstration tour throughout the East, having given demonstrations in Boston, New York, Philadelphia, Baltimore and Washington, D. C., with one and the same outfit and very shortly we will go South and West. Let us hear from you at once, so that we may manage to have you witness the demonstrations.

DETROIT AEROPLANE COMPANY

"THE PIONEERS OF AIRCOOLING"

Detroit, Mich., December first, 1911



Calbraith P. Rodgers starting in a Wright biplane in an attempt to win the Hearst prize for the trans-continental flight. Although Rodgers failed to win the $50,000 offered, he succeeded, after several mishaps, in flying from the Atlantic Ocean to the Pacific Ocean.

CONTENTS—DECEMBER, 1911

AIRCRAFT

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THE WAR AEROPLANE

By Hudson Maxim

THE problems which have been solved so successfully in aviation discover to us new problems yet to be surmounted, some of them difficult ones.

The most important improvement in the aeroplane that awaits inventive genius is one which shall secure greater stability. Something in the nature of automatic equilibration is much wanted. At the present time too much depends upon the skill and daring of the aviator—skill beyond the power of accomplishment of the many, and daring beyond the possession of all but the few.

Again, there is the very important factor of endurance which the present form of flying machine taxes severely during a long-sustained flight. Few men, had they the skill; few men, had they the daring, possess the requisite endurance to accomplish what Rodgers has accomplished in his marvellous flight across the American continent from ocean to ocean.

Man is and always has been by nature a warring animal. The constantly increasing demand for improved weapons of warfare and improved war enginery has been the greatest single stimulus to inventive genius. The necessity of defence of country, home, and loved ones, on the one hand, and the coveted rewards of conquest on the other, have been very fruitful of invention.

Heretofore, all war enginery and all weapons have been devised for battling on the two-dimensional plane of the earth's surface. Now, that aviation takes warfare into the third dimension, the problem is greatly complicated and weapons and tactics must be altered accordingly.

Enough has already been done in aeronautics to justify the prediction that the flying machine is destined to exert a revolutionary influence upon the conduct of future war campaigns. Already, in Tripoli, the aeroplane has proven itself of inestimable value and fully justifies expectations.

Even though no further improvements were to be made to secure greater stability in flight, even though no improvements were to be made in means to secure more rapid or longer sustained flight, or the carrying of greater weights, the aeroplane would still be a revolutionary factor in warfare.

Danger and difficulty form no barriers to the brave. There are, broadly, three kinds of aeroplanes, which will be required in future warfare: First, the naval aeroplane, if it may be so termed, carrying pontoons enabling it to alight upon and to arise from the water; while in land warfare, there will be required the smaller, quick-winged flyer, capable of travelling at very high speed with a single aviator, for purposes of reconnaissance and the carrying of messages. Clouds of these will be needed to serve as videttes or scouts ahead of troop fleets of aeroplanes, to give quick warning of a discovered enemy; and there will be the larger machine capable of carrying several passengers with arms and equipment, either as scouts or raiders.

There is one very important consideration which has not, I believe, been given the prominence it deserves, and it is this: That artillery is mainly useful for the conquest or defence of positions on the two-dimensional plane of the earth's surface, whereas, the flying machine which can fly over all positions at heights beyond practical cannon reach, will be able to transport armed combatants over national frontiers to attack unprotected inland country.

In order to protect the whole country from aerial attacks by means of artillery, it will be necessary to plant batteries or artillery within range of one another over all the land. Even then the artillery will be largely useless owing to the wide dispersion of both guns and gunners.

Battles are always won by concentration of force upon a given point of attack.

A few, well-armed, aerial raiders dropping down from the sky upon inland country will be able to work wide destruction before a sufficient land force can be concentrated to resist them successfully. Then they will easily take wing to alight elsewhere to repeat their devastation.

Consequently, aeroplane must be met and fought with aeroplane. We must have our aerial navies just as we now have our navies on the sea. We must have our aerial troop ships, aeroplanes made large and staunch carrying half a dozen men each with arms and equipment. Twenty thousand of these could be quickly built at a mere nominal expense as compared with the cost of ocean warships, capable of carrying an equal number of men, and the only possible way to resist such an invading fleet would be to oppose it with another aerial fleet of equal magnitude and strength.

We must have our swift flying cruisers scouting the heavens, our aeroplane destroyers and our aerial transports.

Suppose that one of the great world powers should secretly build a fleet of twenty thousand aeroplanes, drill, equip and train an army of a hundred thousand aerial fighters, and that such a fleet should effect a landing anywhere upon our coast line and take flight inland, how should we be able successfully to resist such an invasion, taking us in the rear of all our fortified positions? Suppose we were to rush an army to the point of attack, by the time the army reached its destination the invaders would be working devastation in another place hundreds of miles away.

This is a subject for very serious consideration for our Congress and every patriotic citizen in the country.

When we witness frequent flights back and forth across the English Channel, when we witness the whole European sky patrolled with aeroplanes as it is to-day, when we witness a continuous flight of four thousand miles across the American continent by Rodgers, we must realize the truth that aviation has come in earnest, and that it is no longer to be called the dream of fevered imagination. The aeroplane is no longer to

be looked upon as the foolish fangle of the crank inventor. It has come, and come as a great war potentiality, which must be recognized.

Such, then, I hold to be the coming fighting aeroplanes of land and sea warfare.

THE DUTY OF OUR CONGRESS.

Our army and navy ordnance officers are very progressive, and they have readily grasped the significance of aviation as a war potentiality. Although they may not, many of them, fully grasp its importance, nevertheless, their recommendations for Congressional appropriations to keep this country abreast of the times in war are always far in advance of Congressional acquiescence.

Congress should immediately appropriate sufficient money to enable the United States Army to construct and build at least a thousand aeroplanes to be devoted to the training of officers and men in military aeronautics. This would insure the availability of an efficient corps of officers and men as a nucleus of the enormously large operations which would follow the breaking out of a war between the United States and any of the great powers.

Even should these aeroplanes cost in the aggregate half as much as a modern dreadnought they could be well afforded. But they would not cost the government anything like that sum for such a number. They would not cost a quarter as much as a dreadnought, even though they should be made to meet the most exacting requirements.

Aerial war games by such a corps of military aviators would do more than anything else further to develop the aeroplane to meet military requirements, while the lesson taught to the people at large about the enormous possibilities of aerial warfare would arouse the whole country and make it alive to our needs for an adequate aeronautical equipment to meet the exigencies which are sure to arise in the event of war.

The French Military Aeroplane Competition and Description of Machines Entered

By W. H. Phipps

That the French Government made no mistake in fostering and encouraging the art of military aviation is a proven fact. The recent success attained by the Italian military aeroplanes in the war in Tripoli has removed once and for all the doubts which have existed in the minds of many, and has firmly established the value of the aeroplane as a most important and necessary military adjunct.

In view of these facts, it will readily be seen that the French military aeroplane trials just completed at Rheims assume an added significance, and for this reason we feel confident that the following detailed description of the trials and machines will not be untimely.

CONDITIONS OF THE COMPETITION.

At the suggestion of General Roques, Inspector-General of Military Aeronautics, it was decided to hold a military aeroplane competition, with the end in view of testing the various makes of aeroplanes and selecting those most suitable for military use. A sum of one million one hundred thousand francs ($220,000) was given by the French Government for prizes and the purchase of aeroplanes in connection with the competition, the winning machine to be purchased by the Government for the sum of one hundred thousand francs ($20,000), and the constructor to receive an order for ten similar machines for the sum of forty thousand francs ($8,000) each, this price being subject to an additional bonus of five hundred francs ($100) for every kilometre that the average speed during the final run of 300 kilometres exceeds 60 kilometres per hour, up to a maximum limit of 80 kilometres per hour.

The constructor whose machine is placed second to receive an order for six machines at the price of forty thousand francs ($8,000), is subject to the same speed bonus, while the builder of the machine securing third place is to receive an order for four machines on the same terms. In the event of only one machine satisfying the conditions, the builder is to receive the price of 100,000 francs and also the full order for twenty aeroplanes. It was necessary that the machines be entirely constructed in France, but the builders did not necessarily need to be French subjects.

The rules, however, stated that each machine was to be fitted with three seats, one for the pilot, another for the mechanician and the third for the observer. The machines also had to be capable of carrying a useful load of 300 kilograms, which does not include the weight of fuel, oil and water. The minimum average speed of 60 kilometres an hour had to be maintained for a distance of 300 kilometers, and the machines had to be capable of landing and restarting on plowed land, prairies, stubble fields or meadow land. The machines had also to be constructed in such a manner as to be capable of easy transit, either by road or railway, without being taken entirely to pieces.

The elimination trials consisted of six separate tests; in the first three the machines were required to start fully loaded and alight on plowed land at a fixed point 50 kilometers from the start. Here the machines had to demonstrate their ability to start again. Each time the machines had to be demonstrated and transported back to the starting point, either by road or rail.

In the fourth test the machines, fully loaded, were timed over the 50 kilometres to a certain speed condition; the course being an out and home one, the machines being required to land at the point from which they started.

The last two tests were for altitude; the machines being required to attain a height of 500 meters within fifteen minutes. In the final tests the selected machines are drawn up and started at five-minute intervals, with their useful load of 300 kilograms, and required to complete their journey of 300 kilometers maintaining a speed of at least 60 kilometres an hour.

DESCRIPTION OF MACHINES.

Antoinette.

The military Antoinette monoplane, specially built for these trials, is perhaps one of the most novel and interesting machines brought out up to the present date.

The general feature of the design of this machine has been to cut down head resistance. Although, in general plan, it resembles the usual Antoinette models, it differs essentially from these in that the wings are made tremendously thick and that there are no stay wires bracing the wings to the fuselage.

Passengers, motor and controls are all enclosed in the forward part of the fuselage, which at this part is quadrangular, but converges towards the rear, giving the frame the shape of a boat; the whole being completely closed in. The forward section of the fuselage is so constructed that the motor is always under the hand of the mechanician, who sits directly in front of the pilot. The mechanician is thus able at all times to watch and adjust the motor while in flight. To each side of the forward part of the fuselage are attached the two enormous wings. The under surface of each wing is very flat, while the top side has a considerable curve.

It was found necessary, owing to the absence of external bracing, to make the interior of the wings very strong, and in furtherance of this end the interior of the wings is strengthened by an elaborate system of biplane trussing, thus each wing is constructed with uprights and cross-braces similar to the manner in which the ordinary biplane cellule is assembled.

The longitudinal stability is controlled by two elevator flaps at the rear of the tail.

The landing chassis consists of two wheels, each wheel completely enveloped in a frame work of wood and cloth, which aids in cutting down head resistance. The bottom parts of this framework around the wheels also act as skids in the event of hard landings.

Blériot Monoplanes.

The most noticeable feature of the Blériot machines entered is the arrangement for the passengers, who sit one behind the other, with the pilot in front.

Another feature is the attachment of three separate wheels to each shock absorber in triplicate. This gives a total of six wheels in place of the usual two. It will also be noticed from the accompanying photographs that on this machine Blériot has reverted to the use of the lifting tail and elevators.

As a type these machines differed but little from the early Blériots and showed few improvements.

Paulhan Triplane.

The machine entered by Louis Paulhan resembles in many respects his earlier biplane, which was shown at the last Paris Salon, with the exception that in this case a third plane of the same size as the others had been attached without materially altering the design of the rest of the machine.

It was evidently Paulhan's idea in adding this third plane to simply increase the carrying surface without the necessity of redesigning and building a very broad machine.

The main cellule is formed of three superposed planes in the same vertical line, which are braced with steel tubes and the usual truss wires. In front of this cellule is the front elevator and in the rear the tail plane, which is hinged and connected to the front rudder. These two rudders are simply supported by four wooden stays and are held and braced in position by wires. At each side of the tail is mounted two vertical rudders.

The landing chassis consists of two long skids doubly braced and fitted with six wheels, two at the nose of the skids and four Farman type wheels under the central part of the body.

The supporting surface is covered on the under side only and treated with a special varnish. The ribs of the planes fit into pockets in the covering and are so constructed as to be capable of being detached from the main spars and the whole covering, ribs and all, rolled up.

The rudders and the tail are constructed in a like manner, as may be noticed from accompanying photographs. The ailerons, six in all, are attached to the end of the planes.

A neat cabin, made entirely of aluminum, houses the passengers and protects them from the wind. The apparatus is constructed almost entirely of steel tubing, and the whole can be dismantled in very quick time.

A 75 H. P. Renault motor, placed directly behind the cabin and a little above the bottom plane, furnishes the motive power.

The Nieuport Monoplane.

Winner of the Competition

In general design, the military Nieuport monoplane differs but little from the Nieuport machine which was described in the August number of "Aircraft." As usual, the fuselage is entirely covered in with cloth. The two trapezoidal wings attach to the front of this fuselage, while the semicircular tail, tail elevators and rudder are carried in the rear. The motor used was a 100 H. P. Gnome and the propeller a four-bladed one. This machine, piloted by Weymann, was one of the first to successfully pass the elimination tests.

The Voisin "Canards."

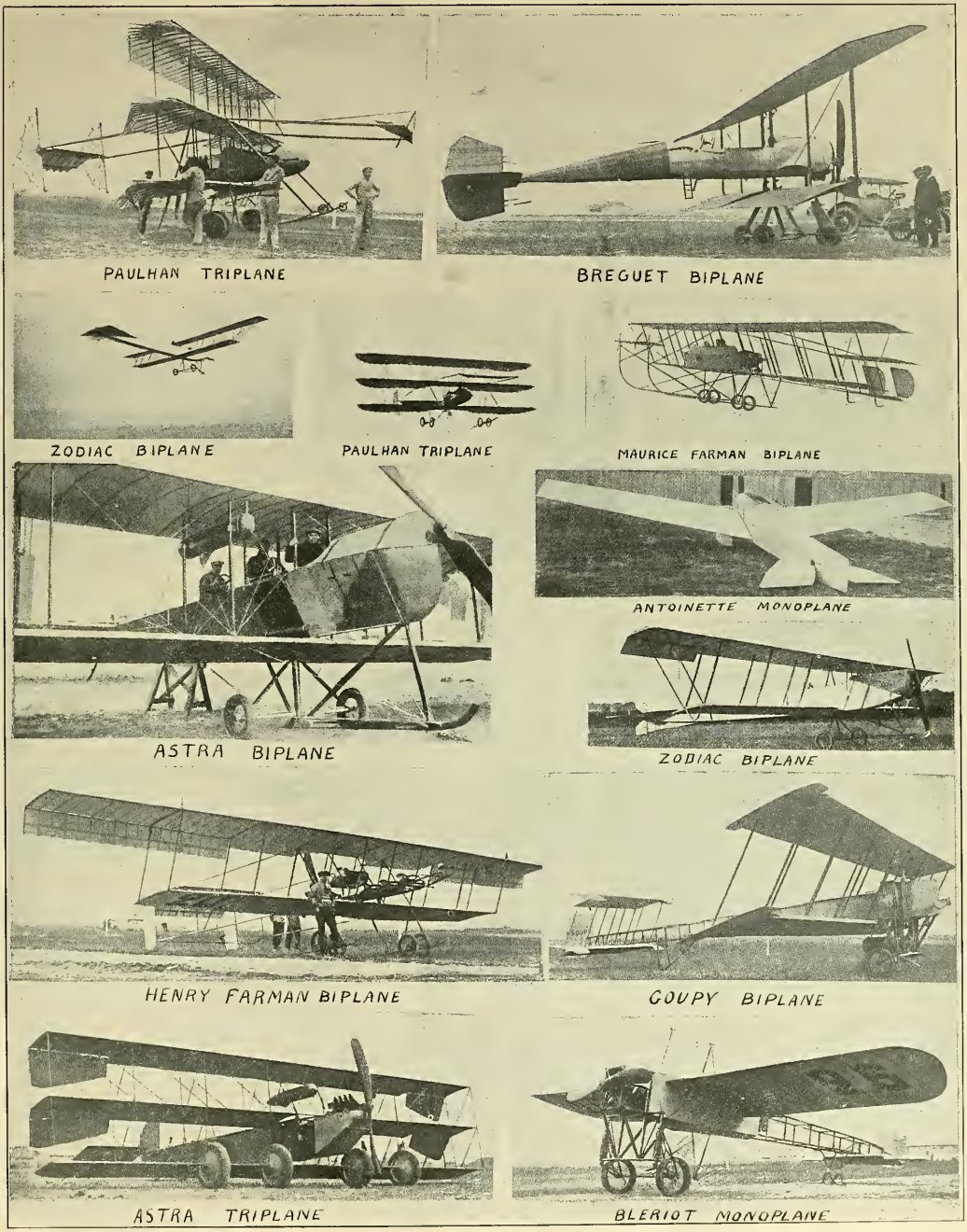
The Voisin firm entered three military machines, two of the "Canard" type and a headless military biplane. The Canard machines were fitted, one with a Renault 75 H. P. motor and the other with a Gnome 70 H. P. Apart from the difference of the motors, these two machines were exactly alike.

They presented, however, several interesting innovations. The cellule is constructed in the usual Voisin manner. The main spars and the uprights being of nickel steel tubes, while the ribs, which have been carefully designed and studied out, are of wood. The planes are double surfaced and the cloth is laced tight along the rear edges. The covering is coated with a special varnish, which assures its preservation indefinitely and also keeps it at a constant tension. This cellule is attached to the rear end of the long fuselage body, which carries at its front end the elevator and front rudder and at the rear the motor and tanks.

Just in front of the cellule is situated the place for the pilots. At the front of the fuselage is attached the front landing wheels, which are so mounted that they turn with the rudder.

This swiveling chassis permits of the machine being transported by road on its own wheels after the main cellule has been dismantled and packed alongside of the fuselage. In addition to being capable of easy dismantling, this machine presents the following additional advantages: First, owing to the extreme length of the fuselage the front of the machine has a tendency to glance off on striking the ground and thus ease the shock of rough landings. Secondly, in the case of a bad landing or a fall the pilot is protected to a large

NEW MACHINES ENTERED IN FRENCH COMPETITION



Types of New Machines which took part in the French Military Aviation Trials. As will be noticed there is a prevailing tendency of the French constructors towards the use of triplanes and staggered plane biplanes. Note also that the machines are all of large surface and fitted with large wheels and tires.

extent by the extreme length of the fuselage, which projects in front of him.

Perhaps the greatest advantage, however, of this tailless type is the absence of all framework and rudders behind the machine. Thus, in the case of a propeller breaking there is no danger of the rear framework being carried away or control wires broken.

The Voisin Biplane.

The third machine entered by the Voisin firm was a biplane of the regular standard type without any rudders in front. Its advantage lies in the fact that the passengers sit out in front and have a clear view of the ground beneath them. It was in a Voisin machine of this type that Mahieu recently broke the world's height record with a passenger.

This machine, like the "Canards," is fitted with a 100 H. P. Gnome.

The Zodiac Biplane.

The Zodiac biplane has the appearance of an Antoinette monoplane in which the monoplane surfaces have been replaced by a staggered biplane cellule. The motor is placed in the front of the fuselage and covered by a hood and projects out in front of the biplane cellule. The pilot is placed quite far back, as in the case of the Antoinette, there being quite some distance between the pilot and the motor.

The fuselage is completely covered in and terminates in the rear in a triangular non-lifting plane to which is hinged an elevator flap.

Above and below the tail plane are fitted two small fins, to the ends of which are hinged the two vertical rudders. The biplane cellule consists of two long narrow double-surfaced planes, which are mounted staggered fashion one in advance of the other. The top surface, which projects forward, has a greater spread than the lower surface, measuring as it does almost fifty feet across.

The landing chassis consists of two wheels mounted one on each side of a central vertical tube and braced in a triangular fashion by steel tubes. The central tube supports all the weight of the machine.

A single skid running from the top projects out in front of the nose of the machine, where it turns up in the form of a skid and carries at its end two small wheels.

The ribs are a special study and have proved to be remarkably effective.

Lateral stability is obtained by ailerons. One of the machines is mounted with a 75 H. P. Renault, the other with a 70 H. P. Labor.

The Henry Farman Biplane.

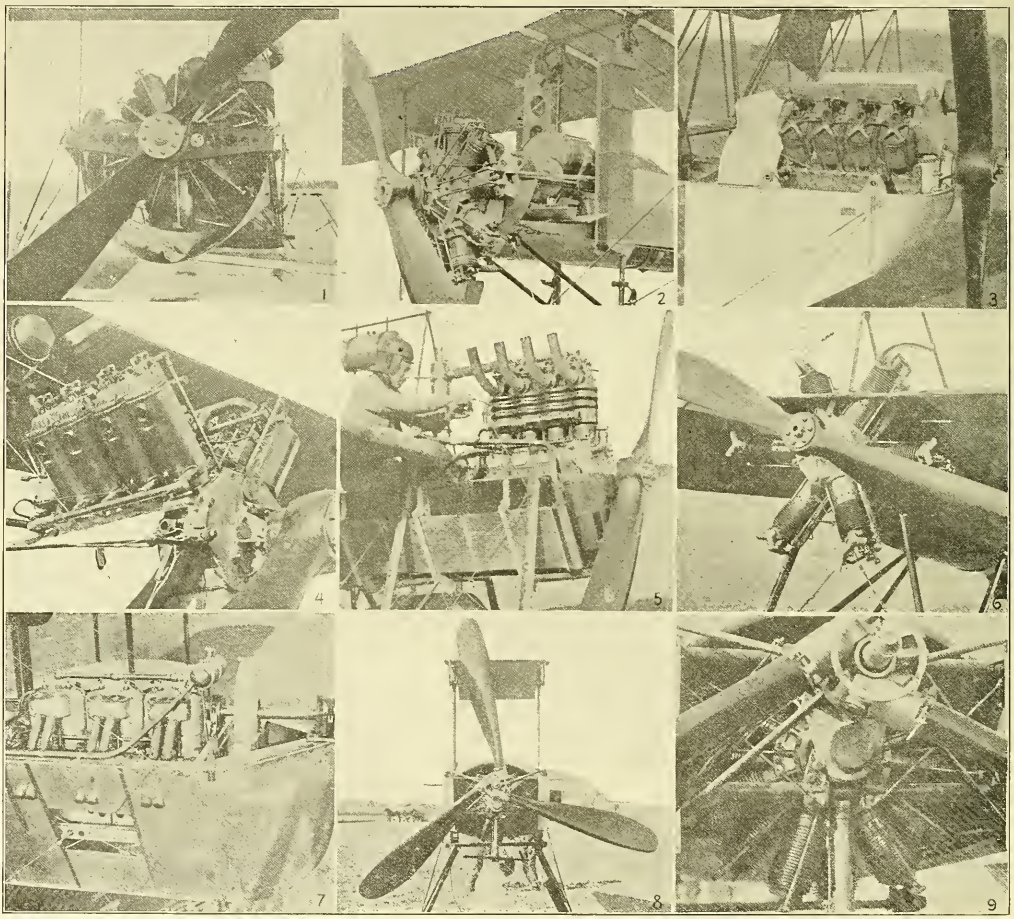
Henry Farman entered two machines, one of the usual headless military type, the other a larger machine of the same general type, but fitted with staggered planes. As can be seen by accompanying photographs, this machine presents quite a peculiar appearance. It will be noticed that the three passengers sit way out in front of the machine in what appears to be an extremely dangerous position, although without doubt an admirable one for scouting and military purposes.

The landing chassis, although similar to those fitted to the regular military types, has been somewhat strengthened by the addition of an extra skid in the centre and sloping upright braces.

The motors used are 70 H. P. and 100 H. P. Gnomes.

The Maurice Farman Biplane.

Maurice Farman entered two machines. One, a standard military type, such as was used by Fourny in his flight of September 2nd, when he made the world's record, non-stop flight of 11 hours 1 minute and 29 seconds, during which he covered a distance of 720 kilometers.



TYPES OF AEROPLANE MOTORS USED IN FRENCH MILITARY TRIALS.

Figure 1 shows a 100 H. P. 14-cylinder Gnôme engine fitted to one of the Military Voisin "Canards." Figure 2 illustrates a 9-cylinder, water-cooled, 110 H. P. Canton-Unne motor, mounted in one of the latest Breguet biplanes. Figure 3 shows a Renault 75 H. P., 8-cylinder, forced-draught, engine mounted at the front of the Astra military triplane. Figure 4 illustrates an 8-cylinder, water-cooled, 100 H. P. Dansette engine mounted in the bow of the Breguet biplane. Figure 5 shows the mounting of a 4-cylinder water-cooled, 100 H. P. Clerget motor in the military Hanriot monoplane. Figure 6 illustrates the method of mounting the new 6-cylinder, 80 H. P. air-cooled Anzani in Vedrines military Deperdussin. Figure 7 shows a 75 H. P. 6-cylinder, water-cooled Chenu motor mounted in the bow of the new Astra tractor biplane.—Note how the engine is set low down in the fuselage and the propeller driven at reduced speed through a short chain and sprocket transmission. Figure 8 is a front view of the Breguet fuselage and its 100 H. P. Gnôme, which drives through reduction gearing the special three-bladed flexible propeller shown in the cut. Figure 9 is a closer view of the same machine giving a more detailed view of the mounting of the motor with its reduction gearing and special flexible propeller.

TABLE OF MACHINES ENTERED IN THE FRENCH MILITARY AEROPLANE TRIALS

Make	Type	Pilot	Seating Arrangement of Passengers	Surface in Sq. Ft	Span in Feet	Length in Feet	CONTROLS			MOTOR				
							Elevator	Lateral	Chassis	Make	Cyl.	H. P.	Revolutions	Cooling
Antoinette	Monoplane	Latham	Tandem	602	52′ 6″	35′	Two elevator flaps	---------	2 wheels and tail skid	Antoinette	8	60	1200	Water
Astra	Biplane	Labouret	Tandem	530	40′	34′ 3″	Two elevator flaps	Warping	1 skid and 2 wheels	Chenu	6	75	1300	Water
	Triplane	Goffin	Tandem	510	43′	31′	Rear elevator	Farman ailerons	4 wheels	Renault	8	75	1800	Air
Astra-Wright	Biplane	Gaubert	Pilot front, 2 behind	---	52′	34′	Rear elevator	Warping	Farman type	Renault	8	50	----	Air
Bleriot	Monoplane	Desparmet	Tandem	267	36′	27′	Twin rear elevators	Warping	2 wheels	Gnome	14	100	1050	Air
	Monoplane	Beaumont	Tandem	267	36′	27′	Twin elevators	Warping	2 "	Gnome	14	130	1200	Air
	Biplane	Breguet	Tandem	451	53′	29′	Universal tail	Warping	3 " 3 skids	Gnome	14	100	1050	Air
	"	"	"	360	41′ 4″	28′ 6″	Universal tail	Warping	3 " 3 "	Gnome	14	130	1050	Air
Breguet	"	Bregi	"	360	41′ 4″	28′ 6″	Universal tail	Warping	3 " 3 "	Gnome	14	100	1050	Air
	"	Montalent	"	451	53′	29′	Universal tail	Warping	3 " 3 "	Dansette	8	110	1200	Water
	"	Montalent	"	360	41′ 44″	28′ 6″	Universal tail	Warping	3 " 3 "	Canton-Une	9	110	1200	Water
	"	Moineau	"	451	53′	29′	Universal tail	Warping	3 " 3 "	Canton-Une	7	80	1200	Water
	Monoplane	Prevost	Tandem	310	40′ 6″	30′	Elevator flap	Warping	2 " 2 "	Gnome	14	100	1050	Air
Deperdussin	"	Vidart	"	300	39′ 6″	30′	Elevator flap	Warping	2 " 2 "	Anzani	6	80	1300	Air
	"	Vedrines	"	310	40′ 6″	30′	Elevator flap	Warping	2 " 2 "	Clerget	8	100	1050	Water
	Biplane	Bill	Tandem	749	64′	38′	Rear elevator flap	Ailerons	6 " 3 "	Renault	8	75	1800	Air
H. Farman	"	Bill	"	749	64′	32′ 6″	Rear elevator flap	Ailerons	4 " 2 "	Renault	8	75	1800	Air
	"	Fischer	"	588	52′ 10″	32′	Rear elevator flap	Ailerons	4 " 2 "	Gnome	7	70	1050	Air
	"	Beaud	"	588	52′ 10″	32′	Rear elevator flap	Ailerons	4 " 2 "	Gnome	14	100	1050	Air
M. Farman	Biplane	Renaux	Tandem	749	64′	37′ 5″	Front & rear elev.	Ailerons	4 " 2 "	Renault	8	75	1800	Air
	"	Barra	"	749	64′	33′	Front & rear elev.	Ailerons	4 " 2 "	Renault	8	75	1800	Air
Goupy	Biplane	Ladougne	Tandem	508	41′	33′	Biplane tail & elev.	Ailerons	2 " 1 "	Chenu	6	75	1300	Water
	"	Bouvier	"	508	44′	33′	Biplane tail & elev.	Ailerons	2 " 1 "	Gnome	14	100	1050	Air
Morane-Borel	Monoplane	Verrept	Tandem	---	------	-----	Elevators rear	Warping	4 " 2 "	Gnome	14	130	1050	Air
Nieuport	Monoplane	Weymann	----------	257	41′	29′	Elevator flaps	Warping	2 " 1 "	Gnome	14	100	1050	Air
	"	Chevalier	----------	257	41′	29′	Elevator flaps	Warping	2 " 1 "	Gnome	14	100	1050	Air
Paulhan	Triplane	Paulhan	1 front, 2 behind	680	41′ 6″	33′	Front & rear elev.	Ailerons	4 " 2 "	Renault	8	75	1800	Air
R. E. P.	Biplane	Gibert	Tandem	430	36′	33′	Rear flaps	Warping	2 " 1 "	R. E. P.	5	60	1200	Air
Savary	Biplane	Level	Pilot front,	729	62′	38′	Rear biplane elev.	Ailerons	2 " 1 "	Labor	4	70	1200	Water
	"	Frantz	Tandem	729	62′	38′	Rear biplane elev.	Ailerons	2 " 1 "	Labor	4	70	1300	Water
	Biplane	Collieux	Pilot front, 2 behind	599	43′	33′	Front elevator	Ailerons	4 "	Gnome	14	130	1050	Air
Voisin	"	Benoit	Pilot front, 2 behind	599	43′	33′	Front elevator	Ailerons	4 "	Renault	8	75	1800	Air
	"	De Ridder	Pilot front, 2 behind	492	43′ 8″	33′	Rear elevator	Ailerons	4 "	Renault	8	75	1800	Air
Zodiac	Biplane	J. Labouchere	Pilot front, 2 behind	350	43′	32′	Rear elevator flaps	Ailerons	2 " 1 "	Renault	8	75	1800	Air

This machine is characterized by the larger top surfaces of both the main cellule and the tail cellule.

The landing chassis consists of two stout skids, which run right up to the front of the elevator, and Farman type shock-absorbing wheels.

The second Maurice Farman biplane is another example of the prevailing tendency of the French constructors towards the use of the staggered planes. This machine is practically an exact duplicate of the other machine with the exception that both the main cellule and tail cellule have been built up staggered fashion. Both machines are fitted with 75 H. P. Renaults.

Société Astra.

The Société Astra entered three machines in the competition, one an Astra biplane, 80 H. P. Chenu motor. The second an Astra triplane with a 75 H. P. Renault, the third an Astra-Wright with a 50 H. P. Renault.

The Astra Biplane, Type C. N.

This machine is another of the now quite popular tractor-screw biplanes. The long fuselage, which is entirely covered in, carries at its front end the motor and biplane cellule and at the rear the flat tail.

The forward part of the fuselage is in the shape of a racing motor boat, and is fitted with a shield to protect the passengers from wind and oil.

The landing chassis consists of two wheels and a single central skid, which projects out in front to protect the propeller and keep the machine from capsizing.

Lateral stability is obtained by warping. The main planes are demountable and can be attached to the side of the fuselage for transportation.

The Astra-Wright Biplane.

This is a modification of the headless Wright machine, and was designed by Mr. La Chapelle, an American engineer and Wright pilot. Lateral stability is obtained by warping. The two propellers, as usual, are driven in opposite directions through chains. The novelty, however, has been the fitting of a 50 H. P. Renault motor and a cabin for the passengers.

The Astra Triplane.

The Astra triplane, which was designed by Gabriel Voisin, is one of the distinct novelties, both from the point of view of general disposition as well as construction. The motor is placed out in front of the triplane cellule. The fuselage is quadrangular and completely covered in, and carries at its front end the motor and direct connected propeller, and the main cellule, while at the rear are the tail and rudders. There are no landing skids. The landing carriage consists of four very large wheels, whose axles are in the same plane as the bottom front main spar and, in fact, form a part of this spar. Two wheels support the rear of the fuselage.

Lateral stability is obtained by four ailerons placed at the extremity of the two upper wings. The chief constructional novelty of this machine has been the dispensing of wire trussing and the substitution of steel tube braces in their places.

The Breguet Biplane.

Louis Breguet entered six machines in the trials, one of which was piloted by himself, the others being in the hands of such capable pilots as Bregi, Montalent and Moineau. All six of these machines were almost identically the same in type, differing only as to size, make of motor and propeller. In this respect, it is interesting to note that the machines were fitted, three with two-bladed propellers, two with four-bladed propellers and one with a three-bladed propeller.

The peculiar feature of the Breguet machine is the use of only four uprights in the biplane cellule and the extremely flexible and special constructed ribs. The landing chassis is a combination wheel and skid arrangement, using either 3 or 5 wheels and three skids.

The Deperdussin Monoplane.

The Deperdussin firm entered three of their regular type machines, one fitted with a 100 H. P. Gnome; the other with an 80 H. P. Anzani and the third with a 100 H. P. Clerget.

These monoplanes were all of practically the same type. The fuselage, which is very long and shallow, carries at its front end the motor, main wings and passengers, and at the rear the large, flat pigeon tail, elevator and vertical rudder.

The landing chassis consists of two skids and two wheels on a single axle, which is attached to the skids by rubber shock absorbers.

The Goupy Biplane.

The Goupy firm entered two of their latest type machines, which were almost identical in construction. These machines were the first to be built with staggered planes and Mr. Goupy deserves a lot of praise in having originated, or, at any rate, first used this method of plane mounting.

As Mr. Goupy pointed out when he produced his earlier machines back in 1908, the staggered plane construction has a distinct advantage over the usual vertical method of mounting biplane wings. In the event of motor stoppage and the machine falling there is more of a self-righting and parachuting effect to this type than to the ordinary style.

The Goupy biplanes make use of a Blériot type fuselage, carrying the motor and main cellule at the front end and the staggered biplane tail, with Blériot type elevator tips at the rear.

The landing chassis consists of the usual Blériot arrangement with the addition of two small skids, which are attached at the end of the steel columns upon which the shock absorbing collars slide.

The Morane-Borel Machine.

The Morane-Borel monoplane entered in the trials is simply a large copy of the smaller machine made famous by Vedrines. The landing chassis has, however, been greatly strengthened; two heavy skids being fitted and four Farman type wheels.

The R. E. P. Biplane.

The R. E. P. biplane resembles the regular R. E. P monoplane with the addition of another set of planes in front. This machine is constructed almost entirely of steel tubing and has a central fuselage, which carries at its front end the motor and biplane cellule and at its rear extremity the flat pigeon tail, elevator and wheels, extremity the flat pigeon tail, elevator and rudders, absorbing wheels and a specially constructed shock absorbing skid. A detailed description of the R. E. P. monoplane appeared in the September issue of "AIRCRAFT," page 244, and shows clearly the construction of the R. E. P. chassis.

The Savary Biplane.

The Savary biplane is the only biplane entered which had two tractor screws.

As a type it somewhat resembles the Wright machine, but has the two chain-driven propellers situated in front and the pilot and passengers directly behind.

Lateral equilibrium is obtained by ailerons fitted between the two planes. The biplane tail elevator is fitted in the rear, while the rudders are fitted to the extremities of the main planes. The power plant consists of a 70 H. P. four-cylinder Labor.

Results of the Competition.

As "AIRCRAFT" goes to press news is received that the competition has been won by Weymann on a Nieuport with Prevost on the Deperdussin second.

TWO BAD FACTORS

EUGENE B. ELY, one of the very greatest of American aviators; the man who first demonstrated the feasibility of alighting on and flying from warships, lost his life during an exhibition flight at Macon, Georgia, on October 19th, 1911. He fell to the earth attempting one of his spectacular dips, while too near the ground.

The death of Ely brings up the question as to whether exhibition flying really is a benefit or a detriment to the progress of aerial flight. There is a vast difference between flying to please a crowd and flying for the pleasure of flying or for the purpose of transporting oneself safely from place to place. The crowd before which a man gives an exhibition is not usually satisfied by the demonstration of a machine moving through the air with exactness and precision. It wants to be thrilled by acrobatic and dangerous performances; and the people who actually urge the man on to his death, are the first to cry about the terrible danger of aviation, causing others to fear it as they would an earthquake, thus impeding its progress.

There is no more danger to flying than there is to automobiling, steamboating or railroading, on condition that the science of flying is understood equally as well as the others, and the construction of the machines equally as good.

The principle of flying is correct, but the art of construction and of manipulating machines must be acquired. That takes time No man is permitted to run a steamboat or a steam locomotive without months and years of training, and no man, no matter how long his training, would undertake to do tricks with the steamboat or the steam locomotive. They utilize them for purposes of transportation, and transportation is the chief aim of those who are most interested in the development of aviation.

The man who builds and the man who utilizes a flying machine for useful purposes is a great benefactor of mankind.

No doubt two-thirds of all the deaths that have been registered against aviation could have been avoided by the aviators themselves, while one-third can be charged up to faulty construction of the machines. Of the deaths chargeable to the aviators probably one-half were expert drivers who lost their lives through their own carelessness, while the other half were novices who knew little or nothing about the first principles of aviation.

Flying is apparently so easy that most men, after having taken one or two lessons, see no reason why they cannot fly wherever they please. Few of them realize that it is just as necessary for a long and strict course of training to fly a machine properly, as it is to learn to run a steamboat without mishap. Also the sense of security while flying is so great that the flyer himself, and especially the expert, cannot feel that it is possible for the machine to fall, until, of course, it is too late.

Therefore carelessness upon the part of the expert and non-experience upon the part of the novice, are two bad factors which have caused so many fatal accidents; accidents which frighten the ordinary mortal and impedes aeronautical progress to a large extent, and which should be guarded against to the utmost limit.

A MAMMOTH COMBINATION MEET.

WE suggest to aeronautical promoters a combination grand circuit meet for the year of 1912 in which several meets could operate simultaneously and in conjunction with each other.

During the same week a meet could be held in New York, Buffalo, Cleveland, Detroit, Chicago, St. Louis, Louisville, Cincinnati, Pittsburg, Washington, Baltimore and Philadelphia. The ordinary races and events could be held in each of these cities at the same time while the two big races took place around the entire circuit. For instance, on the first day a race for monoplanes could start from New York making it obligatory for each one of the machines to stop at the grounds where the meet was taking place in each of the other cities. The prize could be made sufficiently large, say fifty thousand dollars divided into first, second, third, fourth and fifth prizes, with a bonus offered by each of the different meetings for every aviator who reached their grounds. In this way the spectators in every city could be posted on each aviator flying either to or from the grounds, and by an immense blackboard system showing the aviator's progress around the entire circuit intense interest could be kept up at all times in all of the cities, and therefore

the enthusiasm would never be lacking, as the people would have the benefit of both the local events and the long distance races to keep them interested.

Not only could there be a race around the circuit for monoplanes, but on the second or third day a race for biplanes could start around the circuit, which would make one continual going and coming of racing machines at every meet thereby creating constant excitement everywhere.

The Editor of this magazine thought of this plan over two years ago, but of course considered the time inopportune for its adoption then, but now we feel that the growth of aviation has reached a stage that will warrant undertaking such a mammoth aerial spectacle.

INTERCITY PASSENGER SERVICE.

THE remarkable success attained by Zeppelin's latest ship of the air—the Schwaben—causes us to wonder why it is not possible for Americans to establish intercity airship service.

At the time this editorial is written, the Schwaben has made eighty-one ascensions without the least mishap, and among these ascensions were nine long voyages, ranging from 125 to 250 miles. She was in the air 187 hours altogether and carried 1,675 persons.

The Schwaben has demonstrated its ability not only to carry passengers long distances in luxurious drawing room and with excellent dining service, but it has also demonstrated its ability to make money through the process.

While we have not the figures at hand to give to our readers, it is an easy matter to multiply 1,675 passengers by fifty dollars each and reach the sum total of $83,750.

We ask our American financiers if they do not think the time has arrived to warrant their beginning to figure on the commercial probabilities of airship service. For instance, could an air-line not be established and made to pay between New York, Philadelphia, Baltimore and Washington, a regular trip being made every day, in which thirty passengers could be carried from city to city?

Presuming, to begin with, that there are enough people among the great population of the East willing to pay $50.00 for a ninety mile trip and $25.00 for a forty-five mile ride, we figure that such transportation in one day would net, first $1,500 from New York to Philadelphia, where either a change of passengers could be taken on or the same passengers charged again a like amount from Philadelphia to Baltimore, where another stop could be made and another charge be made of $25.00 from Baltimore to Washington, making altogether $3,750 for the day's journey, which should not consume more than from four to six hours. At this rate one hundred days' service would bring $375,000, or more than enough to pay for the airship, a hangar at each end of route and the operating expenses.

Aircraft advocates such a line being established next Spring, and hopes there are sufficient numbers of leading men of this movement who will get together and undertake the task. Surely our boasted American enterprise should at least equal the so-called slowness of the German.

WATCH THE LAW MAKERS.

LAST year five States of the United States considered laws for the regulation of aircraft. Connecticut succeeded in putting a chapter on the subject into her statute books, which becomes effective on January 1. This year probably half the States will consider such legislation, the bills in most cases being the work of men not familiar with aviation. The public, thanks to the increase in cross country flying, will be more interested in this legislation than last year, and a larger proportion of it will undoubtedly be passed. Those who make laws will not have any stake in such legislation; aviation scientists, fliers themselves, above all, the manufacturers, will. We do not believe that there will be need for lobbying to protect the reasonable needs of aviation in its present stage, but we do believe that there is need for intelligent co-operation among aviation organizations to see that no law is passed that will be prejudicial to the interests of this great new field of endeavor and without benefit to the public. The manufacturers have the greatest interest, and the objects of their association cover just the activity we advise. The Association's constitution also provides for a legislation committee to "take an active interest in furtherance of legislation in relation to the air craft industry and in the formulation of laws affecting such industry and the manufacture and business of aeronautic supplies, and when possible to secure legislation favorable thereto."

