

INDEXED

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No. 3



THE LATEST R. E. P. MONOPLANE IN FLIGHT

15 CENTS
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EDITED BY
ALFRED W. LAWSON

\$1.50
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AIRCRAFT

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NEW YORK, MAY, 1911

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THE HAVANA MEET

By Henry A. Wise Wood



THE LAST FLIGHT OF AUDEMARS' DEMOISELLE IN CUBA.

IN 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. Zig-zagging 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

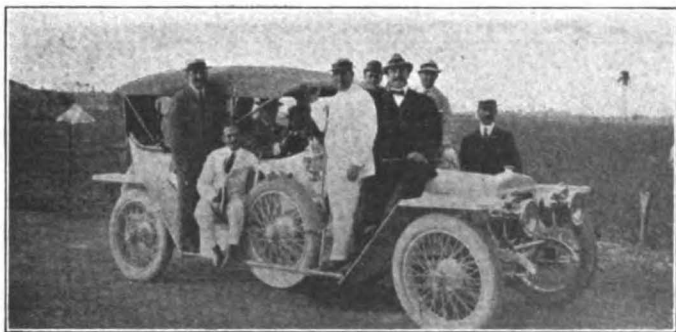
them called the Blériot. The machine was right over their hats, in the very streets of the city, so several persons informed the writer. Nevertheless, practical Johnstone was well up, within safe gliding distance of the water should necessity compel him suddenly to come down. Passing over Morro Castle 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 25rd 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 mowings 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 burgee 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 mechanic 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 Gnome 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.

SOCIÉTÉ DES ÉTABLISSEMENTS 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

SOCIÉTÉ DES MOTEURS GŔOME	
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



HE 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.

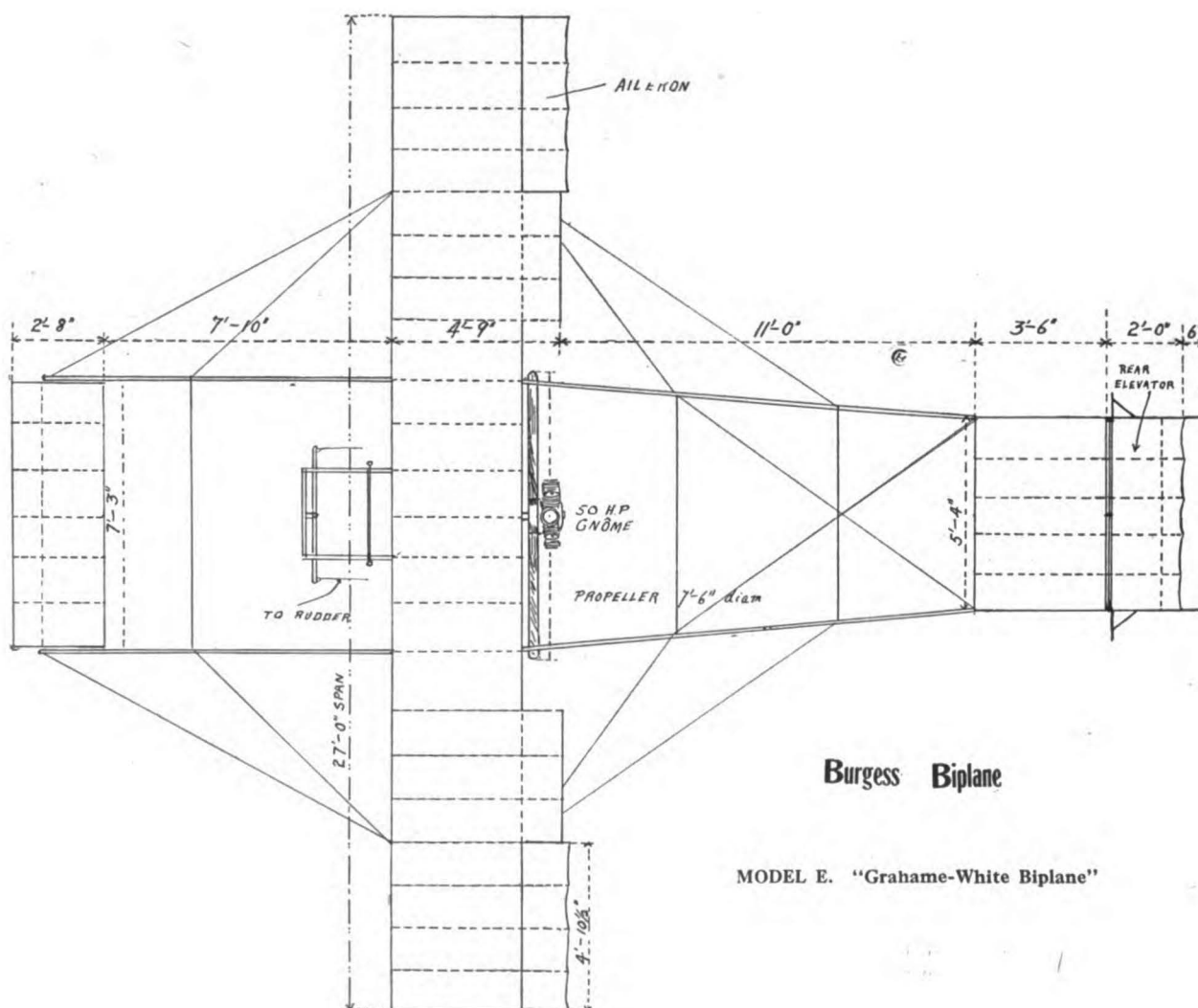
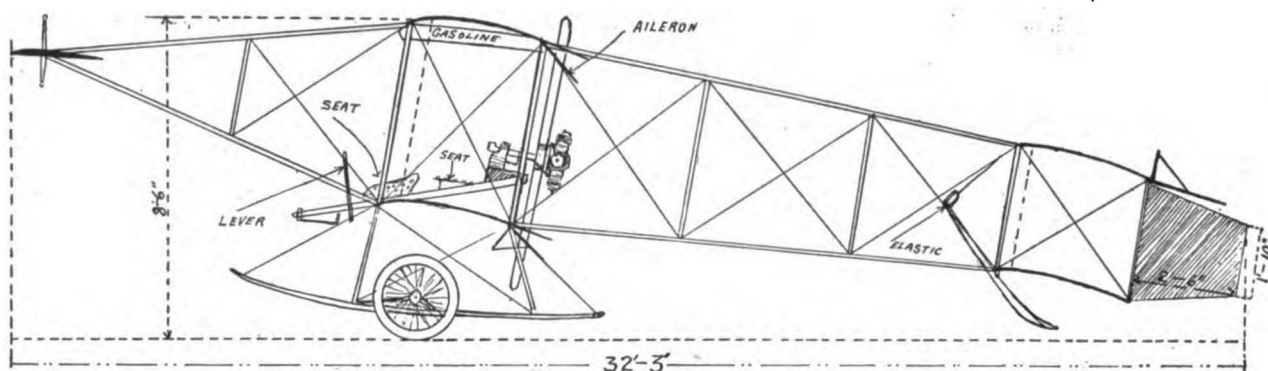
The running gear consists of two skids and Farman type wheels and shock absorbers.

PROPULSION.

