

AIRCRAFT

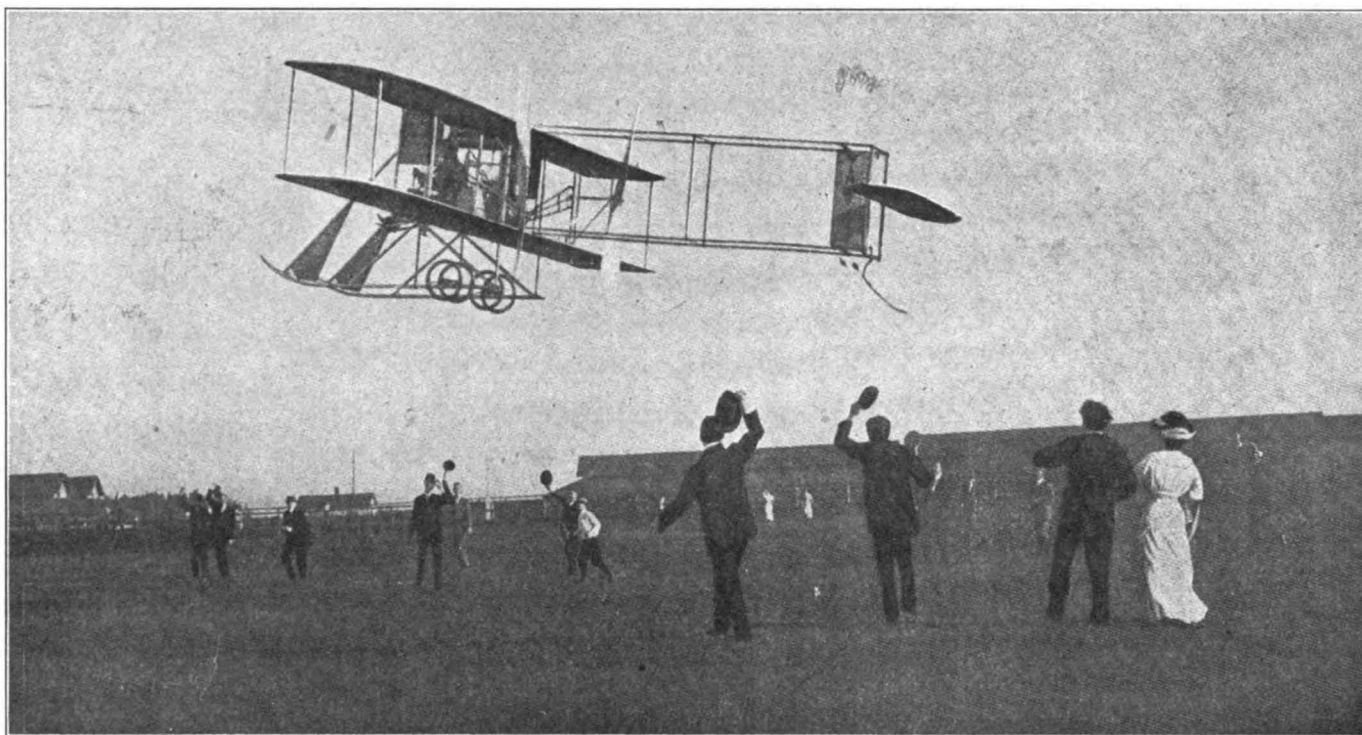
Vol. 2, No. 10

DECEMBER, 1911

15 Cents a Copy



CHARLES TERRES WEYMANN, THE AMERICAN, WINNER OF THE FRENCH MILITARY COMPETITION, FLYING THE NIEUPORT MACHINE DURING ONE OF THE TRIALS



Calbraith P. Rodgers starting in a Wright biplane in an attempt to win the Hearst prize for the trans-continental flight. Although Rodgers failed to win the \$50,000 offered, he succeeded, after several mishaps, in flying from the Atlantic Ocean to the Pacific Ocean.