We therefore suggest: That the Legislation Committee of the Aeronautical Manufacturer's Association arrange to co-operate with the Law Committees of the Aero Club of America and the Aeronautical Society. The Aero Club of America should encourage its affiliated societies throughout the country to organize law committees. These should report all contemplated legislation in their own territory to the parent club. The committees of the three organizations mentioned, representing the industrial, sportive and scientific sides of aviation, should constitute themselves a joint committee to study all bills, and local societies should be encouraged to act in accordance with their decisions.

IT is reported that Lord Northcliffe, the proprietor of the London Daily Mail, intends to offer a one hundred thousand dollar prize for the first man who will fly across the Atlantic in a heavier-than-air machine.

Whether there is any foundation to this report or not, the fact that Lord Northcliffe has already given one hundred thousand dollars in prizes to aviators for their flights in Europe, shows him to be a man who evidently believes in deeds to a far greater extent than he believes in words.

The Aeroplane Without Engine and Without Screw Propeller—A Gliding or Soaring Machine Automatically Balanced, Automatically Kept Head Against the Wind and Steered at Will of the Aviator

By THEOD. GIBON

This performance will be accomplished in the following comparatively simple manner.

Any of the present-day monoplanes or biplanes and any glider can be changed to answer the purpose.

The way is:

1. Let there be no engine and no screw propeller.

2. Put in the automatic system of balance as described in AIRCRAFT of October a. c., page 279.

3. Fix to the rear of the flying-machine one or more stationary vertical planes, the square surface of these planes combined being larger than the square surface of the main planes (supporting surfaces), so that in a wind the flying machine will be kept head against the wind automatically.

4. To accomplish steering, make the square surface of the steering rudders sufficently large to be powerful enough to counteract at will of the aviator. The work of the automatic balancing device and counteract at will the work of the vertical planes, which hold the flying-machine head against the wind.

5. Start from an elevation, a hill, or in any manner as the glider of today takes its start against the wind.

6. Let the flying-machine take an upward course by working the horizontal steering rudders.

7. If risen high enough, turn the horizontal steering rudders to make a downward glide and when getting too close to the earth, put the rudders so that the upward course against the wind is again taken up.

In that manner, as explained in my American patent 710,266, September 30, 1902, Fig. 7, the aeroplane will progress against the wind or with the wind, the aeroplane going up and down on a zigzag line, as a vessel on the water makes progress against the wind on a zigzag line, going to the right and to the left alternately.

Long flights can be accomplished in that manner with little power for balancing and *no power* for propulsion, the wind and gravity being pressed into service to accomplish the task.

That a gliding machine is not *bound* to take a *continuous downward course* is illustrated in the appendix of Mr. Octave Chanute's book, Progress in Flying Machines, on page 287 in the article: "The Flying Man," by Otto Lilienthal, where it is shown in the illustration that the glider after a long downward glide, has by the impulse of the wind alone and without any mechanical means for propulsion risen to a point as high or higher than the *starting* point.

On page 289 in the above mentioned article Otto Lilienthal says that he intended to employ a 2 H. P. motor to further increase the lifting power by a *beating* action of the wings.

To this I say: Instead of making "beating wings" it will be much more simple and more practicable to have stationary wings and produce the *beating* effect by the reactive force of explosions *coming out of* the wings. In that manner the aeroplane is more independent of wind and can climb to greater heights quicker and surer. The explosion outlets on the balancing system ought to be set at an angle of about 45 degrees to the horizontal of the planes and in that manner furnish power for propulsion and balancing at same time.

The straight forward push of the aeroplane is constantly maintained, even when outlets close for balancing purposes, by a certain arrangement of the outlets of the power supply in the surface of the planes, a detailed description of which is contained in my U. S. Patent 730,107, June 2, 1903, and it would go too far to explain in this article.

Very long flights and soaring for hours can be accomplished in the described manner.

The following is a description of how the location of the outlets for explosions has to be arranged in order to combine in the same outlets automatic balance with straight horizontal forward push:

Figures 1-7 represent a circular disk turnable around its center.

Figure 1 shows one pipe with outlet for reactive explosions on the outer margin of the disk. This disk would, of course, turn in the direction of the arrow. At figure 2 the disk would turn in opposite direction, while at figure 3 the disk would not turn at all, because the turning forces exactly oppose and equalize each other. At figure 4 the disk would again turn in the direction indicated by the arrow, on account of the location of the outlets because outlet *h* is more forcible than outlet *i*. Therefore, to avoid turning and to have equal straight forward push with outlets set at an angle of 45 degrees to the horizontal of the planes, the outlets have to be *geometrically* located on a circle and on the corners of a square a rectangle, etc., as shown in figures 5, 6, 7, 8 and 9.

But when, as for example at figure A, outlet *a* is closed for balancing purposes, the straight horizontal forward push for propelling purposes would be disturbed and the aeroplane would turn in the direction of the arrow.

But this difficulty is overcome in a simple manner by arranging the outlet as shown in Figure 10-14.

A detailed description of the weighted automatic valve which is employed and a detailed description how the connections from the valve to the outlets has to be, is shown in my American patent 730,107, June 2, 1903.

The sketches which are reproduced with this article are only made to explain the principle.

Experiments with this system of balance have been made, using streams of water. It was found that the distribution of the power was such that not only automatic balance was established, but also straight forward horizontal push all the time, even when outlets for balancing purposes were automatically closed.

How was this complicated thing done?

Explanation:

Figure 10-14 represent a square frame. At figure 10 the frame is horizontal and on each of the four corners are four streams of water, of which two go upward and two go downward. Therefore the upward and downward push is equalized all round and the frame stays horizontal, and were the outlets set at 45 degrees to the horizontal as indicated—Figure 15, the forward push would also be equalized and continue straight forward.

Figure 11. The frame is tilted downward with the edge *C* and upward with the edge *D*. It will be seen that of the 16 streams of Figure 10, four have disappeared because on the tilt the automatic valve which was employed closed the outlets. Therefore, the pressure increased in the remaining 12 streams, Figrue 11, and it will be seen that underneath of the depressed edge *C* four streams push upward, while only two push downward, and on the lifted edge *D* just the reverse is the case, four streams above push downward and only two push upward, restoring the horizontal position of the frame.

If the frame tilts too far, getting edge *C* too high and edge *D* too low, the streams shift automatically and immediately by the action of the weighted valve, putting the streams as shown in Figrue 12. On each corner two streams work against one stream and restore the horizontal position of the frame.

Figure 13. In case the frame is tilted over a corner, depressing corner *f* and lifting corner *g*, then at *f* two streams push upward, and at *g* two streams push downward, while on each of the other two corners one stream pushes downward and one upward, equalizing each other. At a tilt over a corner eight of the original sixteen outlets are automatically closed and the remaining eight streams go at double force.

Again the streams shift automatically if, as at Figure 14, corner *f* gets too high and corner *g* too low.

This is a veritable system of equalization to restore the horizontal every time and all the time when the aeroplane tilts.

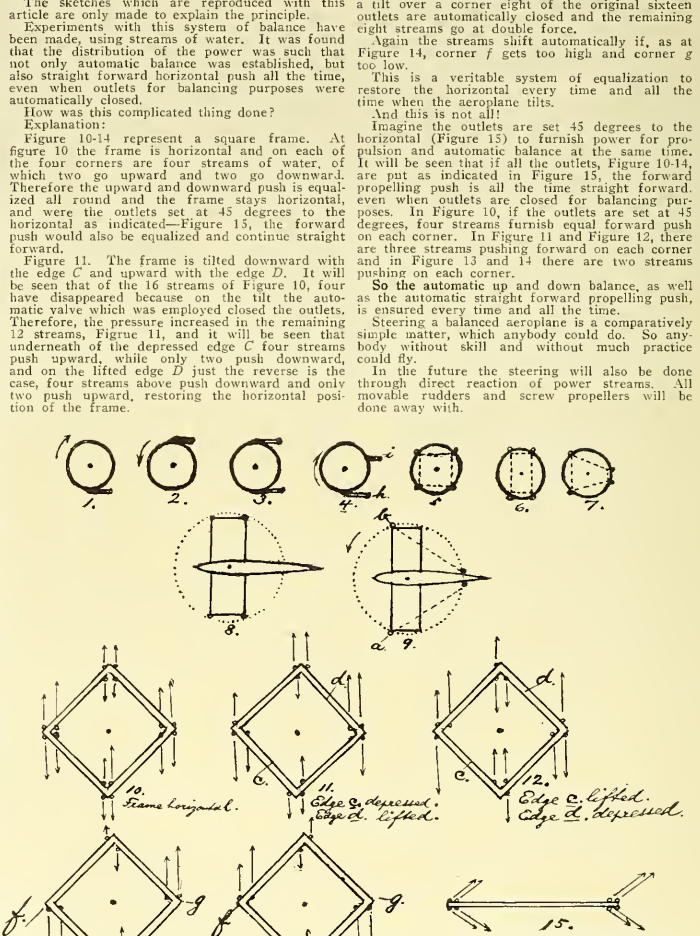
And this is not all!

Imagine the outlets are set 45 degrees to the horizontal (Figure 15) to furnish power for propulsion and automatic balance at the same time. It will be seen that if all the outlets, Figure 10-14, are put as indicated in Figure 15, the forward propelling push is all the time straight forward, even when outlets are closed for balancing purposes. In Figure 10, if the outlets are set at 45 degrees, four streams furnish equal forward push on each corner. In Figure 11 and Figure 12, there are three streams pushing forward on each corner and in Figure 13 and 14 there are two streams pushing on each corner.

So the automatic up and down balance, as well as the automatic straight forward propelling push, is ensured every time and all the time.

Steering a balanced aeroplane is a comparatively simple matter, which anybody could do. So anybody without skill and without much practice could fly.

In the future the steering will also be done through direct reaction of power streams. All movable rudders and screw propellers will be done away with.



A NEW AERO CAMERA

By W. Nicholson Jennings

THAT the aerial highway will soon be invaded by a countless fleet of aeroplanes is now an assured fact. Within five years we shall motor out to a suitable rising place, unfold our wings and seek a higher level with a dustless, limitless outlook.

Aerial photographs from the basket of a free balloon have hitherto been more or less a matter of chance so far as any desired locality was concerned.

But now that we can glide at will in any direction and at any elevation, the camera will doubtless be a very important instrument in aeronautics.

The aerial scout from cloudland heights will take tele-photic snapshots of fortifications—the enemy's position and a thousand and one details of military manœuvers.

American checker-board cities are being beautified by diagonal boulevards and circular breathing places. Aerial photographs of congested districts upon which the municipal architect may plot his proposed improvements will be of the greatest value for advertising purposes where the merchant wishes to show the locality of his establishment in relation to the railroad stations, chief hotels, etc., and the bird snapshottist will be called upon to exercise his aerial art.

Land companies will be able to display aerial photographic records of suburban development, and the real estate agent the desirability of his "For Sale" property from a sky-view point.

Genuine motion pictures showing the various phases of a journey through cloudland will some day be as common as our present day snapshots.

To meet new conditions we must modify our presents methods. The aeroplane aloft is a thing of jumps and jerks and ceaseless throbbing. The highest speed of the "roller-blind" shutter in the camera of the newspaper photographer will show sure signs of this vibration while the curtain slot passes along the face of the plate. The blue haze between lens and landscape will hopelessly "fog" the plate, and should the sky operator lean far enough over the hood of his graflex camera to view the image on the ground glass, he will find the instrument a poor substitute for a parachute.

From actual experience on several occasions, I have found the regular photographic camera quite unsuited to aerial work for the following reasons:

The usual view camera, with its bulgy bellows and ground glass focusing screen, is bulky and difficult to operate as a hand camera, the use of a tripod being, of course, out of the question in a balloon basket.

No photograph less in size than 6½x8½ will be found satisfactory, as the fine detail of the distant landscape will be lost on a smaller plate or film. Hence kodaks are of little service for serious aerial view work.

The "graflex" type of reflecting camera, in addition to its great weight, is objectionable for the reason that to direct the lens downward it is necessary to lean so far forward in order to see the reflected image in the "finder" as to place the operator in danger of floating off into space.

My new camera is designed especially for aerial photography and eliminates all the above bad features. It consists of a cone-shaped leather covered box. An 8x10 plate holder slides under an opaque spring-compressed door at the wide end. The lens—a Turner-Reich of 10½ inch focal length—is screwed in its flange at the smaller end. The lens is equipped with a multi-speed shutter with any exposure up to the 2,000th part of a second.

The shutter can be instantly "set" and released with the index finger without changing the position of the camera. No rack or focusing screen are required. the camera being of the "fixed focus" type. The wide open lens gives good sharp definition at 25 feet. When stopped down to F 16 (a good working aperture for balloon views) everything is sharp beyond 25 feet.

By reversing the lens combination front and back the wide oper lens gives a clear image at 10 feet, while stopped down to F 66 gives a sharp range of view from 6 to 15 feet. This is useful for detail and figure work before leaving the ground.

A square "look through" finder enables one to instantly "sight" the desired object or locality.

The cone-shaped box, having no outside projections of any kind, may be quickly passed between and withdrawn from the guide ropes of the balloon.

In an aeroplane the camera, with little wind resistance, may be placed upon the photographer's knees, tilted downward, and snapshots made without the trouble of focusing or "sighting" in the finder.

A glance at the accompanying photograph will clearly show the construction and operation of the camera.

FROM LEFT TO RIGHT, MR. GRENFALL, ALAN R. HAWLEY, G. F. CAMPBELL WOOD, JAMES A BLAIR, JR., CHAS. JEROME EDWARDS.

CLUB NEWS

ROBERT J. COLLIER, THE NEW PRESIDENT OF THE AERO CLUB OF AMERICA.

Aero Club of America

The annual meeting of the Aero Club of America was held at the Club House, 297 Madison Avenue, New York, on Monday, November 13th, beginning at 8.30 P. M., and the following officers were elected: President, Robert J. Collier; first vice-president, James A. Blair, Jr.; second vice-president, Major Samuel Reber, U. S. A.; third vice-president, Harold F. McCormick; fourth vice-president, Henry A. Wise Wood.

The following governors were also elected: Class A—Robert J. Collier, William W. Miller, Dave H. Morris. Class B—Russell A. Alger, Jerome H. Joyce, Albert B. Lambert, Harold F. McCormick, A. Lawrence Rotch, George M. Myers, Rodman Wanamaker, Dr. A. F. Zahm.

At the meeting it was decided to increase the number of directors or governors of the Club from twenty to twenty-four, and the four new directors elected were: G. F. Campbell Wood, Henry A. Wise Wood, Charles E. Knoblauch, W. Redmond Cross.

There was no opposition ticket in the field so that the above elections were made unanimously.

Mr. G. F. Campbell Wood, Secretary of the Aero Club of America, reports that the club year ending on the 31st day of October, 1911, was the most successful and prosperous the Club has ever known, during which time the individual membership was increased from 390 to 540. The Affiliated Clubs now number 24 and are showing greater activity and more earnest support to the Club than in any previous year. The number of Aviation pilots' certificates granted by the Club is now 74 as against 26 on October 31st, 1910. The acquisition of the Clubhouse, which affords its members living-rooms and restaurant service, has proven a success.

The granting of aviation pilots' certificates has been so systematized that applicants can pass their tests all over the country under the supervision of the Aero Club of America's special delegates. These certificates have been recognized already by the U. S. Army and Navy as qualifying standards and several military and naval officers figure in the list of pilots.

A new trophy has been presented to the Aero Club of America by Robert J. Collier. It is a group in bronze conceived by Ernest Wise Keyser of New York and will be awarded to the American champion chosen in the elimination contest to defend the Coupe Internationale d'Aiation. The chief figure, the genius of man, youth, buoyant with hope, crowned with victor's laurels, soars from the earth with arm outstretched and hand just closing upon a gull in full flight typifying control of the wind. Beneath his feet, Gravity, represented by a male figure, falls conquered, with another form, that of a woman with puffing lips, representing the contrary winds. Garments and hair of all the figures convey the impression of sweeping winds. Much admiration of the graceful lines of the group and the ideas it conveys have been expressed by all who have seen it.

CORTLANDT FIELD BISHOP, PAST PRESIDENT OF THE AERO CLUB OF AMERICA AND VICE-PRESIDENT OF THE INTERNATIONALE FEDERATION AERONAUTIQUE.

At a recent meeting of the Board of Governors of the Aero Club of America it was decided to hold an aeronautical show at the New Grand Central Palace, New York, next May. While the show will be held under the auspices of the Aero Club of America it will be conducted by the International Exposition Company which will finance the Exposition and attend to the business end of it.

The Club feels that the time is now ripe to give the public an opportunity to judge the great progress made in aeronautics by getting together under one roof all of the latest products relating to the new industry. By a special Act of Congress the foreign machines shown at the New Grand Central Palace can go in free of duty and it is hoped that this will lead to a strong foreign representation although, of course, the Club is counting on domestic manufacturers to provide the bulk of the exhibitions.

Mr. G. F. Campbell Wood, as a special representative of the Aero Club of America, has been sent to Europe for the purpose of inducing foreign manufacturers to enter the show and at the same time he will also attend the annual meeting of the Internationale Federation Aeronautique to be held in Rome.

The Aeronautical Society

The Aeronautical Society continue to hold their regular meetings at their club rooms, 250 West 54th street, New York, on the second and fourth Thursdays of each month. Papers by well-known aeronautical experts are usually delivered, followed by a general discussion of various subjects.

At the Aeronautical Society's club-rooms during the afternoon of Friday, November 10th, a Womens Auxiliary Branch of the Aeronautical Society was formed and a temporary organization effected in the election of Mrs. Hugo C. Gibson as chairman, and Miss Daisy E. Ball as secretary. It was decided to hold another meeting on November 21st to effect a permanent organization. There were nine ladies present which is a very good showing for a beginning and those present were most enthusiastic for the future prospects of the Association and promised to work hard toward its further development. At this meeting it was decided that the dues would be five dollars per year. All mail in reference to this organization can be addressed to the Secretary, 37-39 East 28th street, New York. Those present were: Mrs. H. C. Gibson, Miss D. E. Ball, Miss A. Shady, Mrs. Anna O. Hagstedt, Mrs. Harriet Atkinson, Mrs. Eva Phipps, Mrs. W. D. Suydam, Miss Irene Lupo and Mrs. G. Loveday.

Kansas City Aero Club

George H. Myers, President, and E. H. L. Thompson, director, of the Kansas City Aero Club, made a 95 mile trip in the balloon, "Kansas City II," on Saturday, November 4th. Captain H. E. Honeywell acted as pilot and John Watts as aide. The ascension was made from the balloon field in Kansas City and the party descended five miles from Bosworth, Missouri, at 3.30 P. M.

This was the first ascension made by Captain Honeywell since his recent attempt to win the Lahm cup in connection with the International Balloon race, which started from Kansas City.

ALLAN A. RYAN, PAST PRESIDENT OF THE AERO CLUB OF AMERICA.

At a Meeting of the Directors of the

AERO CLUB OF CALIFORNIA

Held in the

CLUB ROOMS, OCTOBER 24, 1911

the following preamble and resolutions were unanimously adopted:

WHEREAS, Almighty God, in the exercise of His divine will, has removed from this world and the busy cares of life,

EUGENE B. ELY
of
Davenport, Iowa,

Therefore, We, the Directors of the Aero Club of California, have assembled here to-night to pay our last sad tribute to the memory of the departed, and to express our deep appreciation of the many and lasting obligations that we, as fellow-workers, owe to him, and by words and tokens to express our sincere sorrow for the loss Science has sustained by his death.

His good judgment and intrepid daring placed him in the front rank of the world's best aviators. His battleship flight—to embark and disembark from a sea-going vessel—was a marvel of skillful engineering and opened to the science a field whose future usefulness is inestimable. In this age of the world any man whose life has been a success can be justly called great, but there is a greatness even greater than this; to be crowned with the love and admiration—after his grave is closed—of all those who knew him. Such men were born to live in our affections, and in years to come the name of Eugene B. Ely will be recalled with an honest sense of pride that such a man lived and labored among us as a pioneer in the field of Aviation.

Resolved, That the Secretary be instructed to spread upon the minutes a copy of this preamble and resolutions, and that a copy be sent to her who was nearest and dearest to him, his sorrowing wife, as a token of our respect for the deceased, one who was, in every way, worthy of our deepest respect and highest regard.

VAN M. GRIFFITH,
Secretary.

L. P. BARRETT,
Vice-President.

Record of Calbraith P. Rodger's Flight Across U. S.

Started from New York City, Sheepshead Bay, September 17, 4:33 P. M.

	Miles.	Dates.
Middletown, N. Y.	84	Sept. 17
Callicoon, N. Y.	179	Sept. 21
Elmira, N. Y.	289	Sept. 22
Canisteo, N. Y.	315	Sept. 23
Salamanca, N. Y.	442	Sept. 24
Kent, Ohio	646	Sept. 28
Rivarre, Ind.	851	Sept. 30
Huntington, Ina.	887	Oct. 1
Hammond, Ind.	1,010	Oct. 5
Chicago, Ill.	1,062	Oct. 8
Springheld, Ill.	1,227	Oct. 9
Marshall, Mo.	1,398	Oct. 10
Overland Park, Kan.	1,493	Oct. 11
Vinita, Okla.	1,682	Oct. 14
McAlester, Okla.	1,884	Oct. 16
Fort Worth, Tex.	2,064	Oct. 17
Dallas, Tex.	2,096	Oct. 18
Waco, Tex.	2,302	Oct. 19
Kyle, Tex.	2,311	Oct. 20
San Antonio, Tex.	2,576	Oct. 22
Spofford, Tex.	2,708	Oct. 24
Sanderson, Tex.	2,876	Oct. 26
Sierra Blanca, Tex.	3,107	Oct. 28
El Paso, Tex.	3,198	Oct. 29
Wilcox, Ariz.	3,420	Oct. 31
Maricopa, Ariz.	3,656	Nov. 1
Stoval Siding, Ariz.	3,786	Nov. 2
Imperial Junction, Cal.	3,837	Nov. 3
Banning, Cal.	3,942	Nov. 4
Pasadena, Cal.	4,017	Nov. 5

Exceeds Atwood's world's cross-country flight record of 1,265 miles by 2,752 miles.

Including detours in order to avoid dangerous places and mileage not counted in schedule because the aviator had wandered off his course, it is estimated that Rodgers flew about 4,231 miles in fifty days.

His flying time was 4,924 minutes. These figures are his manager's.

He made his best day's flight between Sanderson and Sierra Blanca, Tex., on October 28, covering 231 miles.

Fowler's Transcontinental Flight

Robert G. Fowler left Los Angeles on October 19th on his second attempt to cross the American continent. The start was made from Fremont Park at 4:55 P. M. and the first stop was made at Pasadena at 5:40 P. M. After being delayed at Pasadena, he restarted on October 21st and continued to Riverside, where he stopped for the night.

The following day he succeeded in getting as far as Banning, and on October 23rd reached Mecca, where he was delayed for one day by engine trouble.

On October 25th he got as far as Yuma, Ariz., having succeeded in crossing the desert and mountains. After four days' delay in Yuma, he finally left there on October 29th, and got to Maricopa, a distance of 165 miles.

At the time of going to press Fowler is continuing his flight eastward and apparently making good progress.

Curtiss Doings

A large amount of equipment, in the shape of aeroplanes, parts, machinery and staff of employees, was sent recently from the Curtiss aeroplane factory at Hammondsport, N. Y., to the Curtiss training ground and experimental station on North Island, near San Diego, Cal. The Curtiss training school is already open at San Diego with about a dozen pupils in attendance, including one officer of the Greek army.

The experiments which are in contemplation, and which have been thoroughly worked out by the Hammondsport manufacturer, are the most important that he has ever undertaken, and will undoubtedly bring further improvements in aerial vehicles that will cause world-wide interest.

Lincoln Beachey, the famous Curtiss flyer, will go to San Juan, Porto Rico, on November 25th, to fill a week's contract with the government fair at that place. The inhabitants of the Island of Porto Rico are reported to be eagerly awaiting Beachey's exhibitions. Following San Juan, Mr. Beachey will go to Caracas, Venezuela, to carry out a contract made with an official of the Venezuelan Government.

Aviator Charles F. Walsh, another of the Curtiss flyers, has given exhibitions recently at Broken Bow, Neb.; Alva and Thomas, Okla., and Laredo, Texas, together with J. A. D. McCurdy, who has returned to the Curtiss management.

Mr. Beckwith Havens, having concluded an engagement of ten days at the Texas State Fair at Dallas, has given exhibitions at Fort Smith, Ark., in conjunction with Mr. Lincoln Beachey, and at Marlin and Temple, Texas, and Houston, Texas, where, together with Aviators Hugh Robinson and Eugene Godet, he made flights for the Houston Carnival Association covering a period of seven days.

The Curtiss Exhibition Company is carrying on an active campaign throughout the South and Southwest during the Winter months. Two of its aviators, J. A. D. McCurdy and Charles F. Walsh, will give exhibitions in the City of Mexico in connection with the Presidential inauguration.

THE EIANE BIPLANE
And New System of Control for Lateral Equilibrium

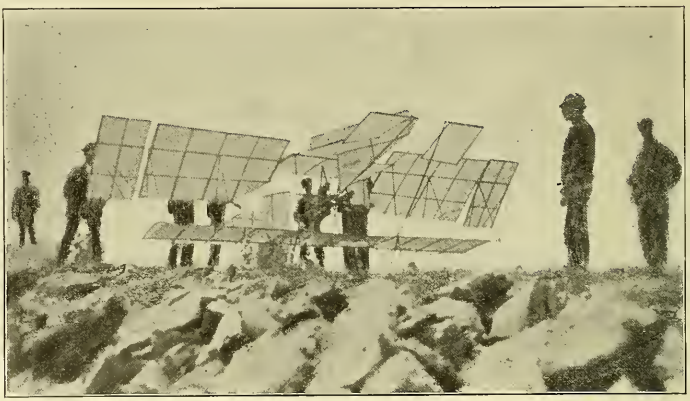
By H. O. Eiane

The Eiane machine is a biplane with the propeller in front, and has the upper planes mounted pivotally on a transverse bar, while the lower surface is rigidly held in place. The uprights from the lower surface converge and join together at the point where they attach to the top planes (see accompanying drawings), making the frame very strong and doing away with a large number of wires.

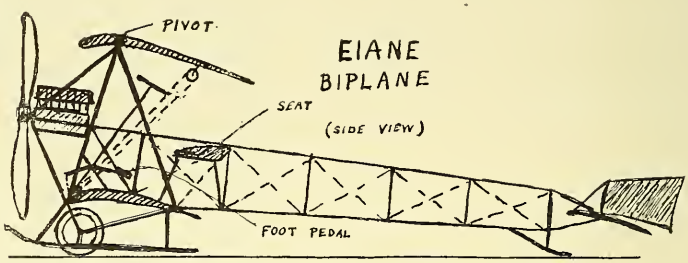
The upper planes serve the purpose of ailerons, and also serve to slow up the machine in the air, when making landings aboard vessels or in other limited spaces by moving the planes against the course of flight. Control of the machine is attained by a pair of foot levers and a hand wheel. The bar from the hand wheel passes through a hinged yoke and the lower end of said bar is secured by a universal joint to a winding drum; from this drum runs a number of wire cords, preferably three to each side, along the front edge of the lower plane, where guide sheaves are placed at certain intervals from which the wire cords run up to pulleys placed under the rear parts of the upper planes, and thence return to a point at the drum, where all returning wires form a junction which in turn is connected to a pair of foot levers; thus, by turning the drum, both upper planes are moved down. Simultaneously and by working the foot levers, the planes can be moved oppositely in regard to each other, thus acting as ailerons; moving the hand wheel fore and aft operates the horizontal rudder, and the sidewise movement of the wheel works the vertical rudder, the drum is provided with a ratchet which can be disengaged by lifting the hand wheel a little. The advantages of this machine are its ability to descend at a steep angle on an even keel; this can be done by allowing the propeller to run, after the upper planes is thrown against the course of flight, thus creating a strong air current in which to operate the tail rudders. And secondly to bring the machine to a quick stop when alighting on the ground. Thirdly, to avoid the fatal downward plunges by winding down the planes, thus greatly retarding the speed.

It is likewise possible to connect up the top planes to two pivoted vertical fins, which are so placed as to be capable of turning sidewise when struck by gusts and thus through wires automatically operate the top planes as ailerons and so restore the balance of the machine.

The writer, not being a manufacturer, is desirous of co-operation with some manufacturing concern or individual who is in a position to build or market his invention, and will be glad to receive any correspondence on the subject at the following address: Mr. H. O. Eiane, U. S. S. Perry, Mare Island, Cal.

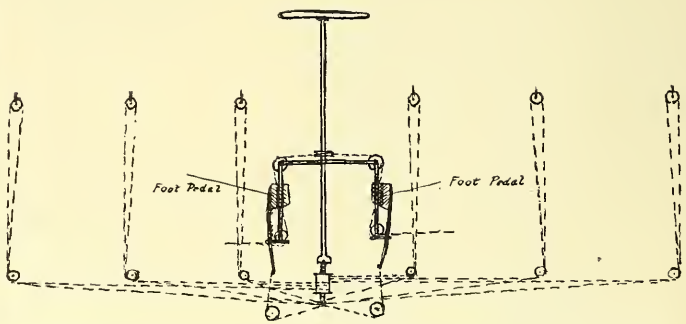


Front view of the Eiane experimental biplane showing how the upper main plane can be pulled down to act as a brake in alighting or as an aileron when only one is pulled down.

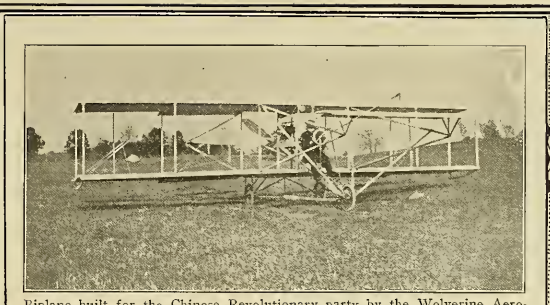


Diagramatic side view of the Eiane biplane. Note the method of pivoting the top plane and the method of connecting it to the foot pedals.

The Eiane experimental glider, fitted with the Eiane system of automatic balance, making a towed flight in a high wind.



Diagramatic sketch showing the workings of the Eiane system of control. The two foot pedals operate through wires the upper plane while the column is used for steering up or down. By turning the wheel and column the two planes can be pulled down together to change the angle of incidnce or to act as a brake.



Biplane built for the Chinese Revolutionary party by the Wolverine Aeronautic Construction Co., of Albion, Mich.

FOREIGN NEWS

Austria

A new record for height with two passengers besides the pilot has been put up by Lieut. Bier on his Etrich monoplane. He rose to a height of 1,220 metres, thus considerably bettering the previous performance of Moineau on a Breguet at Douai, last August, when he reached a height of 876 metres.

Belgium

Chevalier Jules de Lamine is one of the few gentlemen who has an aeroplane stable and who uses his aeroplanes solely for pleasure as one would an automobile. On October 8th de Lamine and his wife decided to accept an invitation of the Baroness de Gaiffier d'Hestry to lunch at Marchowelette Castle, near Namur. He made up his mind to make the journey *en aeroplane*. Mounting his racing Henry Farman machine, and taking as passenger his friend, Lieut. Selliers de Moranville, the Chevalier left his castle grounds, at two minutes to ten and arrived at his host's residence at half-past ten, having covered 25 miles in 33 minutes, and beating the motor car by which his family made the journey by about 20 minutes. About a quarter to two the aviators remounted the machine and were back at Oudoumont Castle at ten minutes past two. After landing the Chevalier was asked by Baron de Macar to carry an urgent message to Major Vischers at Rimiere Castle. Taking the Baron with him as passenger, the Chevalier started from his Castle grounds and soon had his destination in sight. The Rimiere Castle being surrounded by thick forests no possible landing place could be found, but this predicament had been guarded against, the message having been fixed to a tennis ball to which had been attached a long strip of fabric, and the aviator was able to throw it to the crowd on the Castle Terrace which had assembled on hearing the humming of the Gnome motor. After making a circle above the Castle the two aviators returned home, having covered a distance of 25 miles in 30 mins. 50 secs.

England

Cody Wins Second Michelin Cup.

Mr. Cody is an easy winner of the British Empire Michelin Cup No. 2, as his was the only successful attempt, the other competitors having left the matter too late. Several had intended making an attempt but the bad weather frustrated them, and so when the competition closed on October 14th, Mr. Cody was the only one who had covered the 125 mile cross-country course stipulated in the regulation.

On October 21st, Mr. Pixton made a trip on a Bristol biplane to Hayling Island with the object of making some flights over the sea. Starting from Amesbury at 2 P. M., with Lieut. Burney, R. N., as passenger, they arrived at Hayling Island at 5 o'clock, having stopped at Durley near Eastleigh, for lunch. After Mr. Pixton's arrival the weather was so gusty that he was only able to fly on three occasions, the wind going steadily from bad to worse.

Testing the new Short twin-engine biplane recently, Mr. Frank McClean flew it from Eastchurch over Capel Hill to Leysdown, returning to Eastchurch. There was a stiff breeze, but with the new control system the minor air currents scarcely affected the machine. A similar biplane is now being built by Messrs. Short Brothers, and they will shortly commence another biplane embodying one or two new features and fitted with two 100 H. P. engines driving four propellers.

France

The special benefit meet recently held for Frey, the aviator who, it will be remembered fell and broke both his legs while attempting to complete the last leg of the Paris-Turin race, attracted a large crowd to the Juvisy aerodrome. Verrept came out first on a Morane monoplane and gave an exhibition of high flying. He was followed by Audemars who made a very amusing flight on his Demoiselle. Pischoff on his monoplane, Henry on a Henry Farman, Demazel on a Caudron biplane and Divetain and Ladougne on Goupy biplanes, all made splendid flights which were greatly appreciated by the spectators.

On one of the new Morane monoplanes built especially for altitude climbing, Verrept has been putting in some good practice preparatory to trying for the world's altitude record. On one of his flights he got up to 1,150 metres in 7 minutes and came down in 4½ minutes, while on another he reached a height of 2,450 metres in 21 minutes and descended in 15 minutes.

A splendid cross-country trip was made by M. Sommer on October 18th, when he carried six passengers besides himself on a biplane from Rheims to Mourmelon and back in 55 mins. The passengers were Mdlle. Marvingt (weight, 67 kilogs.), Kimmerling (87 kilogs.), Crombez (68 kilogs.), Bordier (60 kilogs.), Brocart (72 kilogs.), Molla (86 kilogs.). In addition, at the start, there were 80 litres of petrol and 20 litres of oil on board.

On October 13, trial flights were carried out at Mourmelon, before a deputation of military officers, of four Nieuport monoplanes intended for use in the French Army. The total flying time of the four machines was 9 hours. Two of them were fitted with 2-cyl. 28-h.p. engines, and two with 50-h.p. Gnome motors. The altitude test of rising to 500 metres was made in times ranging from 7 to 9 minutes.

Recently Marcel Hanriot, on one of the biplanes, flew from Rheims to Mourmelon and back without stopping, in 58 minutes. The elder Hanriot was out testing a new machine fitted with a 100-h.p. Clerget engine.

At the Deperdussin school at Courcy-Betheny, on Oct. 19th, Gaillard was flying on a new machine fitted with a 3-cylinder Anzani engine for 1 hr. 40 mins. On the following day, Delacour flew over to Montcornet at a height of 1,200 metres. At the Deperdussin school at Etampes, Grassi made five figure-eight tests for his license in 7 mins. 35 secs.

On Oct. 19th Molla, on a Sommer biplane, succeeded in carrying five passengers from Rheims to Mourmelon and back.

The Quentin-Bauchart Prize.

The official results of the competition for the Quentin-Bauchart prize have now been given out. Renaux (M. Farman) is awarded first prize of $6,000 his distance being recorded as 6,830.75 kiloms.; Helen (Nieuport) is second with 5,248.8 kiloms., and taking $3,000; Tabuteau (Borel-Morane) third, 3,030.2 kiloms., $1,000; and Vedrines (Borel-Morane) fourth, 2,334 kiloms, $500.

It has now been definitely decided to open this year's Aeronautic Salon at the Grand Palais, on December 16th, and it will continue till January 2nd. Present indications show that this exhibition will exceed the two previous ones, some forty-five machines having already been entered against thirty-seven in 1910.

An anonymous and patriotic donor has offered 100,000 francs ($20,000) for the purpose of encouraging and aiding military aviation in France. A condition attached to it stated that the amount shall be raised by patriotic subscription to 1,000,000 francs, ($200,000) which it is thought will not be difficult owing to its national character.

Germany

THE JOHANNISTHAL MEETING.

The official results of the Johannisthal Meet show that Pietschker, on his Albatross biplane, was first in the duration competition with 13 hrs. 46 mins., and Suvelack, on a Rumpler-Taube monoplane, was second with 12 hrs. 13 mins.; Grulich on a Harlan monoplane, third, 10 hrs. 10 mins.; Fraulein Beese, Rumpler-Taube monoplane, fourth, 9 hrs. 22 mins.; Kahnt, Grade monoplane, fifth, 7 hrs. 32 mins.; and Engelhard, Wright biplane, 6 hrs. 49 mins. There were eleven other competitors whose aggregate ranged from 5 hrs. 35 mins. to 1 hr. 16 mins. Hirth, on a Rumpler-Taube monoplane, was awarded a medal for his height record of 2,475 metres.

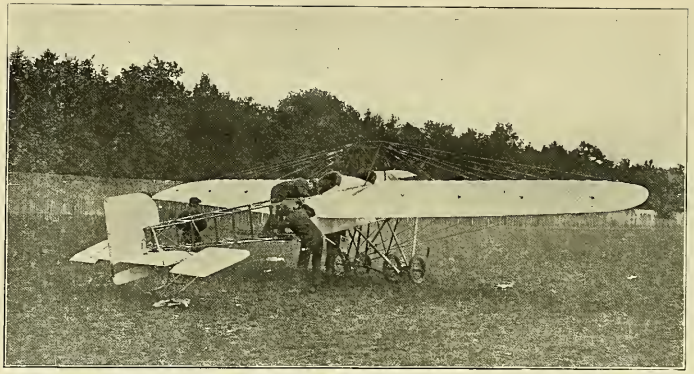
While flying at Hanover, on Oct. 21st, Tachs fell from a height and subsequently died from the injuries received.

GERMAN NEWS.

By Arthur Wiener.

The past month has wrought wonderful events in the world of aviation; not as one would be apt at first to suppose for the aeroplane, but for the dirigible balloon, in which Germany to-day possesses a means of transportation, more ideal than anything else which can be found in the whole world. The Zeppelin ship which I mentioned in my previous report and which was being built by order of the military department, has been completed in the meanwhile, and has proved its worth in the highest degree at its trial flight. All attempts of the aeroplane fliers to equal the feats of this giant bird failed miserably, and to-day there is no longer any doubt that for practical transportation only the dirigible balloon comes into question. The new ship has no cabins like the "Schwaben" but it has many more extensive military equipments; in fact it even has a stairway leading to a small platform on the top of the ship, on which Maxim guns can be erected. During the twenty hour test flight, which the military officials had made a condition, the seventy-three-year-old Count Zeppelin steered the ship, which responded to each touch of the rudder in the most satisfactory manner. But that was not the only triumph of the Zeppelin system this month; and it is through the second much greater success that the first gains its strength. The "Schwaben," which was built for passenger transportation and which the middle of last month made the trip to Berlin for the second time has, since it was finished three monthe ago, completed one hundred trips. In an aggregate time of two hundred and twenty-four hours (224) the ship traveled over eight thousand (8,000) miles and transported two thousand and fifty-three (2,053) persons without the slightest damage having been done to it. The perseverance and the indomitable energy of the aged Count hereby triumphed over all doubters and over the enemies of the "rigid system." If now that this system has withstood the severest test, equally successful work be continued, Germany will in less than a year have control of an air flotilla in comparison with which the combined aeroplanists of all the nations will appear like a collapsible house of cards. While the aeroplanists must reach the desired height by circling their way upward through the air, the Zeppelin shoots like an arrow 5,000 feet and more into space by the impetus of its own machinery; and where is there an aeroplane that can show the record of an uninterrupted twenty hour trip with fifteen passengers?

The airship "Schuette-Lanz," which was constructed of wood, also made its first trip the middle of October with good results. It is about 450 feet long, and its diameter in its broadest part is about 60 feet. Like the Zeppelin it has within it numerous cells, but unlike the Zeppelin it works with but two screws which are fastened directly to the boat. The motor power is about 500-600 h. p.



The latest 100 H. P. 5-passenger Borel-Morane monoplane, which was used in the French military trials, and a duplicate of which will be flown in this country by Arthur Stone. Note the extra heavy landing chassis and roomy cockpits for pilot and passengers.

More long trips are anticipated in the very near future.

The autumn week in Jobannisthal gave the aeroplanes the opportunity to show what they have been doing in the meantime toward making men masters of the air. Of especial interest was the successful appearance of Miss Biesse, a young sculptress, on the field of aviation; this young woman directed the Etrich Rumpler "Taube," by which she gave evidence that woman, also in this branch of modern sport, is not inactive, and that she aspires to equal men in every respect. A shadow was thrown upon the otherwise brilliant meet by the death of Captain Engelhardt. With Engelhardt, who was a Wright pilot, one of the oldest German pilots passed away.

The week of flying showed several technical improvements among which a few very elegantly built monoplanes were most conspicuous. Especially successful was, as always, the Rumpler'sche "Taube," perhaps the most beautifully built monoplane up to the present time. On the last day Hirth ascended with it to a height of about 7,500 ft., within fifteen minutes; the descent was accomplished in but four minutes, an evidence of the assurance of the flyer and of the excellence of the machinery.