Propulsion is furnished by a 7-cylinder 50 H. P. Gnome 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)



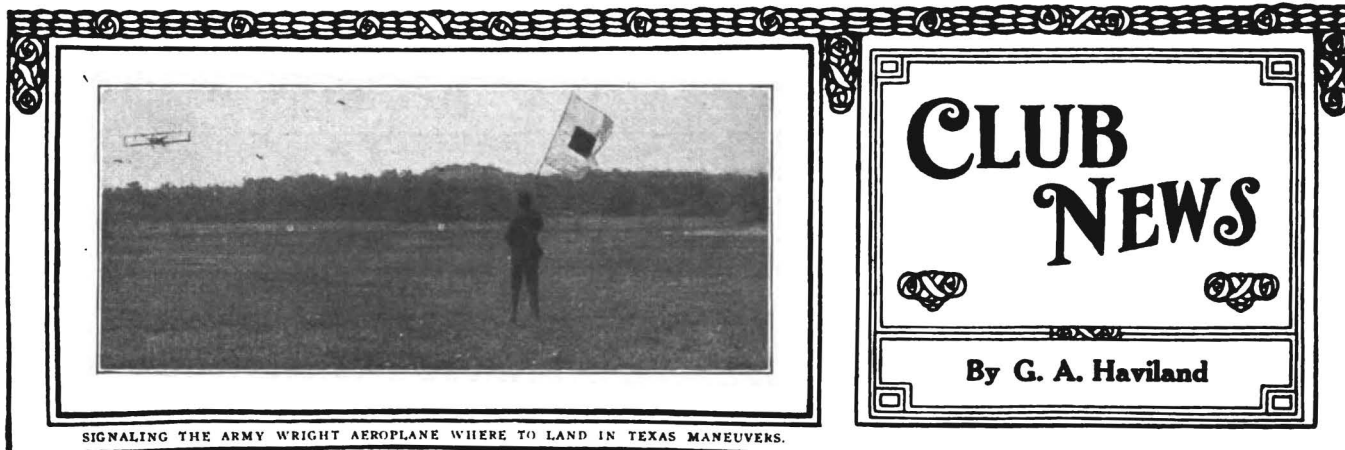
Burgess Biplane

MODEL E. "Grahame-White Biplane"

AIRCRAFT

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 remodeling 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, Inter-collegiate 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. F. 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 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 Insti-

tute of Technology, Nobel and Greenough, Tufts, University of Pennsylvania, Volkman, 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 F. 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 Hevri, vice-president and photographer; Sigurd Sjöberg, recording secretary; Daniel McCarthy, treasurer; Arthur Frenzer, correspondent; Louise Wade, assistant correspondent; 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. I. 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 plaque 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. Foulis 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 wireless 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
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2. Distance in a given time.

AVIATOR ALONE.

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

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"
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(c) AVIATOR AND TWO PASSENGERS.

C. Grahame-White	Belmont Park	Oct. 30, 1910	H. Farman	2'51"
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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.

U. S. Signal Corps No. 1	Thomas S. Baldwin	Fort Myer to Cherrydale and return	Aug. 14, 1908	31.559 (19.61 miles)
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AEROSTATS (Spherical Balloons)

DISTANCE.

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

DURATION.

C. B. Harmon	St. Louis to Edina, Mo.	Oct. 4, 1909	48 hrs. 26'
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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 mono-rail 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 "stabilizer," 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.

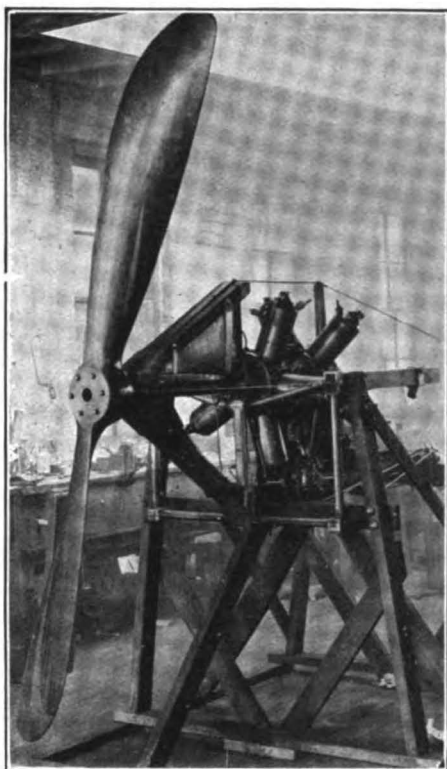
In the accident that caused the death of Chavez, and also in the more recent ones that killed Moisant and Hoxsey, the aviators had just finished a long glide, and while traveling at a terrific speed, suddenly changed their paths from an angle of 30 degrees to that of a horizontal one.

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

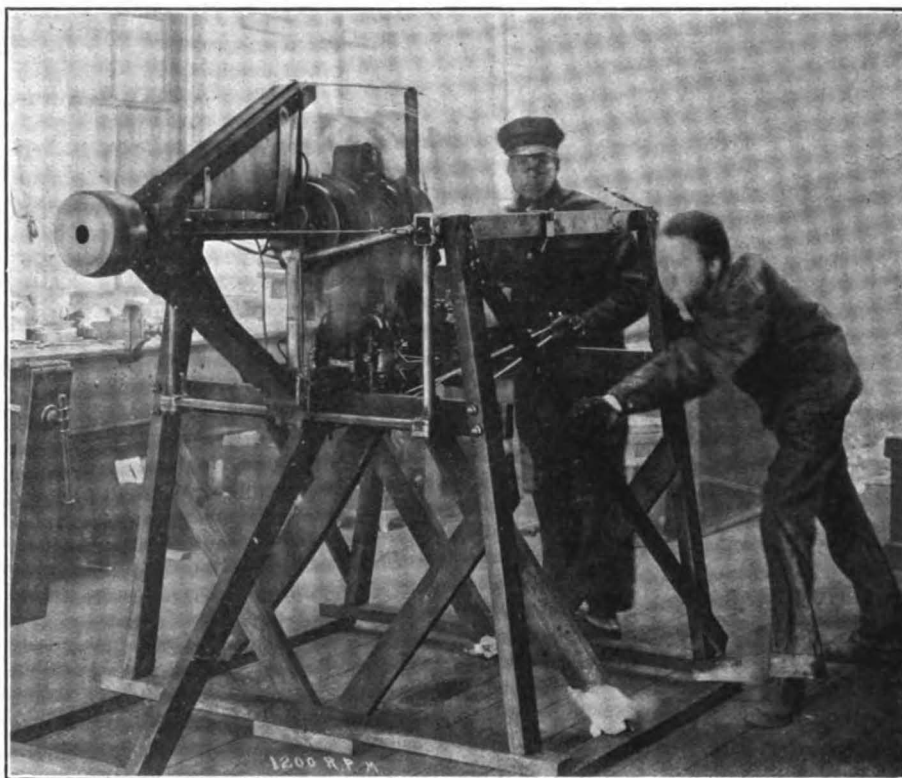
All the published accounts of these accidents agree in that "at the point where the elevator was raised to alter the gliding angle the machine seemed to shudder for an instant, turn slightly to the left and plunge downwards."

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

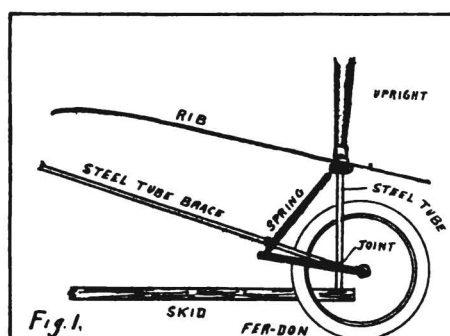


Fig. 1.