The fact will probably be of general interest that a combined Committee of the Imperial Automobile Club and the Society for German Locomotion Industry worked out a competition contest for the flying machine motors which is set for the spring of 1912. The competition is to be international and is supposed to fit as nearly as possible the conditions existent in flying apparatus. In accordance with this not only motors alone, but also all the parts necessary in the construction such as coolers, tanks containing propelling supplies, and other accessories will be taken into account. The valuation of the competitive machines will be estimated not only by the weight of the entire apparatus but the weight of the material used in running will be taken into account, and in addition to this the average result shown during a seven hour run. By the decision being made in this way it is expected that the economy of motors and their surety during the run will be given more attention. As large money prizes will be given and as the contest receives practical assistance by the authorities it is to be expected that the motor manufacturers of domestic and foreign countries will take a very lively interest in it.

Italy

ACROSS THE APPENINES.

A notable flight was made on October 20th, when Le Lasseur de Ranzay, accompanied by Baron Della Noce, on a Blériot monoplane, succeeded in flying from Bologna to Florence. The distance is abont 100 kiloms., but the aviators had to cross the Appennine mountains, which rise to about 1,300 metres. Nevertheless they got over their task without much difficulty, and landed safely in Florence about an hour after leaving Bologna.

Switzerland

THE SWISS MEETING.

The opening of the meeting at Berne on Oct. 21 was marred by a bad accedent, in which the aviator Hans Schmidt lost his life. He had made a fine flight of 31 mins., when the machine was seen to oscillate and then suddenly dive to the ground from a height of 50. metres. The wreckage burst into flames, and before anything could he done the pilot was burnt to death. Flying was immediately suspended for the day. On the following day some good flying was put in by Durafaur (Dufaux biplane), Grandjean (Blériot), Taddeoli (Morane), and Wyss (Blériot), but on Monday the wind prevented any of the machines being seen in the air. It was also decided to abandon the proposed circuit from Berne to Bienne, Avenches, Neuchatel, Geneva.

Tripoli

AERIAL SCOUTS AND ITALIAN ARMY.

On October 23rd Captains Piazza and Miozo proved to the world the great value of the aeroplane for military purposes. The two Italian aeroplane scouts went out to reconnoitre and sighted the Turkish cavalry closing in on their ranks and immediately reported to the commanding officer, with the result tbat the Turks were repulsed and badly beaten.

On several other occasions the aeroplanes proved of great value, and on one occasion Capt. Piazza successfully dropped bombs among the enemy, in spite of the fact that he was shot at and his machine riddled with bullets.

NEWS IN GENERAL

Professor John J. Montgomery of Santa Clara College died at San Jose on October 31st, from the effects of a fall from a glider with which he was experimenting in the foot-hills near Evergreen.

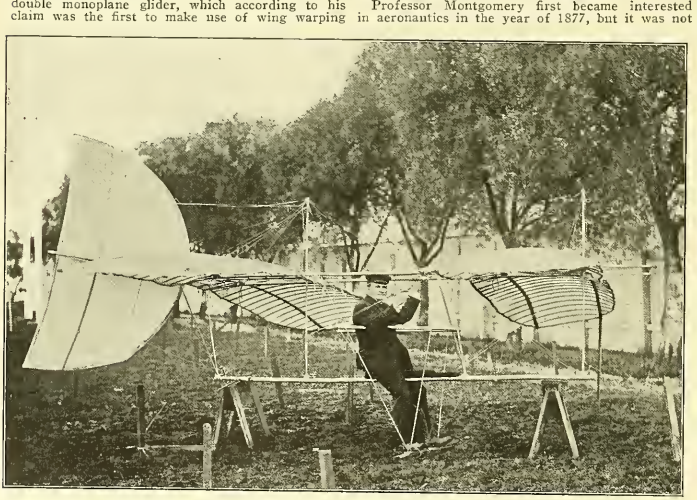
The glider was about twenty feet from the ground when it fell.

Professor Montgomery was the inventor of a double monoplane glider, which according to his claim was the first to make use of wing warping on curved surfaces. The glider was very successful when operated without power and the machine, at one time, glided safely to the ground from a height of abont 4,000 feet, having been dropped from a balloon. As far as is known Professor Montgomery's experience with a motor driven machine was never successful.

Professor Montgomery first became interested in aeronautics in the year of 1877, but it was not until 1903 that he built his first flying machine, which was of the wing flapping variety.

During 1904 and 1905 three gliders were built, one of which with wings curved to imitate those of a sea gull made a flight of 1,600 feet. It was equipped with ailerons hinged to the rear of each wing and demonstrated the value of curve lifting surfaces. In the third machine the stability was maintained hy pivoted wings.

When it is considered that Montgomery's first glide was performed eight or nine years before Lilienthal's experiments it shows that he had constructed a machine that was far in advance of its time and well worthy of development.



Prof. John J. Montgomery seated in the glider, on which he was killed at San Jose, Cal., on October 31. Prof. Montgomery was one of tbe pioneers of aviation, and claimed to have been the first to use wing warping.

Plew's Letter on Montgomery

November 8, 1911.

MR. A. W. LAWSON,

37 East Twenty-eighth Street, New York.

MY DEAR SIR—Replying to yours of the 6th instant, we have not yet recovered from tbe shock of Professor Montgomery's death. It came like a thunder clap from a clear sky. We have had so much confidence in his judgment and ability that we had come to feel that it was impossible for any accident to happen to him, all of which goes to prove the fallihility of the human being.

I am informed that the Professor made his last attempt at flight after making fifty or more successful trials. He had assisted in pulling the aeroplane to the top of the hill to the starting point and had undergone great exertion just prior to his attempt. His brother is of the opinion that his nervous condition, as a result of tbe above, was largely responsihle for the accident.

I consider his loss a hard blow to the science, as Professor Montgomery was undonbtedly one of the most profound students of the science of aerodynamics. His knowledge was deep and far-reaching. He seemed to know more of the whys and wherefores than any other man with whom I have talked. He had a most interesting personality. To know him was to respect, admire and love him. A casual acquaintance would not have been strongly attracted to him, yet after knowing and talking to him one could not but recognize his great learning and ability along the lines of his chosen work.

No matter how much one might know of the subject of aviation, in the presence of Professor Montgomery the inclination was all to listen and not to talk. His ideas were so beautifully expressed that they were not only enlightening, but extremely interesting. I specially remember one visit which he made to my home. After dinner we sat in the library and talked about various subjects, but the conversation naturally drifted to aeronautics. Before we realized that the evening had scarcely begun we discovered that it was 11 o'clock. We seemed to be under a spell. The evening was one of the most delightful I have ever experienced, and the most enlightening. His illustrations were so simple and his language was a poem. I shall never forget that visit, and am sorry that I cannot look forward to its repetition.

Ever since I have known the Professor I have been anxious to be in closer touch with him, but on account of his living in California his visits have been few and far between.

When his theories are finally reduced to practice I believe then the world will recognize his great ability. His untimely taking away is another proof that the master mind should not attempt the hazardous feat of the physical demonstration of their ideas. The master mind should be conserved for planning and the execution left to people who are a less loss to science. The general should not be allowed to be on the firing line. Aeronautics is still in its infancy, and it is a hazardous proposition at best. We are making rapid strides, in fact, almost too rapid, but we should have a greater regard for the safety of our scientists. Of course, Professor Montgomery's death will only check the progress. Others will take it up and it will be fought to a final successful conclusion.

This death is more nearly personal than any which has yet occurred among the many connected with aviation who have lost their lives in recent months, and many of them have been personal friends. I trust, however, the time has come when a smaller percentage of lives must be sacrificed and the work from now on can be along more safe and conservative lines.

I am enclosing under separate cover a picture of Professor Montgomery, which you can use and return at your convenience.

With my kindest regards, I am,

Yours very truly,

JAS. E. PLEW.

Aeroplane Mail Carrying

Postmaster General Frank H. Hitchcock states that he considers the aeroplane all right for practical mail carrying to a limited extent as they are today, but adds that he believes they must continue to improve.

"Even with the aeroplane as it is now, it will be useful to us, particularly in some parts of the country," said the Postmaster-General. "Take it along the Colorado River in the canyon district of Arizona, for instance, or in parts of Alaska. Along the Colorado there are places where detours of fifty miles out of the way are made in mail routes to get to a bridge. An aeroplane could hop right across the river."

Since the Nassau Boulevard meet in September, mail carrying by aeroplane has become one of the most popular and attractive features at aviation meets. The Curtiss aviators have carried mail at Rochester, N. Y.; Fort Smith, Ark.; Temple, Tex., and other places. The long-distance aeroplane mail carrying record is now held by Hugh Robinson, one of the staff of Curtiss aviators. Mr. Robinson carried a bag of mail from Minneapolis, Minn., to Rock Island, Ill., in a Curtiss hydroaeroplane on his flight down the Mississinoi River. The distance covered in this trip is 375 miles, and mail matter put in the bag at Minneapolis was turned over to the post office at Rock Island, Ill., by Mr. Robinson.

The Airship Akron, Built by Melville Vaniman with which He Expects to Cross the Atlantic Ocean

The construction of this dirigible was begun at the Goodyear Tire and Rubber Plant at Akron, Ohio, and finished at Atlantic City, where it is house a he old hangar used for the Wellman-Vanaman expedtition of last year.

The Akron is longer but of smaller diameter than the "America." It is 258 feet long and 47 feet in diameter. The body of the car, which runs along below the gas bag is made of steel and acts as a reservoir for five tons of gasoline. A platform is built on this tank, which forms the deck of the ship.

Three engines are provided to drive the dirigible, one forward of 100 H. P. is fitted with propellers that rotate only in the vertical plane, the other two propellers of 100 and 80 H. P. respectively, drive the propellers whose plane of rotation may be turned to any desired angle. Normally only, the forward engine will be used, which should be sufficient to create a speed of about 30 miles per hour.

About 60 pounds of gasoline will be consumed per hour, so that the supply should last about a week.

The propellers of he other two engines when not in use will be turned to a horizontal position so as to eliminate resistance to the forward movement of the ship. In addition to these engines there is a 17 H. P. engine directly connected with a dynamo, which will be used for lighting, wireless telegraph purposes and also to operate a blower with which the ballonets of the gas bag may be filled. It ill also drive a countershaft by which any one of the large engines may be started.

The Vaniman transatlantic airship "Akron" leaving its shed for a trial trip. The dirigible was designed by Melville Vaniman and built at the Goodyear Tire and Rubber Company's works at Akron, under his personal supervision. The expedition is backed by Mr. Seiberling, president of the Goodyear Company.

For the purpose of maintaining the dirigible at a constant elevation above the water a system of taking on and throwing overboard water, as ballast, has been devised, as well as fore and aft stabilizing planes. In case of an emergency the elevating and depressing engines can be used.

There are three planes on each side of the car at the forward end, each are curved upward while those at the rear, mounted on a rudder, are reversely curved. These planes may be tilted to any angle desired and will serve to keep the car on an even keel.

When dipping down to take up water ballast, the forward planes will be used for depressing the bow and as these planes are more powerful than those at the rear, they will cause the bow to be more rapidly depressed than the stern, thus giving he ship its greatest possible downward thrust. These planes are controlled separately by hand wheels, at each side of the binnacle.

The level of the vessel may also be controlled by inflating the ballonets forward when it is desired to make the bow heavier than the stern or vice versa, if the opposite effect is desired.

The ship can be driven near the level of the sea to take on water ballast by tilting either pair of the adjustable propellers to the proper angle. The hydrolevitor with which the water ballast will be taken up is similar to the America's equilibrator and consists of tanks about 6 inches in diameter and 24 inches long strung upon cables in the same way that the gasoline tanks of the equilibrator were connected. These water ballast tanks have openings near the upper end of each so that when dragging them along they scoop up the water.

Three different sets of tanks are stored in the body of the craft, when not being used. During the day time when the gas in the balloon is expanded by the heat of the sun, much water ballast will have to be taken on, but at night when the air is cool and the gas contracts this ballast will be thrown overboard.

Below the car is suspended the same life boat which was used on the America. In this boat a wireless telegraph apparatus is stored.

The crew of the expedition consists of the commander, aviator, a wireless operator and three engineers.

Wright Soars Nearly Ten Minutes

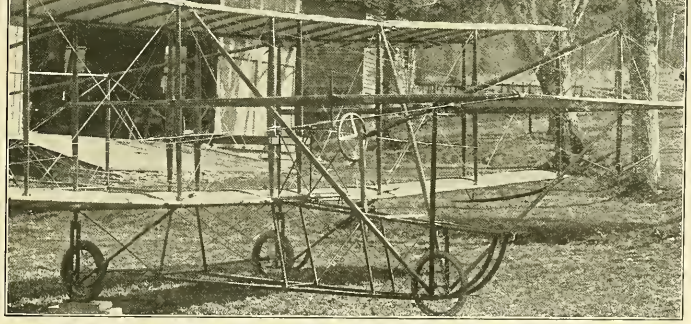
Newspaper reports state that on October 24th Orville Wright accomplished the unprecedented feat of remaining aloft in a glider for ten minutes at Kitty Hawk, N. C. This flight was the most sensational and instructive of the series of flights which were being conducted by Orville Wright and Alec Ogilvie, the English aviator, and was made in the teeth of a fifty-mile gale. The machine used was a small copy of the standard headless Wright biplane, with the exception that it was built low to the ground, had a large vertical fin in front and a larger vertical rudder in the rear.

On October 28th the new Burgess hydro-aeroplane was successfully flown from Marblehead Bay by W. Starling Burgess, Clifford L. Webster and Harry N. Atwood.

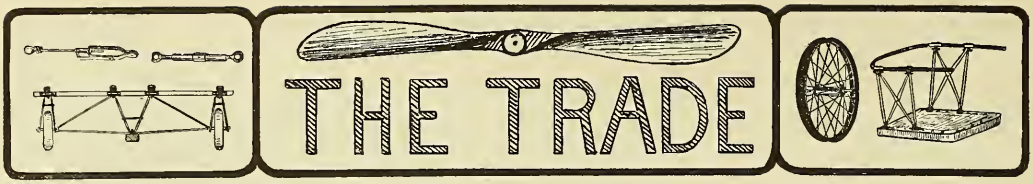
During one of the trial flights, Webster rose to a height of 1,500 feet and descending *en volplane*, with the motor just turning over, alighted on the water and then, speeding up his engine, rose again without the slightest trouble. The machine is a regulation Burgess Model F and the hydroplanes are attached in place of the regular skids. The hydroplanes are of the single step type, 14 feet long and 18 to 24 inches wide and are of canvas, stretched over a frame.

On October 20th Frank Coffyn, accompanied by Russell A. Alger, flew over Lake Michigan, covering a distance of 23 miles in 26 minutes. The flight was made in the vicinity of Detroit.

The machine used was a standard Wright biplane, which was fitted with two hydroplanes in the place of the usual skids.



DETAILED VIEW OF THE WITTEMANN BIPLANE, SHOWING THE NOVEL SHOCK-ABSORBING LANDING CHASSIS AND SINGLE SPARS SUPPORTING THE FRONT ELEVATOR.



ATTENTION of the American manufacturers is herewith called to the advisability of opening up correspondence with the various governments of South America for the purpose of supplying them with war machines.

The very successful debut of the aeroplane in the war between the Italians and Turks at Tripoli has demonstrated the practicability of the aeroplane for scouting service even in its present crude state, and we feel sure that the various governments of the world will now begin to consider the flying machine as a necessary adjunct to their Armies and Navies and begin to look about to make purchases.

The American manufacturer should make his presence known to them before they have decided to buy their machines from Europeans, therefore a flood of correspondence to the Secretaries of War and the Secretaries of Navies of the different South American countries might mean the bringing of considerable business to this country that otherwise would go elsewhere.

Further than this, it would not be a bad idea to let our own Secretary of War and Secretary of the Navy know just what you have to offer, as there will no doubt be something doing by this government in the near future.

The Aeronautical Manufacturers' Association

At a meeting of the Aeronautical Manufacturers' Association, held on the evening of November 10, the following correspondence was recorded:

November 2, 1911.

Aeronautical Manufacturers' Association.

DEAR SIRS:—We are holding an aeronautical show next May at the Grand Central Palace and earnestly solicit your co-operation to make it a success. With this end in view, we have named Mr. E. La Rue Jones, your president, as a member of our show committee. Where your interests will thus be well represented, we would be glad to have your ratification of this representation of the Aeronautcial Manufacturers' Association Committee.

Yours sincerely,

(Signed) GEORGE F. CAMPBELL WOOD,

Secretary, Aero Club of America.

November 10, 1911.

George F. Campbell Wood, Esq., Secretary,
Aero Club of America, New York City.

DEAR SIR:—Replying to your courteous invitation of November 2, I am instructed to advise you as follows:

At a special meeting of the Aeronautical Manufacturers Association, held November 10, 1911, it was unanimously

Resolved, That this Association heartily endorse the International Aeronautical Exposition to be held at Grand Central Palace, May 9-18, 1912, under the auspices of the Aero Club of America.

It was the consensus of opinion of the members present that it would be unnecessary for this Association to be represented on your Show Committee.

Respectfully yours,

(Signed) F. D. WOOD, *Secretary,*

Aeronautical Manufacturers' Association.

It was the general opinion of the members present at this meeting that the Aeronautical Show which will be held at the Grand Central Palace in May, would act as a stimulus to the industry in this country. It was agreed that at the next meeting of the Aeronautical Manufacturers' Association a committee would be appointed to look after the interests and welfare of the members of the Association who become exhibitors at the show. Mr. Alfred W. Lawson reported that Mr. Frank A. Seiberling, President of the Goodyear Tire and Rubber Company and also President of the Chamber of Commerce of Akron, Ohio, had accepted the office of Second Vice-President of the Aeronautical Manufacturers' Association. This announcement was greeted with an unmingled display of satisfaction on the part of the members present who recognize in Mr. Seiberling one of the coming big men of the aeronautical movement.

The Wolverine Aeronautic Company, of Albion, Mich., manufacturers and dealers in motors, propellers and aeroplanes, report a steady growth of their business during the past year. One of the new aeronautical devices that this company handles is a wire stretcher which they use in the place of turn buckles on all their machines. This company has just finished a 30 by 4½ foot biplane for the Chinese Revolutionary party. The machine is double surfaced and covered with Naiad No. 2 C cloth. Each plane is in five sections and everything arranged to pack flat in the very smallest space and be easily taken from the crates and assembled by two men in less than two hours.

A concern which has proven itself to be both conservative and progressive in conducting its business during the past year, and which gives promise of becoming a permanent establishment in the aeronautical movement is the **Chelsea Aero Company**, of New York, builders of the well known and much used Charavay propellers. It is understood that this concern has not only met with considerable success in the constructing and marketing of their propellers, but that they are also planning even greater things for the future.

The Frontier Iron Works, of Buffalo, N. Y., is the latest big manufacturing concern to enter the aeronautical industry. This concern has just completed a new V type, eight-cylinder, four-cycle aero motor, which they believe will meet with considerable success among the flying men and constructors of aeroplanes in this country.

The coming of this big concern into the aeronautical trade is only another instance of the sure and ever-increasing growth of the movement. About fifty or a hundred more such concerns as the Frontier Iron Works coming into the aeronautical industry and spending their money towards its development, will insure, beyond any question, its substantial and permanent existence.

The Queen Aeroplane Company, of New York, has opened a school of aviation at Los Angeles, Cal., for the Winter, and has sent several machines to the coast for that purpose. The school will be conducted under the personal supervision of Mr. Ladis Lewkowicz, the well known aviator, who, it will be remembered, was the first aviator to fly over New York City, which he did last July in a monoplane at a very high altitude. Mr. Lewkowicz will be assisted by other licensed pilots and a corps of expert mechanics. The school will be conducted on entirely French lines, as Mr. Lewkowicz is a great believer in the French methods of conducting schools.

The Curtiss Exhibition Company of New York, who act as the sales agents and foreign representatives for the Curtiss Aeroplane Company and under whose management all of the different Curtiss aviators of the world operate, have adopted a clever method to ascertain the exact progress made by the aeronautical movement in this country.

On page 329 an advertisement appears in which an autograph photograph of Glen H. Curtiss is offered free of charge to any reader of AIRCRAFT, who will send in his reasons for being interested in aviation.

The Aerial Construction Co. of New York report a conservative increase in their business of building propellers and complete aeroplanes. They are also planning to keep their men employed during the winter months building a stock of Nieuport type monoplanes, so as to be ready for the rush which is expected next spring.

It speaks well for the optimism of Mr. Sanford, the president of the Aerial Construction Co., that they have recently taken possession of an additional two-story building 25x100 directly adjoining their present location on West Forty-third St.

The New York Aeronautical Supply Company, of New York are compiling a new catalogue of aeroplane parts which will be ready for distribution at an early date. This concern is making preparations for an increased volume of business by enlarging their office facilities both in space and equipment. The growth of this company speaks well for the rapid advancement of the aeronautical industry.

Mr. J. T. Seely has recently been appointed Special Representative for **The Roberts Motor Company** of Sandusky, Ohio. He may be reached at 781 Golden Gate Ave., San Francisco, and will cover the three Pacific Coast States, California, Oregon and Washington.

Mr. Seeley is admirably fitted for his new work, having been connected with the Elbridge Engine Company of Rochester, N. Y., for the past three years as Secretary and Sales Manager. In this capacity he has had a great deal of valuable experience in aviation and marine work.

The American Propeller Company reports a most satisfactory season of trade with but little cessation of demand notwithstanding the very unfavorable weather throughout the country during October. Their business extends to every state in the union, including foreign countries to the north and south. This company is making extensive plans for the season of 1912, having the advantage of a most enviable reputation for fair and frank business methods as well as for the beauty and excellence of their product, and being especially well fortified with patents covering the special structural features which distinguish all their Paragon Propellers, and also covering the peculiar technical variations of pitch which are regarded as a most important element contributing to the well known efficiency of their product. It is also understood that their patents cover certain peculiar methods and processes of manufacture whereby they are able to put up special work with great speed and efficiency and which contribute greatly to the excellence and economy of their regular production. Paragon propellers are reported as

being used by hosts of amateurs and other beginners whose success in many instances has depended absolutely upon the careful selection and designing for the requirements of special cases for which this company has become known. A good trade is also reported from numerous well known professional aviators, including some of the French aviators flying abroad.

Very recently the **Detroit Aeroplane Company** announced their 1912 model. While the chief difference between the 1910 and 1911 models was noticeable from their outside appearance, the new 1912 model power plant distinguishes itself from its predecessor through constructional and internal changes. For instance, the omission of cap screws by replacing same through machined bolts locked with castle nuts and split key is decidedly an advance. In fact, in the present type there is not a single nut that remains unsecured. Another constructional detail is the introduction of chrome nickel steel as crank shafts and steel alloy as connecting rod material. This change was made necessary through the additional power and speed gained by the use of higher compression. The additional heat developed by the more instantaneous combustion was compensated through arrangement of auxiliary holes in the cylinder walls and the necessary change of the valve timing which is now slightly over lapping. It is a well known fact that auxiliary holes have a certain unwelcome reaction on the lubrication and therefore one will find on the new model the necessary arrangement in form of an oil pump driven from the cam shaft and feeding the cylinder from a lubricating supply in the tank.

The power plant itself develops according to the manufacturers 28 brake-horsepower and when equipped with a seven-foot 3¼ foot propeller delivers a stationary thrust of 250 to 260 lbs. at 1,100 R.P.M.

The Rocky Mountain Aviation Company has been organized in Denver, Colorado with the following officers: President, F. D. Taggart; Vice-President, Frank King; Secretary, W. C. White, Treasurer, M. M. Koser. Georges Renel, the French aviator, has been retained as chief instructor in flying, and Mrs. H. J. Kuhm as assistant instructor.

The American Aeroplane Supply House, of Hempstead, New York, reports the sale of one of their Blériot type monoplanes to E. J. Marley, of Sumner, Miss., which machine was satisfactorily tested by Professor A. Houpert in an eight-mile cross-country flight at Nassau Boulevard.

R. O. Rubel, Jr. & Company, have leased for a period of five years a tract of ground about two and a half miles from the city of Louisville, on the Interurban car line, where it is intended to open up a school of aviation. Mr. Frederick Morlan will act as instructor. It is stated that already seven students have been enrolled.

California News

By Ernest Ohrt.

Lieutenant J. W. McClaskey, U. S. M. C., seven students and five Curtiss biplanes arrived in San Diego October 21, and immediately went into camp on the aviation field on North Island, across the bay from San Diego. These students will take up the study of aviation, instructed by Glenn Curtiss.

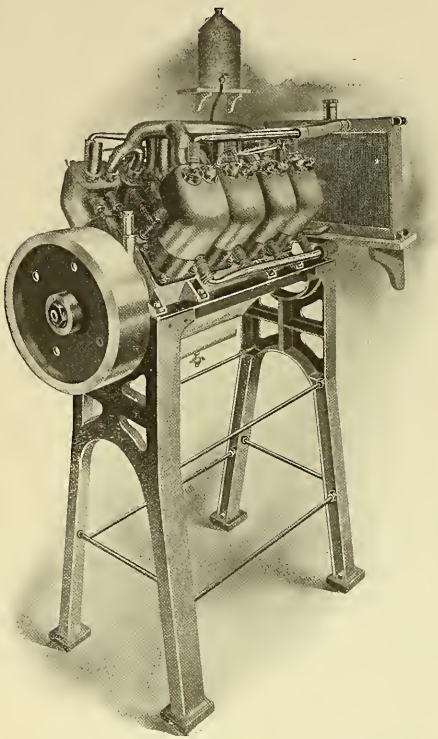
Murry C. Gunnison, of San Rafael, Cal., is seeking a good place to try out his large passenger carrying aeroplane. C. E. Hagen, of San Francisco, who demolished his Farman type biplane at the recent aviation meet, is completing his second machine.

Robert G. Fowler, the aviator who started on a transcontinental flight from San Francisco and who failed to cross the Sierras in the northern part of California, arrived in Los Angeles October 6 to make a new start. After being delayed day after day by a series of mishaps, Fowler finally started at 5.30 on the afternoon of October 19 and got as far as Pasadena the first evening.

Flying has been very popular at San Francisco's new aviation field, which is located at the Presidio reservation, and the field is known as Calvary Flat. Among the new machines on the field are two Blériot monoplanes, one belonging to Jeff De Villa. The two machines were used by Aviators Walker and Masson in their recent trip to the South Sea Islands. Aviator Criblet and Sergeant Seely, who have a Curtiss type equipped with a Maximotor, have made many short flights around the field. While attempting an extended flight on October 29, Criblet met with engine trouble and after being struck by a sudden gust at the same time, the flight ended in a bad smashup for the machine. In attempting to avoid colliding with his automobile, Aviator De Villa ran into a small ditch and demolished the entire landing gear of his Blériot monoplane. C. C. Bradley, who was practising with his Farman type biplane equipped with a Ford automobile engine of 20 H. P., has put his machine in storage until he gets a more powerful engine.

The New Frontier Aero Motor

MODEL A-1.



This engine is the product of the Frontier Iron Works, Buffalo, N. Y., who have spent the past two years developing and testing this motor for aerial purposes. It is of the V-type, eight cylinder, four cycle.

The cylinders, pistons and rings are of a mixture and grade of iron that is non-overheating metal. The crank case is aluminum, box type and is ribbed and braced in such a manner as to give stability and to resist undue strain.

The cam chamber is cast integral with the case and machined out to insure perfect alignment with no danger of parts loosening or becoming false timed.

The crank shaft is made from Krupp 3½ chrome nickel steel, hollow, as is also the connecting rod and piston wrist pins, through which the lubricating system pumps a continuous flow of oil from the reservoir, which is returned strained and continually used. All revolving shafts are run in imported anular ball bearings supported in specially designed housings with connections to the lubricating system.

The valves are of special alloy and construction which has been thoroughly tested to withstand long runs without adjustment or cleaning. The valve stems are operated through push rods adjustable for wear, they are hardened and run on steel balls, this feature eliminates the improper timing of valves. The intake and water manifolds are of copper, well designed for strength and capacity. All bolts and nuts are provided with ample protection against looseness through lock washers, castle nuts and copper pins.

This motor is equipped with carburetor, magneto, oil and gasoline tanks and radiator, this being the standard equipment.

Aviators are being sent invitations to take part in a meet on a new field at San Rafael, Cal., on which it is planned by the owners to bring aviators from all parts of the world during the Panama-Pacific Exposition in 1915.

The field comprises one hundred acres and is controlled by M. C. Tunison, who is the inventor of a monoplane. It is stated that twenty-five acceptances have been received from aviators, who will be accommodated with hangars free of charge during the exposition.

Mr. Tunison is associated in the enterprise with N. E. Clemenson, secretary of the Marin County Promotion League. A big amusement park, with scenic railways and other concessions, is to be attached to the aviation field if the promoters are able to carry out their plans. An effort is being made to arrange an international meet at the same place in July of next year.

An aviation meet has been announced to be held at Winnipeg, Canada, next June, and preliminary arrangements are now in progress by aeronautical enthusiasts in that city.

New American Endurance Record

On October 26th Howard Gill established a new American record for duration, remaining in the air for 4 hours 16 minutes and 35 seconds. This flight was made at Kinloch Field, St. Louis, Mo., in a Wright machine, which was over a year old and was once fitted with front elevators.

This flight was the main feature of the Kinloch meet, but others who made creditable flights were: Elton, Andrew Drew, Clifford Turpin, G. W. Beatty and Dr. Henry Walden, who made an 18-minute flight in his original monoplane.

It has been announced that seven aviators will go to Mexico to take part in an Aero Meet on the occasion of the inauguration of President Francisco G. Madero.

The promised prizes aggregate $100,000. The aviators who are to take part are: Miss Matilda Moisant, Harriet Quimby, André Houpert, George M. Dyott and Captain Donald Patrick, J. A. D. McCurdy and Charles F. Walsh.

It is said also that these aviators will afterwards visit several other Mexican cities.

Robert J. Collier recently held a private flying meet at his country home at Wickatunk, N. J., in which O. G. Simmons, T. O. M. Sopwith and A. L. Welsh took part.

On the first day, October 14th, Simmons opened the meet with a flight of 30 minutes, which was followed by a flight of A. L. Welsh, with James A. Hare, a well-known war photographer of Collier's Weekly, as a passenger.

The two flew to Freehold, N. J., to witness a fox hunt and take several pictures from aloft. Later in the day passenger carrying was indulged in and over twenty guests were taken on flights.

On the next day the feature was the passenger carrying flights of Sopwith, who carried Mr. L. Thompson and Robert Collier on lengthy trips.

On the third day, Simmons, in Collier's Wright machine, flew with Robert Collier from Wickatunk to Lakewood, N. J., landing on John D. Rockefeller's estate, which journey occupied 57 minutes. After resting there awhile, they ascended bound for Alliers, which is 10 miles away, but had only gone a little more than half the way when the engine stopped and they were forced to make an abrupt landing, but fortunately neither Mr. Collier nor Simmons were hurt and the machine only slightly damaged.

It is announced that James V. Martin will shortly make an attempt to break the American records for speed and endurance. For the endurance flight Mr. Martin has procured a new Queen-Martin biplane of the type illustrated and described in the November "Aircraft," but fitted with a 50 H. P. Gnôme in place of the 100 H. P. For the speed record, however, he will use a 100 H. P. Gnome.

The Young Aviation Company has been organized in Topeka, Kan., with the following officers: President, H. Young; Manager, J. B. Larimer. The chief aviator of the company is Alvin K. Longren, while E. J. Longren is the machinist. The company manufactures the Curtiss type aeroplane, which they equip with Hall-Scott power plants.

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AIRCRAFT

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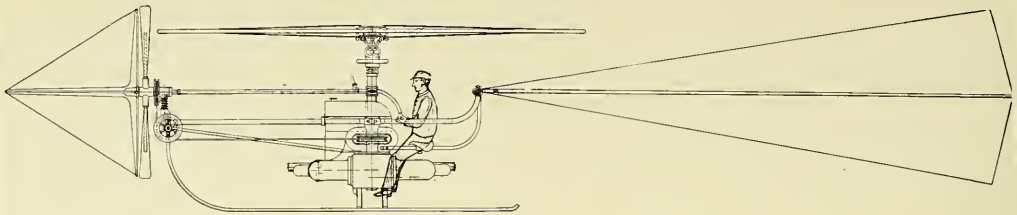

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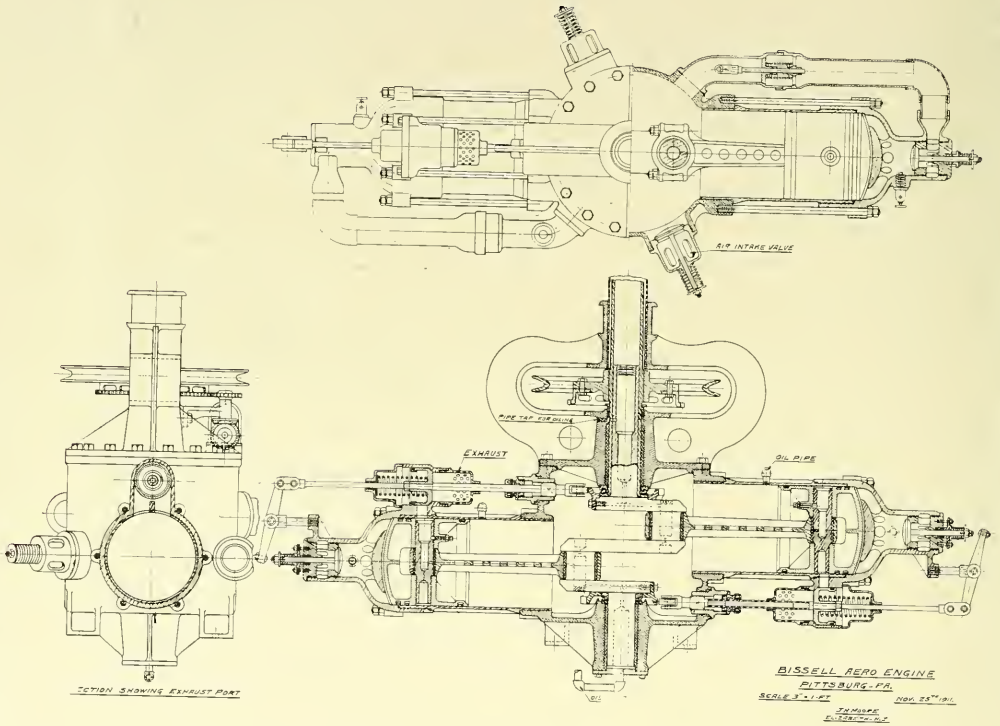

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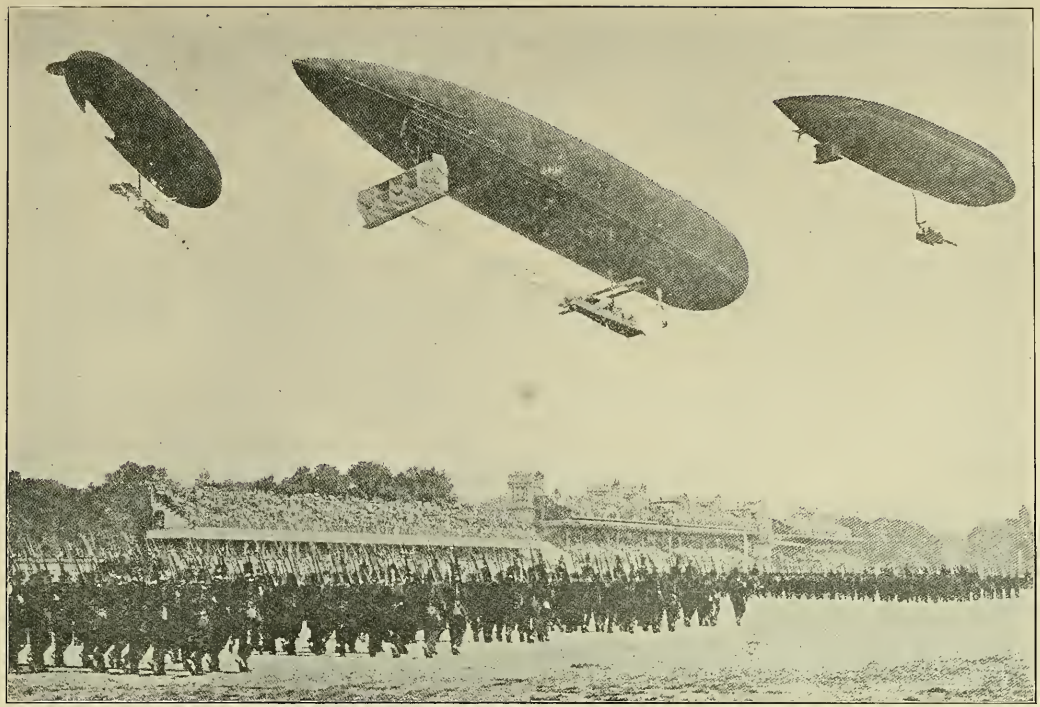

THREE FRENCH MILITARY DIRIGIBLES MANOEUVRING OVER TROOPS ON PARADE.

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THE MARINE AEROPLANE

By Henry A. Wise Wood

IT is not generally known that but for the breaking of a dam, near Dayton, Ohio, the first power-driven man-carrying aeroplane would probably have arisen from water instead of from land. The Wrights were preparing to carry out their experiments afloat, and one day launched their apparatus on the river. The following night its dam gave way—and the development of the hydraeroplane was left to a later investigator. Had the Wrights persisted with their water work, and success resulted, the subsequent course of the progress of aviation would undoubtedly have been changed; fewer lives would have been sacrificed, the writer believes, and the sport of flying would have been much further advanced at the close of 1911 than in reality it is.

Since Curtiss put water-flying upon a practical basis, enough has transpired to permit us now to form a somewhat correct estimate of the possibilities of the marine aeroplane. In doing this the following summary of its achievements will be of assistance: Curtiss arose from the water, alighted beside a battleship, and was successfully hoisted aboard. Being put overside he promptly got into the air again, and returned to his starting point. With wheels attached, he went under power from his shed into the water, and from the water into the air; alighting on the water he returned over the beach to his shed. Recently, without the aid of wheels, Curtiss successfully launched his machine from a three-cable runway, rigged as if from the foremast to the bow of a ship, and proved that a practical device is at hand by means of which the hydraeroplane may be instantly put to work by the Navy.

Flying together, in the U. S. Navy's hydraeroplane, Lieutenants Ellyson and Towers have gone long distances at great speed in moderately heavy weather, and have landed through heavy seas. On October 25th they flew 112 miles in 122 minutes, and came safely ashore through a six-foot surf, with a twenty-mile wind astern. Continuing their journey, Ellyson and Towers covered thirty-five miles in twenty-five minutes—with a thirty-mile wind off the port quarter—and successfully beached their machine through an eight-foot surf. This cost only a split hull-bottom, which was quickly patched with tarred canvas. In this landing, Ellyson states, Towers and he came ashore at the rate of eighty miles an hour, striking the tops of the waves with great force. On October 19th Hugh Robinson, in a similar machine, flew from Lake Calhoun, Minneapolis, to Winona, Minn., 110 miles, at the rate of eighty-eight miles an hour. Flying thence, along the Mississippi River, he collected and distributed mails over a route 300 miles long. Previously, in Puget Sound, Robinson had carried out some interesting manoeuvres in rough water with his Curtiss hydraeroplane. In a twenty-five-mile wind he was able to run in the trough of the sea, each lower wing-end cutting the top of a wave, and by turning slightly to windward successfully to rise into the air. In illustrating the facility with which the marine aeroplane may be handled, Robinson states that to make a short turn, while upon the water, he has only to set his rudder and dip a wing, when the machine will instantly come about, using its submerged wing-end as a pivot. Curtiss, Ellyson, and Robinson all report the absence of difficulty in rising from heavy seas; which, of course, is easiest done against the wind.

Its great speed afloat is another remarkable characteristic of the marine aeroplane. With his standard hydraeroplane, having a seventy-five horse-power engine, and a 125-pound boat, Curtiss has made fifty-six miles an hour on the water, and from sixty to sixty-five in still air. At fifteen miles his boat mounts the surface, and at forty-five it answers the elevator, and clears. The weight of this machine, without wheels, is 900 pounds; its engine makes 1,200 r. p. m., and delivers a thrust of from 450 to 500 pounds. It is fitted with a starting crank, which may be worked from the "deck" of the machine, and has a "shift" control, which may be used by either of two persons seated side by side.

In considering the prospective evolution of the marine aeroplane it must not be overlooked that there are two schools of constructors already in the field. Curtiss, the originator of the single-hulled type, is convinced that he has chosen the line of development which is destined to survive; while others, Fabre, the Wrights, Starling Burgess, Voisin, and Roe seem partisans of the double-hulled type. The Curtiss, with its short wing spread, can perhaps afford a narrower floating base than the wider Wright, Fabre, or Voisin machines, with the resulting advantages of a single float, a few of which are simplicity, lightness, and manoeuvring facility. A careful study of both types has led the writer to prefer that of the single hull, and to agree with Curtiss in his belief that the normal development of the marine aeroplane will be along the lines of the boat, rather than of the catamaran. The second step upon this path has, in fact, already been taken by Curtiss, who has wisely inverted his previous conception of the hydraeroplane. To him it no longer is to be a floating aeroplane, but a flying boat. He is thinking from the water up, rather than from the air down. To this end he has already constructed a rather comfortable scow-like hull, in which sit pilot and passenger; while, from a position astern of them rises the wing-bearing structure, and in this, well aloft, is the power-plant. From this to a longer and still more roomy hull, in which is housed the power-plant, with its communicating chains, or shafts, to screws set among tandem planes above, is but a short step; and, when this has been accomplished, it is the opinion of the writer, a comfortable air-and-water long-distance passenger-carrier will be in sight. Indeed, so thoroughly is the writer convinced of the ease, celerity and safety with which the further development of the aeroplane may be prosecuted, if the work be conducted over water, that,

with every wish to avoid the appearance of sensational prophecy —which to him is extremely repugnant—he is prepared to say that out of this movement the world may shortly expect to see arise heavier-than-air structures that will rival the Zeppelin in longitudinal dimensions, and far surpass it in carrying capacity, speed, range of action, and economy of cost and operation. As the surface of Lake Constance made the Zeppelin possible, so will other favoring water-surfaces facilitate the swift transformation of the marine aeroplane from a single-person or few-passenger small-craft, to a roomy and safe liner of power, equally at ease upon sea or air. The materials, mechanisms, and engineering skill for such an undertaking are already at hand—nothing is needed but the will, the energy, the purse, and the technical knowledge of another Zeppelin.

Meanwhile, it is of stirring interest to know that the preliminary steps have been taken, and the development of the first sea-and-air-worthy craft—though they be small—is proceeding with the utmost success. Whatever may be hoped for in larger units, the small unit of the sportsman—swift, handy, and safe—is already here; and with it there has come over the rather grim aspect of the sport of flying a most welcome cheerfulness. All who have flown the hydraeroplane, whether it be the Curtiss, the Wright, or the Burgess-Wright, pronounce it a thoroughly safe and enjoyable craft. There have been many spills, but no serious mishaps; and, in a suitably-designed machine, a ducking seems to be the most serious penalty attached to water flying. By a suitably-designed machine is particularly meant one in which pilot and passenger sit free of any facing obstruction, and in which they are so placed that, in the event of a too-abrupt descent upon the water, and the consequent sudden arrest of the forward motion of the machine, they will be shot clear of stanchions, wires, and mechanism. This, of necessity, condemns the placing of engine or screw forward of the seats, which would be an extremely dangerous practice. In opening this new field of flying to the public, a responsibility of unusual weight rests upon the constructor. If he be wise and conscientious he will use infinite care to safeguard those who entrust themselves to his machine. There have been enough deaths ashore to make him realize, when over his drawing board and in his shop, that he is dealing with the lives of human beings; and that in this new sport, which by nature is the safest form of flying, there can be offered for him no excuse, if he adopts a single avoidable feature which jeopardizes life. The interests of the industry, too, are at stake, for it requires no foresight to perceive that once water-flying shall have become known as a pronouncedly safe sport, there will scarcely be limit to its popularity and growth, for it offers a new kind of recreation that is unlike any other to be had.

THE FOURTH ARM

From the London Daily News.

FROM a purely military point of view, the outstanding feature of the Italian operations in Tripoli has been the successful utilization of aeroplanes for both defensive and offensive purposes.

Too little attention has been given in this country to the highly-effective work carried out by the officers of the Italian air corps. The series of reconnoissances undertaken by Captain Piazza on his Blériot monoplane to and from the town and the outskirts of the desert, the dropping of bombs by the military airmen over the Turkish camp at Ain-Zara, and, lastly, the signal assistance rendered by the flying machines in the desperate battle of October 23rd, afford, indeed, incontestable evidence of the value of the "fourth arm" in actual warfare.

The success that has attended these important operations is beyond anything anticipated. Leblanc, the "lightning flyer," says the Italians have established the fact that aeroplanes afford ideal means of reconnoitering in war time, and Blériot, following in the same strain, says he did not think two years ago, when he crossed the Channel, that flying machines would so soon be used on or over battlefields.

While our Air Battalion is about to be reinforced and reorganized, and the War Office are actually arranging a competition for military aeroplanes, the publication of a detailed account of the performances of the Italian airmen in and round Tripoli will be opportune.

THE ITALIAN FLYING MEN.

The Army Air Corps dispatched from the Pordenone military school, near Milan, to Tripoli, consisted of only half a dozen aeroplanists, namely, Captain Piazza, Captain Moizzo, and Lieutenants Gavotti, Rossi, Roberti and de Rada. The corps reached the seat of war on October 19th, and on the 22nd, Captain Piazza, on his Blériot, made his first flight over the town and the country round, covering a distance of about eighty miles. In a subsequent reconnoissance the same officer detected the presence of the Turkish and Arab forces some fifteen miles from the Italian headquarters. Previous reports had given the enemy's position as sixty miles away.

The facts detailed hereunder speak for themselves: "The battle which was fought at Tripoli on October 24th," writes the correspondent of the Central News, "will remain celebrated in military annals as the first engagement to be directed entirely from aeroplanes." (The date here is wrongly given. The battle referred to must be that of October 23rd, when the Italians had to withstand the joint attack of the insurgents in the town and that of the Turks and Arabs from outside.)

"Three machines were employed," continues the correspondent. "One, operated by Captain Piazza, watched the centre; the second, that of Captain Moizzo, hovered over the left; and the third, that of Lieutenant Rossi, was on the right. Each aviator was accompanied by an officer of the general staff, who followed closely the various phases of the combat in his own particular zone.

SCOUTS IN THE AIR.

"These observers were able to write notes of the progress of the battle, which they threw down to those below when the aeroplanes returned at intervals in the direction of the commander-in-chief's position. The commander-in-chief had thus merely to regulate the movements of the troops in accordance with the indications furnished by his aerial general staff.

"The system was found excellent in operation, and it worked without a hitch throughout the battle. It was the employment of the aeroplanes which made it possible for the enemy to be attacked in flank and in rear, and the execution wrought by the Italian artillery was also largely due to the observations of the military airmen."

Here is another remarkable incident, showing the effectiveness of the flying machine for offensive purposes. In the course of a reconnoissance, carried out last week by Lieutenant Gavotti, the officer flew over the Turkish camp at Ain-Zara, and dropped four bombs. He states that one of the bombs took considerable effect, creating a scene of indescribable confusion among the enemy. The soldiers fled in all directions, and the animals stampeded.

Again, in the battle fought on October 26th, the assistance given by the military aeroplanists proved invaluable. "The aviators," declares the special correspondent of the *Daily Telegraph*, "handed in many useful reports regarding the direction of the firing." One need not wonder, therefore, that the Italian War Office have ordered additional flying machines to complete the scout service throughout the line of occupation. It is also proposed to send aeroplanes to Erythrea and Italian Somaliland, the latter country being still unexplored.

MILITARY AERONAUTICS

Report of the Chief Signal Officer of the U. S. Army, Brigadier General James Allen

THESE reports have recorded during the past four years the progress of military aviation by the Signal Corps of the Army in a concise form, beginning with the first contract for the purchase of an aeroplane designed by the Wright brothers, the specifications for which were issued by this office in December, 1907. The progress and development of this auxiliary to the military establishment during this period is believed to be without precedent. Although the United States was the first nation to recognize the aeroplane for military purposes, and carried out the first official government tests of an aeroplane in 1908-1909, at Fort Myer, Va., yet, such has been the phenomenal progress in this science and art that this country has been left far behind in securing practical equipment and organization for the use of this recognized indispensable adjunct to war.

The Army appropriation act for 1912 includes an item of $125,000 for the purchase, maintenance, operation and repair of aeroplanes and other aerial machines, and $25,000 of this fund was made available immediately. This enabled the Signal Corps to purchase and supply the manoeuvre division, organized at San Antonio, Tex., with a small aeronautical equipment, which was used for the training of officers and for actual reconnoissance work in division manoeuvres during the period from March to July of the current year. An aviation school has been started at College Park, Md., in the vicinity of Washington, for the training of specially selected officers in the military use of aeroplanes and in accessory subjects. At present the aeronautical equipment of the Signal Corps consists of five aeroplanes and three small captive balloons. There are at present six Army officers holding a pilot's license for the operation of aeroplanes. The Signal Corps is at present confronted with the situation of having means provided for starting the development of aviation in the Army, and the War Department is unable to detail the necessary officers to be trained as aviators. In order to develop aviation it requires two essential things, namely, money and officers and men; either one of these without the other brings all adequate development to a standstill.

PROGRESS IN AVIATION DURING THE PAST YEAR.

The past year has been one of continued achievement in aeronautics, especially as applied to aviation. The most notable progress in military aeronautics has been accomplished by France, Germany and England. The past year has witnessed the development of the hydro-aeroplane, which is a new type of vehicle capable of locomotion, either in the air, on the surface of the water, or on the surface of the earth. The attainment of this object opens up a substantial extension in the use of aeroplanes, both for military and naval purposes, and especially for general co-operation of the Army and Navy. Cross-country flying has reached the point where a single aeroplane has made a successful trip from St. Louis to New York via Chicago. This has been accomplished without transporting any special mechanician or special repair kit. During the year the speed has gone up to about eighty miles an hour, and as many as a dozen passengers have been carried in an aeroplane. Continuous flights have been made of over fourteen hours, and the distance reached in continuous flight has been about 400 miles. The altitude has been increased to about 13,000 feet, and English and United States mails have been officially transported by aeroplane. For military purposes it has been conclusively shown that the two-place machine is necessary for reconnoissance purposes.

In order to secure accurate and reliable military information the observer must be able to give his sole attention to the terrain below, and this is most important, since all objects seen from an aeroplane appear in an entirely different perspective from the same objects viewed by an observer upon the surface of the earth. The military airman must be specially trained by continued practice to accurately discern and report the objects below him. In other words, it is necessary that he must possess to the highest degree the qualities of a soldier, and in addition must be carefully trained in making observations in flight.

THE FOURTH MILITARY ARM.

France has continued to be a leader during the year in the practical organization and development of aviation to serve the mobile army. In the recent manoeuvres held on the eastern border of that country aeroplanes were used extensively and were divided into groups consisting of seven machines with each of the two army corps, three machines with the artillery of the eastern army corps, and three at the disposal of the director of manoeuvres. Total, twenty aeroplanes.

The types and makes of aeroplanes used during the manoeuvres were eight monoplanes, Blériot; six biplanes, Henry Farman; three monoplanes, Deperdussin; two monoplanes, Morane; one monoplane, Breguet.

The organization, transport and equipment of these groups for field purposes were:

Organization. Each aeroplane, one or two pilots, two or one observers, and six enlisted mechanics.

Each group or "field-aviation section" consisted of three or four aeroplanes with their personnel, transportation, and equipage for men and machines, material for supply and repairs, and tents for sheltering the machines in camp.

The supply and transport of these machines was accomplished by the following means: Each field section was divided into three echelons.

First echelon: The aeroplanes, their trucks for transport by road, their "tractors" or traction automobiles for hauling the trucks and transporting the crew, aeroplane tent, repair tools, spare parts most used, enough gasoline and oil for a 375-mile flight, a litter, and surgical material. These tractors have a speed of twenty-five miles per hour.

Second echelon: The freight automobiles, containing complete spares and reserve supplies. Their speed is slower than the tractors of the first echelon.

Third echelon: Repair-shop automobile.

The first echelon corresponds to the combat train of a field battery. It moved with the combat trains. It camped near corps headquarters. The aeroplane normally traveled by air. On occasions it was placed on its truck and hauled by the tractor. When less time was available the wings of the machines were folded and the aeroplanes hauled on their own wheels. Time, atmospheric conditions, and military considerations governed the method of transport in each case.

The second echelon freight wagons carried extra motors, wings, frames, controls, and in fact all parts necessary to make complete repairs to the aeroplanes. At present the French utilize two such wagons for each section, namely, for three or four aeroplanes. This echelon normally moves with the regimental trains and joins the first echelons at night.

The third echelon consists of a workshop on wheels with automobile traction. It carries a forge, tools, and material for repairs to frames and motors. It has an electric light plant for use in night repairs. With this echelon are three 3,000-candle-power searchlights. These were used for the triple purpose of lighting the work, lighting the landing park, and by their beams guiding aviators to their landing places. It is understood that there is one of these workshops with each section.

The French Army actually used five sections, constituted as above, in the recent manoeuvres. The Sixth Corps used two sections and the Seventh Corps three sections. These sections were

several times moved during the course of the manoeuvres. They camped at Villersaxel, Lure, and Héricourt, as directed and required by the military situation in each case.

The section which was used with the field artillery of necessity utilized a different means of transporting its first line supplies. As the cross-country work of artillery would not permit the use of automobile traction, a limber was so arranged as to haul behind it a van, which carried a specially light tent and accessories, spares, tools, gasoline and oil. Six horses hauled the limber and its van. This van was arranged to carry a disassembled aeroplane, in addition to the spares, tools, etc., above mentioned. The total weight behind the team was about 4,500 pounds, so that this echelon could remain with the artillery on the march and camp with it at night.

At the time of the manoeuvres there had not yet been devised second and third echelons for aeroplane sections operating with field artillery.

One of the definite problems solved by aeroplane reconnoissance at these manoeuvres was:

On September 9 an officer made four reconnoissances in quick succession. On one of these trips he discovered that a counter-attack was in preparation on the right flank. He flew quickly to the nearest brigade headquarters, secured a horse, and, galloping to the general, gave him the information, which enabled timely preparations being made to ward off the blow.

The aeroplanes attached to the field artillery did excellent work in locating hostile batteries. Previously, during target practice, this same section had been highly successful in plotting the hits, thereby increasing the efficiency of fire to such an extent that a distinguished French specialist has said: "Two batteries and one aeroplane are five times more redoubtable than three batteries without an aeroplane."

The French Minister of Finance in his 1912 estimates for the army has included approximately $1,000,000 for the "extension of the aeronautical service."

The Chief Signal Officer concludes this report with an urgent appeal for additional officers and men to carry on the work of the Signal Corps as now prescribed by law. It is believed that it is the duty of the War Department to present to Congress at its coming session the critical needs of this corps and that if these needs are properly understood there will be no hesitancy in providing the minimum personnel required at the present moment to carry forward the important and diversified work at present devolving upon the Signal Corps of the Army.

Very respectfully,

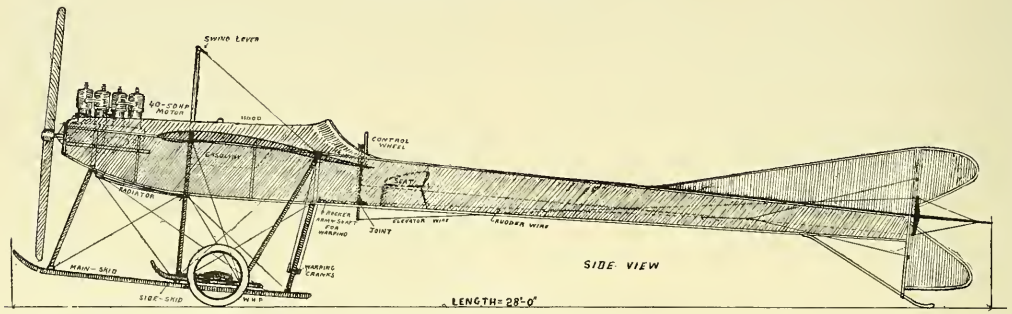
JAMES ALLEN,

Brigadier General, Chief Signal Officer of the Army.

The Secretary of War.

SUGGESTED DESIGN FOR A MONOPLANE

By Walter H. Phipps



In presenting the accompanying design for a monoplane, it has been the aim of the writer, not to evolve an absolutely original machine, but merely to combine in one aeroplane the best features of present day practice, together with several original ideas, in such a manner as to form an efficient, safe and easily controlled aeroplane.

For this reason each section is described separately with an explanation of the suggested changes and functions of each. It is hoped that this method of procedure will lead to discussions upon matters which generally escape attention, and so will tend to direct more attention to those parts which need improving.

FUSELAGE.

The fuselage of a monoplane is perhaps its most important component, forming as it does the backbone of the whole machine. It must be so constructed as to offer little head resistance and yet be light and strong. There are several forms and shapes of fuselages, some long and narrow as the Deperdussin and Bleriot; others deep and stubby like the Nieuport and R. E. P.

While the deep-stream-like type of fuselage cuts down head resistance and is productive of great speed, it offers no material advantage as regards safety, owing to the fact that the operator sits well inside the body with only his head sticking out and must necessarily sit well forward in order to be able to see, thus placing himself in grave danger in the event of rough landings, as was emphasized in the accident which cost Nieuport his life.

Turning now to the design of the suggested monoplane, it will readily be seen that the fuselage is a medium between the Deperdussin and Nieuport types. It is of the box-girder construction, tapering both front and rear, and fitted with a long aluminum hood in front, which protects the pilot and aids in giving the fuselage a stream line form. As will be noticed the pilot sits well to the rear of the machine and is thus protected to a large extent by the front of the fuselage in the event of bad falls. As it is almost impossible for this type of machine to tilt over forwards in landing it might be well for the pilot to strap himself in with an elastic shock absorbing belt fitted with a quick release, such as the kind made by Robert Esnault Pelterie.

THE PLANES.

Glancing at the top view of the machine it will be noticed that the wings are of the Morane type; that is to say, they have their greatest breadth at the rear instead of the front, as is the practice on most machines. The advantages of this form of plane are twofold, namely: first, they give the greatest warping area at the rear extremities of the wings, consequently giving greater leverage and increased efficiency; and secondly there is added surface at the rear of the wing and there-

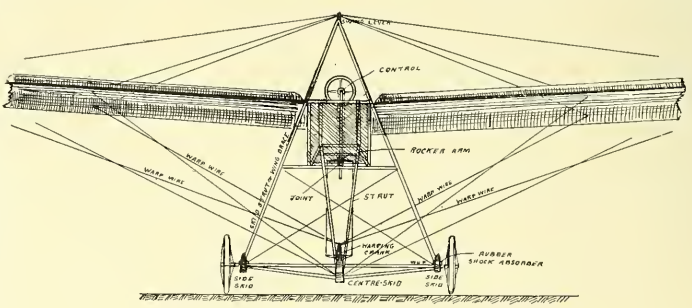


Fig. 1 — FRONT VIEW

fore added lift towards the rear of the machine, thereby eliminating the necessity of fitting an extra large flat tail or a lifting rear plane. As will be noticed a piece is cut out of each wing just behind the rear main-spar and at the point where it joins the body, thus allowing the pilot a clear view of the ground immediately below him as well as in front of him. The wings attach to the fuselage in the usual manner. The front spars fit into a tube which extends across the top bars of the fuselage while the two rear spars fit into rocker sockets in the sides of the fuselage.

CONSTRUCTION OF WINGS.

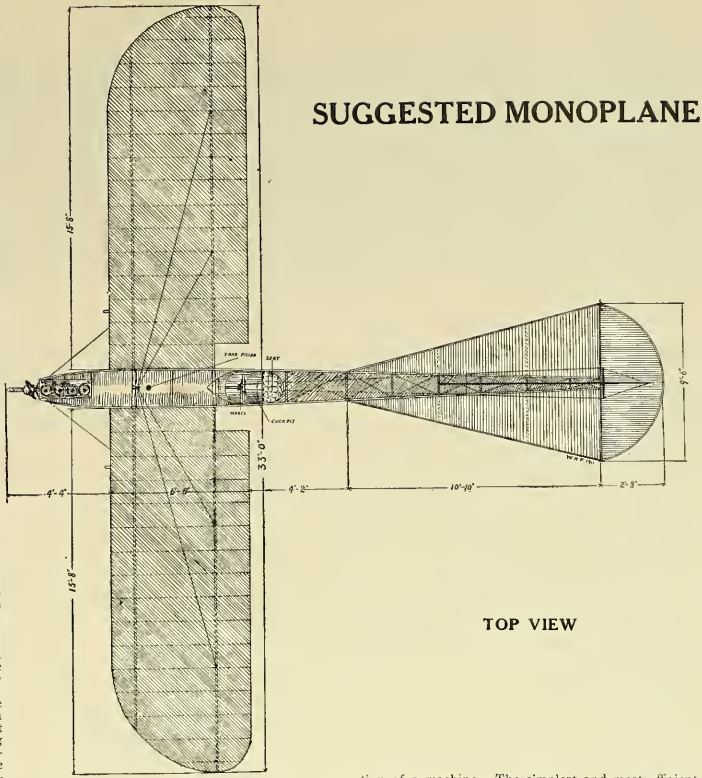
Great care should be exercised in the construction of monoplane wings for it must be borne in mind that they form the entire support of the machine and must necessarily be capable of withstanding all strains. As the wing-spars are the backbones of the wings and next to the wing guy wires, must stand most of the strain, it is necessary that they should be strongly built. In the first place they should not be the same size throughout their entire length, but should be thickest and strongest at those points where the greatest strain takes place. For this reason they should be thickest in the centre and at the two points where the guy wires attach, (see Fig. 5). It has occurred to the writer that on large passenger carrying monoplanes it would be well to make the main spars from two pieces of wood bolted together with a thin steel plate between them extending their entire length.

The ribs are of the Nieuport type built up in the manner shown in Fig. 2. The whole wing should be strengthened by internal wiring and the cloth kept from becoming baggy by the introduction of longitudinal strips of wood.

THE TAIL.

The proper design for the tail of a monoplane cannot be given too much attention, for it is this important part of the machine that has the most to do with its safety and control. If the tail of a monoplane is constructed too large or is of the lifting plane type it is likely to cause a serious accident in the event of having to land with a following wind, it often happening that in such cases it is impossible to get the tail down, with the result that the machine crashes head on. If, on the other hand, the tail is too small and the weight too far back, the machine will be tail heavy and perhaps slide backward.

In order to secure a reasonably safe monoplane the tail must be so proportioned as to act as a damper or non-lifting plane; that is to say, that the machine should be so balanced by distributing the weight of the engine and pilot in such a manner as to properly balance without the tail plane having to lift more than its own weight. In normal flight the tail and elevator should fly straight out in the stream line of the machine, the elevator being used solely for directional purposes and not as a lifting surface. If this is done a remarkable degree of longitudinal stability can be secured and yet by making the elevator large enough the machine can be made quite sensitive.



SUGGESTED MONOPLANE

THE LANDING GEAR.

There is perhaps no part of present day aeroplanes that is so open to improvement as the landing gear and for this reason too much care and consideration cannot be given to this vital section of a machine. The simplest and most efficient form of landing carriage so far devised for speed purposes is the Nieuport, and while it works satisfactorily if the wheels hold, it is nevertheless a most dangerous arrangement in the event of a wheel buckling and the end of the spring catching and capsizing the machine.

In referring to the accompanying drawings it will be seen that the suggested landing gear consists of an arrangement of three rigid skids and two shock absorbing wheels, which are so arranged that the two wheels take the first shock through their rubber springs and then the centre skid strikes. If the shock is severe and the central skid should break, the two side skids then come into action. It will thus be seen that it will take a very rough landing to rip the landing gear away and if such should happen the shock will be so broken that little harm should befall the pilot. Another advantage of this arrangement is that on account of the central skid projecting out in front it protects the propeller and prevents the monoplane from capsizing.

CONTROL.

Great care must be exercised in the designing and constructing of the control gear of an aeroplane, for upon the proper action of this most vital organ depends the safety of the whole machine at all times. For this reason all unnecessary pulleys should be eliminated, especially in the warping control, and no complicated joints or fittings used, which would be liable to cause the controls to jam.

As will be noticed from a study of the accompanying illustrations all pulleys have been eliminated from the warping and all wiring doubled. The necessary warping movements are accomplished by the use of rocker arms and wires (see Figs. 3 and 4). On the floor of the fuselage is a pivoted steel rod which has a rocker arm at the front end and a pivoted control column at the other end. At the top of the control column is the steering wheel which actuates the rear rudder by turning. Warping is obtained by moving the column from side to side thus rocking the rocker lever at the end of the pivoted tube and transmiting the motion to the warp lever mounted on the skid struts and thence through wires to the wings. Steering up or down is accomplished by moving the control column forward or backward. Here again it will be noticed that the wires are connected direct to the column and do not pass over pulleys as on the Bleriot.

Fig 2. CROSS SECTION OF RIB

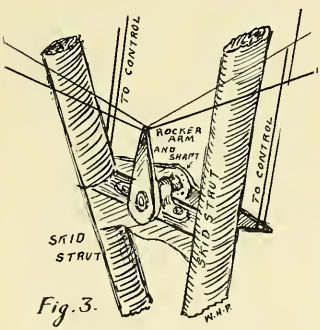


Fig.3. WARPING CRANK

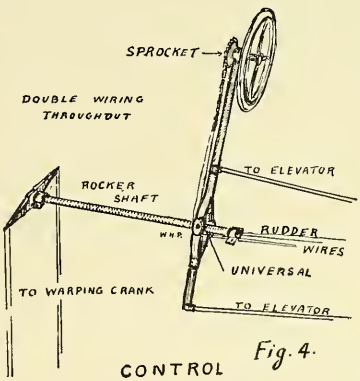


Fig.4. CONTROL

Fig. 5. MAIN-SPAR OF WINGS

Some Construction Details

NOTHING THE MATTER WITH AVIATION.

SOMEONE has asked "what is the matter with aviation" and we answer, nothing! emphatically nothing.

Aviation is merely the germ of a great transportation system of the future. It is but the acorn of a great oak—the seed from which must come the real substance. For the acorn to grow into the mammoth oak requires time and for our present aviation to grow into a great aerial transportation system requires time. It must be remembered that the most substantial things in life require the most time to develop and those things which grow up rapidly as a rule go down just as rapidly. Sudden expansion means sudden explosion.

Who would compare the mushroom, which springs up in a night, with the solidity and usefulness of the giant oak which requires generations to mature?

Those people who have gone into the aeronautical movement thinking that they were going to make fortunes in a month or a year are going to be disappointed and are likewise going to drop out of the movement quickly, but those who have entered the movement for the purpose of being in the foremost ranks of progress and helping to develop what will eventually be the world's greatest industry, will not only enjoy the satisfaction that usually comes to those who are patient and unselfish but will also be rewarded with financial returns commensurate with the energy and ability exercised in the development of the industry. It is much better for the movement anyway that the weaklings depart and that only those with strength and perseverance remain to carry on the work.

Statistics of the aeronautical movement for the past four years prove conclusively that aviation from every conceivable view point has progressed not only continuously and substantially but in comparison its ratio of development has been even greater than the railroad, steam-boat or automobile industries in the same length of time during their infancies.

It is but a few short years back that the automobile industry underwent the same stage of development as at present the flying machine industry is undergoing and the weaklings were dropping out by the hundreds claiming that there was no future for the automobile; but those with foresight, patience, courage and energy remained to prove that there was a future for the automobile and to reap rich rewards for their labors.

AIRCRAFT predicts that within ten years the flying machine industry will have eclipsed in scope that which the automobile industry now holds or even will acquire by the year 1922.

Furthermore the year 1912 is going to show greater progress in the aeroplane industry in the United States than it did during the year of 1911, just as the aeroplane industry of 1911 showed greater progress than in the year of 1910 and just as its development in 1910 showed a gain over that of 1909.

This being the case, therefore, we again say there is nothing the matter with aviation. It is just enjoying a healthy normal growth.

SPEED, SAFETY, ECONOMY NEEDED.

THE three main factors that will eventually bring about a permanent aerial transportation system are speed, safety and economy.

To begin with speed is the leading factor because it saves time and time is man's greatest asset.

Only a few years ago is took ninety days or more for man to transport himself and luggage from New York to California by land. In those days he used oxen and horses and mules. Since that time, however, steam locomotives have taken the place of the quadrupeds—wheels superseded legs—and man can now travel from New York to California within five days thereby saving eighty-five out of ninety days through the process.

Still in the early days of railroads there were people who were afraid to ride on trains just as some are afraid to ride on flying machines in these days.

There is a train today which leaves New York at 4 o'clock P. M. and gets into Chicago at 8:55 A. M. tomorrow morning on which an extra fare of ten dollars is charged for the speed it makes and the time it saves. If one took another train it would not arrive in Chicago until 5 o'clock P. M., therefore the speed of the fast train saves the business man a whole day that he may employ to advantage instead of spending that time in the cars—and that is just the reason why the fast train is patronized so extensively.

In New York a subway was recently built in which fast express trains were made to run from one end of the city to the other in thirty minutes, whereas the old system of surface cars required nearly three hours to go the same distance. Naturally the speedy express is

patronized to a far greater extent than the slow surface cars.

Now, that is just where the speedy flying machine of the future will secure the advantage over the slow going land vehicles. We believe that in fifteen or twenty years from now a vehicle will be constructed that will shoot through the air at the rate of three hundred miles or more per hour and be sufficiently large to carry a hundred or more passengers.

This being the case, it would simply mean a ten-hour trip or thereabout from New York to San Francisco. A passenger could enter an air vehicle at 12 o'clock at night and be in San Francisco at 6 o'clock in the morning deducting, of course, four hours for the difference in time going from East to West; or, he could leave San Francisco at 6 o'clock at night and arrive in New York the following morning at 8 o'clock, in this case adding four hours for the difference in time.

We do not believe that it will ever be possible for land vehicles to make such speed and that is one reason why travelers will prefer the air car to the land vehicle for no man who values his time will spend five days on railroads if he can make the same journey by the air route in one night. It would be patronized even if the fare were two-fold, for, in the saving of time man naturally saves money and the extra fare would mean no more to him than the extra fare means to the man who rides from New York to Chicago on the "Twentieth Century Limited." However, we know of no good reason why the fare from New York to San Francisco should cost more by the air route than it does by the slow going land transportation system.

To begin with there is going to be a great saving in the air lines over the land lines in construction work alone. There will not be the tremendous outlay of capital for exploring a route or for obtaining from various legislatures the right of way or for the purpose of purchasing land upon which the land vehicle must pass over, or in the grading of the land and building road beds, or the boring of tunnels through hills and mountains or the laying of ties and expensive steel rails and various other things which go to make up an enormous expenditure before even the vehicle is considered; and there is no good reason why the air car cannot be constructed as cheaply as the land car in which case the tremendous outlay for the right of way, land, road beds, steel rails, etc., will be eliminated thus making possible a reduction in the cost of air transportation over land transportation instead of an additional expense as some people claim.

These people, by the way, usually compare in figures the cost of the present aeroplane and its operation to land vehicles, not taking into consideration that the aeroplane is being built singly and without system or adequate machinery, while railroads for instance have been in use for more than half a century and through extensive utilization the cost of construction and operation has been cut down to a minimum.

The evolutionary development of the present aeroplane into the great passenger carrying air vehicle of the future will naturally reduce the cost of construction until it reaches a point where it will be no greater than that of the land vehicle in which case the saving will come from the disuse of the road beds, etc., as aforesaid. So we contend that the air vehicle of the future will not only be speedier than land vehicles and thus save man's valuable time, but also that it will be a more economic means of travel, and if this is so then there is nothing left to hinder the growth of aerial transportation except the factor safety and this we believe will keep pace with both speed and economy just as the development of safety kept pace with that of speed and economy in railroading, steam-boating and automobiling during the past.

BATTLE AMONG THE CLOUDS.

THAT battles in the air will soon be fought is truly not to be classed as a dream in these days. In fact, the first battle, or skirmish, would have already taken place in the year of 1911 at Tripoli if the sleepy Turks had had the foresight to study the science of aviation and supply themselves with aeroplanes and aviators.

What else could have happened but a fight in the air if the Turks had sent out aeroplane scouts to offset the Italian aeroplane scouts?

How important has been the work done by the airmen in the military operations at Tripoli may be judged by the fact that the Italian war department has ordered additional flying machines to strengthen their scout service.

It is understood also that the Turks having been given a demonstration of the great value of the aeroplane to their own detriment and sorrow, are now determined to assemble a fleet of aeroplanes at the earliest possible date in order to put themselves upon the same war footing as the Italians. If this is done then what is to prevent an early battle among the clouds?

We suggest that manufacturers who would like to obtain Government contracts, experiment with aeroplanes painted sky-blue for war purposes.

We are of the opinion that if everything about an aeroplane were arranged in this color even to the clothes of the aviator that the machine could pass out of the range of vision within a thousand or two thousand feet thus making it impossible for landsmen to even see it let alone train their aeronautical guns upon it.

While there is not a gun in the world that has as yet proved it is capable of hitting an aeroplane in swift flight, still those who advocate the war aeroplane should bring into use every possible invention that will demonstrate its great superiority when put to an actual test, in fact make the opposition appear as weak and ridiculous as a tribe of savages with their knives and arrows fighting against a well drilled regiment with gatling guns, for the step of advancement between the land fighters and the air fighters will sooner or later be just as great.

PHILLIPS W. PAGE IN FLIGHT ABOVE MARBLEHEAD HARBOR IN A BURGESS HYDROAEROPLANE.

CLUB NEWS

Aero Club of America

At the meeting of the Board of Governors held on November 23d, Mr. John H. Worden was granted aviation pilot's license No. 76.

PROHIBITION OF FLYING OVER GAMES.

On November 13th the following resolution was passed by the Board of Governors:

Whereas, It has come to the notice of the Board of Governors of the Aero Club of America that the practice of flying over spectators and contestants in athletic sports and games is becoming prevalent among aviators, and

Whereas, such flying unnecessarily endangers human life.

Be it therefore resolved, That all aviators licenesd by the Aero Club of America be and are hereby forbidden to fly over or in the close vicinity of spectators or contestants in games or sports other than licensed aviation meets or exhibitions in which the flying is governed by the rules for the meet or exhibition, and

Be it further resolved, That the Contest Committee be and is hereby instructed to take cognizance of any violation of the above inhibition and apply such one of the penalties set forth in Article 63 of the Regulations of the International Aeronautical Federation as it may deem expedient.

At the adjourned annual meeting held at the clubhouse on Monday evening, November 27th, the following named members were unanimously elected governors, of Class A:

G. F. Campbell Wood, term expires.....1912
Henry A. Wise Wood, term expires.....1913
C. E. Knoblauch, term expires.....1914
W. Redmond Cross, term expires.....1915

It was also decided that a Fifth Class of Membership be instituted comprising commissioned officers of the Regular Army and Navy of the United States, and that the initiation fee of this class be ten dollars, and the dues ten dollars.

ARMY AND NAVY MEMBERS

As the officers of the Club are particularly desirous that the Army and Navy of the United States shall be adequately represented in its membership, it is hoped that there will be prompt response to the action of the Club in creating Class Five from members who may wish to propose friends who are in the service.

ANNUAL DINNER

The Honorable William H. Taft, President of the United States, has accepted the invitation of the Club to be its guest at the annual dinner of the Aero Club of America, to be held on the evening of Saturday, January 27th, 1912.

AERONAUTIC SHOW

On November 8th, the Working Committee of the First Annual Aeronautic Show was created, composed of the following members:

W. Irving Twombly, chairman; Roger B. Whitman, secretary; A. Holland Forbes, Charles E. Spratt, Alfred Reeves, E. L. Jones, Charles de San Marsano, Otis F. Wood, G. F. Campbell Wood, Henry A. Wise Wood.

F. A. I. Rules for Licenses

AVIATOR.

Applicants must pass the three following tests:

(A) Two distance tests, each consisting in covering, without touching the ground, a closed circuit not less than five kilometres in length, (length measured as indicated below).

(B) An altitude test consisting in rising to a minimum height of 50 metres above the starting point.

(C) The (B) test may be made at the same time as one of the (A) tests.

The course over which the aviator shall accomplish the aforesaid two circuits, must be indicated by two posts situated not more than 500 metres from each other.

After each turn made around a post, the aviator will change his direction so as to leave the other post on his other side. The circuit will thus consist of an uninterrupted series of figure eights, each circle of the figures alternately encircling one of the posts. The distance credited over the course covered between two turns shall be the distance separating the two posts.

For each of these three tests the landing shall be made:

(1) By stopping the motor not later than the time when the machine touches the ground.

(2) At a distance of less than 50 metres from a point designated by the applicant before the test.

Landings must be made properly and the official observer shall indicate in his report the way in which they were made, the issue of the license being always discretionary.

Official observers must be chosen from a list drawn up by the governing organization of each country.

SPHERICAL BALLOON PILOT.

Applicants must pass the following tests:

(A) Five ascensions without any conditions.

(B) An ascension of one hour's minimum duration undertaken by the candidate alone.

(C) A night ascension, with the understanding that if the start takes place before sunset, the landing must be effected after midnight, and if the start takes place before midnight, the landing must be made after sunrise.

The issue of a license is always discretionary.

DIRIGIBLE BALLOON PILOT.

The applicant must:

(A) Hold a spherical balloon pilot's license.

(B) Furnish proof of having made six voyages, in a dirigible balloon on different dates, of which one, at least, must have been of an hour's duration, and on at least three of these occasions the dirigible must have been handled by the candidate himself.

The application for a license must be endorsed by two Dirigible Balloon Pilots, who have witnessed at least three of the starts and landings of the candidate.

The issue of a license is always discretionary.

The Aeronautical Society

The Aeronautical Society has decided to move their training grounds from Mineola to Bergen Beach, New York, which point is located on the edge of the water upon which it is intended to do much experimental work with the hydro-aeroplane types during the coming season.

Meetings continue to be held on the second and fourth Thursday of each month at the Society's rooms, 250 West 54th Street, New York.

The Aero Club of Illinois

The Aero Club of Illinois has been showing great activity in its developments lately and are planning to do big things during 1912. The usual technical discussions are carried on at the Club's rooms in the Auditorium, Chicago, weekly, and the attendance at these meetings is large.

The membership has already grown to one thousand which is probably the largest membership of any Aero Club in the United States. The officers believe that they can triple this membership within the next year or two and thereby make Chicago the aviation centre of the United States.

Captain Horace B. Wild, who nas done so much to promote aeronautics in the West, has left for a tour of Europe for the purpose of making a complete study of clubs and aviation grounds there and also to learn the latest European methods in the industrial development of flying machines and airships.

Several meets are being planned for Chicago during the summer and arrangements are now being made for the remodelling of the Club's aviation field.

The Aero Club of California

The Aero Club of California is planning to hold a ten days' meet in the latter part of January, the dates already set being from January 20th to 29th, inclusive. This meet will be held on the Dominguez field, Los Angeles, which field is now controlled by the Club through an option from the American Aviation Company, which expires October 1st, 1913. It is hoped that thirty or more aviators will take part in the coming meet and the Club will try to raise a prize fund sufficiently large to attract the best flyers. Among other events planned are a competitive race over a mile track and a one hundred and fifty mile tour to be called the "Circuit of California."

The Aero Club of Long Island

The annual meeting of the Aero Club of Long Island was held December 7th. The following officers were elected for the ensuing year: Charles Wald, president; Charles D. Spence, first vice-president; William T. Newell, second vice-president; Joseph K. Post, secretary, and Henry I. Newell, treasurer, were re-elected to their respective offices.

There will be a change in the Board of Directors owing to the expiration of the term of Howard C. Brown. Thomas Kramer was elected to fill the vacancy. The directorite for the ensuing year is as follows: Charles Wald, chairman; Francis C. Wilson, John H. Lisle, Henry I. Newell, Jr., Thomas Kramer.

The meetings of the Club are held on the first Thursday of each month.

Aero Club Italiano

An Italian Aero Club has been formed in this country for Italians residing in America who are interested in aviation. The Club rooms are located at 135 West 12th Street, New York, and on Saturday evening, December 9th, 1911, the Club gave a reception to its members and their friends. Regular monthly meetings will be held in the future.

Y. M. C. A. Aero Clubs

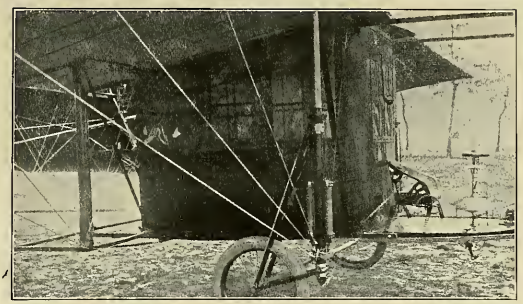
On Saturday evening, Nov. 18, Mr. S. S. Jerwan, pilot, Aero Club of America, gave the first of a series of lectures on aviation at the 23d Street Branch of the Y. M. C. A., 215 West 23d Street, New York, where he spoke before a large and appreciative audience. Mr. Jerwan took for the subject of his first lecture "Practical Aviation."

Introductory to his subject, the lecturer gave a brief, but concise, history of aerostation, beginning with the experiments of the Montgolfier brothers, of Annony, France, in 1782. Conducting his hearers through the trials of these and other pioneers of the art, Mr. Jerwan led them up to the development of the dirigible, through its various stages and a thorough explanation of the modern day dirigible of Count Zeppelin in Germany, which now enjoys a daily passenger service.

Mr. Jerwan then entered upon the subject at hand, that of "Practical Flying," and his treatment of the subject indicated careful preparation, for, while it was necessary to use considerable data and technique, the lecturer delivered his lecture in the story tellers' style, keeping his hearers in good humor by interpolating his own experiences while a novice at the game. A 5-foot working model of the Bleriot machine was used to illustrate the lecture.

A new aero club has been organized in connection with the Easton, Pa., Y. M. C. A., with ten charter members.

The officers elected are as follows: President, Harold Peiffer; vice-president, Donald Wullmuth; treasurer, Geo. Pursel; secretary, Willis K. Jones.



THE LATEST PASSENGER-CARRYING BLERIOT AEROCAR.

FOREIGN NEWS

England

TESTS FOR AIRMEN.

Special Royal Aero Club Certificate.

The Royal Aero Club of the United Kingdom will grant a Special Certificate (under the rules of the Federation Aeronautique Internationale) to airmen who have passed the following tests:

A. Candidates must hold the F. A. I. Aviator's Certificate, and be entered on the Competitors Register of the Royal Aero Club.

B. The requirements are:

(1) A cross-country flight, out and back round a point situated at least 50 miles from the start. The turning point will be selected by the Royal Aero Club, and will not be indicated to the candidate until one hour before the starting time selected by the candidate. This flight shall be completed within three hours of the selected starting time.

(2) A separate altitude flight of at least 1,000 feet rise, which shall be verified by recording barograph sealed by the observers prior to the start.

(3) To glide from a height of at least 500 feet above the ground to earth, with engine completely cut off, and alight under normal conditions within 100 yards from the starting point. This glide may, at the candidate's option, be the conclusion of Test 2.

The first aviator taught to fly by a woman is Lieut. Francis E. T. Hewlett of the British Navy who was given his flying instruction by his mother at the Blondeau-Hewlett aviation school at Brooklands.

Since returning to England Tom Sopwith has been engaged in testing the Martin-Handasyde, a new monoplane of very pleasing appearance and excellent flying qualities. Judging from the performance of this machine together with the new Flanders and Bristol monoplanes, it appears that England no longer needs to send to France for successful monoplanes.

France

DIRIGIBLE HEIGHT RECORD BROKEN.