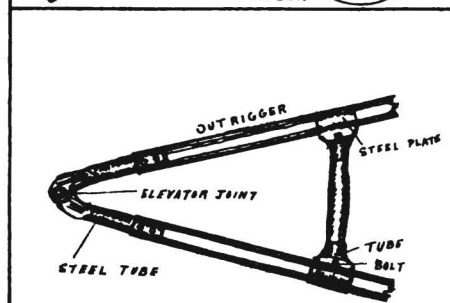


Fig. 2.



Fig. 3.

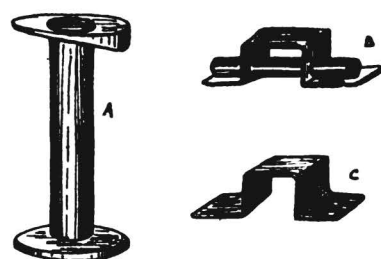


Fig. 4.

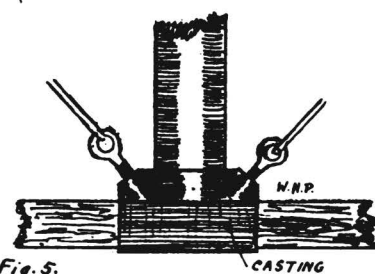
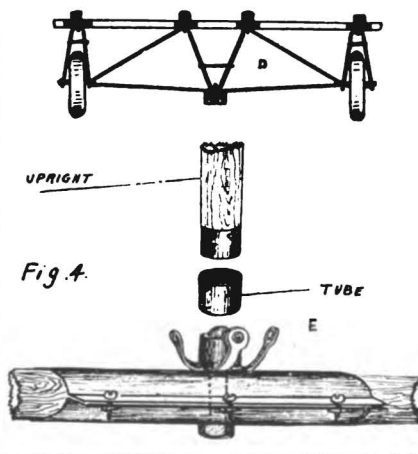


Fig. 5.

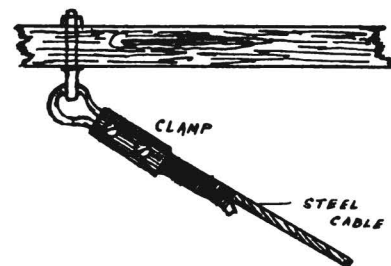


Fig. 6.

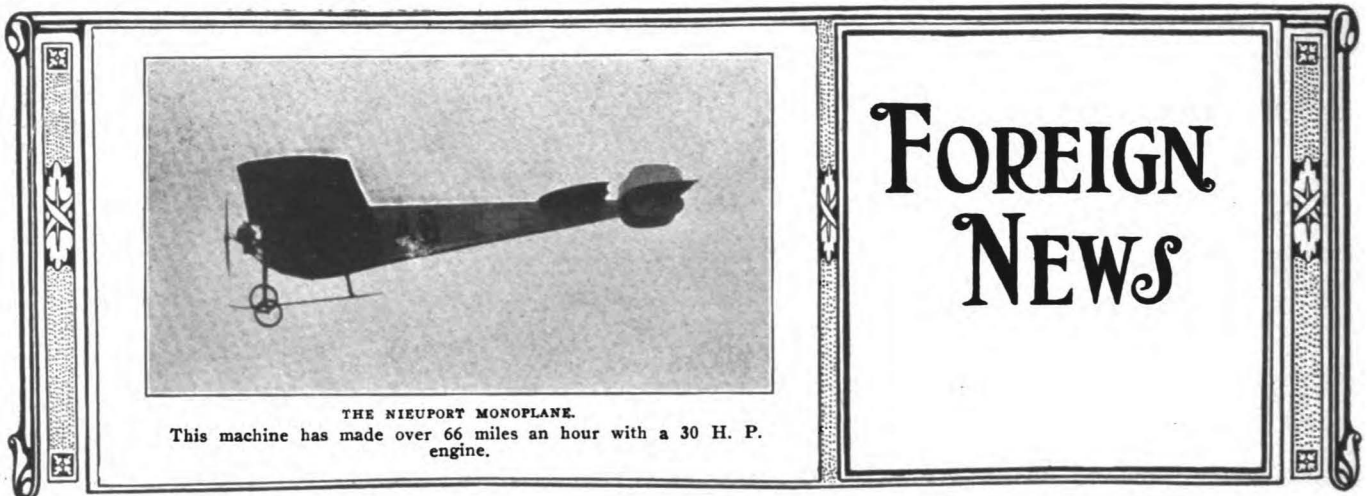


Fig. 7.

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."



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:

事領國各並子王各與家王是乃船飛之社會本者啟
在甚過演經未畢本因也船飛之別特最是乃辦協所
至起就一十三月正英由演開方地(灣通柏溫屈)於
點兩午下由行開日每停日五拜禮號三號六月式
見開以鑒雅來到君諸 請啟日是止鐘點六至起鐘
聞佈此特玉各勿幸識

條規社會益利羅選

由英三月三十一號起至二月六號止
茲將各處之賽飛規則開列於左
第一條 凡欲參加賽飛者須向本會領取入場券
第二條 凡欲參加賽飛者須向本會領取入場券
第三條 凡欲參加賽飛者須向本會領取入場券
第四條 凡欲參加賽飛者須向本會領取入場券
第五條 凡欲參加賽飛者須向本會領取入場券
第六條 凡欲參加賽飛者須向本會領取入場券
第七條 凡欲參加賽飛者須向本會領取入場券
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第九條 凡欲參加賽飛者須向本會領取入場券
第十條 凡欲參加賽飛者須向本會領取入場券

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, G. 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 build-

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 fee 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 Total1,000 miles



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

ing and four on order. Russia has ten aeroplanes available for use and twenty on order.

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).

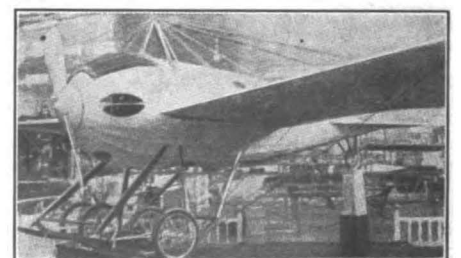
France, 1909, expenditure, £540,000; 1910, expenditure, £630,000. These figures include pay of personnel, etc., upkeep of laboratory, depots, etc.

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



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

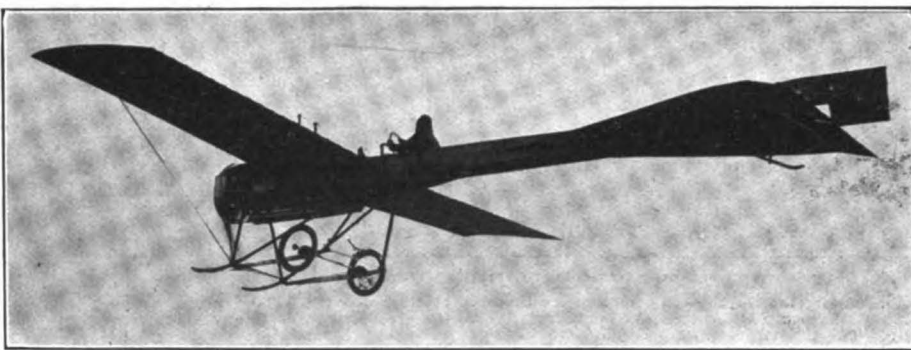
1. A competitor by entering thereby agrees that he is bound by the regulations herein contained or to be hereafter issued in connection with this competition.

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.

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 K. Hawley, Augustus Post, Wilbur Wright, Col. Osborne and State Senator Stiles 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 Curtiss type in which they will install a 30 H. P. Anzani motor. Mr. Ford expects to try 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. K. Tuttle, of the Curtiss 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. Rickel, 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 Rickel, 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 by 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 Sweeney (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 a little damage in landing on rough ground. The day previous Young made five straight ways.

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 arrived 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 K. 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.

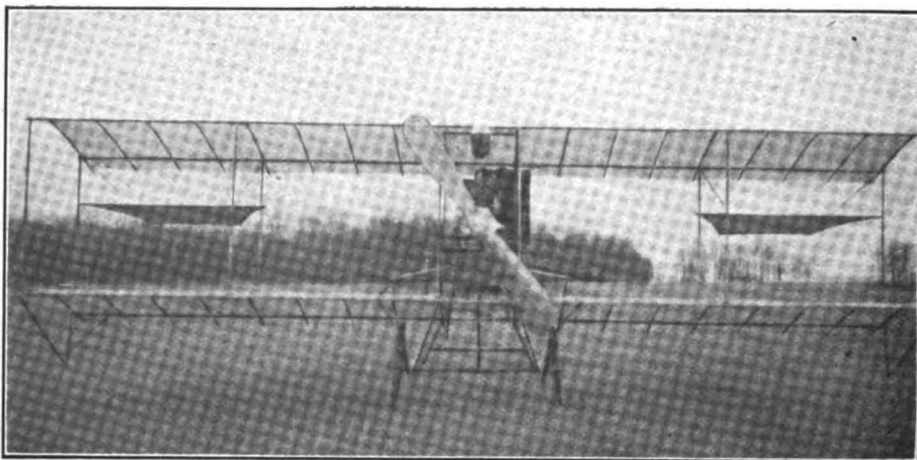
The Lawrence Aeromobile is comprised of a main frame or fuselage, a running gear containing four standard motorcycle wheels, attached to shock absorbers. The front pair of wheels being coupled to the axle with means for steering the machine on the ground. The main planes (or wings) are constructed in 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.

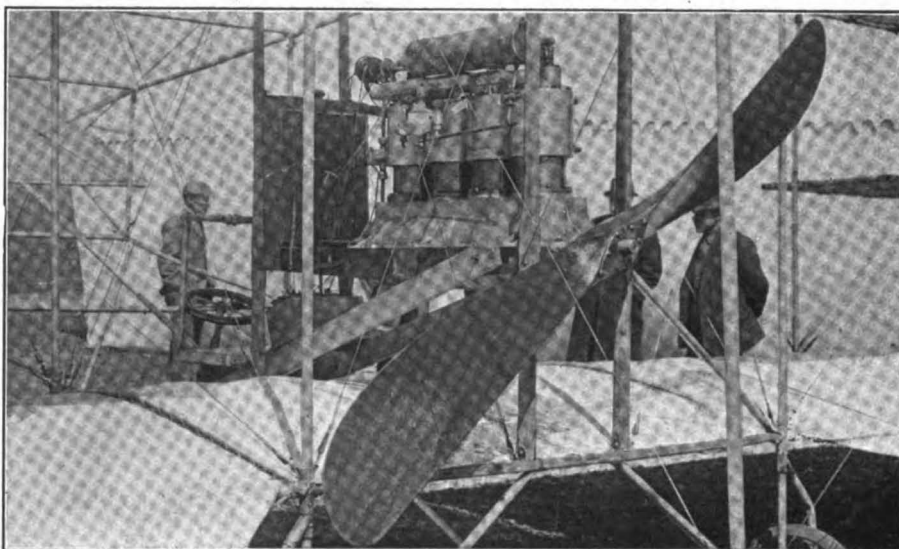
The centre of the radius or swing of this pit is found at the central longitudinal rib of the main planes. The small planes at the rear of the machine oscillate in connection with the basket or pit also, which compels the machine to rise and descend on an even keel.

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.

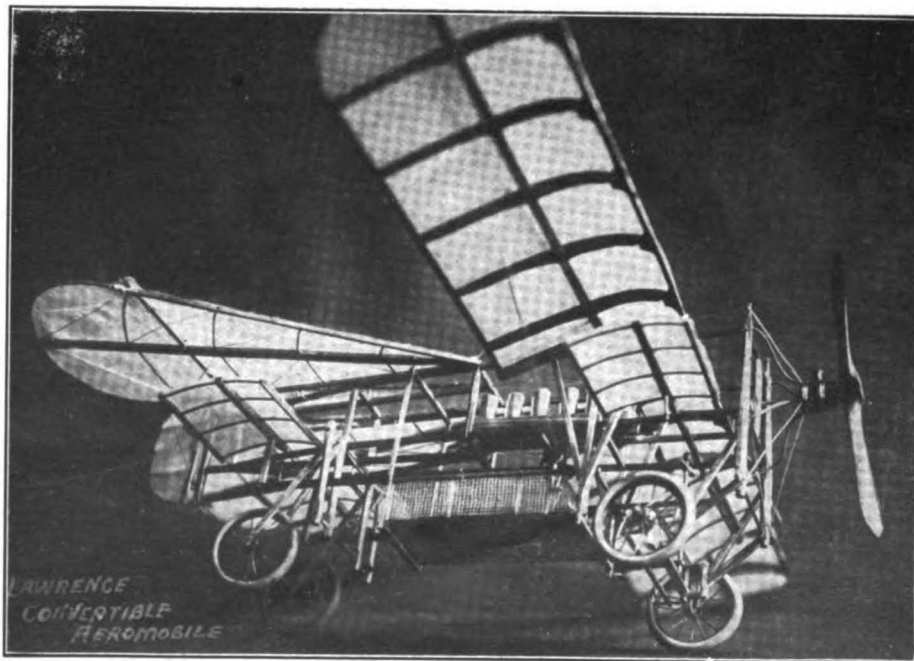
The Aeronautic School of Engineers of New York announces that they will fly their Demoiselle equipped with an Aeromotor and their Curtiss equipped with an Elbridge engine at Mineola in the course of the next few weeks.



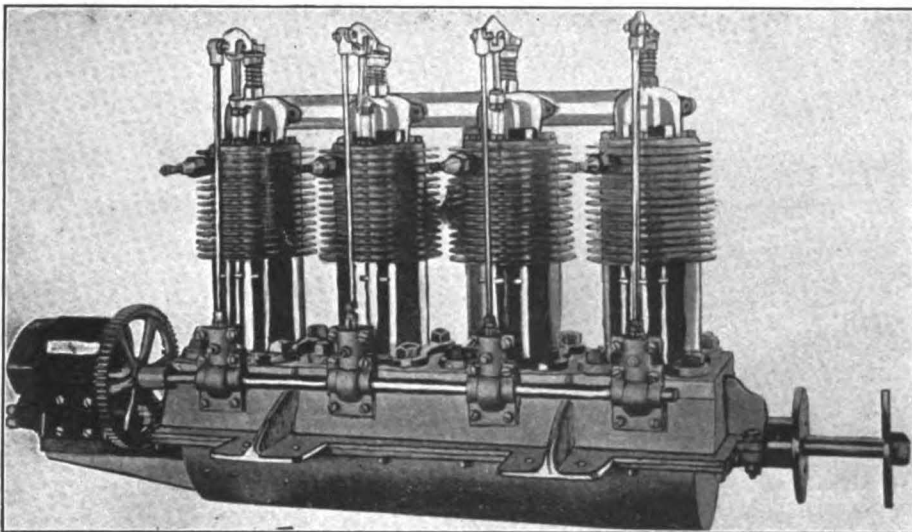
THE FRONT PROPELLER BIPLANE BUILT BY DONALD GREGORY OF MICHIGAN CITY, IND., WHICH WAS RECENTLY FLOWN WITH AN AEROMOTOR.