On November 6th the military dirigible balloon Adjutant Reau broke the world's altitude record for dirigibles by ascending to a height of 7,053 feet.

The altitude record for dirigibles has hitherto been held by the French dirigible Clement-Bayard, which on August 23rd, 1908, attained a height of 5,085 feet.

It is with sorrow and regret that we have to report the sad loss of Mr. Edgar Mix, who apparently jumped overboard from a channel steamer on November 11th. Mr. Mix was a well known engineer and was very popular in French sporting circles. He sprang into fame by winning the Gordon Bennett Balloon Cup in 1909, for which he entered as the only American representative, practically at the last moment. He acted as the representative of the American Aero Club in the Federation Aeronautique Internationale and was to have gone to Rome for the conference.

Flying over a course from St. Cyr to Chartres and back, Lieut. d'Aiguillon, on a Goupy biplane recently made his qualifying flights for a superior military brevet.

On November 15th, the King of Servia with President Fallieres and General Roques paid a visit to St. Cyr, and although the weather was unsuitable for flying, Lieut. Battine on his Farman and Captain Bellenger on his Bleriot made flights for the entertainment of the royal guests. The King handed Captain Bellenger, on his descent, the Cross of a Chevalier of the Order of the White Eagle.

Following up our description of the French Military Aviation trials which appeared in our last issue, we herewith give a detailed list of the winners, their machines, amount of money won and the times and speeds made over the 300 kilometer course:

Winners of the French Military Competition

Pilot	Machine	Motor	Propeller.	Time for 300 kilos h.	m.	s.	Average Speed k. p. h.
Weymann	Nieuport*	Gnôme	Chauviere	2	33	52 3/5	116:976
Moineau	Breguet†	Gnôme	Chauviere	3	9	16 2/5	95:1
Prevost	Deperdussin*	Gnôme	Rapid	3	21	5	89:515
Bregi	Breguet†	Gnôme	Chauviere	3	26	47	87:047
Fischer	H. Farman†	Gnôme	Chauviere	3	33	5	84:474
Barra	M. Farman†	Renault	Chauviere	3	56	13 4/5	76:196
Renaux	M. Farman†	Renault	Chauviere	4	8	40	72:38
Frantz	Savaryf	Labor	Chauviere	4	27	49	67:210

* Monoplane † Biplane

The amounts gained are—

	frs.	
Weymann (Nieuport)—		
Purchase of winning machine	100,000	($ 20,000)
Purchase of 10 replicas at 40,000 frs. each	400,000	($ 80,000)
Speed bonus at 500 frs. per kilom.	280,000	($ 52,000)
Total	780,000	($152,000)
Moineau (Breguet)—		
Purchase of 6 machines at 40,000 frs.	240,000	($ 48,000)
Speed bonus	105,000	($ 21,000)
Total	345,000	($ 69,000)
Prevost (Deperdussin)—		
Purchase of 4 machines at 40,000 frs.	160,000	($ 32,000)
Speed bonus	58,000	($ 11,000)
Total	218,000	($ 43,000)

Germany

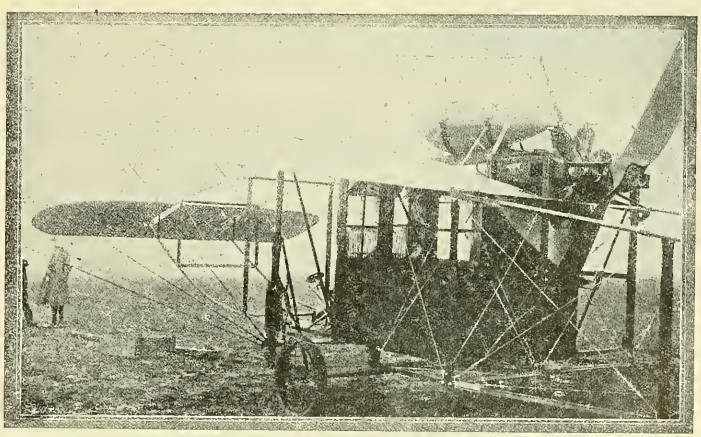
By Stella Bloch.

The Society of German Aerial Technicians is planning an exhibition at Berlin from December 19 to January 1st, being supported in their venture by the Aviation Ground Company Berlin-Johannisthal.

An international aero show, arranged by the Imperial Aero Club and the Society of German Motor car manufacturers will be held at Berlin next spring.

Another fatal mishap occurred in Germany on October 22nd, when Ernest Dax, who piloted an Oertz, came to grief at Hanover in the act of landing. It is believed that he was dazzled by the sun and ran into some shrubs, overturning the machine in so doing. Death was immediate.

The great German event for next year is to be a flight from Vienna to Berlin, for which the preliminary arrangements are being made. According to present arrangements only one landing will



The new Blériot passenger-carrying aerocar which was constructed to the order of M. Deutsch de la Meurthe. Note the front elevator, enclosed car with pilot's seat in front, and also the disposition of the Gnôme motor, propeller and tank. The top picture on this page shows a closer view of the car and control.

be obligatory, that at Breslau, all others being made when and where the aviators see fit.

A remarkable incident occurred to two Wright flyers whilst landing during a cross-country journey in the vicinity of Berlin. They came to ground in a fine vol plane but the aeroplane hit and killed a fine young deer. The aviators were forced to come down in the midst of a hunt, which was deprived of its prey by their action. Amid general excuses and amusement they reascended for their goal proper.

Dirigible maneuvers on a large scale are being held at Cologne to last for a month. Gross, Zeppelin and Parseval airships are taking part and military detachments have been sent up from Berlin and Metz.

Stuttgart will be the starting-point of the next Gordon Bennett balloon race, won this year by the German "Berlin I." in America.

A "Round-About-Berlin" flight was carried out on November 13, by Pietschker, accompanied by a passenger on a military Albatross double-decker with a 100 H. P. Argus motor. The trip, which encircled Berlin and the whole of the suburbs, lasted about two hours, counting in a landing at Schulzendorf.

Tremendous interest is being shown in the 1912 South-German Circuit starting from Strassburg either in May or June. The circular flight will lead to the most of the important South German cities. The finish has not yet been decided upon. Prince Henry of Prussia, who is on the committee, has promised a challenge cup for the event. The trophy is to invest the flight with the same importance as the Prince Henry Cup did for the automobile contest known under this name.

Bozena Lagler, the young German aviatress, came to grief whilst flying at Prague, and is now in the hospital suffering from various fractures.

The day after the paragraph recounting Pietzschker's circular flight around Berlin was written, the news arrived of his death, which occurred on November 15th at Berlin-Johannisthal where the young aviator was testing a machine of his own make. Whilst at a height of thirty metres the stabilization plane suddenly ripped away. The machine reared on end and threw Pietzschker clear out of his seat. He fell to ground heavily and died in the fall as his neck was broken. The deceased, who belonged to a well known family, was only 24 years of age, and won both big events during the last National Aviation Meet at Johannisthal on an Albatross biplane.

DIRIGIBLE FOR GERMANY.

The German military authorities are planning to build an aerial cruiser with a carrying power of three hundred persons and a speed of fifty miles an hour. Its gas capacity will be ten thousand cubic metres. The plan is the outcome of the aerial maneuvers recently ended which were unusually satisfactory.

Italy

The first Italian circuit, Milan-Turin-Milan, which was recently held, was won by Manissero (Blériot), with Verona (Blériot) second. Others who took part in the circuit were: Rimini, M. Maffeis, Brilli and Bigliani on Bleriots; De-Gino (Deperdussin) and Ramasotto and Re (Chiribiri). The winners' time was 3 hours 16 minutes, and the distance 300 kilometres.

Mexico

While it appears that the meet held at Mexico City has been a success from a flying standpoint, it does not appear to have been such in point of attendance. Flying was accomplished almost every day of the meet by most of the Moisant aviators, who were ably assisted in their efforts by Charles F. Willard. The feature of the meet, however, was the flight of George M. Dyott, carrying President Madero in the passenger seat of his Deperdussin monoplane. Although the flight was of short duration it was highly successful in every way and the President was delighted with his experience.

Russia

The Russian aviators, headed by Wassilieff, have formed a society for furthering and defending the interest of aviation in Russia. The members of the society have pledged themselves and machines to be at the disposal of the Government in time of war.

Tripoli

It was reported that on November 21st, the Italian military airscouts succeeded in dropping bombs inside the Turkish camp, which did great damage. Those stationed in the captive balloon were able to see the result and reported that many were killed.

In view of the success attained by the Italian airmen at Tripoli, the Italian Government has decided to send more aeroplane sections to the front. The second section consists of Maniserro (Blériot), Verona (Blériot), Maffei (Blériot), and Dal Mistre (Deperdussin). The third section will consist of Cagno (Farman), Ruggerone (H. Farman), Cavalieri (H. Farman), and Rossi (Blériot). The first section which consists of Captain Plazza, Captain Moizo, Major Falchi, Lieut. Rossi and Lieut. Gavoti, have at their disposal two Blériots, two Etrichs, two H. Farmans and three Nieuports.

NEWS IN GENERAL

Mrs. Madeline Blériot Johnson, one of the first pupils to join the Queen Aeroplane Company's aviation school at Pasadena, California.

New England Notes

By Denys P. Myers.

Official figures of the Harvard-Boston aero meet show a net deficit of $11,221 as against a net deficit of $23,147 in 1910. The loss will be met pro rata by the sixteen backers of the Harvard Aviation Association.

From advertising and other concessions $4,716 was realized. A new source of income, which contributed $11,429 to the gross receipts, was obtained through sale of tickets to the Nashua, Worcester and Providence grounds, where the cross-country flyers alighted. Gate receipts at Squantum were $39,220; of the 26,808 paid admissions there, 5,980 represented twenty-five cent tickets.

Ordinary Seaman Daniel H. Mackney of the Naval Training Station at Newport, R. I., is working on a hydro-aeroplane, which he hopes to have completed by April next to begin flights along Narragansett Bay. The sailor, who is but twenty-three years of age, came into the Navy from his home in Terryville, L. I., nine months ago, and is now on special duty at the station by orders of the Navy Department.

Alfred Vanderbilt has joined the aviators, having Farm, Newport, R. I., where a field will be ing brought from England an aeroplane to Oakstaked out for the purpose of aviation parties. Alexander Smith Cochran and W. Redmond Cross are among the new recruits to the sport.

Captain Washington I. Chambers, acting for the Navy Department, under which he is serving as the navy's aeronautical expert, has purchased from the Burgess Company and Curtiss of Marblehead, one of that concern's Burgess hydroplanes, the intention being to attach it to a Wright aeroplane. The Navy owns one of the Glenn H. Curtiss pontoons which has been used successfully. The main difference between the Curtiss pontoon and the Burgess hydroplane is that the former is flat bottomed and the latter is boat shaped, giving much more speed when running under full power and is especially designed for ocean service. Lieut. John Rodgers took delivery of the apparatus and when it was fitted to an aeroplane tried it out successfully. A few days later at Newport, Lieut. Rodgers sailed in and out and over the ships of the Atlantic fleet in the outer bay, circled the flagship Missouri at a height of 400 feet and finally landed in the water in the lee of the battleship Ohio.

A little flurry was caused previous to the Harvard-Yale football game by Harry N. Atwood announcing that he intended to see the game from his aeroplane, owing to his inability to get tickets. The announcement caused great opposition, but Atwood persisted in his intention until President A. Lawrence Lowell of Harvard, made a personal request of him not to make such a flight. As it turned out there was no trouble, but there might easily have resulted, a test case as to the Aero Club of America's control over its licensees. The Aero Club passed a resolution forbidding such a flight, which Atwood is quoted as flouting.

California News

By Ernest Ohrt.

What promises to be a great help to aviation on the Pacific Coast is the newly organized California Aviation Company of San Francisco. Two Curtiss type biplanes are now under construction both of which will be equipped with Roberts motors. One of the machines is being built for Miss Margaret Murphy, who has become well known in aviation circles through her flights with Weldon B. Cooke, the daring Oakland aviator.

The California Aviation Company has secured a large field for practice grounds near San Francisco, and are making arrangements with several competent drivers for flying instructors. A hangar 40 by 40 feet is being built upon the grounds.

Weldon B. Cooke made many fine flights at Stockton, California, on November 23d. Mr. J. B. Seeley, of the Roberts Motor Company, witnessed the flights of Cooke and was greatly pleased.

Walter Edwards, of San Francisco, has been making several fine flights at Madera, California, in his Curtiss type biplane.

Ray M. Francis, the latest arrival at Calvara Flat, has been making many fine flights lately in his Gage biplane. He has been taking up many passengers and at San Jose on November 30th, he took a newly wedded couple up. His Gage biplane, which is of the Farman and Curtiss type, is of splendid workmanship. The biplane is equipped with an 80 H. P. Hall-Scott motor. Francis is now making an exhibition tour of California.

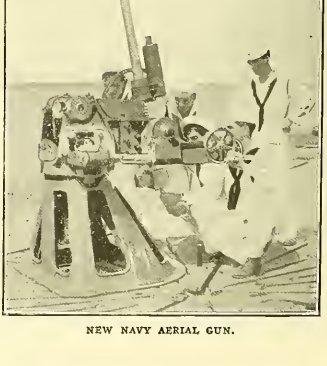
It is proposed to have an aviation meet in San Francisco the latter part of December. Hughes Simon, manager for Grahame-White and Tom Sopwith, is in San Francisco, and are helping to arrange matters.

The dirigible airship built by C. H. Toliver of San Diego and which has been under construction for over a year, failed to fly. It was built to carry forty passengers.

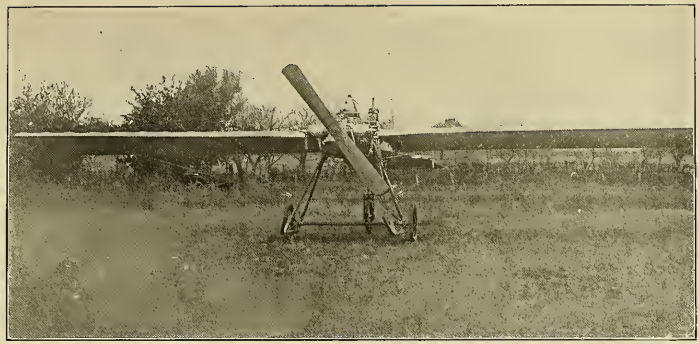
Tom Cunn, who claims to be the only Chinese aviator in the world, is at present in San Francisco negotiating with the Chinese revolutionary leaders for dropping bombs from his biplane which is a conbination of the Farman, Curtiss and Wright types.

Mrs. Lillian Janeway Atwater, widow of Senator Platt has purchased a hydro-aeroplane, which she is learning to pilot under the tuition of Glenn H. Curtiss at the training school near San Diego. It is Mrs. Atwater's purpose to fly for pleasure.

On their honeymoon journey Mr. and Mrs. Atwater came to California so that the bridegroom could purchase an aeroplane and learn to fly it. Mrs. Atwater became so enthusiastic that she determined she also would learn to fly. Both are now flying their craft daily at San Diego.



NEW NAVY AERIAL GUN.



THE CALL MONOPLANE EQUIPPED WITH A CALL MOTOR.

The Call Monoplane

The Aerial Navigation Company of America, of Girard, Kansas, besides manufacturing the Call Aviation Engine, has recently turned its attention to aeroplanes. In fact, it was with this ultimate object in view that the manufacture of the engine itself was originally undertaken.

The Call monoplane weighs 800 lbs., without fuel or operator, has a main supporting surface of 210 square feet, and is equipped with a 50 horsepower Call Aviation Engine, turning a propeller 8 ft. 6 in. in diameter, of 6 ft. pitch, approximately 1,200 revolutions per minute.

Repeated shop tests showed a thrust of fully 600 lbs., with a later propeller, turning 1200 revolutions. One of these tests was with a 400 lb. dynamometer anchored to a stake, and attached by guys to rear of monoplane. The thrust obtained was sufficient to register the full capacity of the dynamometer—400 lbs.—in addition to the power required to propel the ship forward, with three persons on board, and to overcome the head resistance engendered by the 80-mile-per-hour wind current from the propeller—estimated at not less than 200 lbs.

Trial work will be continued throughout the winter. With the remarkable showing made by this power plant, the Call Aeroplane and Call Aviation Engine will undoubtedly be heard from to some purpose in the exhibition and prize field during the coming season. It is the intention and plan of the Company to also open regular traffic and passenger lines in the near future.

The Winner

Mr. Raymond W. Garner, of Davenport, Iowa, has been awarded the $25.00 offered by the X. Company, of Detroit, for a name to replace "propeller." The name "Spiron" selected is a modification of his suggestion.

The X. Company reports that a widespread interest was taken in the contest and that suggestions were received by them from all parts of the world from prominent aeronautical writers and aviators who commented on the unsatisfactory word "propeller." Some of the substitutes for the word "propeller" suggested were "club, blade, stick, fan, and wheel," now in use at various aeronautical fields.

Nassau Boulevard

In spite of the inclement weather of the past month activity continues at Nassau Boulevard and almost every day the aviators are out practising in spite of the snow.

The sensation of the month has been the trial of Lester Weeks in the Dietz paraplane, a semi-circular machine with a large hollow tube in the centre in which is stored a parachute for emergency purposes. In spite of the peculiar appearance the machine has proved itself a flier. The motor used is a 60 H. P. 6-cylinder Kirkham which furnishes power enough to enable the machine to rise from the snow on its skids alone.

Others who have been making good flights at the field are Oliver B. Sherwood and Frank Cline.

Mineola News

During the past month at Mineola considerable flying has been indulged in by the many private experimenters located there.

Captain Baldwin has converted his biplane into a comfortable passenger-carrying machine, having placed the passenger seat directly behind the pilot instead of by his side as heretofore.

Frank Boland is continuing his experiments with his tailless and rudderless biplane and the way he handles the machine in the air has been a revelation to the other aviators.

Stanley Y. Beach is installing a new and novel engine in his Bleriot. The engine was designed by S. Ashmundson and is an eight cylinder affair of the double opposed type.

Grahame-White Gets Statue of Liberty Prize

The Federation Internationale Aeronautique at its meeting at Rome, Italy, on November 26th, awarded the Statue of Liberty $10,000 prize to Claude Grahame-White.

This prize, it will be remembered, was first awarded to the late John B. Moisant and after his death, to Jacque De Lesseps. It was, however, protested by Grahame-White, but it was claimed that he had fouled a pylon and therefore under the rules was not entitled to the prize. Grahame-White has claimed all along that he did not foul a pylon and as there is some doubt of his having done so, the decision was reversed.

Curtiss Doings

Captain Washington Irving Chambers, who has charge of Navy aviation affairs at Washington has accepted the invitation of Glenn H. Curtiss to observe the experiments now in progress at the Curtiss winter training grounds on North Island, San Diego, Cal. Captain Chambers will spend several days at Mr. Curtiss' experimental station.

Major Bell, Chief of the United States Signal Corps, has made known his intention to detail several Pacific Coast army officers to North Island for the purpose of studying aviation under the direction of Mr. Curtiss.

A carload of aeroplane equipment arrived at San Diego, Cal., recently from the Hammondsport factory. A second carload is on its way.

It is stated that the Curtiss Company received an order from the Russian Aerial League for a two-seated Curtiss hydro-aeroplane of the duo control type. The Russian Aerial League is an organization formed to further and develop a Russian aerial fleet.

In addition to the above order the Curtiss Company also reports the sale of one of its machines to Dr. Charles S. Decker of Binghamton, president of the Aero and Automobile Clubs of that city.

It is reported that Curtiss has constructed a hydro-aeroplane rescue machine which is equipped to carry twelve men. Should this latest device prove successful it will show conclusively the great value of the hydro-aeroplane for war purposes, as a means of transportation and for rescue work.

Louis Paulhan, the French aviator, spent a few days in America recently and signed contracts with the Curtiss Company whereby he controls the exclusive agency for the Curtiss aeroplanes and hydro-aeroplanes in France.

On December 2d, Tod Shriver was killed at Ponce, Porto Rico while flying a Baldwin biplane. For some unexplained reason the machine is reported to have fallen 200 feet into a cane field and injuring poor Shriver so badly that he died on the way to the hospital. Shriver was well known in American aviation circles and was a particular favorite at the aviation colony at Mineola.

When Curtiss went to France and won the first International cup race he was accompanied by Shriver who acted as his chief machanician. At Mineola last year he built the Shriver-Dietz biplane and learned to fly in a remarkably short time. Shriver, although usually a careful flyer, at times was inclined to be a little too reckless for safe flying.

Activity still continues at Marblehead, Mass., where the Burgess-Curtiss headquarters are located. Philip W. Page and Clifford L. Webster have been making almost daily flights in the Burgess hydro-aeroplane. During several of Webster's trips a moving picture machine and operator was carried and several pictures taken.

Greely S. Curtis, who has been an active partner of W. Starling Burgess for the past two years, is now learning to fly one of their hydro-aeroplanes.

Wright Company Affairs

A most interesting announcement which shows the important improvements that can be expected in future aeroplanes, has just been given out by the Wright Company. This concern states that their 1912 models, besides embodying their present well-known features, can be furnished with automatic control, silent motors and hydroplanes, all features which should make these machines specially attractive to sportsmen.

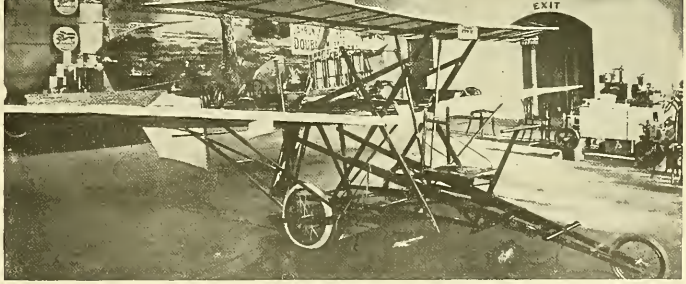
It is a pleasing matter to mention the fact that there has not been one fatal accident during the year 1911 to a Wright Company aviator, notwithstanding that the Wright aviators were continually flying in all sections of the United States.

On December 12th Judge Hand, in the United States Circuit Court at New York, granted an injunction to the Wright Company to restrain Claude Grahame-White, the English aviator, from flying in this country without permission from the Wrights and directed him to render an accounting of profits from his flying since November 29th, 1910, the date the Wright Company brought suit, and the following day the Wright Company served papers on Mr. Grahame-White in another suit to endeavor to obtain a portion of the profits from flights made by Grahame-White prior to November 29th, 1910.

Tests lasting four days of the Wright brothers' aeroplane motor have been completed in the laboratory of the Automobile Club of America. This is the first trial in the $1,000 prize contest, entries for which closed September 10 last. The results of the trials will not be made known until the competition has been completed. Wilbur Wright ran the motor during the tests, which were made by Herbert Chase under the direction of the Technical Committee of the club. The motor is that in use on the Wright biplanes.

The Wright motor is of the four cycle water cooled type, having four cylinders of four and three-eighths inch bore by four-inch stroke. It is rated at thirty to thirty-five horse power.

The tests included a run of three hours' duration at constant speed, starting from a standstill, and again while the engine was turning over slowly, and other tests to determine reliability, flexibility, fuel economy, power, freedom from vibration and lubrication efficiency.



A NOVEL AMERICAN MACHINE. THE SLINN BI-MONOPLANE.

INSPIRED BY AIRCRAFT.

IN the December AIRCRAFT, which was published on the 20th day of November, we ran a trade note in which we stated that the Wolverine Aeronautic Company of Albion, Mich., had just finished the construction of a biplane which was intended for the Chinese Revolutionary party, and on November 24th—four days later—a Cleveland newspaper published a story in which it was claimed that the Chinese Revolutionists were assembling a fleet of airships for an attack on Pekin and that some of them were to be made in Cleveland while some were to be made at Albion, Mich., by the Wolverine Aeronautic Company.

The whole story was quite cleverly arranged and no doubt proved interesting reading matter but judging from its contents there could be no doubt that it was inspired by AIRCRAFT, in fact it even went so far as to reproduce a copy of some Chinese writing which AIRCRAFT published on page 80, volmue 2, May issue.

Now we have no objection to newspapers in any part of the world taking their cues from AIRCRAFT, in fact the aeronautical Editors on every up-to-date newspaper in the United States use AIRCRAFT as an encyclopedia from which they obtain their facts and figures. This is all right and as it should be, but we think that it is no more than fair that when they use our stuff they should at least state from whence it came.

ALL indications point to a very brisk aeronautical trade during the year of 1912 and already manufacturers and supply houses throughout the country are making preparations to take advantage of what promises to be a prosperous season. Therefore we call the attention of advertisers to the fact that the next number of "Aircraft"—the February issue—should be an exceptionally good one to advertise in, for not only will it be the forerunner of the Spring trade, but also the index number of Volume II., the number in each volume which is referred to the greatest number of times by readers. Advertisers should remember, however, that the February "Aircraft" is published on the 20th day of January and that advertising forms close on the 10th day of January, and act accordingly.

The Sloane Aeroplane Company has been organized under the laws of the State of New York.

This concern, which apparently is well backed financially, will in the future manufacture both monoplanes and biplanes as well as spare parts for almost any make of machine. It is also their intention to have a repair shop to be used exclusively for repairing disabled aeroplanes. Their manufacturing plant is one of the most complete in the United States.

The Queen Aeroplane Company has opened up its winter aviation school at Pasadena, California, under the general management of Ladis Lewkowicz, who also acts as general instructor of flying.

Work on the hangars is now being pushed rapidly and by the first of January it is expected that the school will be in good working shape.

The first student enrolled was Mrs. Madeline Bleriot Johnson.

The flying ground contains one hundred and sixty acres of perfectly flat land at the foot of the hills and is well protected from the winds by being thirty miles from the ocean.

The C. E. Conover Company, of New York, manufacturers of the much used Naiad aeronautical cloth, report a large increase of sales for the year of 1911 over the year of 1910, and that they anticipate doubling their 1911 business in 1912.

They also report that some of the cloth they sold two years ago is still doing good service. They are, however, still experimenting and have prepared an even better fabric than that which has brought them in such good results during the past.

Maximotor Makers of Detroit, have engaged the services of a celebrated Detroit automobile designer to co-operate with the Maximotor designed by Mr. Dingfelder. The latter is said to have been the first to drive an automobile on the streets of Detroit which to-day are choked with automobiles, and also the first to introduce the spark plug into the United States.

Among the recent purchasers of Maximoters is Mr. Lewis Matthews, official and part owner of the Maleable Stove Works of South Bend, Ind., who has now resigned to invest in an aviation enterprise.

Geo. H. Smith has just installed a model 2 Maximotor in the Bleriot he had built by the National Aero Co., of New York City and Long Island.

Reports from Honolulu indicate considerable activity by F. A. Schaefer, of the well-known importing firm of G. E. Schaefer & Co., Ltd. His Maximotor plane is believed to be the sole aeroplane between San Francisco and Yokahama.

Nels J. Nelson, of New Britain, Conn., who has flown at fairs and gala day celebrations through eight States since he received his 40-50 h. p. Maximotor at the beginning of September, states that his engine has returned ten times its cost in that time. There has been nothing in the way of accident to mar his good fortune.

Mr. Nelson is going to hibernate in New Britain and build another plane for next year.

John A. Roebling's Sons Co., of Trenton, N. J., report that the demand during 1911 for wire cords and wires for stays for aeroplanes has exceeded that of any preceding year.

In addition to supplying large quantities of such cords and wires, the Roebling Company has filled many orders for flexible wire cords for steering gear.

All wire must be of the highest quality, the inventors and manufacturers of aeroplanes demanding the severest tests which can only be met by careful and intelligent treatment of the best grade of metal.

There has recently been a considerable increase in the demand for **"Kirkham"** motors and a large number of orders have been booked for future delivery. Indications point to a considerable activity in the sale of motors during the winter and spring months.

Capt. Hugh L. Willoughby, of Newport, R. I., and Sewalls Point, Fla., has recently received delivery of a 6-cylinder "Kirkham" Motor to be installed in his hydro-aeroplane, the "Pelican."

Motors have also been delivered during the past month to Aviator James V. Martin and the Chicago Aeroplane Mfg. Co.

Recently W. F. Cline, in the A. N. Ridgely plane, equipped with a 6-cylinder "Kirkham" motor, flew 16½ minutes at Nassau Boulevard. Ascending in the fast approaching darkness and flying on a schedule he descended only on being signalled down, and it was then so dark that it was neecssary to burn a considerable quantity of gasoline on the field in order that he might safely alight.

The New York Aeronautical Supply Company report that in spite of the winter season orders are coming in thick and fast. A large percentage of these orders are for supplies for machines which are to be built during the winter months. A new addition to their line is the Roberts motor which is made in two sizes—four and six cylinders.

This enterprising concern is now building a Curtiss type hydroaeroplane in which they intend to demonstrate their engines in the Spring and Summer months.

Mr. W. E. Watts, the president of the company, has just returned from a trip through New England and Canada, and reports the outlook for next season as very bright in these respective territories.

At a recent meeting the **Chelsea Aeroplane Company,** manufacturers of the famous *Charavay* propellers, was taken over by the Sloane Aeroplane Company, and the following officers were elected: President, John E. Sloane; vice-president and chief engineer, Kingsford Goodman.

Owing to the constantly increasing demands for the Charavay propeller, the company has moved its manufacturing plant to a larger factory located in Brooklyn, N. Y., where they have greater facilities for turning out propellers and patterns. The offices of this concern, however, are located at 1737 Broadway, New York.

This company will have two standard types of propellers for 1912, the "Charavay" and the "Charavay Normal." The first is the same type that they have been turning out for the last few months while the "Charavay Normal" is an entire-

ly new design which is claimed to give even better results than the "Charavay."

Mr. Harry B. Wise is connected with the sales department of this company.

The E. J. Willis Company of New York, have recently placed upon the market an extra large turnbuckle with locking device preventing loosening of the turnbuckle and slackening of the cable around engine section of the biplane. This company announces that so large has been the volume of their business lately that their stock of aeronautical catalogues has become entirely exhausted by the demand for them, showing the great interest manifested in aeroplane construction throughout this country at the present time.

The American Propeller Company reports a most satisfactory condition of trade in their well known Paragon propellers, especially considering the approach of the winter season. They report a most excellent export trade, to a considerable extent compensating for the inevitable falling off of their regular trade during the colder months. It is a matter of much gratification to this company to know that their product is becoming known and appreciated in foreign countries for the same excellent qualities which make their propellers so popular here. A considerable portion of their foreign trade is reported as being with foreign governments and belligerent parties under circumstances which forbid publication of full details.

The hydro-aeroplane built by the **Burgess Company & Curtis** has been in active service since its first installation and during the last month over fifty flights have been made, on most of which passengers and pupils have been carried.

On December 4 the set of hydroplanes for the Navy Wright machine were shipped to Annapolis, after they had been thoroughly tried at Newport in maneuvers with the Atlantic Squadron, where Lieutenant Rodgers delivered a message from shore to the battleship Ohio lying to some miles off awaiting orders.

Among pupils being trained are H. H. White of the University Press of Boston; H. J. White, of Baltimore, Md., and G. W. Roosa, of Lynn. Among ladies carried recently are Miss M. E. King and Miss Curtis, of Boston; Miss M. W. Wainwright, Miss F. Webster and Mrs. G. H. Webster.

On November 27 a flight was made over Marblehead harbor with a moving picture machine for the Aviation Film Company, results of which were highly satisfactory.

On December 6 the hydro-aeroplane was used for the first time to go duck shooting. Mr. Sam Hathaway took out his rifle and with Mr. W. Starling Burgess as operator flew along the coast looking for ducks. A number of shot were made, but as it is difficult to shoot a duck with a rifle the hunters returned with an empty bag.

On the evening of the same day Mr. Webster continued his training on into the evening, finding no difficulty at all in operating under the full moon. Eight flights in all were made during the day.

On December 8 eleven flights were made.

December 9. Harry N. Atwood in behalf of the Clayton and Craig Aviation Schools, takes delivery of the first of his Burgess hydro-aeroplanes. This machine will be used not only in active training work, but as Mr. Atwood's own service hydro-aeroplane.

The shops are busy filling rush orders for hydroplanes, as well as regular orders for Burgess machines.

A Burgess aeroplane and Burgess hydro-aeroplane have been shipped to Los Angeles for winter training. The work will be in charge of Mr. Howard W. Gill, present holder of the American endurance record. The selection by Mr. Gill of the Burgess machine was made after a very careful study of the market as he wished to obtain a type thoroughly satisfactory for general work.

The company will also have a school located in Florida to be opened about January first, definite notice of which will be made later.

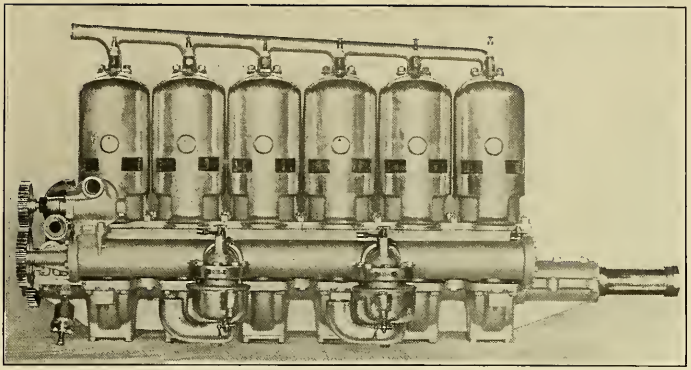
The Roberts Aeroplane Motor

This motor made its first appearance on the aviation field the first of June and has risen rapidly in favor of aviators in general until now it is one of the leading aviation motors of American manufacture.

In the five months, from June first to November first, The Roberts Motor Co., of Sandusky, Ohio, sold and delivered over fifty motors.

The Roberts model X aeroplane motor is built in two sizes, four-cylinder 50 H. P. and a six-cylinder 75 H. P. The motors are 4½" bore by 5" stroke and give their rated H. P. at 1150 r.p.m. They are of the two-cycle valveless type, and fitted with a rotating cylindrical valve or distributer between the carburetter and crank case so as to give more perfect control of the mixture than can be obtained with the ordinary third port opened and closed by the bottom edge of the piston.

This valve is gear driven at the same speed as the engine and actually proves in use that it shows that the valve performs its function in an admirable manner. The valve gives an exceptionally perfect distribution of the mixture to the various crank cases.



INTAKE OF NEW 6-CYLINDER MODEL X ROBERTS 75 H. P. MOTOR.

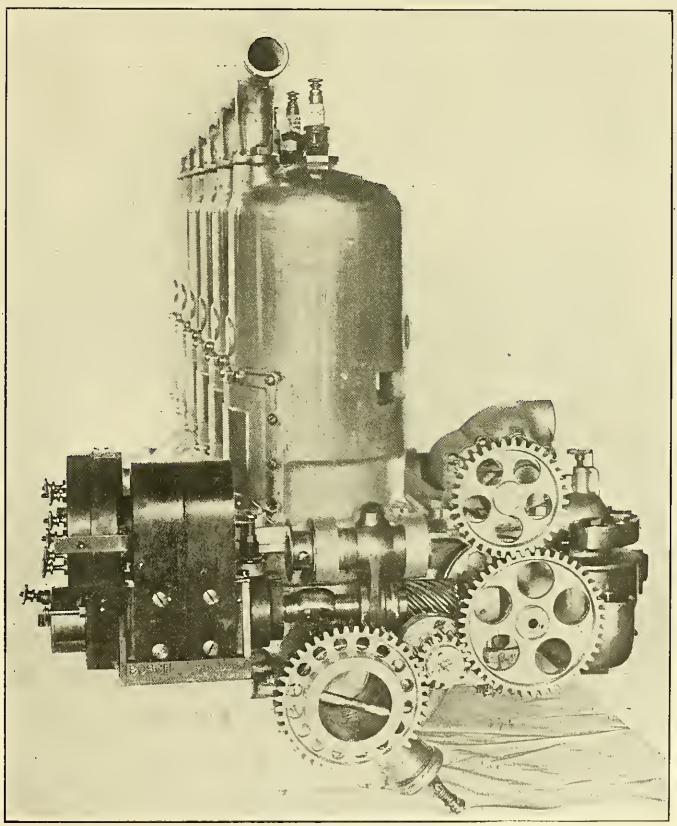
Another feature of the Roberts Aeroplane Motor is the method of advancing the spark. It is well known that with the ordinary magneto advance obtained by turning the circuit breaker a spark of maximum intensity is obtained only at one point in the priming.

In the Roberts Motor a fixed spark magneto is used and the advance is obtained by rotating the armature of the magneto in relation to the drive. This is accomplished by sliding the spiral or helical gear and no matter what the position of the spark, it is of the same intensity at any point of the advance. This gives a hot spark and makes starting much easier than with the ordinary magneto advance. Furthermore it eliminates the danger of back kick because it is not necessary to advance the magneto to make starting easily.

Another unique feature of the Roberts Motor is the use of a special alloy imported from Germany for the cylinders. This alloy while no heavier than aluminum is exceptionally tough, has a high tensile strength, more than that of cast iron. This permits the use of a solid casting for the cylinder and better distribution of the water than can be obtained when separate jackets are used.

The weight of the four-cylinder 50 H. P. motor is 170 lbs., including carbureter and magneto, and that of the six-cylinder 75 H. P. motor, 240 lbs. complete.

So great has been the success of this motor in the aeroplane field that the Roberts Motor Co. are now getting out a larger motor, a six-cylinder 5½ x 6, rated at 125 H. P. which will weigh complete about 400 lbs. This motor will be ready for delivery about the first of the year.



END VIEW OF ROBERTS 6-CYLINDER MOTOR, SHOWING MAGNETO AND PUMP GEARING.

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GENUINE Glenn H. Curtiss aeroplane, good as new. Plane or 4-cyl. Curtiss motor separate; will ship for inspection; cash or part payment to responsible party. George Russell, 1370 Broadway, Room 1?. New York City.

IT DEPENDS on the motor. "A Good Model," plus An Adequate Motor" "Equals Success." The Cellulose Turbine is an internal combustion turbine, designed for model aeroplanes. It delivers ½ horsepower, from 1 to 3 minutes. Complete plant ½ pound. Price $2.00. Correspondence invited. Co-Operative Aero Association, Muncie. Indiana.

FOR SALE—One 50 H. P. DeChenne Power Plant complete. Cheap if taken soon Reason, have closed for season and can make more by spring. DeChenne Motor & Aeroplane Co., Monett, Mo.

FOR SALE—Curtiss Type Biplane complete and set of extra planes, $100.00. Good workmanship (Broke contract). Address Box 752 c/o AIRCRAFT.

THIRTY perfect photographs of prominent aviators, machines, flights, etc.: interesting, authentic descriptions; $1.00 Sample: six photographs, 25 cents. Aero Specialty Co., Revere, Mass.

FOR SALE—One Requa-Gibson propeller, 7 ft. diameter, 6 ft. pitch $35.00
One French propeller type 8.097 ft. diameter, 3.987 ft. pitch 50.00
One French Propeller type 8.097 ft diameter, 3.45 pitch 50.00
One Dean Mfg. Co. propeller type 6½ ft. diameter, 4¾ ft. pitch 50.00
The above French propellers were made in France, are made of the very best of material and workmanship. The price F. O. B. Paris is $100.00 each.

1 50 H. P. Harriman engine, 4 cylinder, 4 cycle. This engine sells for $1,650.00, our price $700.00. This includes a complete power plant.

1 6-cylinder, 2 cycle, 48 H. P. engine, $775.00. This includes radiator propeller and high tension magneto. This engine sells for $1,500.00.

We are closing out our business and must sell. LeBron-Adams Aeroplane Co., Omaha, Neb.

WE HAVE for sale the basic Butusov patent issued in 1898, covering hinged wings, dipping planes, horizontal and vertical rudders, hydroplane, etc. This patent resulted from the early extensive developments by Octave Chanute and Wm. P. Butusov, under contract, June 25th, 1896, which we have. The Scott-Rose Company, 1651 Marquette Bldg., Chicago, Ill.

BARGAINS—Integral Propellers, 6 ft., $16 up. Perfect balance, material, workmanship guaranteed. J. C. Press, So. Norwalk, Conn.

AVIATION," the best book on AVIATION. The *First Lessons on Aeronautics.* Most scientific treatment on the subject. Illustrated. Prepaid $2.00. Ostergaard Aero Co., 1830 North Sawyer Ave., Chicago, Ill.

NEW BLERIOT MONOPLANE, almost completed, $600; first class materials and workmanship used throughout; can be seen at any time. Call or write. M. R. L., 26 N. Franklin St., Hempstead, N. Y.

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PARTNER WANTED—To furnish engine for latest type 30 ft. Curtiss aeroplane for one-half interest. Plenty of contracts waiting. Weight of machine 375 lbs. For further particulars, address S. C. Moore, 200 Second St., S. E., Minneapolis, Minn.

AVIATOR, young American; experienced with Bleriot; desires financial assistance; will fly other model if desired. Box 751, AIRCRAFT.

POSITIONS WANTED

A YOUNG MAN, age 18, desires position as an aviator's assistant, with prospects of learning to fly. Address, Louis Fenouillet, 132 West 47th St., New York City.

MECHANIC who has been doing some aeronautical experimenting; thorough gasoline Engineer Machinist and Automobile Driver, wishes position as helper to aviator or firm. Address C. B., % AIRCRAFT.