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 wit-

ness 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 Aeronautique 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."

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 helicoidal 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.

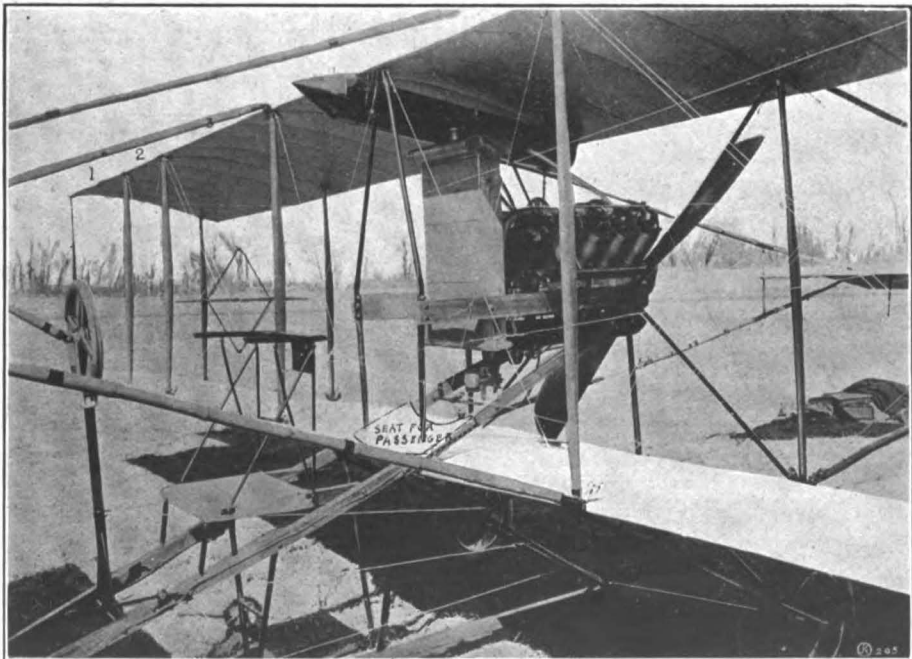
I have now ready the most important parts of a helicopter made of two superposed pairs of blades to be rotated inversely to each other, the blades measuring 1 foot by 59 inches, a total of 28 square feet. Those blades are not rolled up on drums, they simply hang from their hinges as in my hand machine, 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



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.

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 incidence, soaring flight is possible.

The true explanation of soaring flight has never been given. I think that I have it. But this does not matter. The eagle has found how to soar without knowing why 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.

BUSINESS DIRECTORY

AEROPLANES

Burgess Co. and Curtis
MARBLEHEAD - - - - MASS.

FABRICS

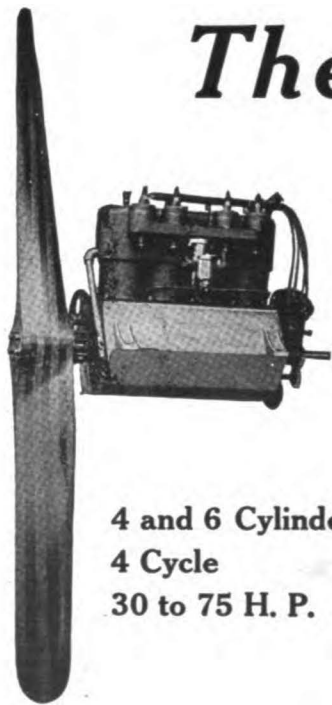
Goodyear Tire & Rubber Co.
92d Street
AKRON - - - - OHIO

KITES

Samuel T. Perkins
Man-Carrying by Kites
110 TREMONT ST., BOSTON, MASS.

PARTS FOR AEROPLANE MODELS AND LARGE MACHINES

Chas. M. Dressler
386-390 Second Ave.,
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The AEROMOTOR

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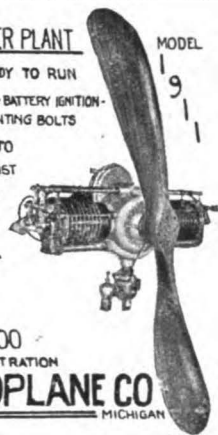
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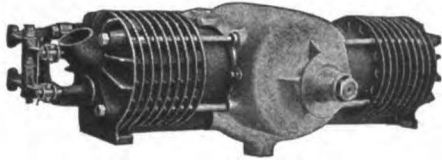
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Lieut. John C. Walker, Jr.,
Pilot Aeroplane Over
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Two flights made by Glenn H. Curtiss at the army and navy aviation school on North Island yesterday proved the passenger-carrying qualities of the Curtiss biplane to military and naval representatives.

The first passenger to ride with the biplane yesterday was Lieut. John C. Walker, Jr. of the Eighth Infantry. A passenger's seat was attached to the lower plane of the biplane and the pilot's seat. This was occupied by Lieutenant Walker, and with Curtiss at the wheel, the biplane soared to a height of 100 feet, making an easy landing on the beach. The test, and demonstrating its efficiency for work which the government has proposed for aircraft.

Lieut. G. B. Kelly of the Third Cavalry was the next passenger taken aloft by Curtiss and the machine again demonstrated its efficiency in carrying passengers. According to Lieutenant Walker the trip made yesterday proved the superiority of the Curtiss machine over the Wright aircraft for carrying passengers. The officers were well pleased with the flight. The machine, despite the load of the plane, the weight of Curtiss and the passenger, was easily handled as it is when only Curtiss is seated in the craft.

During the flight it was learned that the Curtiss biplane when carrying a passenger is faster than the Wright aircraft. A similar test was made by the army officers after Curtiss had finished his flight with the biplane. The machine, which was disassembled a few days ago by the breaking of a crank shaft, was put into commission and manned by Lieutenant Walker.

The lieutenant made a short flight over the island course and handling the machine with much skill, landed the machine on the beach in safety. The flight made by Walker was pronounced by Curtiss to be the best made by any of the student aviators since the school was established at North Island.

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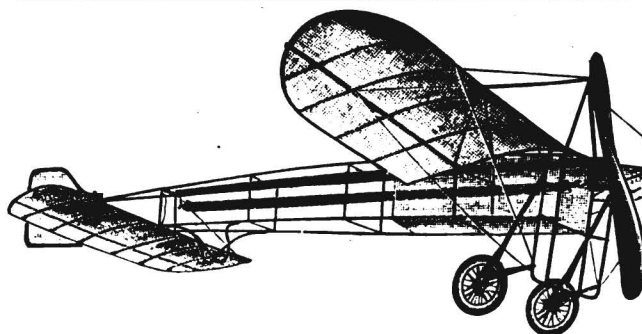


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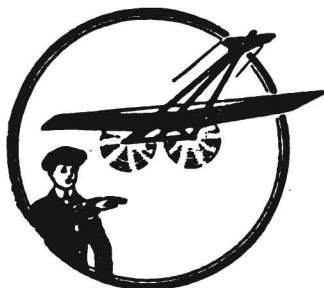
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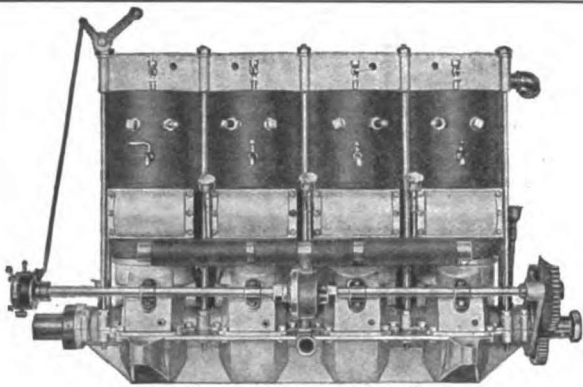
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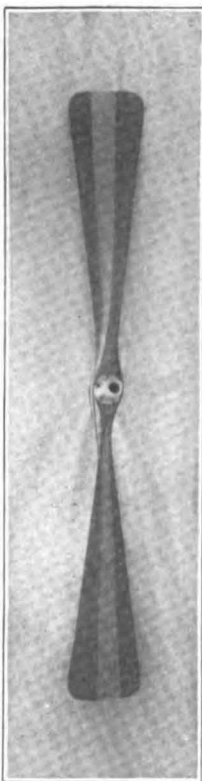
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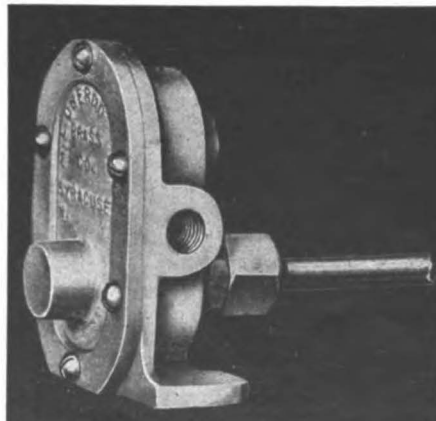
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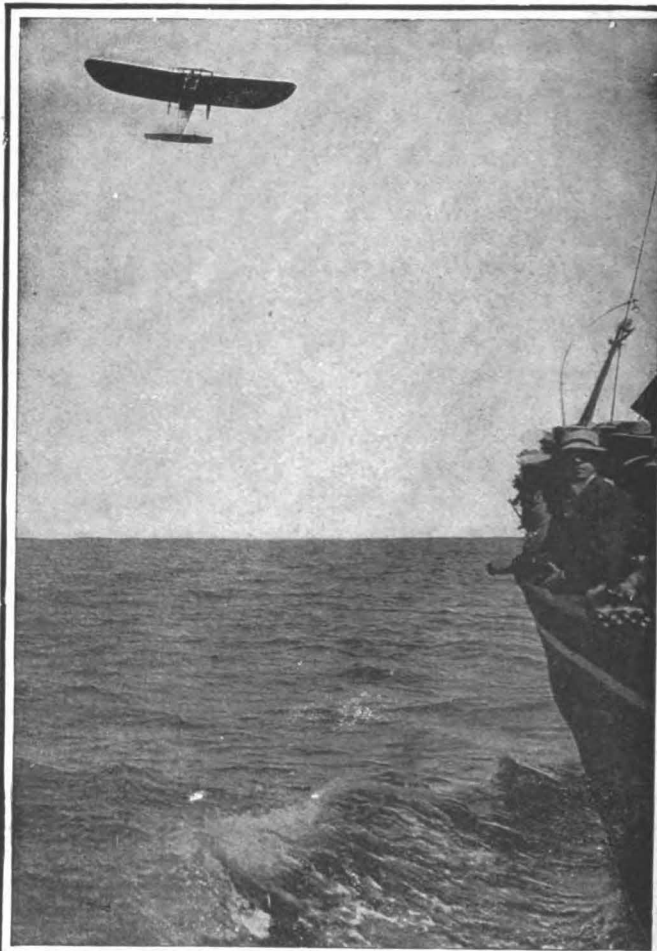
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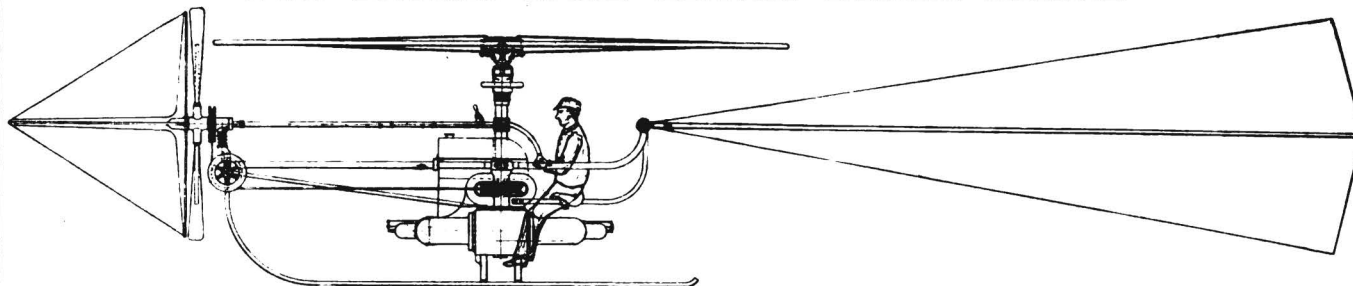
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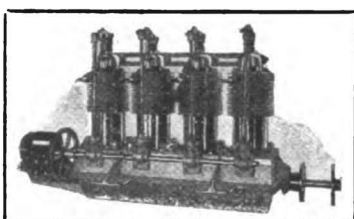