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LEARN TO FLY $100 REQUIRED
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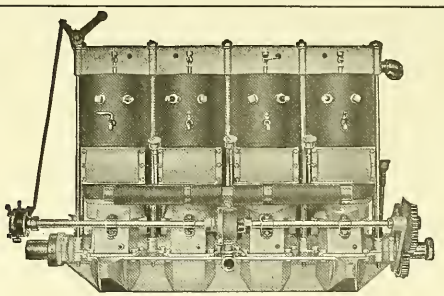

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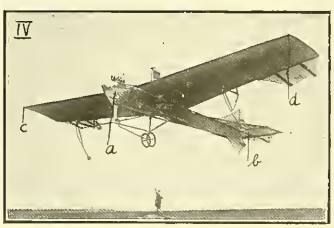

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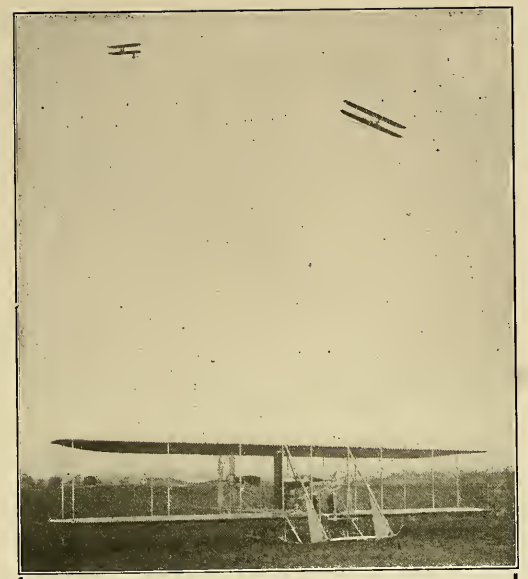

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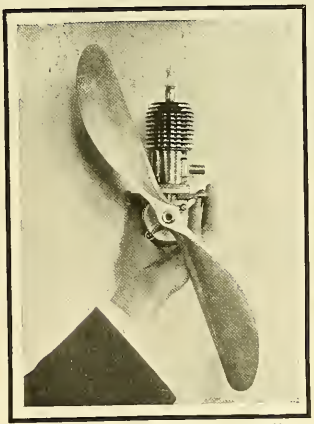

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Weighs complete with aluminum spray carburetor and tank, spark plug and aluminum propeller less than 4 pounds.
Automatic oil feed and spark control.
This engine is absolutely valveless and has but three moving parts.
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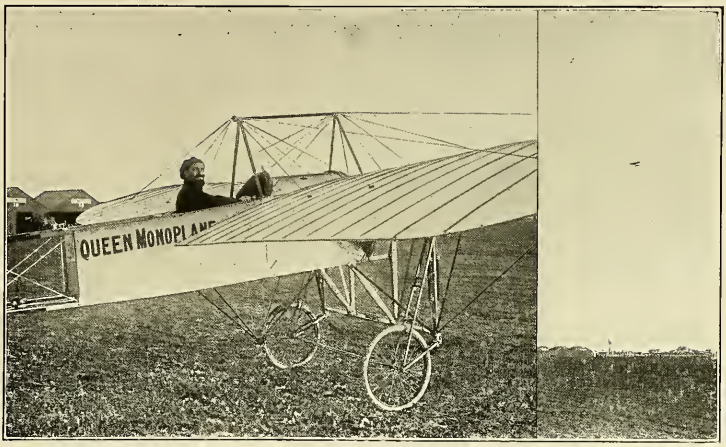

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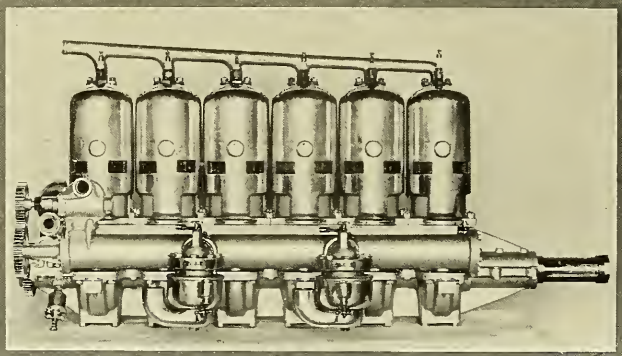
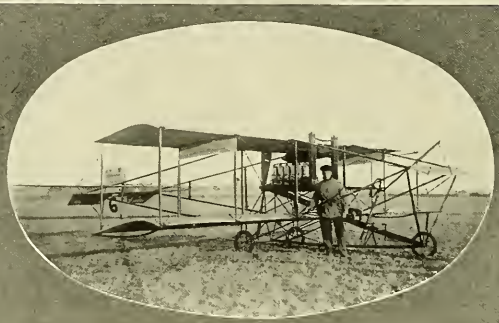
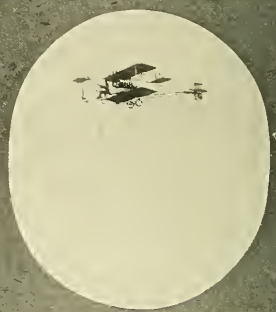
School of Aviation

Attention of LADIS LEWKOWICZ **PASADENA, CAL.**

ANTONY JANNUS AND THE ROBERTS SIX







St. Louis, Mo., November 30, 1911.

THE ROBERTS MOTOR CO., Sandusky, Ohio.

Gentlemen:—

You have asked me to report any and all observations in regard to the performance of the 6 X, in the Benoist No. 11. This is indeed a pleasure as the Roberts six has scored many little triumphs at Kinloch in the past three weeks.

In regard to power, I need only mention the size of the propeller and what the revolutions are. We use a 7-ft. 6-in. diameter by 6-ft. 6-in. pitch Paragon and can turn it 1075 r. p. m. This is a tremendous pitch speed and the machine flies in circles with the motor throttled to 600 r. p. m. Furthermore I flew the machine and made part of a circle starting from the ground with only three cylinders. This was not an accident and will be done on a bet for any one who comes to Kinloch to challenge its possibility.

So far I have had such cold days that real altitude work has not been possible but on Saturday, I attained a height of at least 1,800 ft. in eight minutes. There was no complaint from the motor, and on the next warm day I will take a barograph and make you a good report.

Yours truly,

ANTONY JANNUS,

Chief Instructor Benoist School.

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THE ROBERTS MOTOR COMPANY

1463 Columbus Ave. - - Sandusky, O., U. S. A.

AIRCRAFT

Vol. II, No. 12 FEBRUARY, 1912 15 Cents a Copy

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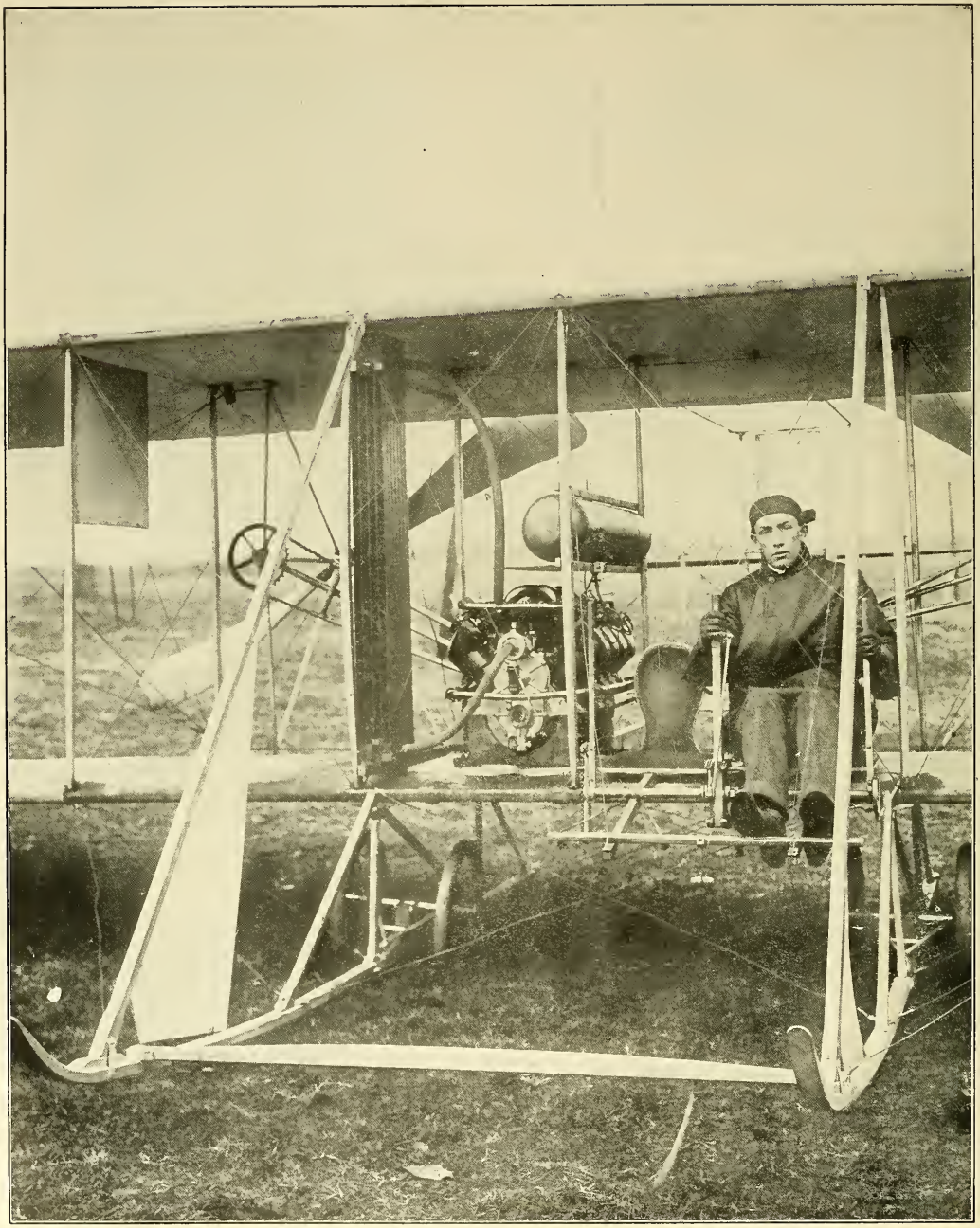

Mr. George W. Beatty tests out the FRONTIER MOTOR at Buffalo, December 21st and 22d with grand success. Carrying passengers in a number of flights. Mr. Beatty orders a FRONTIER MOTOR for his Wright machine and says he believes the FRONTIER MOTOR is the best engine in the world.

The above is a three-quarter view of the latest Blériot Aerocar built to the order of Henri Deutsch (de la Meurthe). The inside is fitted as luxuriously as a limousine automobile and is made to seat four persons besides the driver, who sits in front on the outside. The seats are made with air cushions in order to break the shock in case of rough landing. There is a door on each side and windows of a transparent non-brittle material on three sides, so that the passengers may have a good view of the surrounding country as they speed along. According to Legagneux —who has been experimenting with this machine—it works as well as any of the other Blériot styles.

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AIRCRAFT

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Entered as "second-class matter" February 18, 1910, at the Post Office, at New York, N. Y., under Act of March 3, 1879.

"Aircraft" is registered as a trade-mark by the U. S. Patent Office, under date of August 9th, 1910.

AIRCRAFT

Vol. 2. No. 12 NEW YORK, FEBRUARY, 1912 15 CENTS A COPY $1.50 A YEAR

AVIATION FORECAST FOR 1912

By Denys P. Myers

AIRCRAFT in 1912 will be better constructed than ever before. They will be, speaking generally, a credit to the builder's art and far more correct in engineering principles. It is a maxim of construction that the simplest method to attain a result is the best. A year ago half the scaffolding that was necessary to erecting an aeroplane was left on the alleged finished product in the shape of wires, and stays, and struts, and braces, and whatever such things were named to the *n*th degree. The year just closed saw simpler design—and stronger. Two years ago it was like solving a Chinese puzzle to get into a machine without snapping a wire; last year one could almost take the aviator's seat blindfolded. This year it will be as easy to mount an aeroplane as it is to enter an automobile.

The reason is not far to seek. Notwithstanding the things we all said in our enthusiasm, the actual era of flight is not so old as the books aver. History, of course, records correctly the dates of the first flights, but everybody knows that they were based upon a very small part of the possible knowledge of aerodynamics. The first flights simply indicated that man had solved enough principles to enable him to beat out gravity. There remained the art of flying to be learned, and many details of aerodynamics to be solved. Even two years ago it was a considerable accomplishment to have built a machine that would fly. Last year they were constructed by the hundreds all over the world. New types have sprung up faster than a diligent press could report them. Almost every inventor dealt with minor details by original methods, and machine after machine has been produced which men technically familiar with aeronautics have declared could not fly—but which did. This situation means: We have definitely established many essentially correct principles. The more experienced constructors have become so expert that they have been able to turn from their first concern of building correct principles into machines, a thing which they are able to do now almost by instinct. They are consequently able to devote more energy to solving other problems. Here is a wire. Can it not be removed or passed to its destination internally? Such questions are occupying the leading builders now more than the former question, Will it fly? The result will be observable in 1912 models.

Machines to-day represent one problem of sustentation solved. Speaking simply, the air-craft is sustained because it is supported by a column of air extending from its surfaces to the ground, conditioned upon the fact that it possesses a motor that can drive it across many such columns in the time requisite for gravity to exert its force. In other words, we fly by sheer power of engine, aided and abetted to an extent by the arrangement of sustaining surfaces. And planes to-day are rather sustaining than lifting.

The ultimate type will make its greatest advances in the transformation of the plane from a sustaining one to a lifting one. Langley made a study of the internal work of the wind, and found it was diligent quite regardless of union hours. Soaring is the traditional expression of the ability to take advantage of this internal force of the air as seen in birds. Orville Wright's recent experiments with his new type glider at Kill Devil Hill point the way in which the aviational mind is working, but the Wrights are not alone. I for one hope that the Dayton brothers will be successful in this pioneer work, and will be first to establish the necessary principle. But the superlative efficiency of the Nieuport, with its radically original wing sections, shows that others are approaching the problem, which is double-headed:

1.—Planes must first give all the lift possible. As a minor consideration, they must provide the lift with their under surfaces, and must diminish the danger of equilibrium being destroyed by suction on the upper surface, which in my opinion has been a contributing cause of deaths in glides, where the machine becomes poised very delicately and during which the under-surface pressure is reduced.

2.—Of prime importance to accomplish soaring, however, is facility of motion in the air. How can a man fly safely when he can get no inkling of the sort of air he is traversing until it has thrown his machine into a position that he must use all his energy to correct?

A bird is mobile in the air. It can extend or draw back its neck, and thus help to control its balance. It can not only move its wings as a whole, securing thereby the effect of our propellers, but it can move them internally, change the position of almost every feather, alter the camber of its wing spread, change the angle of wing incidence and do lots of other things. And over and above all these, it has an instinct for the air, a sixth sense that enables it to secure some foreknowledge of wind conditions before it arrives within a given area. How many of these bird qualities can be solved in a year, the writer does not intend to predict in detail.

But it can be asserted that we shall go far toward duplicating some of them. The stabilizers may give the results obtained by the mobility of the bird's neck, and if the weight carried on the Wright glider is movable, it would seem that it can be developed to duplicate this feature of the apparatus of winged things. Given a plane-section to snatch all available lifting power out of the contactual air—which we can produce by experiment—and the thing that is then needed is apparatus to reproduce the internal mobility of the bird's wing. Modern man can solve the problem, perhaps has solved it. If somewhere among experimenters now is not one who has advanced into it, by the end of the year the conditions for its successful solution will be understood, and that is far on the road to victory.

It will be well if in the coming year the aeronautical manufacturers specialize more than they have. Take the case of the propeller. I am told that a propeller is satisfactory if it delivers only a small percentage of the force used in driving it. A friend cites the instance of a ventilating blower driven with a single horse power which drew a man's arm into its blades despite his strength and broke it in sixteen places. Why could not the ventilator people, who have studied for years the problem of air suction and driving furnish information that, worked out to fit the conditions, might enable a manufacturer to produce propellers of so great an efficiency that nothing to-day would equal them. The aeroplane factory to-day is something of a one-man affair. Cloths, motors, and minor accessories represent about the extent of the specialist's products, largely because such things are quite outside the type of material the aeroplane factory is equipped to manufacture. The fertile field in aeronautical manufacturing lies in the direction of specialization on particular accessories. As yet, the motor is almost the only part of the machine which has had the full benefit of experts in the particular field in which it falls. Most of the rest of our machines are too often made by men who understand aerodynamics and are building their ideas by means of materials procured, as it were, from the general store. The writer realizes that serious exception will probably be taken to details of this suggestion, but he believes that if, say, the propeller manufacturer has as a consulting expert a man with a reputation as a ventilating engineer, the two will produce results which will make it foolhardy for the prospective purchaser to buy any other goods. Specialization is bound to come in aeronautical manufacturing, and now is not too early to begin.

Lastly, it may be said that this forecast is not meant to be inclusive of everything that will happen. Advances along broad lines not here indicated will take place, records will be broken. Public interest in aviation will be centered during the year 1912 in watching new types of machines, or those which accomplish sustentation without great power. In fact, it is probable that 1912 will witness a cessation in the demand for mere speed and look for something else as marking the greatest thing in current aeronautics.

SIMPLE EXPLANATION OF AIR HOLES

By D. W. Starrett

THIS article is an attempt to point out the reason why aviators fall into "air-holes." The subject has been treated in a general way before, but, as far as the writer has been able to ascertain, the real cause of the danger has not been indicated.

Mr. D. E. Conner in an article, "Airswirls and Their Relation to Aviation," in the July issue of "AIRCRAFT," is undoubtedly correct in his conclusions regarding the first causes of air swirls and up and down currents. This is a step in the right direction. But it is necessary for the aviator to know that there is another reason for the sudden dropping of his machine while flying, apparently, in smooth air.

The knowledge which Mr. Thomas Preston Brooke brings to the attention of the aviator in "The Causes of Air-Pockets" in the May issue of "AIRCRAFT," is also a step in the right direction. Mr. Conner shows the main cause of the up and down air currents, and Mr. Brooke, after a great deal of experimenting, shows their relation to each other and surrounding objects. He seems to confirm all that Mr. Conner has written. It is therefore the intention of the writer only to add a little information on the subject.

Professor Langley, under his law, has given to the world the reason why a heavier-than-air machine can be made to fly. At present the aeroplane depends entirely upon speed for its buoyancy. The law has demonstrated that the more square feet of air it passes over per second of time the more weight it can carry.

This means, theoretically, that if it could attain sufficient speed no planes would be necessary with which to overcome gravitation. Imagine the machine, stripped of its planes, whirling around the earth with the force of gravitation as an invisible string holding it to the center of the earth against centrifugal force. Increase the speed sufficiently and the time will come when this string will be unable to withstand the pressure.

But the present requirements demand an understanding of the problem as it appears in every day practice. It is known, under the law, that a certain number of square feet of plane surface must have a certain speed to overcome gravitation. But, apparently, very little is known about a machine being able to overcome gravitation without momentum.

Aviators have found that facing the wind is the best position from which to make a start. The reason for this is that more square feet of air surface is flowing to the machine, which is equivalent to more speed of the machine. Increase the wind's speed and, theoretically, the time will come when a sufficient number of square feet of air will pass under the planes to overcome gravitation. This will be accomplished by the centrifugal force of the wind, even though the planes are level and at rest.

The results, therefore, of speeding the wind and machine, each acting upon the other separately, are identical. Now assume the machine and the wind having speed and moving against each other; according to the Langley law the bouyancy of the machine, over that when acting separately, will be increased. But if each has the same speed and moves in the same direction, the bouyancy will be destroyed and the machine will fall to the earth unless this condition is speedily changed.

It is plain, then, that if a machine strikes a descending current of air with a speed that will overcome gravitation, according to the law, there can be no danger of falling any more than in a head wind, if the aviator has had the practice that will instantly tell him to elevate his planes.

No one has ever heard of an aviator falling upward, which would occur if an ascending current of air caught his machine and he could not steer it on its course. It is true that upon entering up and down currents there would be some momentary rise and fall. And if one had an engine with gyroscopic force, there would be grave danger no doubt if one was not prepared for the sudden change.

So the only reasonable explanation of the "air-hole" trouble is the one given below.

It will make no difference whether the aviator is flying in a straight line or circling; *if he passes into a current of air that is moving with the same speed and in the same direction as his machine, it is bound, under the Langley law, to fall.*

His supporting surface will be gone in an instant, and if he is ignorant of the cause of his danger, and unless his momentum takes him from this region nothing can save him. If his momentum does not take him out he must fall out and take his chances. But if he understands the principle he can speed his engine so that he may pass over the requisite number of square feet of air per second, when his rudder will act. Or he can slow his engine when the greater speed of the air will allow it to act, when he can steer and float.

Naturally, in circling, an aviator is certain to encounter more frequently air currents with the same direction and speed as his machine. This, then, is a time when he should be particularly on guard.

There should be an instrument in front of him which would indicate the speed and direction of the wind at each instant.

Birds always fall when sailing with the wind without wing movement. And birds can always rise when sailing against the wind.

AMERICAN AVIATION RECORDS ENDING JANUARY 1st 1912

GREATEST CROSS-COUNTRY DISTANCE FLIGHT

Calbraith P. Rodgers. From Sheepshead Bay, New York, to Pasadena, California. Begun September 17, 1911. Ended November 5th, 1911. Elapsed time 49 days. Actual time in air 4,924 minutes, equivalent to 3 days, 10 hours and 4 minutes. A Wright Biplane was used.
[On November 12th Rodgers started to fly to Long Beach, on the Pacific Coast, a distance of 12 miles from Pasadena, and fell at Compton, Cal., and was badly hurt, causing a delay of 28 days, after which he arrived at Long Beach on December 10th, 1911, thus completing a coast to coast flight.]

(In Closed Circuits)

A. SPEED

1. Time on a given distance.

DISTANCE KILOM.	DISTANCE MILES	HOLDER	PLACE	DATE	MACHINE	TIME
			(a) Aviator Alone			
5	3.107	A. Leblanc	Belmont Park, N.Y.	Oct. 29, 1910	Blériot	2′ 44″ 4/5
50	31.068	A. Leblanc	Belmont Park, N.Y.	Oct. 29, 1910	Blériot	27′ 48″ 7/10
100	62.137	C. Grahame-White	Belmont Park, N.Y.	Oct. 29, 1910	Blériot	1 hr. 00′ 41″ 7/10
250	155.342	St. Croix Johnstone	Mineola, N.Y.	July 27, 1911	Moisant (Blériot-type)	3 hrs. 32′ 56″ 2/5
			(b) Aviator and One Passenger			
10	6.214	C. Grahame-White	Nassau Boulevard, N.Y.	Sept. 30, 1911	Nieuport	6′ 13″ 2/5
50	31.068	C. Grahame-White	Nassau Boulevard, N.Y.	Sept. 30, 1911	Nieuport	31′ 01″ 3/5
			(c) Aviator and Two Passengers			
5	3.107	T. O. M. Sopwith	Chicago, Ill.	Aug. 15, 1911	Wright	6′ 56″ 2/5

2. Distance in a given time.

			(a) Aviator Alone			
25	15.534	A. Leblanc	Belmont Park, N.Y.	Oct. 29, 1910	Blériot	15′
50	31.068	A. Leblanc	Belmont Park, N.Y.	Oct. 29, 1910	Blériot	30′
95	59.030	A. Leblanc C. Grahame-White	Belmont Park, N.Y.	Oct. 29, 1910	Blériot Blériot	1 hr.
141.97	88.216	St. Croix Johnstone	Mineola, N.Y.	July 27, 1911	Moisant	2 hrs.
214.57	133.327	St. Croix Johnstone	Mineola, N.Y.	July 27, 1911	Moisant	3 hrs.
283.628	176.238	St. Croix Johnstone	Mineola, N.Y.	July 27, 1911	Moisant	4 hrs.
			(b) Aviator and One Passenger			
24.14	15	C. Grahame-White	Squantum, Mass.	Sept. 4, 1911	Nieuport	15′
48.28	30	C. Grahame-White	Nassau Boulevard, N.Y.	Sept. 30, 1911	Nieuport	30′

3. Greatest speed obtained, whatever the length of the flight.

HOLDER	PLACE	DATE	MACHINE	SPEED PER HOUR KILOM.	MILES
		(a) Aviator Alone			
A. Leblanc	Belmont Park, N.Y.	Oct. 29, 1910	Blériot	109.237	67.877
		(b) Aviator and One Passenger			
C. Grahame-White	Squantum, Mass.	Sept. 4, 1911	Nieuport	101.762	63.232
		(c) Aviator and Two Passengers			
T. O. M. Sopwith	Chicago, Ill.	Aug. 15, 1911	Wright	56.263	34.96

B. GREATEST DISTANCE

				DISTANCE COVERED KILOM.	MILES
		Aviator Alone			
St. Croix Johnstone	Mineola, N.Y.	July 27, 1911	Moisant (Blériot-type)	283.628	176.238

C. GREATEST DURATION

				DURATION OF FLIGHT
		(a) Aviator Alone		
Howard W. Gill	Kinloch, Mo.	Oct. 19, 1911	Wright	4 hrs. 16′ 35″
		(b) Aviator and One Passenger		
G. W. Beatty	Chicago, Ill.	Aug. 19, 1911	Wright	3 hrs. 42′ 22″ 1/5
		(c) Aviator and Two Passengers		
T. de W. Milling	Nassau Boulev'd, N.Y.	Sept. 26, 1911	Burgess-Wright	1 hr. 54′ 42″ 3/5

D. ALTITUDE

1. Greatest Altitude.

				ALTITUDE ATTAINED METRES	FEET
		(a) Aviator Alone			
L. Beachey	Chicago, Ill.	Aug. 20, 1911	Curtiss	3,548½	11,642
		(b) Aviator and One Passenger			
C. Grahame-White	Nassau Boulev'd, N.Y.	Sept. 30, 1911	Nieuport	1,020	3,347

2. Climbing. (Upward Vertical Speed)

				ALTITUDE METRES	TIME
		(a) Aviator Alone			
R. Simon	Chicago, Ill.	Aug. 19, 1911	Blériot	500 (1,640 ft.)	3′ 35″
T. O. M. Sopwith	Chicago, Ill.	Aug. 19, 1911	Blériot		
		(b) Aviator and One Passenger			
C. Grahame-White	Nassau Boulev'd, N.Y.	Sept. 30, 1911	Nieuport	1,000 (3,280 ft.)	9′

E. ALIGHTING

				DISTANCE FROM MARK	
		Aviator Alone			
T. O. M. Sopwith	Nassau Boulev'd, N.Y.	July 22, 1911	Howard Wright (Farman-type)	(0.445 metre)	1 ft. 5½ in.

F. WEIGHT-CARRYING

				WEIGHT	
P. O. Parmelee	Chicago, Ill.	Aug. 19, 1911	Wright	458 lbs. (207¾ kilog.)	

Open Hydro-aeroplane Records

Hydro-aeroplane Distance Records

Hugh Robinson. From Minneapolis to Rock Island, Ill. Distance 314 miles. October 17-21, 1911.

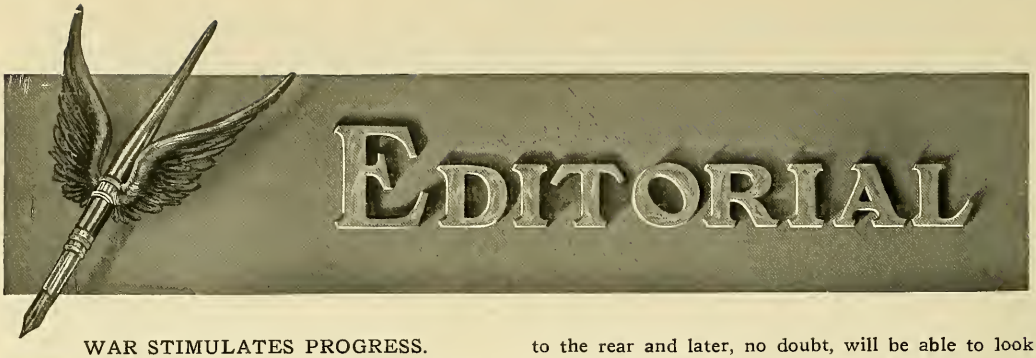
Hydro-aeroplane Two Man Record

Lieut. Ellyson, Lieut. Towers. From Annapolis to within two miles of Fortress Monroe. Distance 140 miles. Time 2 hours, 27 minutes. Date October 25, 1911.

Hydro-aeroplane No-Stop Record

Aviator Alone

Harry N. Atwood. From Point of Pines, Mass., to Narragansett Bay. Distance 130 miles. Time 165 minutes. Date December 21st, 1911.



WAR STIMULATES PROGRESS.

BARON LADISLAS D'ORCY, the famous aeronautical authority and statistician, who has just spent four months in France studying the conditions of that country, industrial, military and otherwise, states that there is no question in his mind that the remarkable advancement made by the French people in the science of aviation has been the most important factor in keeping the German people from entering into a hasty war with France, while on the other hand the feeling of wonderful superiority caused by the knowledge of having a great aerial fleet to aid in the strategical maneuvring of the Army has given the French people as a whole tremendous confidence in their capabilities in case war should break out between the two countries.

Whatever else may be said of war, there can be no doubt of it being a great tonic in stirring up the human mind to productivity and progress.

SEEING WITH THE NAKED EYE.

WE have received, with the compliments of Louis Bleriot, two pictures of his new aerocar, one of which in flight we reproduce on the front cover of this magazine, and the other on page 393. We also presented two pictures of this aerocar in Aircraft last month and we feel that we would like to keep reproducing a picture of this machine for a good many months to come.

This car is the beginning of a larger and broader field in flying and there can be no doubt that it is the first step between the primitive aeroplane and the great transport of the future. It surely disproves the pessimistic prognostications of some of the so-called pioneers of the aeronautical movement who claimed that flying would never get beyond the exhibition stage.

Here, right before their eyes, can be seen an enclosed car fitted up similar to a limousine automobile and capable of carrying a whole family if neecssary in luxury, flying through the air at a speed of an express train. The occupants of the car can look out of the windows to the right, to the left, to the fore or to the rear and later, no doubt, will be able to look through windows below or above and bring to their vision sights, and to their feelings thrills, such as the human mortal never beforc experienced.

Furthermore there is no dust from the highway for the occupant to inhale as he speeds along; no bumping over rugged roads; no stopping at railroad crossings; no police to interfere with the speed being made.

We request every one of our readers not merely to look at this picture but to study it and seriously contemplate on what it will lead to.

The picture presented was, but a few months ago, a vision of the dreamer; to-day it is, as can readily be seen with the naked eye and without the aid of foresight, an actual reality.

Do you think, reader, that this is the end of the development of aerial cars? Or do your thoughts tell you that it is only a beginning? .Which?

BEST IN THE END.

WE often hear a small manufacturer complain about the dearth of capital to be obtained in the development of the aeronautical industry; many of them point to the fact that such men as Morgan, Rockefeller, etc., with their immense capital could do such wonderful things if they could but see the future development of aerial navigation.

There can be no doubt that if Morgan, Rockefeller and other great generals of commerce could understand the aeronautical situation as we understand it and could foresee the big strides to be made and the great utilization of air vehicles to come, that they would not only be interested in the subject but that they would do wonderful things for its development.

But right here we wish to call attention to this fact: that should these great financiers once enter this movement the unlimited opportunities of the small manufacturer would forever afterward be eliminated.

For instance, how could a small manufacturer with little or no capital compete with a concern financed by millions, capable of producing the very latest machinery in the construction of aeroplanes and their parts and able to turn them out by the hundreds or the thousands if necessary and even sell them at lower prices than a small manufacturer without capital, and

therefore without adequate machinery to construct machines cheaply, could make them for?

The great safeguard for the ambitious man without capital, but with foresight, is the invariable rule that the individual who has been eminently successful in one branch of human effort fails to see the golden opportunities still offered through other sources, and for that reason, if for no other, permits him to start a new business and put it upon a self supporting and solid foundation before discovering its value.

All of the great industries of this world as well as all of the great things of the universe grow from small beginnings, and the aeronautical industry is not an exception to the rule.

So we advise the small manufacturer not to bother about the big capitalist but go ahead and build up his business slowly and carefully and feel satisfied if at the end of his career he has been successful. Make a life's work of it and remember that the name established by twenty or thirty years' efforts along this line will remain longer to one's credit than that which can be made in a few days, weeks or months.

AGENCIES NEEDED EVERYWHERE.

MANUFACTURERS should not complain, as many of them do, because more companies are being organized throughout the United States to manufacture aeroplanes and accessories. Most of these companies are organized with small capital and therefore as competitors are on the same footing with each other. Further than that the more companies organized the better it is for every one concerned. The aeroplane industry can hardly be expected to be in a prosperous and healthy state until at least fifty good companies are making machines, not singly but turning them out by the hundreds. For when this is being done a market must be found for them and consequently bright, brainy men are going to make a market. They are going to demonstrate these machines to the public and the public is going to buy them because they understand and want them. In other words, the aeroplane industry must be built up along the same lines followed by the automobile industry, through practical demonstration of the machines.

And right here we want to call the attention of ambitious young men in every city, town and village in the United States to the fact that the time is now ripe for the sale of aeroplanes everywhere and that by beginning now the foundation of a permanent and prosperous business can be established with very little capital.

First, one should go to some responsible school of aviation and learn the construction and operation of a machine thoroughly, then buy one, take it to his home town and teach the people its simplicity of management and usefulness by actual demonstration and then sell them machines. In this way an agency for the sale of aeroplanes can be established, just as the pioneers of the automobile demonstrated and sold their machines and established profitable agencies a few years ago throughout this and other countries. It is a simple proposition and the young men with ability, energy, honesty and patience are the ones who are going to be the successful captains of the aeronautical industry in the future. The day will arrive when there will be more air vehicles than there are automobiles.

SHOCK ABSORBING SAFETY DEVICE.

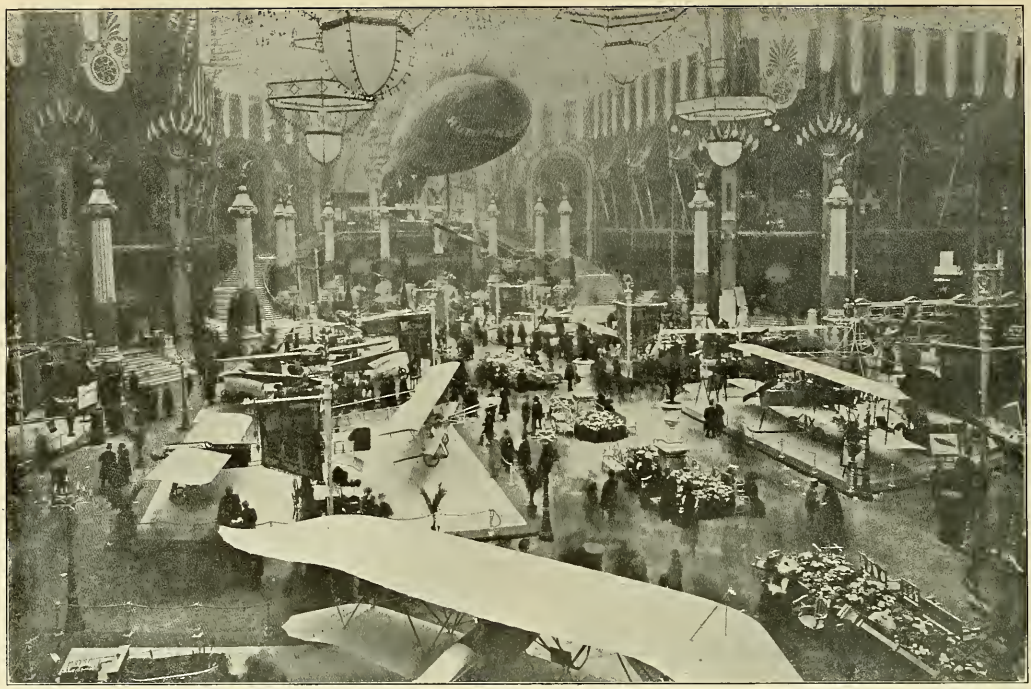
WE suggest that manufacturers of aeroplanes give some attention to inventing a shock absorbing device for the safety of the aviator along the following lines.

That the aviator's position be surrounded entirely with two or three walls of inflated rubber, each wall being separated by a net work of wire springs. This would not be such a difficult thing to arrange as far as the feet end of the aviator is concerned but there would have to be an automatic hood arrangement that could be thrown quickly over the aviator's head in case of emergency. In this way if the aviator found that the aeroplane was diving toward the earth and there was no possible means of saving it, he could at the last moment by touching a spring, encase himself entirely within an enclosure that would be absolutely free from shock no matter what part of the machine struck the ground first, or even if the rest of the machine was badly shattered.

No doubt the cost of producing such a life saving machine would be considerable but then there are thousands of men in the world to-day who would pay almost any reasonable price for an aeroplane free from the chances of fatal accidents. To work out an idea along these lines will, no doubt, take the constructor a great deal of time and much experimenting, but we feel sure that such an apparatus once properly completed and put into use would save the lives of a great many aviators that otherwise would have been lost and also bring a rich reward to the manufacturer who first produces it successfully.

To any one who wants to follow closely the gradual development of the primitive aeroplane into the scientific passenger carrying, enclosed, luxuriously furnished aerocar, we call attention to the picture of a design by Breguet on page 401. In order to appreciate the subject thoroughly, one must go back to the first numbers of Aircraft and follow step by step this great inventor's progress in aeroplane construction. Surely the law of mechanical evolution is clearly demonstrated in this man's work.

As the forms of this issue were closing, we received two photographs of the new aeroboat designed by Glenn H. Curtiss. These photographs we are reproducing on page 408 and offer as one more "positive proof" of the steady onward march of aerial progress.



GENERAL VIEW OF THE THIRD PARIS AERO SHOW—THE PECULIAR SHAPED BIPLANE IN THE FOREGROUND IS THE NEW ALBATROS TRACTOR SCREW MACHINE.

THE THIRD PARIS AERO SALON

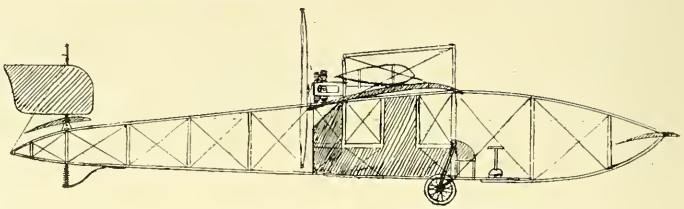
By Walter H. Phipps

That the aeronautic industry has reached a stage of commercial practicability and in consequence is here to stay, was clearly shown by the number and nature of the machines exhibited at the Paris 1911 Aero Salon, which was held in the Grand Palais, Paris, from December 16th to 23rd.

Already the manufacturing of aeroplanes has progressed to such an extent as to warrant classifying the different types according to their yearly models in much the same way as we do automobiles; thus those exhibited at the 1911 Salon represent the early 1912 types of the various builders and embody all the latest and most up-to-date features of present day practice.

In regard to the aeroplanes themselves, there were 43 exhibited, 29 being monoplanes and 14 biplanes. It was very evident that the speed events of the past year have influenced designers, for we find nearly every machine constructed with a view to cutting down head resistance and increasing speed and efficiency.

The general tendency is to protect the pilot in a sort of fuselage which usually affects the shape of a torpedo or elongated boat. Most of the biplanes are now fitted with fuselages and carry the engine and propeller in front. Steel tubing has entered largely into the construction of all machines, and the landing skids in most cases have been cut down to a minimum.



DIAGRAMATIC SKETCH SHOWING THE SIDE VIEW OF THE NEW BLERIOT "AEROCAR."

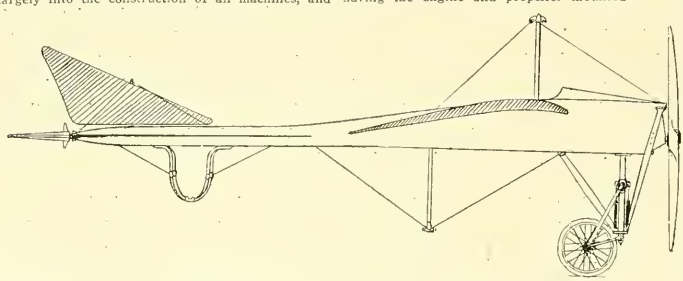
Following is a detailed description of the more important exhibits:

ALBATROS.

The Albatroswerke exhibited a novel biplane, having the engine and propeller mounted in the front of the torpedo-like fuselage. The seats for the aviator and passenger were arranged tandem fashion behind the gasoline tanks and immediately between the two main planes. To the rear of the fuselage was attached the large fan-shaped tail plane, which in this machine is warped up or down to act as an elevator, and thus serves the purpose of a stabilizing plane as well as elevator.

The chief peculiarity on the machine is the bird-like wings, which are very much after the style of the Etrich, having upturned end-tips, which are warped to preserve lateral balance.

The landing chassis is of a peculiar design and very strong. It consists of two skids which attach to their struts by small semi-eliptic springs instead of being rigidly joined to the struts, as on the Farmans and other machines. The wheels are also fitted with shock absorbers, so that this landing gear should prove very effective on rough ground.



SIDE VIEW OF THE 2-SEATER MILITARY TYPE BLERIOT.

AVIATIK.

The only Austrian machine shown was the Aviatik monoplane, which attracted considerable attention owing to its fine workmanship and graceful lines. As a type this machine somewhat resembles the well-known Hanriot monoplane with the exception that it is fitted with a Farman type landing gear.

The power plant consists of a 70 H. P. Aviatik 4-cylinder water-cooled motor which drives a large Chauviere two bladed propeller.

THE ASTRA.

The Astra Company exhibited one of their latest three-passenger tractor-screw biplanes. This machine is very strongly built and looks rather heavy. It has a long triangular fuselage carrying the engine at the extreme front with the seats for the passengers arranged immediately behind, tandem fashion, while at the rear is the tail and elevator.

The landing gear is somewhat similar to the early Antoinette, but appears somewhat sturdier. It consists of a single pair of wheels and a single skid mounted on a large diameter shock absorbing, oleo pneumatic spring, which forms the central post of the whole landing chasis.

The planes have a Nieuport type curve and are double surfaced. They attach to the forward part of the fuselage with the bottom surface passing under the lower longitudinals of the fuselage.

Lateral control is accomplished by turning a hand wheel which warps the planes while the elevator is worked by pushing the control wheel and column forwards and backwards. Steering is done by a foot yoke.

The power plant consists of a 100 H. P. 6-cylinder, water-cooled Chenu motor which drives an 8-foot propeller at reduced speed through a short chain transmission.

THE BLERIOTS.

Louis Bleriot exhibited five monoplanes: a small popular type monoplane, a 50 H. P. cross-country model, a 70 H. P. two-seater, a 50 H. P. pigeon-tail racer and his latest machine, the new Bleriot aerocar.