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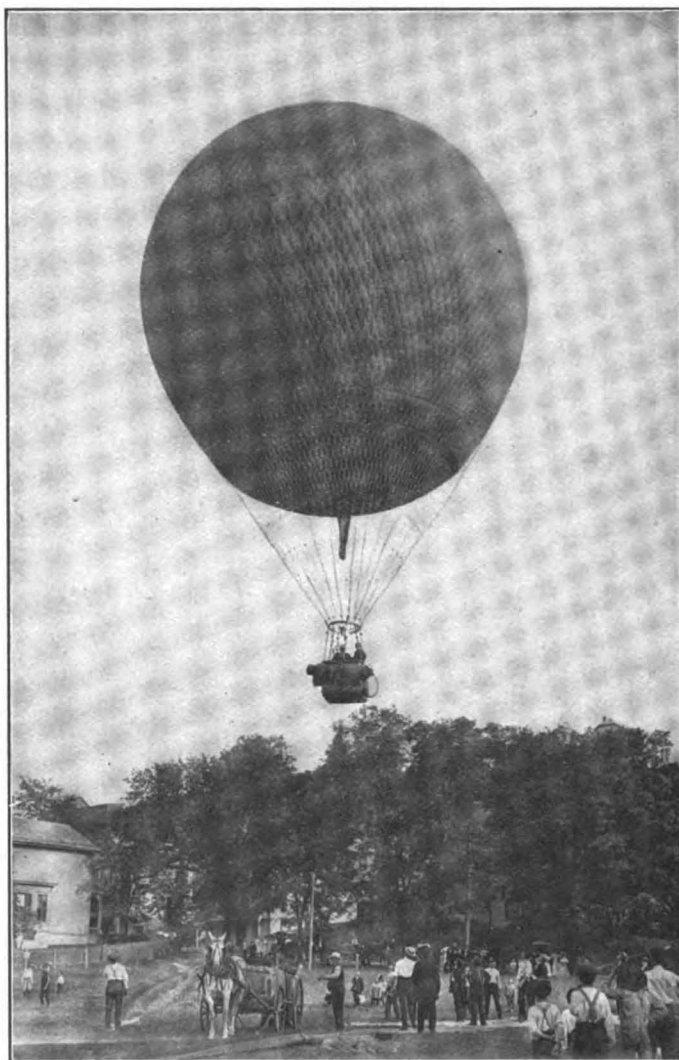
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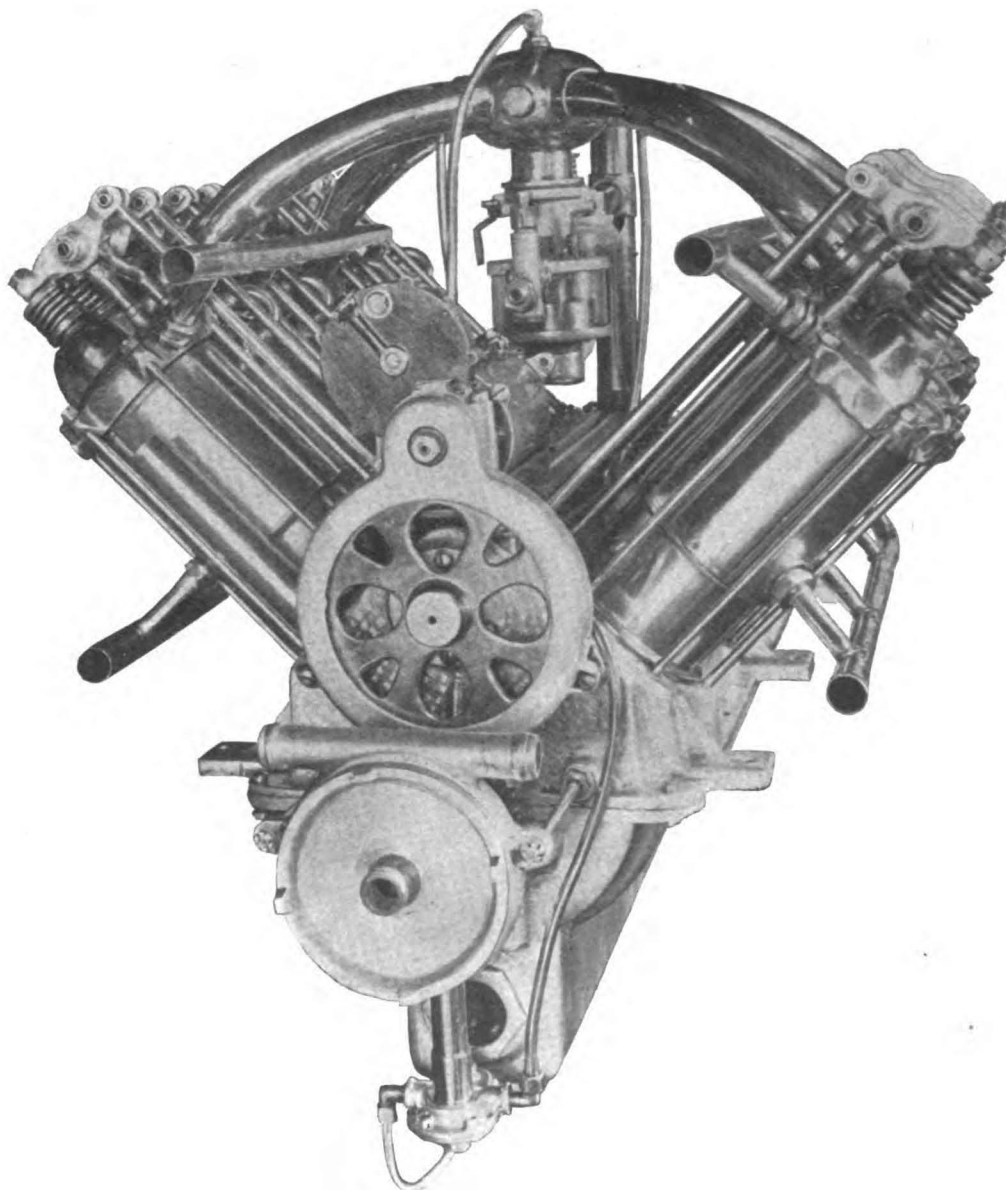
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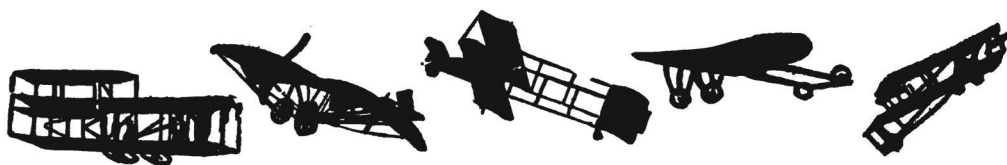
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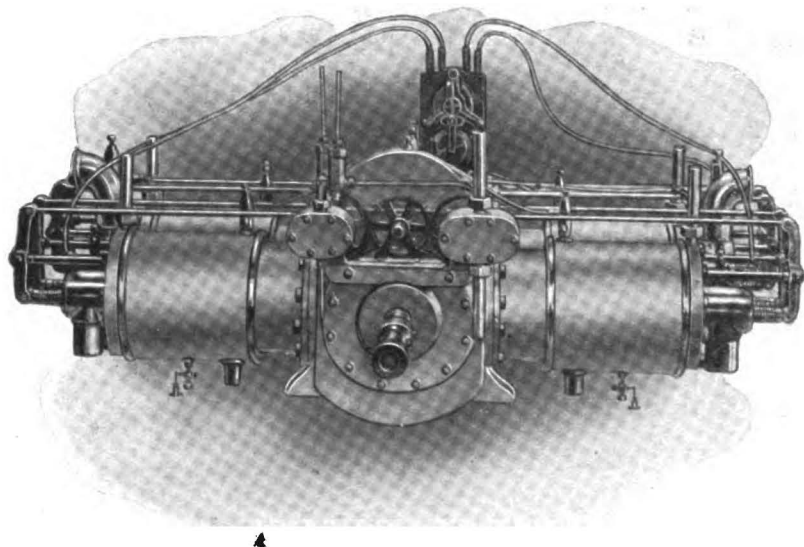
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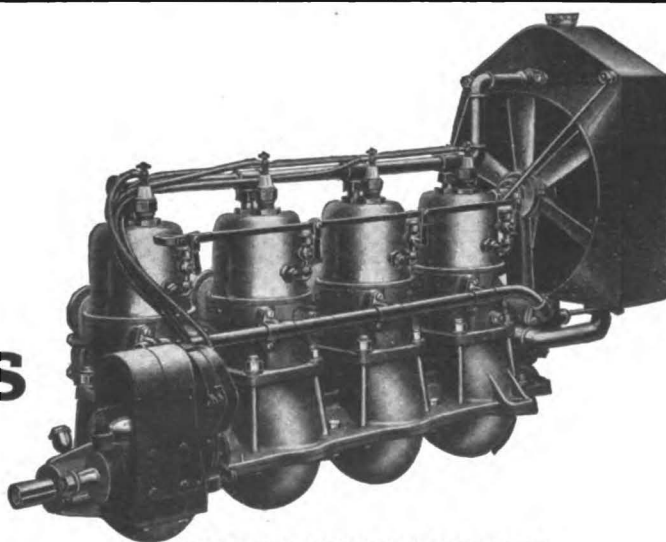
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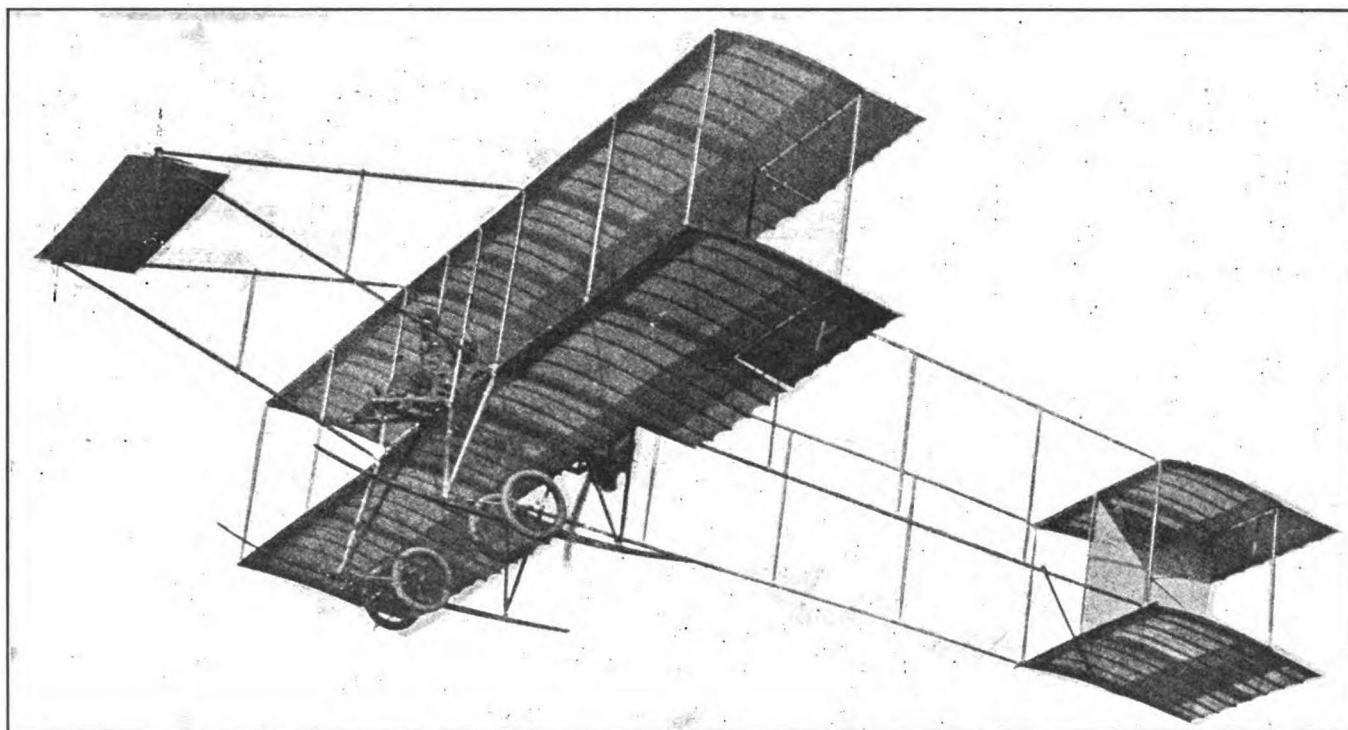
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For Safety's Sake— Goodyear Tires ∴ Goodyear Fabrics