The popular type Bleriot is a single seater machine which sells for quite a reasonable price. It has the regular box girder fuselage but carries the engine and gasoline tanks further forward than on former machines. The wings attach further back and the pilot's seat is placed immediately in back of their rear edge. The new inverse tail and elevator is fitted in place of the lifting tail used heretofore, and cane rear skids take the place of the pivoting rear wheel.

The landing carriage has been modified so that its top cross member attaches to the bottom of the fuselage instead of the top as heretofore. The power plant consists of a new 3-cylinder air-cooled radial Anzani motor of 35 H. P., which gives the machine a speed of from 50 to 55 miles an hour and permits of cross-country flying. The engine is rigidly mounted to the outside of the front end of the fuselage and the pilot is protected from flying oil by an aluminum hood.

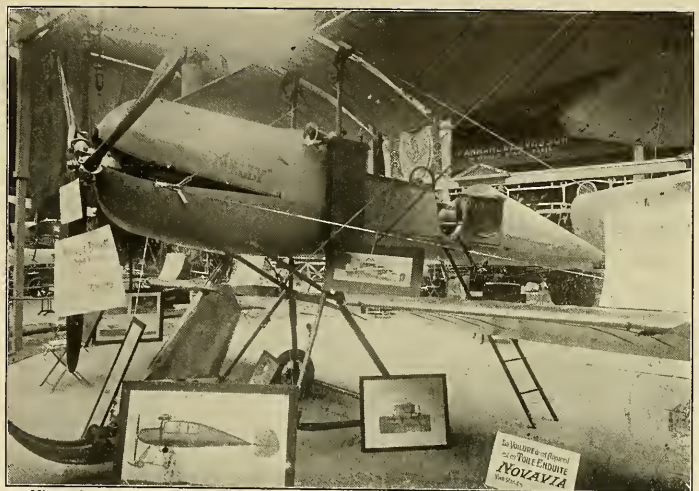
The 50 H. P. racer is perhaps the most graceful and business-like looking machine that Louis Bleriot has so far designed. The fuselage is entirely covered in and is quite narrow in front, so much so in fact that the Gnome engine will not fit between the longitudinals of the fuselage and has to be attached to the front of the frame, as shown in an accompanying illustration. The tail is formed by simply spreading out the main spars of the fuselage in such a manner as to form a wedge-shaped stabilizing plane to which the rear elevator is hinged. A distinct departure from regular Bleriot practise is the new landing arrangement, which simply consists of two wheels mounted on laminated springs, rigidly attached at their front ends to sockets into which the struts from the fuselage fit. The two bad features which limit the use of this arrangement in its present form for other than racing purposes are, first, that no provision is made for side play, and secondly, in case the wheels spring up too far or should break, the points of the struts would stick in the ground and cause a nasty smash.

The 70 H. P. military two-seater (illustrated in an accompanying drawing) is a large pigeon tail monoplane. It has a wide fuselage with seats arranged side by side and quite near the front of the wings so as to permit of a good view. In the latest machine the control cloche has been placed immediately in the centre so that both passengers can operate it.

The 70 H. P. cross-country model differs but little from the model of last year with which we are familiar. This type is simply a high powered machine used for extended cross-country flying competition work.

We now come to Bleriot's latest creation, the aerocar. This machine is a development of the Blériot bus experimented with at Pau and was built especially to the requirements of M. Deutsche (de la Meurthe). As will be noticed from the accompanying drawing this monoplane differs considerably from regular Bleriot practise and contrary to his usual custom is fitted with a front elevator.

A system of spars and struts extend fore and aft of the main plane and support the elevator at their front end and the tail and rudder at their rear. The limousine car in which the passengers sit is built up in the middle of this frame work with the platform and seat for the operator in front and exposed to the air. The control consists of the usual Bleriot cloche arrangement which steers the machine up and down by a fore and aft movement, which works the front elevator and a side to side movement which controls the warping. Steering to the right and left is done by a pivoted foot yoke. The power plant consists of a 14-cylinder 100 H. P. Gnome which is mounted immediately in the rear of the main-plane and above the car.



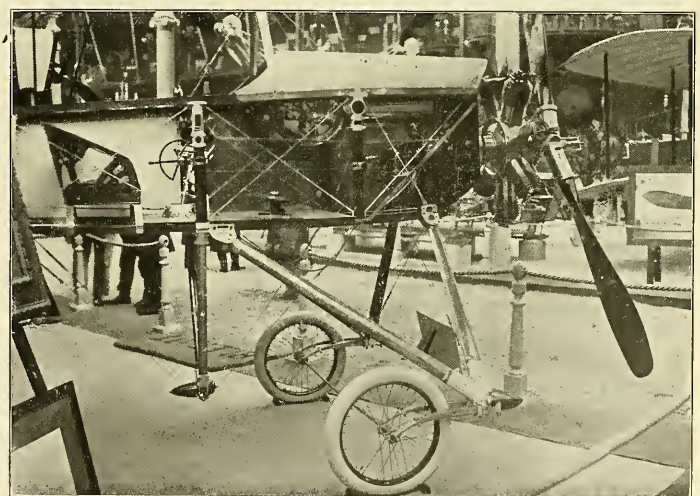
View of the latest Breguet biplane fitted with a six-cylinder 100 H. P. Water-cooled Chenu Motor, which drives the special 3-bladed flexible propeller at reduced speed through reduction gearing. Attention is particularly called to the splendid workmanship displayed in the construction and finish, which plainly shows the advance toward engineering methods now being adopted by aeroplane builders instead of the unsystematic and primitive methods of the past. Note the torpedo-like form of the fuselage with side door, permitting easy access to the seats, the single uprights bracing the main planes with their special attachments for varying the angle of incidence, and also the radiators placed each side of the fuselage and also the siren horn. Further attention is called to the picture in the lower left hand corner showing Breguet's latest design for an enclosed passenger-carrying tractor-screw biplane in which head resistance is cut down to a minimum.

THE BRISTOL.

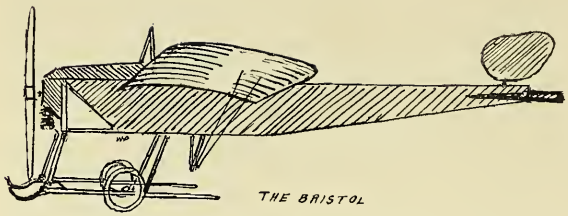
The British and Colonial Aeroplane Company showed one of their interesting two-seater machines which attracted considerable attention owing to the fact that it was on an exact duplicate of this machine that Valentine made a sensational flight over Paris only a few days before the opening of the show. As a type this machine somewhat resembles the Nieuport, but has many new and distinctive features. The fuselage which is of the box-girder type is deep chested and carries the Gnome engine in front mounted in a special brace and partly covered in by an aluminum shield. The wings attach near the front and the passenger and pilot sit tandem fashion immediately between them. The chief novelty and peculiarity, however, is the very small triangular shaped tail which pivots about a third of the distance from its front end and acts as an elevator and stabilizing plane. The landing carriage consists of two skids and two wheels mounted on a single axle, which are held in place by rubber shock absorbers. A peculiarity of this landing gear is the fitting of two small upturned pieces at the front, which attach by springs and are capable of springing on rough landings. No tail skid is fitted at the rear of the fuselage, the extensions of the main skids serving to keep this from dragging.

THE BREGUET BIPLANE.

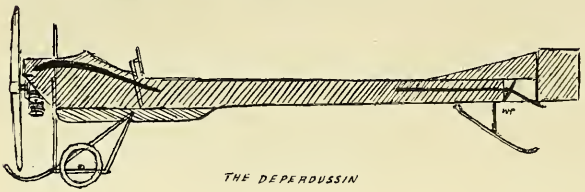
Louis Breguet exhibited two of his well known tractor-screw biplanes, one a new machine with torpedo type fuselage and 100 H. P. Chenu water-cooled motor, the other the celebrated machine which Bregi used in his Casablanca-Fez flight. These machines are chiefly noticeable for their large size and excellent workmanship, steel tubing being used almost entirely, and every part being properly assembled and not merely slapped together. In this respect it is interesting to note



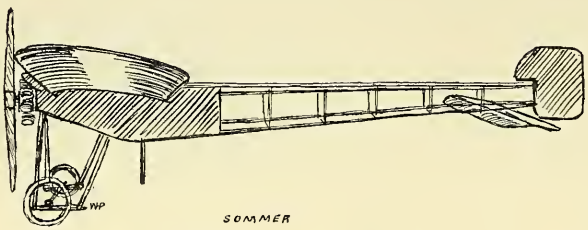
Side view of the latest Blériot racer with part of the covering removed to show the construction, control and seating arrangement. Note the flexible bladed propeller, simplified laminated spring landing carriage and the special stream line attachments fitted to the ends of the landing carriage struts and also to the warping pulley bracket, for the purpose of lessening resistance.



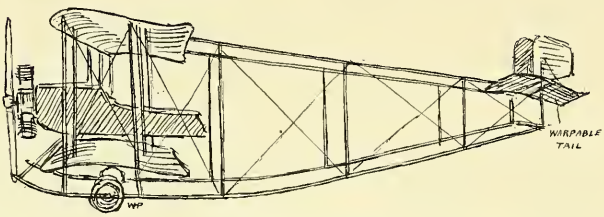
THE BRISTOL



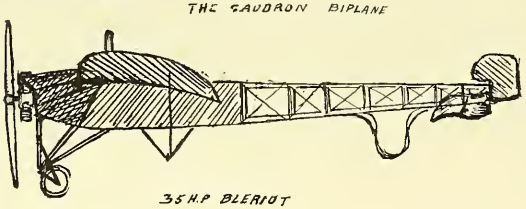
THE DEPERDUSSIN



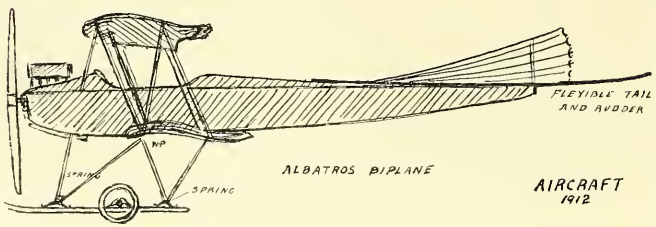
SOMMER



THE GAUDRON BIPLANE



35 H.P. BLERIOT



ALBATROS BIPLANE

AIRCRAFT 1912

SOME INTERESTING TYPES OF MONOPLANES AND BIPLANES EXHIBITED AT THE PARIS SHOW.

that this machine employs so many special fittings that special machinery has to be used in its manufacture.

The chief peculiarity is the use of only four single uprights in the formation of the biplane cellule, a form of construction not found on other machines except the latest Sommer biplane, which in many ways is modeled after it. Another feature which is not to be found on other successful machines of the present day is the universally jointed tail which acts as a combination elevator and rudder.

THE CAUDRON.

The small Caudron biplane attracted considerable attention on account of its small size and low price, the machine selling complete with 35 H. P. Anzani motor for $1,800.

As a type this interesting little machine belongs to the tractor screw class, but unlike most others of this class it has no fuselage. The engine is mounted in front with the aviator's cock-pit immediately behind. The skids run all the way back to the tail where they are joined by the outriggers leading from the back of the top plane, the two acting as tail supporters, thus materially lightening the structure and simplyfying construction. The tail plane consists of a small flat surface which is capable of being warped and so acts as a combination elevator and establishing tail. The uprights which join the two main-planes together are spaced only about 30 inches apart, thus the planes have long, flexible trailing edges.

BOREL.

Borel and Company, who were formerly associated with Morane and used to manufacture the Borel-Morane machine have now severed their connection with Morane and are manufacturing the Borel machine independently. This machine is simply an improved copy of the earlier Bleriots, the only changes which have been made being the altering of the shape of the wings and the fitting of a light wheel and skid landing gear in place of the tubular Bleriot construction.

The power plant consists of a 50 H. P. 7-cylinder Gnome, which drives a Chauviere propeller.

CLEMENT-BAYARD.

The Clement-Bayard Company exhibited a new biplane of the headless type which was constructed almost entirely of steel. This machine is also fitted with a fuselage body which of course carries the engine and propeller in front, the tail and elevator being attached to its rear. A 50 H. P. Clement-Bayard 4-cylinder motor forms the power plant and drives a Regy Frères two-bladed propeller.

DEPERDUSSIN.

The Deperdussin Sales Company exhibited four monoplane, the first the school type, the second, a military scouting machine, the third, a military two-seater and the fourth a military three-seater.

These machines in general appearance are all very much alike and differ only as to size and the position of the pilot. They all have a long, shallow, box-girder type fuselage which carries at its front end the motor and gasoline tanks, the wings and pilot's seat and at the rear the large triangular flat tail plane, single piece elevator flap and immediately behind this the rudder. The landing gear consists of two skids and two shock absorbing wheels. The control arrangement consists of a large arched bar which extends from one side of the fuselage to the other and is capable of being pushed backward and forward and so operating the elevator. Mounted on this arched elevator control is a large steering wheel which operates the warping by simply turning it to the right or to the left. The rear rudder is controlled by a pivoted foot yoke.

THE FARMAN BROTHERS.

The Farman Brothers exhibited on one stand a Maurice Farman biplane and a new Henry Farman monoplane. The Maurice Farman biplane is a new machine similar to one of his regular type machines but has the lower surface greatly reduced and both the main planes and tail planes set staggered fashion instead of one above the other as heretofore. In all other features this machine retains the regular Maurice Farman characteristics.

The Henry Farman monoplane has a large square box-girder fuselage which carries a 50 H. P. Gnome engine at its front end encased in special aluminum housing, which has large apertures to permit of efficient cooling. The main wings are attached immediately behind this, with the aviator's seat between them and near their rear edge. At the rear end of the fuselage is attached a semi-circular tail plane and elevator flaps with a vertical rudder immediately above them. The control on this machine is of the regular Farman type, ailerons being fitted to the main wings to preserve lateral balance. The landing gear consists of two Farman type skids with two wheels mounted on a single axle, which are attached by rubber shock absorbers.

GOUPY.

On the Goupy stand was shown one of the regular tractor screw Goupy biplanes. This machine has a regular Bleriot fuselage to which are attached a staggered biplane main cellule and tail cellule. The controlling arrangement consists of four elevator tips in the rear and four ailerons attached to extremities of the main planes, which are operated by the regular Bleriot controlling gear.

The landing chassis consists of Blériot type shock-absorbing wheels but has two small skids attached to extensions of the two steel columns on which the two sleeves of the shock absorbing device slide.

MORANE-SAULNIER.

The Morane-Saulnier stand formed one of the centres of attraction of the entire show, owing to the fact that here was exhibited an all-steel monoplane. The fuselage consisted of a large pressed steel cylindrical tube inside of which the aviator and passenger sit and to which the all-steel wings attach. This fuselage tapers toward the rear, where it carries the regular Morane type lifting tail and elevator, the frame work of which is likewise constructed of steel. The landing gear consists of a wheel and skid arrangement, all the members of which are steel tubing. In addition to this all steel monoplane Morane exhibited a small school type of machine fitted with a 35 H. P. Anzani motor and a racer fitted with a 50 H. P. Gnome. These two machines very much resemble the Nieuport but have the regular Morane tail arrangement and a landing gear, which consists of two skids and two shock-absorbing wheels.

NIEUPORT.

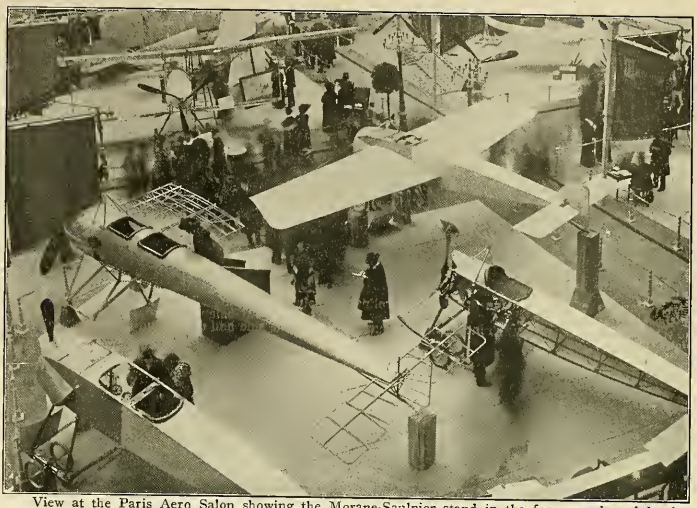
The Nieuport firm exhibited two of their well-known monoplanes, one a school machine fitted with a 28 H. P. 2-cylinder air-cooled Nieuport motor, the other a military type two-seater with 50 H. P. Gnome. As these machines are so well known and were described so fully in the August, 1911, number of *Aircraft* further description is unnecessary here.

PAULHAN-TATIN.

On the Paulhan-Tatin stand was shown the new Paulhan-Tatin monoplane which has created such a sensation in French aviation circles by reason of its peculiar design and tremendous speed. The fuselage is in the shape of a large torpedo and carries at its front end a seat for the operator, the main planes, and motor and at the extreme rear the tail with the propeller immediately behind it. The landing gear consists simply of two arched wooden members which serve the purpose of skids and an attachment for the two shock-absorbing wheels.

R. E. P.

Robert Esnault Pelterie exhibited two of his well-known steel tube monoplanes, one a single seater and the other a military two-seater. These machines differ but little from the types which were used so successfully last year in the different competitions, the only change being that they were fitted with new and improved motors of 60 H. P. The chief peculiarity, however, is the landing chassis, which is different from all others and consists of an arrangement of two wheels and a large skid which is mounted on a powerful oleo pneumatic spring shock absorber.



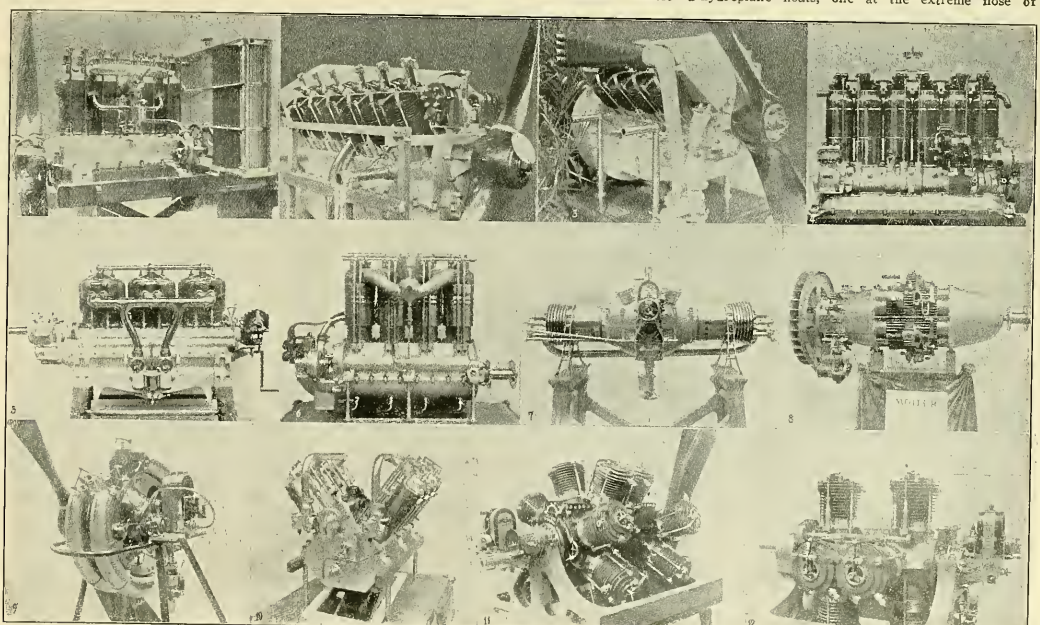
View at the Paris Aero Salon showing the Morane-Saulnier stand in the foreground, and in the backgrounnd the Breguet stand on the left, and that of Paulhan-Tatin on the right. Note the change in design of the fuselage and landing carriage of the new Morane Saulnier machines and also on the left their new torpedo-like all steel military monoplane.

SOMMER.

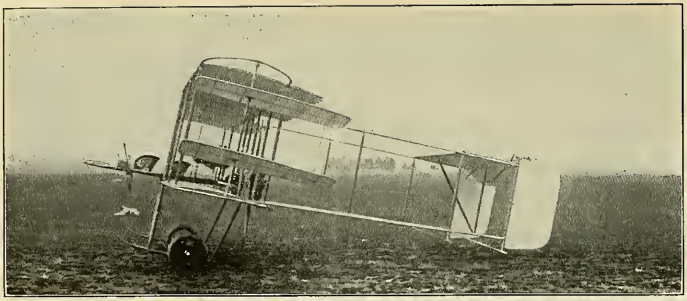
On the Sommer stand was to be found two machines, one a new steel tube Sommer biplane, the other a regular Sommer monoplane. The Sommer biplane was a machine of the regular Sommer type, but constructed almost entirely of steel tubing and only had single uprights joining the lower and upper main wings. The front elevator has been greatly diminished in size while the rear elevator flap has been increased, thus making the machine almost a headless flyer. The Sommer monoplane is very similar to the Bleriot, the only changes being in the fitting of the wheel and skid landing gear and the addition of a flat tail flap to the rear of a curved lifting type tail.

VOISIN.

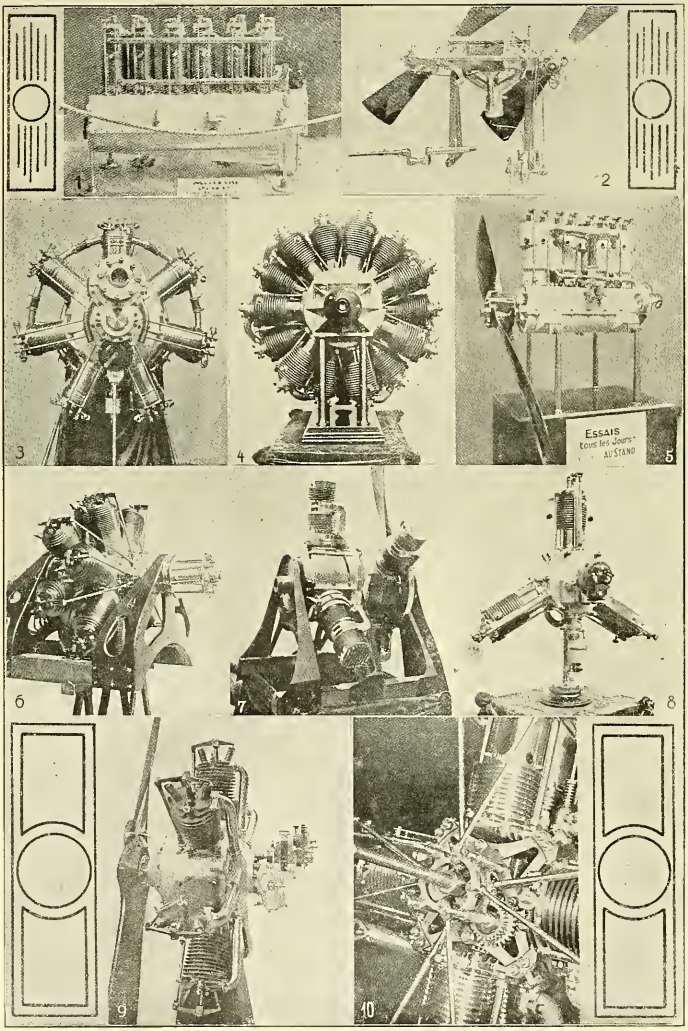
The Voisin firm exhibited one of their latest front rudder hydroaeroplanes. This machine, contrary to most others, has the elevator situated way ont at the front of the fuselage with the main planes and motor at the very rear, while the seats for the passenger are in front of the main planes. The machine shown was fitted with three hydroplane floats, one at the extreme nose of



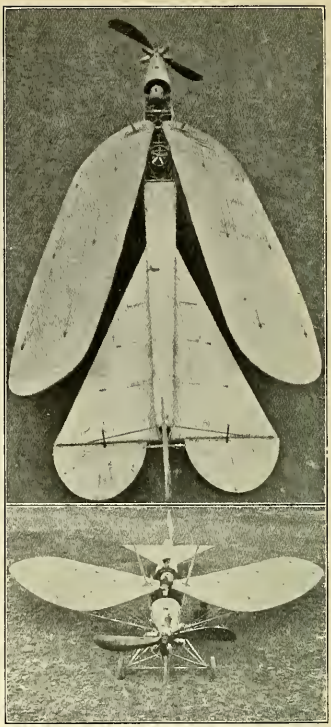
1.—Four cylinder, 100 H. P. water-cooled Aviatik motor. 2.—Twelve cylinder 90 H. P. air-cooled Renault motor, fitted with two magnetos. 3—Eight cylinder, 70 H. P. Renault motor. 4.—Six-cylinder, 60 H. P. water-cooled Panhard motor. 5.—Six-cylinder, water-cooled, Chenu motor fitted with special reduction gearing for propeller shaft. 6.—Four-cylinder, water-cooled Werner and Pfeigerer motor. 7.—Two-cylinder opposed, 28 H. P. air-cooled Nieuport motor. 8.—Sixty H. P. Salnson motor, with cylinders arranged horizontally and parallel to axis. 9.—Beck 35 H. P. gasoline turbine motor. 10.—Eight-cylinder water-cooled, 120 H. P. Dansett-Gillet Motor. 11.—Sixteen cylinder, 140 H. P. air-cooled Burlat motor. 12.—Eight-cylinder 70 H. P. air-cooled Burlat motor.



A Farman military biplane fitted with Brolinski revolving ailerons. These ailerons are normally in the position shown in the illustration, but for preserving natural balance are operated by swinging one set out and the other in, thus increasing the surface of the low side and decreasing the surface of the high side.

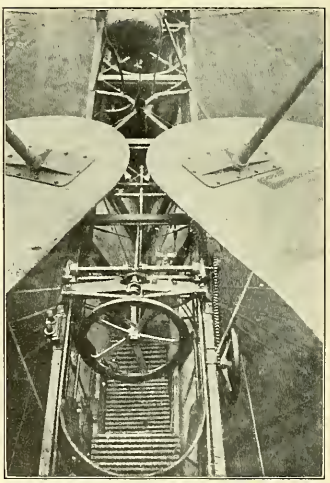


1. Six-cylinder water-cooled Dansett-Gillet motor. 2. Four-cylinder opposed air-cooled motor having two propellers and explosion chamber in the centre, which operates two pistons with each explosion. 3. Seven-cylinder 80 H. P. water-cooled Salmson motor. 4. Fourteen cylinder radial type stationary air-cooled Anzani motor of 130 H. P. 5. Four-cylinder 100 H. P. water-cooled Rossell-Peugeot motor. 6. Latest type fourteen-cylinder rotary Gnome motor. 7. Six-cylinder 2 cycle Helium motor of 110 H. P. 8. The latest three-cylinder, radial stationary air-cooled Anzani motor of 130 H. P. 9. New seven-cylinder stationary radial air-cooled R. E. P. motor of 90 H. P. 10. Favata air-cooled 180 H. P. motor.



The top view shows the Marcay-Moonen monoplane with the wings folded back to facilitate transportation and storage. The lower view shows the machine with wings partly folded back.

the machine, the other two at the rear, placed one on each side of the fuselage. When used on land these floats are replaced by wheels which attach at the same points as the floats. The power plant consists of a 7-cylinder 70 H. P. Gnôme motor which attaches the extreme rear of the machine in a position which has many advantages, chief of which are that there are no outriggers within proximity, which would be likely to be carried away in the event of a propeller breaking, and also the draught of the propeller has no effect on the flying, as there is no surface in the rear.



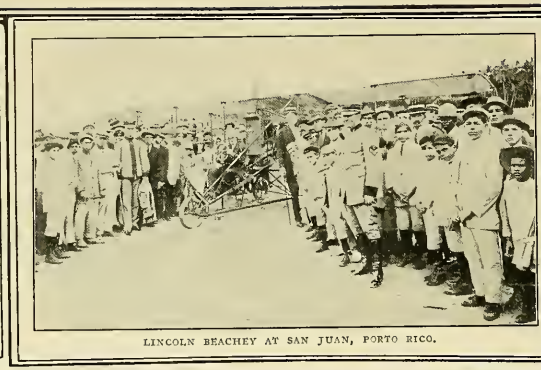
View showing the seating arrangement of the Marcay-Moonen monoplane with the operating mechanism for opening and folding the main planes. There is also an arrangement for varying the angle of incidence of these planes.

TABLE OF MACHINES AT THE THIRD PARIS AERO SHOW

Constructor.	Type.	Span.	Length.	Type of Body.	Construction	Landing Gear	Controlling Surfaces.		Motor.			Propeller.	Speed. (Kil.)	Price.
							Latereal.	Longitudinal.	h. p. and Type.	No. of Cyls.	Position.			
Albatros	Biplane	43′ 8″	34′ 3″	Torpedo	Wood	W. & S.	Wa.	Rear elevator	100 Argus	4	Front	Albatros	90	$6,000
Astra	"	40′ 0″	36′ 0″	Triang. section	"	"	"	"	80 Chenu	6	"	Astra	90	5,600
Aviatik	Monoplane	41′ 2″	31′ 0″	"	"	"	"	"	70 Aviatik	4	"	Chauvière	115	5,000
Blériot	" Popular type	28′ 6″	24′ 6″	Rect. section	"	Wh.	"	"	30-35 Anzani	3 Y-type	"	Normale	89	2,360
	" Cross-country	29′ 3″	25′ 0″	"	"	"	"	"	50 Gnôme	7	"	"	95	4,300
	" racer	23′ 0″	21′ 3″	"	"	"	"	"	50 "	7	"	"	125	4,800
	" two-seater	36′ 0″	27′ 0″	"	"	"	"	"	70 "	7	"	—	95	6,000
	" Aerocar	42′ 6″	45′ 0″	"	"	"	"	Front elevator	100 "	14	Rear	Normale	—	—
Borel	"	29′ 7″	22′ 6″	Square section	"	W. & S.	"	Rear elevator	50 "	7	Front	Chauvière	115	4,400
	" two-seater	39′ 6″	26′ 8″	"	"	"	"	"	70 "	7	"	"	95	5,100
Bristol	" two-seater	33′ 6″	23′ 4″	"	"	"	"	"	50 "	7	"	Bristol	110	4,750
Breguet	Biplane	44′ 0″	30′ 0″	Torpedo	Steel	"	"	"	100 "	14	"	Chauvière	95	9,000
	"	44′ 0″	30′ 0″	"	"	"	"	"	75 Chenu	6	"	Breguet	90	7,000
Caudron	Biplane	24′ 0″	22′ 0″	"	"	"	"	"	30-35 Anzani	3 Y-type	"	Normale	90	1,800
Clement-Bayard	"	36′ 4″	32′ 0″	Pent. section	Steel	"	"	"	50 Clement-Bayard	4	"	Regy Frères	90	5,600
Deperdussin	Monoplane (school type)	28′ 0″	24′ 0″	Square section	Wood	"	"	"	30-35 Anzani	3 Y-type	"	Rapid	85	2,300
	" military	28′ 0″	24′ 3″	"	"	"	"	"	50 Gnôme	"	"	"	110	4,600
	" two-seater	32′ 6″	26′ 6″	"	"	"	"	"	70 "	7	"	"	110	5,400
	" three-seater	42′ 6″	24′ 3″	"	"	"	"	"	100 "	14	"	"	110	9,100
Farman (M.)	Biplane (staggered planes)	36′ 0″	40′ 0″	None	"	"	Ai.	Front and rear	70 Renault	8	Rear	—	85	5,000
Farman (H.)	Monoplane	33′ 0″	24′ 3″	Square section	"	"	"	Rear elevator	50 Gnôme	7	Front	Chauvière	105	5,000
Goupy	Biplane	23′ 6″	23′ 6″	Rect. section	"	"	"	"	50 "	7	"	"	90	5,600
Kauffmann	Monoplane	34′ 0″	26′ 6″	"	"	"	Wa.	"	50-60 Anzani	—	"	Centrale	140	4,000
Loiré et Olivier	"	34′ 3″	27′ 0″	"	"	"	Ai.	"	60 "	—	"	Chauvière	120	4,000
Marçay-Moonen	"	44′ 0″	39′ 0″	Skiff	Wood and steel	Wh.	Wa.	"	50 Gnôme	7	"	"	90	—
Morane-Saulnier	" (school type)	29′ 6″	29′ 0″	Rect. section	Wood	W. & S.	"	"	35 Anzani	3	"	"	90	3,400
	" (racer)	29′ 6″	20′ 0″	"	Wood and steel	"	"	"	50 Gnôme	7	"	"	120	4,600
	" military 2-seater	29′ 6″	20′ 0″	"	Steel	W. & S.	"	"	50 "	7	"	"	102	4,800
Nieuport	" (school type)	28′ 6″	24′ 4″	"	Wood and steel	"	"	Rear	28 Nieuport	2	"	"	120	3,600
	" (two-seater)	36′ 0″	26′ 0″	"	"	"	"	"	50 Gnôme	7	"	"	110	5,200
Paulhan-Tatin	Monoplane	28′ 4″	28′ 0″	Torpedo	Wood	Wh.	N.	Rear elevator	50 "	7	Middle	Regy Frères	130	5,000
Ponche and Primard	"	32′ 6″	28′ 0″	Open triang. section	Steel and alumin.	W. & S.	Wa.	"	35 Labor Aviation	—	Front	Chauvière	75	3,200
R. E. P.	"	39′ 6″	25′ 0″	Pent. section	Steel	"	"	"	60 R.E.P.	5	"	Regy Frères	110	6,000
														1-seater 7,000
														2-seater
Savary	Biplane	45′ 0″	36′ 3″	None	Wood	"	"	Flexing tail	70 Labor Aviation	4	"	Chauvière (2)	190	5,200
Sloan	"	42′ 6″	31′ 0″	Square section	"	"	"	Rear elevator	100 Gnôme	14	"	Chauvière	95	7,000
Sommer	"	39′ 6″	29′ 8″	None	Steel	Wh.	Wa.	"	50 "	7	Rear	—	90	4,200
	Monoplane	29′ 0″	21′ 6″	Square section	Wood	"	"	"	50 "	7	Front	Chauvière	108	3,200
Train	"	30′ 6″	29′ 3″	Triang. section	Steel	W. & S.	"	"	50 "	7	"	"	85	4,400
Vinet	"	29′ 0″	26′ 0″	Rect. section	Wood	"	"	"	50 Anzani	5	"	"	88	3,600
	"	29′ 0″	21′ 4″	"	"	"	"	"	35 Bariquand & M.	4	"	"	95	2,200
Voisin	Biplane (Canard)	39′ 6″	26′ 0″	"	Wood and steel	H.	Ai.	Front	70 Gnôme	7	Rear	"	90	6,000
Zodiac	"	49′ 0″	38′ 6″	"	Wood	W. & S.	"	Rear	50 "	7	Front	Normale	95	5,600

W. & S. = wheels and skids. Wa. = warping. H. = hydroplanes. Ai. = ailerons. N. = natural. Wh. = wheels.

We are indebted to "Flight," of London, for the original of this table.



LINCOLN BEACHEY AT SAN JUAN, PORTO RICO.

FOREIGN NEWS

Bohemia

Some very good flights were made by Jean Kaspar and his cousin, Eugene Cihak, in Bohemia, on December 6th, the former accompanied by a friend, on his Blériot monoplane, going from Meluix to Prague, where he landed on the Chuelle Race course, having covered the 70 kilom. in 42 mins. 52 secs. Ten minutes after they started Cihak started off on a Morane monoplane and reached Chuelle five minutes after they landed. A good deal of flying was seen on December 10th, when a regular demonstration was held and Kaspar took up a number of prominent people.

England

Lieut. Dunne has been continuing his interesting experiments on his automatic stability monoplane, which he has recently fitted with a 50 H. P. motor. On December 23rd he succeeded in accomplishing several circuits of the Eastchurh Aerodrome and afterwards rose to a good height and passed over the village of Eastchurch before alighting. The peculiarities of the Dunne machine are the backwardly sloping V shaped wings and the inverted wing tips.

On January 10th the first aeroplane flight from a British warship was made when Lieut. Samson made a successful ascent from the battleship Africa in Sheerness harbor.

The fore part of the deck was cleared as for action in order to allow of the ascent.

The Aero Club of the United Kingdom intends to enter the international balloon race in Germany this year, as well as the international aviation event to be held in America. The balloon race for the Coupe Internationale des Aeronautes will be in Stuttgart, Germany, as the latter country is the holder of the trophy won in October last in this country by Lieutenant Hans Gericke.

The British club has called for three competitors to represent Great Britain in the race.

CONDITIONS OF THE BRITISH MILITARY AEROPLANE COMPETITION

The conditions governing the British military aeroplane competition have been officially given out and are as follows:

The total prizes amount to $55,000. Two prizes are open to the world. The first is of $20,000, and the second $10,000. The owners of ten machines, which are submitted to all the flying tests and are not awarded a prize, are to receive $500 for each machine so tested. The following conditions are those to be fulfilled by a military aeroplane:

1. Be delivered in a packing case, suitable for transport by rail, and not exceeding 32 feet by 9 feet by 9 feet. The case must be fitted with eyebolts to facilitate handling.

2. Carry a live load of 350 pounds, in addition to its equipment of instruments, etc., with fuel and oil for four and one-half hours.

3. Fly for three hours loaded as in clause 2, and maintain an altitude of 4,500 feet for one hour, the first 1,000 feet being attained at the rate of 200 feet a minute, although a rate of rise of 300 feet per minute is desirable.

4. Attain a speed of not less than 55 miles per hour (in a calm, loaded as in clause 2).

5. Plane down to ground in a calm from not more than 1,000 feet with engine stopped, during which time a horizontal distance of not less than 6,000 feet must be traversed before touching.

6. Rise without damage from long grass, clover or harrowed land in 100 yards in a calm, loaded as in clause 2.

7. Land without damage on any cultivated ground, including rough plough, in a calm, loaded as in clause 2, and pull up within 75 yards of the point at which it first touches the ground when landing on smooth turf in a calm. It must be capable of being steered when running slowly on the ground.

8. Be capable of change from flying trim to road transport trim and travel either on its own wheels or on a trolley on the road; width not to exceed ten feet.

9. Provide accommodation for a pilot and observer, and the controls must be capable of use either by pilot or observer.

10. The pilot's and observer's views of the country below them to front and flanks must be as open as possible, and they should be shielded from the wind, and able to communicate with one another.

11. All parts of aeroplane must be strictly interchangeable, like parts with one another and with spares from stock.

12. The maker shall accurately supply the following particulars, which will be verified by official test: (a) the horse-power and the speed given on the bench by the engine in a six hours' run. (b) The engine weight, complete (general arrangement drawing), and whether air or water cooled. (c) The intended flying speed. (d) The gliding angle. (e) Weight of entire engine. (f) Fuel consumption per hour at declared horsepower. (g) Oil consumption per hour at declared horsepower. (h) Capacity of tanks.

13. The engine must be capable of being started up by the pilot alone.

14. Other desirable attributes are: (a) Stand still with engine running without being held. Engine preferably capable of being started from on board. (b) Effective silencer fitted to engine. (c) Strain on pilot as small as possible. (d) Flexibility of speed; to allow of landings and observations being made at slow speeds if required, while reserving a high acceleration for work in strong winds. (e) Good glider, with a wide range of safe angles of descent, to allow of choice of landing places in case of engine failure. (f) it is desirable that the time and number of men required for the change from flying trim to road trim, or packed for transport by rail, and vice versa, should be small, and these will be considered in judging the machine. The time for changing from road trim and packed condition to flying trim to include up to the moment of leaving the ground in flight, allowance being made for difficulty in starting engine. (g) Stability and suitability for use in bad weather and in a wind averaging 25 miles an hour 30 feet from the ground without undue risk to the pilot. Stability in flight is of great importance. (h) The packing case for rail transport to be easily dismantled and assembled for use, and when dismantled should occupy a small space for storage.

France

NEW WORLD'S DISTANCE RECORDS.

It is reported that the competition for the Ae. C. F. Criterium, which is competed for under almost the same rules as the Michelin Cup, has been gained by Gobe on a Gnôme-engined Nieuport monoplane at Pau, when he succeeded in flying 740.22 kilom. in 8 hrs. 16 mins., thus beating the former world's distance record of Fourney of 722.93 kilom., which took him 11 hrs. 1 min. 29½ secs. on his Maurice Farman biplane.

NEW WORLD'S HEIGHT RECORD WITH A PASSENGER.

On December 3rd, at Courcy Betheny, Prevost, on the 100 H. P. three-seater Deperdussin monoplane, succeeded in rising, with a passenger, to a height of 9,800 feet in 55 minutes. He started from the ground at 3 P. M., and landed again at seven minutes past four. His passenger was M. Besnard, manager of the Deperdussin School.

On December 31st James Valentine, the noted English aviator, made the first flight over Paris ever accomplished by an Englishman in a British monoplane. He started from Issy in his Bristol monoplane, circled the Eiffel Tower, crossed the Seine and continuing along the Place de la Concorde to Notre Dame, the tower of which he circled before, returning to Issy. This flight occasioned quite a stir in Paris, and attracted considerable attention to this make of machine at the Paris Salon.

It is announced that the Michelin Cup competition will be conducted under the following conditions in 1912: The course selected is in trefoil form, consisting of three great loops each 500 kilometres in circumference, making a total of 1,500 kilometres to be covered by the competitors. Paris is the starting point, and stops to replenish supplies will be allowed there after completing each loop of the circuit. The route passes through various towns and places so far apart as Dieppe, Orleans and Troyes will be visited. An additional prize is awarded for each passenger carried.

WORLD'S SPEED RECORD.

On January 13th at Pau, Jules Vedrines beat the world's speed record by covering a distance of 142 kilometres 150 metres (about eighty-eight and a quarter miles) in one hour in a monoplane.

Germany

By Stella Bloch

An aeroplane factory and a pilot school is to be erected at Arad in Hungary by the Hungarian Aero Club; it will be connected closely with the Vienna Daimler Company, which purchased the Westinghouse factory recently at Arad to extend its works to Hungary as well.

The new passenger Zeppelin now in course of construction at Friedrichshafen will commence its trials in February. It is intended for Frankfort-on-Maine.

August Euler has built a triplane at Darmstadt, which is pronounced to be a great success, as the tests were most satisfactory. The aparatus is but seven metres in length and has the same dimensions from tip to tip.

Mr. Campbell Wood presented the Aerial Gordon Bennett Cup won by "Berlin II." in America this past year to the Berliner Verein fur Luftschiffahrt at a meeting specially arranged for this purpose on December 4th at Berlin. A large and influential number of guests were present when Mr. Campbell Wood made the presentation on behalf of the Aero Club of America. At the close of his interesting address Mr. Wood promised that an American team would appear next year in Germany to combat the event. A banquet closed the proceedings.

The International Aero Show, promoted by the Royal and Imperial Austrian Aeronautical Society, takes place from May 18 to June 23 in the Vienna Rotunde and covers the same ground as the majority of these exhibitions.

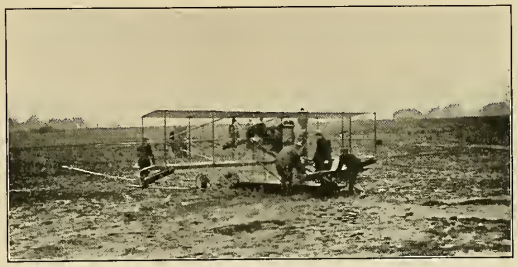
Stuttgart will be the scene of the 1912 Gordon Bennett balloon race won by Herr Gericke's "Berlin II." in the United States in 1911. The city will bear not only all expenses of the arrangement and necessary gas, but give besides several trophies, 30,000 marks in cash prizes, as well.

An excellent performance was achieved on December 8th at Berlin Johannisthal, by the Etrich pilot Suvelack, who beat Lieutenant Gerard's passenger world's record of 4 hours 13 mins. by remaining aloft for 4 hours 33 mins. The new Etrich monoplane, driven by a 65 H. P. six-cylinder motor, showed remarkable staying capacities and carried no inconsiderable load, the two men weighing 153 kilograms, and besides this there were 160 litres of petrol and 30 of oil on board.

Switzerland

The Swiss Automobile Club offered a prize of $1,000 for the first Swiss aviator on a Swiss machine to cover a circuit of two kilometres before the end of the year. The prize has been practically won by Grandjean, who has made some very satisfactory trials with a monoplane which he built himself at Dubendorf, near Zurich.

THE TRADE



AN AMERICAN MACHINE EXPORTED TO FRANCE. THE CURTISS HYDRO-AEROPLANE BUILT FOR LOUIS PAULHAN.

The American Aeroplane Supply House of Hempstead, N. Y., report that during the winter months they are making up a lot of stock parts in order to be in a position to deliver several Blériot type monoplanes when spring arrives. This concern has kept three men working at Nassau Boulevard altering the "Pollyplane," which was built for the San Domingo Government. They have taken out the 4 X Roberts motor and substituted a 6x75 H. P. Roberts motor in its place. It is expected that the designer of the machine, Mr. Z. H. Garcia, will return from San Domingo shortly to begin a series of experiments. The American Aeroplane Supply House will issue a new catalogue of their machines about the 25th of January.

The Sloane Aeroplane Company has put in charge of their factory in Brooklyn, Mr. A. P. Christensen. Several of the same workmen who were formerly with the Chelsea Aero Company have also been employed to make the Charavay Propeller for them. John E. Sloane is President of this company and Kingsford Goodman, Secretary, while Mr. Frederick Charavay is the chief engineer and Vice-President of the company. Mr. Sloane, the president, reports that his company is meeting with considerable success, and that during the past month business was exceptionally good.

The American Aeroplane Manufacturing Company and School of Aviation, of Chicago, Ill., report that Andrew Drew, licensed pilot number 50, has closed a contract with them to take charge of their winter classes. Mr. Drew has had considerable experience as a flyer and will no doubt prove a great help in conducting the school. This company has an aviation field at East Pullman, Ill., where they expect shortly to make considerable improvements and additions to their hangars. The new hangars about to be erected will be capable of housing two machines each. The officers of the American Aeroplane Manufacturing Company and School of Aviation are looking forward to a most prosperous season during the year of 1912 and are very optimistic over the outlook.

Mr. Hugo C. Gibson, President of the **Gibson Propeller Company,** has spent the last few months in making an exhaustive series of tests to determine the most effective and efficient shapes of propellers and obtain knowledge pertaining to the development of the highest possible thrust under actual working conditions when moving through the air as compared with those designs which will produce enormous static thrusts.

One of the latest pupils to graduate from the **Wright Company's** Aviation School at Dayton, Ohio, is Farnum Thayer Fish, of Los Angeles, California, who is probably one of the youngest graduates of an aviation school of national reputation in this country. He is but 17 years of age, and took up flying for his health.

American Propeller Company, of Washington, D. C., reports having found their present facilities entirely inadequate for the growth of their business as demonstrated during the season of 1911. Active arrangements are now being made for removal of their plant to a location more central and better adapted in respect to materials and labor supply for the production of their goods.

The company has not definitely decided as to the exact location of the new plant, but the territory adjacent the Ohio River between Pittsburg and Parkersburg, W. Va., is receiving most favorable consideration as an advantageous locality for shipping as well as for manufacturing.

It is the intention to establish in the new location a thoroughly up-to-date plant, with every modern appliance for the efficient and most perfect production of their well known Paragon Propellers.

This company reports thus early in the year the most favorable indications for an extensive trade, which will more than justify their proposed removal and increase of facilities.

The Elbridge Engine Company, of Rochester, New York, has announced that they are now in readiness to take care of any and all orders which may come their way during the year of 1912. They have been experimenting recently with their 6-cylinder 60-90 H. P. engine for use on hydro-aeroplanes.

One of the chief difficulties of the hydro-aeroplane is that of getting the engine started on the water, without killing or drowning the engineer. Following the lead of the leading automobile manufacturers of the country, Mr. Seely, head of the Elbridge Engine Company, began several months ago to investigate self-starting engine devices. An equipment was found that added very few pounds to the weight of the engine and permits the aviator to start and stop his engine at will without leaving his seat. The device has been subjected to exhaustive tests and found to be nearly 100 per cent. perfect; starting the engines readily even in weather far too cold for comfortable flying.

All of the six-cylindeer Elbridge Engines are now equipped without extra charge with dual ignition systems, so that they may be started without the special apparatus on spark alone after the engine has been running for a few minutes.

Mr. Lyman J. Seely, the president of the company, reports that the increased sales of Elbridge engines during 1910 and 1911 was really phenomenal. About 40 engines were sold in 1909, more than 200 during 1910, and 1911 showed an increase of about 50 per cent. over the preceding year.

Among the well-known aviators now flying the **Burgess Company and Curtis** hydro-aeroplane are Howard W. Gill, Frank T. Coffyn, Lieut. John Rodgers of the United States Navy, Walter R. Brookins, Harry N. Atwood, Phillips W. Page, W. Starling Burgess and Clifford L. Webster.

The Burgess Company report that their machine has been flown in all kinds of weather from calm to 25 knots, carrying passengers with ease and without a single unpleasant occurrence of any kind, which proves that the future sport of aviation to a great extent lies over the water. The United States Navy has purchased a set of hydroplanes for equipping the Wright machine which is now in service.

Palm Beach, Fla., has been definitely decided upon as the winter training headquarters in the south of the Burgess Company and Curtis of Marblehead, Mass. A Burgess Hydro-aeroplane has been shipped to the southern winter resort, and will be in operation there after January 25. Phillips W. Page will be the instructor in charge of the school. One of the first pupils will be Patrick Grant 2d of Boston, the former All-American football player of Harvard.

Mr. Grant is now at Palm Beach, where he is overseeing the erection of a shed adjoining the waters of Lake Worth. This body of water will be the headquarters of the Burgess camp. It is expected that the greater part of the flying during the winter months will be done over water, but for land flying the regular skid and wheel attachment has been shipped.

By completing his course of instruction at the Burgess school at Marblehead on December 22 Henry James White, of Baltimore, Md., becomes one of the youngest aviators in the country. White, who is only 19 years old, thus deposed his instructor, Clifford L. Webster, who was the youngest Burgess operator, since Webster is one year his senior.

White signalized the finishing of his training by taking his instructor for a 15-mile flight across country, over Salem Bay and portions of the towns of Salem and Beverly. He is an appointee to the United States Naval Academy at Annapolis from Maryland, and will specialize in aviation during his course at the Academy.

The Lindsey-Hopkins Aviation Company of Atlanta, Georgia, has begun business both as manufacturers and exhibitors. They expect to put several aviators on the road during the summer months.

The Aeroadster Construction Company, of Chicago, Ill., has issued a new catalogue of aeroplanes and accessories, which no doubt they will be glad to furnish the reader for the asking.

The Frontier Iron Works of Buffalo, New York, feel highly elated over the fact that Aviator G. W. Beatty has installed a new Frontier Motor in his Wright biplane and is meeting with considerable success in its operation.

The Frontier people are making preparations to secure a large percentage of the demand for aeronautical motors this season and feel sure that the American made motor can equal if not excel those of foreign make.

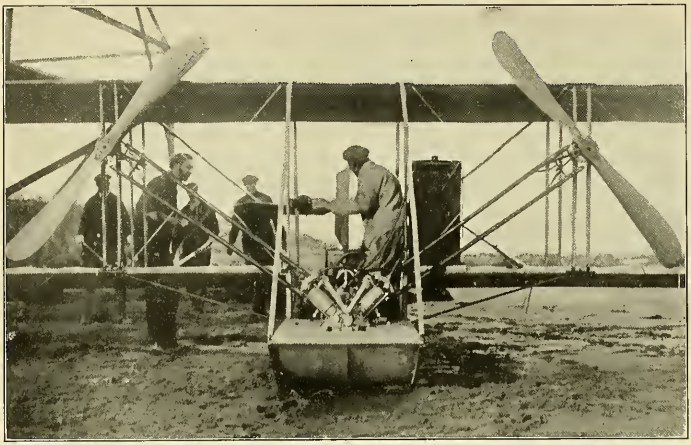
The Curtiss Motor Co., with Glenn H. Curtiss, the noted aviator and aeroplane manufacturer as President, was incorporated at Albany recently for the purpose of taking over all Curtiss's enterprises, including the manufacture of aeroplanes. The new company controls the Curtiss Aeroplane Co., which manufactures the Curtiss biplane, and the Curtiss Exhibition Co., which manages a number of the most prominent aviators and which is the selling agency and foreign representatives for the Curtiss Aeroplane Co.

We regret to say that AIRCRAFT has just received notice that *Aviation*, a monthly magazine published at Los Angeles, Cal., and edited by Van M. Griffith, has discontinued, owing, as they say, to the impossibility of running a magazine on a break even basis. This makes about a dozen aeronautical magazines that have begun and discontinued for the same reason during the past. These magazines were, while they lasted, a considerable help to the development of the aeronautical movement, but unfortunately were not sufficiently appreciated and supported.

Arrangements were made for the disposal of 500 shares of 7 per cent. cumulative preferred stock. The proceeds from the sale of this stock is to be utilized for improvements to the present factory at Hammondsport, N. Y., which needs to be enlarged to handle the increased business of the Curtiss Aeroplane Co.

The directors of the Curtiss Motor Co. are Glenn H. Curtiss, Monroe Wheeler, President of the Curtiss Exhibition Co. Jerome Fanciulli, Vice-President and General Manager of the Curtiss Exhibition Co.; G. Ray Hall, Secretary of the Curtiss Aeroplane Co., and Philip B. Sawyer, of Elmira, N. Y., who will represent the purchasers of the preferred stock.

NEWS IN GENERAL



Front view of the new Curtiss hydro-aeroplane or "flying boat." Note the twin propellers which apparently revolve in the same direction through straight chain drives and also the radiator set to one side to overcome the consequent torque. It is claimed that this machine can travel 50 miles per hour in the water and 60 miles per hour in the air and that it will stand any wind or wave which any other boat its size can weather.

Curtiss Doings

At San Diego on January 10th the new Curtiss hydroaeroplane, or "flying boat," was given its first trial on the bay there with entire success. This is the machine which Mr. Curtiss designed and had constructed under strict secrecy at his factory at Hammondsport.

The new craft, which is equipped to carry a passenger and is driven by a 60 horse power motor, made tremendous speed in contact with the water, estimated at about 50 miles an hour. It lifted off the water with ease and traveled at more than 60 miles an hour in the air. It differs in many respects from the Curtiss hydroaeroplane now in use by the United States navy officers. There are two propellers instead of one, and these are driven by clutch and chain transmission. The motor is equipped with a new automatic starter, which Mr. Curtiss has lately designed, and there is also a fuel gauge and bilge pump.

The boat, or hydro equipment, contains a bulkhead fore and aft, and is twenty feet long, with an upward slope in front and a downward slope in the rear. The great advantages claimed for the new machine are that it is safe, comfortable and quick to rise from the water in response to its control. The hydro equipment, which is more like a boat than anything yet designed and used on the aeroplane, will, it is claimed by Mr. Curtiss, be able to withstand any wind or wave that a motor boat of similar size could weather.

Jerome Fanciulli, Vice-President and General Manager of the Curtiss Exhibition Co., sailed from New York on the steamship "Amerika" for Hamburg, Germany, on January 6th. He is accompanied by Aviator Hugh Robinson, Aviator Eugene Godet, and Mechanic W. J. Shackleford. They took with them two Curtiss hydroaeroplanes, one of which is to be delivered to Louis Paulhan, the famous French aviator and manufacturer of aeroplanes at Sartrouville, France.

From France Mr. Fanciulli and party will go to Germany, thence to Italy and finally to Russia, where the Curtiss hydroaeroplane sold to the Russian Aerial League will be demonstrated. This latter demonstration will probably take place at Sebastopol on the Black Sea, about the first of March, or earlier if conditions permit.

Mr. Robinson will give exhibitions with the Curtiss hydroaeroplane equipped with an 80 H. P. Curtiss engine in the principal cities of Europe.

Four Curtiss aviators, Lincoln Beachey, Beckwith Havens, Charles F. Walsh and Eugene Godet, recently closed a seven days aviation meet in the City of Havana, which attracted wide attention on the island of Cuba. The exhibitions were given at Camp Columbia, which is the military headquarters on the island, and a large number of Cuban Army officers were in attendance, and, in a measure, took part in the exhibitions to the extent of being passengers in daily flights and observing the general practicability of aeroplanes. The City Council of Havana appropriated money for three prizes of $1,000 each, one of them for the carrying of military passengers, another for the greatest altitude attained during the meet and a third for a race around Morro Castle, a distance of 14 miles from Camp Columbia.

The Curtiss winter training school at Miami, Fla., began operations on January 1st, with Aviator Charles C. Witmer in charge as instructor. The school is equipped with three machines, a low powered one for beginners, a 60 H. P. standard Curtiss aeroplane and a 75 H. P. Curtiss hydroaeroplane.

Fowler Still Flying

Robert G. Fowler, who is flying from Los Angeles to New York, arrived at Mobile, Alabama, on January 10th, having flown sixty miles from Biloxi, where he had been detained for some time. In spite of the many hardships Fowler is sticking to his task and is slowly but surely working his way eastward.

The Tantarnapol Exhibition Company, Chicago, expects to leave shortly for the South to make exhibitions throughout the Southern States, Mexico and South America. They have purchased American biplanes equipped with Kirkham six-cylinder motors from the American Aeroplane Mfg. Co. and School of Aviation, the American Aeroplane Company booking them upon this trip. The aviators and crews to be graduate pupils from the above school.

Nassau Boulevard News

On January 4th, G. W. Beatty at Nassau Boulevard in a Wright machine gave an exhibition of flying, during which he indulged in a number of spirals and dips. After flying an hour Beatty came down and took five passengers out in turn, keeping in the air until darkness fell. Those who were taken up were Wilbur R. Kimball, who is learning to fly the machine, and W. L. Avery, of Manhattan; Dr. A. G. Belden, of Terre Haute, Ind.; J. R. Wood, of Milwaukee, and J. J. Williams, of Colbyville, Ind. In all Beatty made eleven flights, covering eighty miles.

Mineola News

On January 4th, Lester Weeks, of Mineola, in the Curtiss biplane of S. M. Moore, made circles around the Court House dome at Mineola.

The engine and seat of the Dietz paraplane have been shifted so that the weight is now in the front part of the plane, and another trial will be made soon.

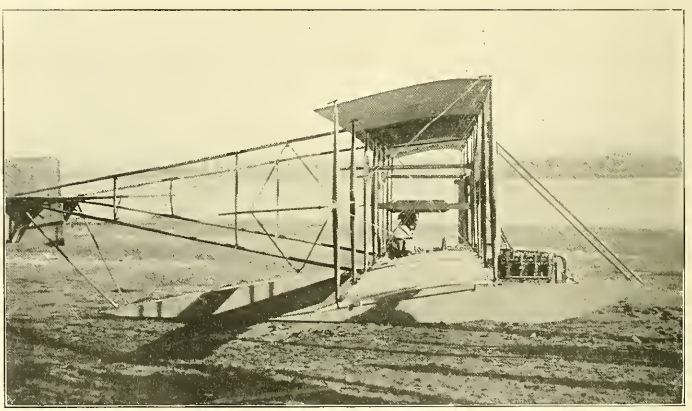
Frank Cline and Oscar Kemmerle, novices, made a series of flights in biplanes on January 5th that carried them some fifteen miles out over the countryside. Frank Boland, with his tailless machine, also flew.

Burgess News

Hunting with a motion camera from an aeroplane had its beginning, in this country at least, during the last week in December, when some interesting views of a flock of ducks were taken from a Burgess hydroaeroplane operated by Phillips W. Page at Marblehead, Mass. The "man behind the lense" was J. C. Hemment, the well known New York photographer. It is believed that this means of picture taking, besides opening a new field of sport, will offer excellent opportunities for the study of bird flight, and with this end in view the experiments are to be continued during the winter.

ATWOOD'S HYDROAEROPLANE FLIGHT.

On December 21st a long distance hydroaeroplane flight was made by Harry N. Atwood, who flew along the coast line from Point of Pines, near Lynn, Mass., to Narragansett Bay, a distance of 130 miles, in 165 minutes. Atwood headed across Boston Harbor, flew over Hingham and reached the Massachusetts south shore. Skirting along the side of Cape Cod Bay the aviator passed over the new Cape Cod Canal and then crossed over Buzzards Bay. He was seen from Horseneck Beach, in the town of Westport, Mass., soon after as he headed toward Rhode Island. The machine used was a Burgess-Wright hydroaeroplane.



Side view of the Curtiss flying boat showing the shape of the 22-foot hydroplane and also the position of the motor and the pilot's cock-pit. The machine has air-tight bulkheads fore and aft in the hydroplane, automatic engine starter, fuel gauge, bilge pump, and clutch on the engine. A spray hood not shown in the picture fits over the engine when in use.

INDEX

An Interesting Interview

Baron Ladislas d'Orcy, who has just arrived from Paris, says that the Aero Show held in Paris recently was a wonderful success. He says that all of the newest machines are constructed for the most part with steel tubing and sheeting, together with aluminum and other metals showing that wood is being discarded almost entirely in the industry. The machines are also being built to accommodate passengers and with more comfort than heretofore and with the very least head resistance. A great many biplanes are now being built with fuselages, showing thereby the tendency of biplanes and monoplanes toward each other. One of the most remarkable machines exhibited was the Paulhan-Tatin, which Baron d'Orcy described in the August number of *Aircraft*. This machine has made 130 kilometres per hour with a 22 H. P. motor, and it is expected will make 160 kilometers per hour when installed with a 44 H. P. motor. The Breguet assortment was also a great success, one of them exhibited being that with which Bregi made his Morocco flight. The Breguet machine is especially adapted for military purposes. The Morane-Saulnier Company exhibited a fuselage made of steel sheeting and part of the structure of the wings of steel tubes.

Baron D'Orcy says the French people as a whole are taking up the study of aeroplanes With them it is a science, and as a nation they have taken to this new industry in the same way as the English nation takes to sport and the Americans to money-making. Everything is scientifically constructed. Great engineers are devoting their energies and follow scientific laws; there is no guess work. They will spend their money even if they see no immediate return for it, whereas the American, he says, expects two dollars for every one expended and that immediately. The French war department will spend about ten million francs next year in air vehicles, and that before the end of the year the Army will have about 500 machines in use.

Baron D'Orcy is of the opinion that the majority of the French builders will not send over aeroplanes to the American Show to be held in May unless the committee in charge of the Show guarantees to take all the risks of any litigations that may be brought about by the Wright Company.

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FOR SALE—One 50 H. P. DeChenne Power Plant complete. Cheap if taken soon. Reason, have closed for season and can make more by spring. DeChenne Motor & Aeroplane Co., Monett, Mo.

FOR SALE—One Requa-Gibson propeller, 7 ft. diameter, 6 ft. pitch $35.00
One French propeller type 8.097 ft. diameter, 3.987 ft. pitch 50.00
One French Propeller type 8.097 ft diameter, 3.45 pitch 50.00
One Dean Mfg. Co. propeller type 6½ ft. diameter, 4¾ ft. pitch..... 50.00
The above French propellers were made in France, are made of the very best of material and workmanship. The price F. O. B. Paris is $100.00 each.
1 50 H. P. Harriman engine, 4 cylinder, 4 cycle. This engine sells for $1,650.00, our price $700.00. This includes a complete power plant.
1 6-cylinder, 2 cycle, 48 H. P. engine, $775.00. This includes radiator propeller and high tension magneto. This engine sells for $1,500.00.
We are closing out our business and must sell. LeBron-Adams Aeroplane Co., Omaha, Neb.

FOR SALE—Aeroplane patent issued 1909, covering biplane wings, no front planes, a new tail device; tri propeller, one front and two lateral. Will consider most any kind of proposition from reliable manufacturer of aeroplanes. Samuel Wade Applegate, 137 North Michigan St., South Bend, Indiana.

TOY AIRSHIP Patent for sale. Crane's Yankee Flyer, a good investment for a man or boy to make a fortune in his own home. The best money making Toy in the market. Can prove it. Investigate. Louis L. Crane, 259 9th St., bet. 4th and 5th Ave., Brooklyn, N. Y.

MINIATURE models of all types aeroplane motors. For flying or exhibition models. Extremely light, showy. Brass bearings in crank cases for propeller shaft. Any type 35 cents money order. Miniature Motor Company, 1716 Riverdale St., Chicopee, Mass.

GNOME ENGINES—Four Gnômes, perfect condition, guaranteed, available for inspection; $2,500 each F. O. B. New York. Louis Herfield, 1331 Connecticut Ave., Washington, D. C.

FOR SALE—One Harriman 50 H.P. four-cylinder four-cycle aviation motor complete with Bosch magneto and Schebler carburetor. New, just as received from factory; never been run. Weight 240 lbs. Price $395 cash. M. F. H. Gouverneur, Wilmington, N. C.

FOR SALE—Gray Eagle 40 H.P. motor, cheap. Run one hour. Box 754, AIRCRAFT.

CO-OPERATION WANTED

LADIS LEWKOWICZ, the experienced international aviator, who is the only man to fly over the City of New York, late manager and chief instructor to the Queen Aeroplane Company, has a chance to become affiliated with one of the best aeroplane manufacturing concerns in France and wishes to establish an agency in New York with some responsible man with a few thousand dollars to invest in the enterprise. Address Ladis Lewkowicz, 102 West 64th St., New York City.

CAPITAL WANTED—Capitalist or firm to finance building of new type of flying machine; patent pending. Something entirely new and taken from life; the machine of the future, which will positively revolutionize the flying machine industry. Do not overlook this wonderful opportunity. Also, do not fail to investigate my new idea for an automatic balancer. Communicate immediately with L. Lukacs, 548 West 125th St., New York City.

YOUNG MAN requires financial assistance to build aeroplane. I have made two flights as a passenger. A great enthusiast. Will make good terms on receipts from flights. References furnished. H. Hertzman, 1123 13th Ave., Moline, Ill.

POSITIONS WANTED

MECHANICIAN, all round man, formerly with Curtiss Aeroplane Company; A No. 1 on Curtiss and Hall Scott motors. F. F. Apgar, 30 Orchard St., Dover, N. J.

MECHANIC who has been doing some aeronautical experimenting; thorough gasoline Engineer Machinist and Automobile Driver, wishes position as helper to aviator or firm. Address C. B., % AIRCRAFT.

MISCELLANEOUS

WANTED—Small factory or shop with facilities for light woodworking in good manufacturing location. Middle West or near New York. Full particulars. Box 2476, Station G., Washington D. C.

CATALOGUES, Samples wanted. Starting a model supply house and would like to get some wholesale model supply catalogues, samples. Agencies accepted. Madrian Bros., 66 Sumner Ave., Brooklyn, N. Y.

WANTED—Two first class Curtiss type aeroplanes; must be in good shape and ready for business. M. D. Hanlon, 940 Plymouth Bldg., Minneapolis, Minn.

WANTED—Curtiss or Wright, Aeroplane and Hydroplane, new or used, with or without power. Send good photo and full description. 2225 2nd Ave., Seattle, Wash.

MODEL Aeroplane Supply Dealers: I can furnish the trade with propellers, propeller blanks, and wood in assorted kinds and sizes, selected Poplar, Spruce, Maple, Birch, Holly, etc., at most reasonable prices. G. C. Stevens, 365 7th Street, Brooklyn, N. Y.

AVIATORS' DIRECTORY

LADIS LEWKOWICZ
the well known aviator, lately Manager and Chief Instructor of the Queen Aeroplane Company, is open to any proposition from responsible firms or individuals, to organize and manage Aeroplane Factory and Aviation School. Write, stating full particulars, to
LADIS LEWKOWICZ
102 West 64th St., New York City

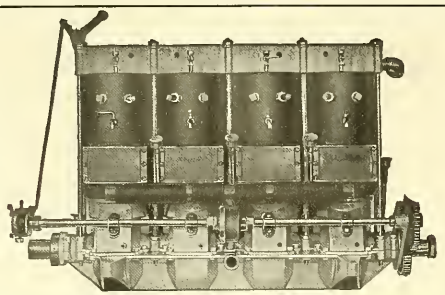
REYBURN, Amedee V. Jr., with Bleriot one hundred horse power monoplane, is now booking engagements for exhibition flights. For particulars apply to 5305 Delmar Boul., St. Louis, Missouri.

LEARN TO FLY $100 REQUIRED
GATES, 227 Englewood Ave., Chicago, Ill.

Aeroadster
AEROADSTER SPECIAL
20-foot Biplane Glider (Chanute Type)
TWENTY-FIVE DOLLARS
Guaranteed to sustain 185 pounds. Best spruce construction throughout. Laminated ribs. Glider guyed with tested Aviator wire and turnbuckles. Shipped anywhere for **$25.00**, f.o.b. Chicago. Others are flying them! Why not you?
AEROADSTER CONSTRUCTION COMPANY
3751 Indiana Ave., Chicago, Ill.

CHICAGO AERO WORKS
H. S. RENTON *Proprietor* **164 North Wabash Avenue**
AEROPLANES ACCESSORIES MOTORS PARTS HARDWARE PROPELLERS
WHEELS ALSO MODELS AND MODEL STOCK
ESTABLISHED 1909. **First in Chicago and the Middle West**
Aviators Taught **Flights Furnished** **Send stamp for Catalog**

AGENTS WANTED
Gibson Propeller
COMPANY
Fort George Park
NEW YORK CITY
Send For Red Book



AEROPLANE MOTORS 40 to 50 H. P.
H. J. LEIGHTON, 1017 West Fayette Street SYRACUSE, N. Y.

WIRE

¶ Aviator Wire supplied in 12 sizes with a plate finish making soldering easy. This wire is specially drawn from extra quality high grade steel. Also Aviator Cord of twisted wire. :: :: :: ::

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THE MAN WHO INVESTS in the AMERICAN AEROPLANE MFG. CO. & SCHOOL OF AVIATION

A Class of Students and Instructors of the American Aeroplane Mfg. Company and School of Aviation

today is bound to make money. The opportunities for making money in Aviation now are greater than they were in the Railroad, Telephone or Automobile Industry. Had You bought stock in those industries when they were in their infancy you would be independent today. Read now—Right now— You can buy shares in the American Aeroplane Mfg. Co. & School of Aviation at

25 Cents - - - - - - - Par $1.00

These shares are bound to double or perhaps treble within a short time. Our advice to you is to investigate and act quick. Every Investor or Student of Aviation should *Send at once for our Free Book*. Read carefully every word of this announcement.

The American Aeroplane Mfg. Co. & School of Aviation

has been organized for the purpose of manufacturing Biplanes, Monoplanes, and all aerial machines.

More than this—it is our purpose to operate a number of our own aeroplanes with our own aviators in order to fill the great demand which now exists for exhibitions in cities, and at county fairs, resorts and open air field meets, etc.

Already they have manufactured and flown successfully 19 of their own biplanes. The profit involved in the manufacture of aeroplanes is enormous. And the demand is growing at a tremendous rate—faster than the company can make them.

It is their intention to enlarge their factory and school—make it the largest and most complete institution of its kind in the world, and for the first time, are inviting the general public to join with them.

Only a limited amount of stock, however, will be sold—simply enough to make the necessary improvements. To enable everybody to join, they have, for a few days, made the price 25 cents a share—par value $1.00.

Aviation today is in its infancy. Its possibilities for expansion and development are too great for human mind to comprehend. Many noted aviators today will tell you that "heavier than air" machines will be as common as automobiles in a few years hence. Look at the progress they have made in the past twelve months. If this is any indication—have you any idea what the future holds for this industry?

You know the advantage of getting in on the ground floor of any new industry.

Make up your mind to investigate this opportunity at once.

The men back of this company are all practical men.

One of the world's greatest aviators, whose record is scarcely approached by any one flying today, is Bud Mars. He is General Field Manager, Consulting Aviation Expert and Vice-President of this Company. Mr. Mars will take charge of our aviators in the making of all exhibitions and open competition flights. The story of this man's genius and his achievements in the air reads almost like romance.

Bud Mars has exhibited and made successful flights in scores upon scores of American cities, as well as a world's tour with Captain Baldwin, reaching all the way from New York to Japan. All you have to do to learn of the proficiency and reputation of this man is to write to any aero club in the United States.

General Kaid Belton, who is well known throughout Canada and is honorary commander in chief of the Imperial Veterans Brigade of Canada is our chief instructor.

General Belton was formerly a captain in the English Army during the Boer war. He won his commission through distinguished service, and after that war entered the service of Mulai Hafid, the pretender at the Moroccan throne, and succeeded in putting this monarch on the throne, being commander of his army of 67,000 men.

General Belton has taken up aviation and is now our chief instructor.

Such men as these absolutely assure the future under the personal direction of men who stand high in aviation and business circles.

This Company Controls the Biggest Flying Field in the West

This Company controls its own flying field, which is located at 118th and Morgan streets, and is the best field obtainable in the City of Chicago. It is ideal for flying and landing and to gain some idea of the extent of this field, one has only to learn that it takes our fastest machine more than four minutes to complete a circle of these grounds. This Company has a favorable lease on this field.

A Part of Our Factory—Students Receiving Practical Instruction

We are not dealing with any new or untried proposition. We build all types of aeroplanes to order and the profits involved in so doing are enormous.

The American Biplane, which is a product of this company, is one of the most modern and up-to-date machines used today. It will be used solely by some of America's most noted aviators this coming season. Already several orders are on hand and more are sure to follow.

Our Factory and School

Our Manufacturing Plant and Aviation School, at the present time, is located in Chicago, at 2224-38 Cottage Grove Avenue, 2227-31 Indiana Avenue, extending through and occupying nearly an entire block, having over 14,000 sq. ft. of floor space.

It is our intention to manufacture the American aeroplane for the purpose of supplying the demand today for aeroplanes of this type. Our type of aeroplane is similar to that of the Curtiss, and this is the machine which the United States Government has said, through its actual orders to the Curtis factory, is the best aeroplane, for the United States Government has purchased more Curtiss planes than any other plane manufactured.

The demand for aeroplanes is tremendous—and is growing larger each and every month. It is our purpose to produce an aeroplane, the equal of any flown today, and to sell such planes anywhere from $2,500 to $1,500 less than any other manufactured.

The directing force of our Company are all practical men. We use the same materials employed in other aeroplane construction and, with proper equipment, we can produce, if necessary, three aeroplanes a week, which would show us a profit of $1,700 per plane, or $5,100 per week, or a total of over $2,000,000 per year. It is our belief that when our factory is in full running strength we will be compelled to exceed this capacity.

Already we have secured communications from hundreds of amusement parks, cities, county fairs, associations, etc., asking for contracts for exhibitions during the coming years of 1912-13. These exhibitions are guaranteed to net the Company as high as $5,000 per exhibition and this work will be directly under the management of Bud Mars.

We have many advantages over every other aeroplane factory in the world. Aside from the manufacturing feature, this Company owns and operates a school of aviation. Our course in aviation is, in our opinion, the best in the world today. We take students, place them in our factory and teach them not only the theory of aviation, but construction and operation as well. We show them everything about an aeroplane, so that when these students have graduated from our factory each and every one of them should be able to build his own aeroplane and operate it. These students pay us for the privilege of working in our factory and, therefore, the great cost in the manufacture of an

aeroplane is eliminated in our product. Other factories are compelled to expend large sums of money for labor. This factory, through its school, turns its labor into a source of profit. All money paid for tuition will be applied on purchase price of machine.

AVIATORS AND STUDENTS PLEASE NOTE.—We have prepared a handsome book filled with interesting facts and information regarding our school, with photographs of our students in our factory and on the field—in brief just the facts and information you will be interested in. It describes fully our "HOME STUDY COURSE," our "CONSTRUCTION" course and our "COMPLETE FLIGHT COURSE." This handsome book will be mailed you on receipt of 4 cents in stamps to partly cover expense. In writing state which course you are most interested in now. This book should be in the hands of every aviator and student. Write for it today.

We estimate as a minimum for tuition charges for our Aviation School to be $80,000, and we believe that the figures here computed are indeed conservative from every point of view.

Roughly figured, $108,000 is a very low profit for manufacturing; $50,000 as the earnings of one aviator; and $80,000 income from the Aviation School.

All the stock of this company is common stock. It is non-assessable and fully paid up. The entire capitalization is $1,000,000, organized under the laws of Arizona and divided into 1,000,000 shares of a par value of $1.00 each.

This Company contemplates selling only a limited number of its shares (of a par value of $1.00) at the price of 25 cents. We do not desire to actually compute the possibilities of the earning power of this stock. But we do say that every aeroplane manufacturing plant in the United States is a close corporation, the stock has all been subscribed by wealthy men and the earning power of these plants is not known. Without the question of a doubt, the earning powers of the Wright, Curtiss, Burgess-Curtis, Capt. Baldwin, etc., are tremendous.

To every person who buys 300 shares of this stock we will send gratis a complete "HOME STUDY COURSE" (regular price, $50.00). We make this offer with a view of interesting financially as many aviators and students of aviation as possible.

To the stockholder purchasing 2,000 shares or more we will give a certificate entitling such shareholder to each and every one of our three full courses. Thus we will educate you in the actual manufacture of an aeroplane, in the principles and science of aeronautics, and the final and complete operation of a machine under your own control.

We desire to urge upon each and every reader of this paper the necessity of sending in your application, together with your remittance in today's mail, as the number of shares which we have to sell at the 25-cent rate is very limited indeed.

A View of Our Factory and School Which Covers Nearly an Entire Square Business Block

Only a Limited Amount of Shares to be Sold

We are selling only a limited amount of stock to complete the necessary improvements in our factory for exploitation purposes. We desire to immediately begin filling as many orders as the capacity of our factory will permit.. The Company desires to have at least 10 aviators with their machines filling exhibition dates before the spring of 1912.

If this Company, during the following year, only builds 60 aeroplanes, it will be enabled to show a profit of at least $108,000. If we only have one man flying for us during the year 1912, we believe his earnings will be in excess of $50,000, and it is our purpose to place at least ten men in the field—and we can make dates sufficient to cover this number of men.

Make Up Your Mind Now to Become a Part Owner in This Company

Please remember that this announcement is appearing in the leading metropolitan dailies.

There is no question but what the small quota of stock will be over-subscribed within a very few days. In order that YOU will not be disappointed, fill out and mail the Special "Stock Coupon" attached for as many shares as you desire, using the table below.

If, however, you want more and complete information with respect to this company, its purposes and plans, just clip the stock information coupon below and send it to us, and we will be glad to send you, without any cost, a large book : : with facts and figures, letters and photographs, etc., of our factory, of Mr. Mars, of our demonstration and flying grounds—of everything you desire to know.

The par value of this stock is $1.00; capitalization is $1,000,000; non-assessable and fully paid up.

We have appointed Arthur W. Greiner & Co., Industrial Bonds and Stocks, as our financial agents, and we desire that all communications, with respect to the school or to the shares of the Company, be addressed to them. Just use the coupon below.

How to Buy This Stock

PRICE NOW 25 CENTS PER SHARE

$ 5.00 down and $2.50 a month for three months buys 50 shares.

$10.00 down and $5.00 a month for three months buys 100 shares.

$20.00 down and $10.00 a month for three months buys 200 shares.

$100.00 down and $50.00 a month for three months buys 1,000 shares.

If you desire to pay all cash, you may deduct five per cent.

STOCK INFORMATION COUPON

ARTHUR W. GREINER & CO.,
1224-28 First National Bank Bldg., Chicago, Ill.

Gentlemen: Please send me your big book containing views of the factory, your flying field, your School of Aviation and explaining thoroughly the achievements of your Company. I enclose 4c. in stamps to help pay postage.

Name .....

Address .....

City..... State.....

(Aircraft)

STOCK COUPON

ARTHUR W. GREINER & CO.
1224-28 First National Bank Bldg., Chicago, Ill.

Gentlemen: Enclosed please find $..... for the purchase of.....shares. I agree to pay $.....each month for a period of 3 months. (Refer to accompanying table on how to buy this stock.)

Name .....

Address .....

City..... State.....

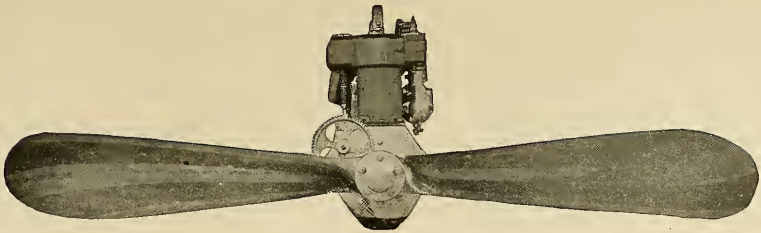
AMERICAN AEROPLANE MFG. CO. & SCHOOL OF AVIATION

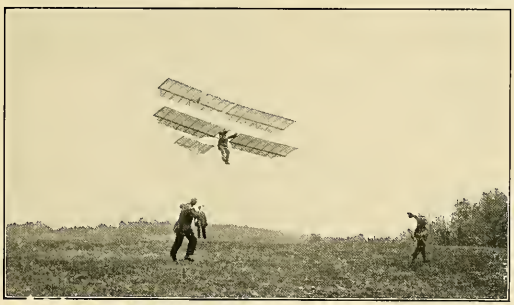
CHICAGO, ILLINOIS

ARTHUR W. GREINER & CO., 1224-28 First National Bank Building, Chicago, Illinois

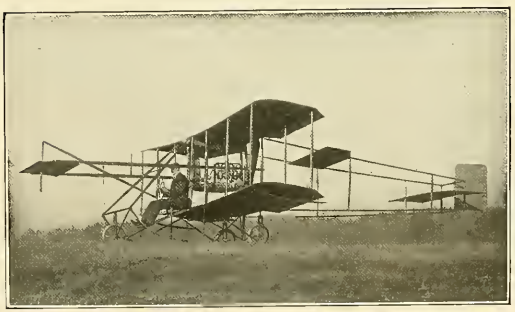
FISCAL AGENTS

We have just secured the services of the well known aviator, Mr. Andrew Drew, Licensed Pilot number fifty, perhaps the best posted aviator in this country, who is to be our field manager, in charge of our winter classes.





A Wittemann Glider in'towed flight



Witteman Biplane to Seat One or Two Persons

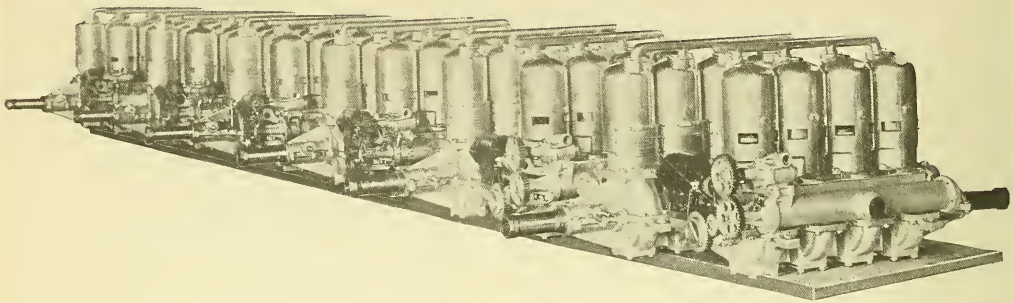
QUEEN AEROPLANE CO.

Fort George Park

NEW YORK

READY

For Immediate Delivery



ROBERTS AEROPLANE MOTORS

These (12) 4x50 H. P. Motors are in stock ***now*** ready to ship the day the order is received.

We have parts complete for 25 more.

We can deliver 6-cylinder 75 H. P. motors in two weeks from receipt of order now and will soon have ***these*** in stock for immediate shipment.

We sold ***61*** Roberts Motors in ***7*** months in 1911.
We are making 300 for our 1912 trade.

---

3 sizes 4x--	50 h. p.	- - -	170 lb. complete
6x--	75 h. p.	- - -	240 lb. complete
6xx--	125 h. p.	- - -	375 lb. complete

Our power rating is actual brake horse power. The Roberts will run so long as the gasoline holds out. Altitude does not affect it.

Weldon B. Cooke with a 4x Roberts circled Mt. Tamalpais at 4500 feet and was in the air one hour and twenty minutes.

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