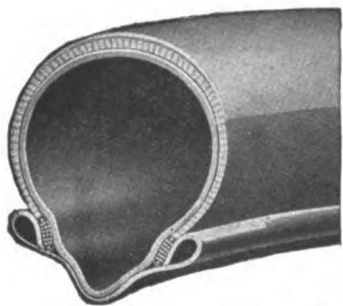
As the aeroplane lands, the tearing loose of a tire means serious injury to the machine. Equipped with **Goodyear Detachable Aeroplane Tires** injury is impossible, for the tire is held to the rim in a vise-like grip by wires in the base of the tire.

Aeroplane Wings: Cold and dampness cause plain, varnished or treated aeroplane fabrics to contract, **tighten up**. This puts on the planes a severe twisting strain that turns into damaging **vibration** the instant the fabric begins to dry out, when they loosen, flap and beat against the ribs. **Goodyear Fabric**, the new rubberized Aeroplane Cloth, makes this stretching and relaxation **absolutely impossible**. It is moisture-proof, **weather-proof**. It cannot shrink nor stretch when subject to atmospheric changes. Furthermore, it will not mildew and rot. It lasts for years.



Detachable Aeroplane Tires

The Goodyear Detachable Tires embody the principles of the famous Goodyear Auto Tires. They are the lightest aeroplane tires manufactured. They combine the greatest possible resiliency with **extra tough tread**—hence al-



most unpuncturable.

Judge the Goodyear by the fact that these aviators have equipped their own machines with it:

Glenn Curtiss,
Brookins, Parmelee,
Ely, Garros, Hilliard, Grahame-White, Charles
K. Hamilton, Capt. Thos. S. Baldwin, J. A. D.
McCurdy, Harkness, and scores of other famous
American and foreign aviators.

Rubber-Coated Aeroplane Fabric

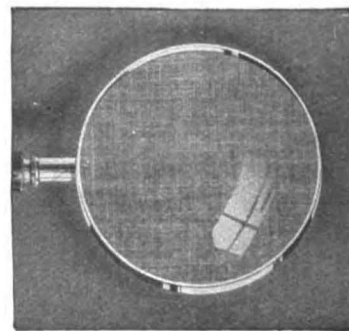
The wonderful fabric's coating is permanent, and constructed to last for many years. It is unaffected by heat or cold. Its invention is the result of an exhaustive investigation by experts in France, England, Germany, Switzerland and America. We have constructed special machinery and a large new building for the sole purpose of making the perfect aeroplane fabric. Our exclusive process is thorough in every particular.

GOODYEAR RUBBERIZED AEROPLANE FABRIC is the **safest long-wearing** aeroplane cloth known to science.

The Wright Company tried for months to get a fabric that would not shrink and stretch. They bought yards and yards of material in America and Europe, but none of it was satisfactory. Now they use Goodyear Rubberized Aeroplane Fabric exclusively. That just about tells the story, doesn't it?

Goodyear fabrics are now being adopted also by the Burgess Company & Curtis, Curtiss Aeroplane Co., The Metz Co., The Detroit Aeroplane Co., and practically all the American manufacturers, as well as the foremost aviators in the world.

These pioneers know what covering is best.



The Goodyear Tire and Rubber Co.,

Main Office and Factory 92nd St., AKRON, OHIO

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