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AIRCRAFT

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AIRCRAFT

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NEW YORK, DECEMBER, 1911

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THE WAR AEROPLANE

By Hudson Maxim

THE problems which have been solved so successfully in aviation discover to us new problems yet to be surmounted, some of them difficult ones. The most important improvement in the aeroplane that awaits inventive genius is one which shall secure greater stability. Something in the nature of automatic equilibration is much wanted. At the present time too much depends upon the skill and daring of the aviator—skill beyond the power of accomplishment of the many, and daring beyond the possession of all but the few.

Again, there is the very important factor of endurance which the present form of flying machine taxes severely during a long-sustained flight. Few men, had they the skill; few men, had they the daring, possess the requisite endurance to accomplish what Rodgers has accomplished in his marvellous flight across the American continent from ocean to ocean.

Man is and always has been by nature a warring animal. The constantly increasing demand for improved weapons of warfare and improved war enginery has been the greatest single stimulus to inventive genius. The necessity of defence of country, home, and loved ones, on the one hand, and the coveted rewards of conquest on the other, have been very fruitful of invention.

Heretofore, all war enginery and all weapons have been devised for battling on the two-dimensional plane of the earth's surface. Now, that aviation takes warfare into the third dimension, the problem is greatly complicated and weapons and tactics must be altered accordingly.

Enough has already been done in aeronautics to justify the prediction that the flying machine is destined to exert a revolutionary influence upon the conduct of future war campaigns. Already, in Tripoli, the aeroplane has proven itself of inestimable value and fully justifies expectations.

Even though no further improvements were to be made to secure greater stability in flight, even though no improvements were to be made in means to secure more rapid or longer sustained flight, or the carrying of greater weights, the aeroplane would still be a revolutionary factor in warfare.

Danger and difficulty form no barriers to the brave. There are, broadly, three kinds of aeroplanes, which will be required in future warfare: First, the naval aeroplane, if it may be so termed, carrying pontoons enabling it to alight upon and to arise from the water; while in land warfare, there will be required the smaller, quick-winged flyer, capable of travelling at very high speed with a single aviator, for purposes of reconnaissance and the carrying of messages. Clouds of these will be needed to serve as videttes or scouts ahead of troop fleets of aeroplanes, to give quick warning of a discovered enemy; and there will be the larger machine capable of carrying several passengers with arms and equipment, either as scouts or raiders.

There is one very important consideration which has not,

I believe, been given the prominence it deserves, and it is this: That artillery is mainly useful for the conquest or defence of positions on the two-dimensional plane of the earth's surface, whereas, the flying machine which can fly over all positions at heights beyond practical cannon reach, will be able to transport armed combatants over national frontiers to attack unprotected inland country.

In order to protect the whole country from aerial attacks by means of artillery, it will be necessary to plant batteries or artillery within range of one another over all the land. Even then the artillery will be largely useless owing to the wide dispersion of both guns and gunners.

Battles are always won by concentration of force upon a given point of attack.

A few, well-armed, aerial raiders dropping down from the sky upon inland country will be able to work wide destruction before a sufficient land force can be concentrated to resist them successfully. Then they will easily take wing to alight elsewhere to repeat their devastation.

Consequently, aeroplane must be met and fought with aeroplane. We must have our aerial navies just as we now have our navies on the sea. We must have our aerial troop ships, aeroplanes made large and staunch carrying half a dozen men each with arms and equipment. Twenty thousand of these could be quickly built at a mere nominal expense as compared with the cost of ocean warships, capable of carrying an equal number of men, and the only possible way to resist such an invading fleet would be to oppose it with another aerial fleet of equal magnitude and strength.

We must have our swift flying cruisers scouting the heavens, our aeroplane destroyers and our aerial transports.

Suppose that one of the great world powers should secretly build a fleet of twenty thousand aeroplanes, drill, equip and train an army of a hundred thousand aerial fighters, and that such a fleet should effect a landing anywhere upon our coast line and take flight inland, how should we be able successfully to resist such an invasion, taking us in the rear of all our fortified positions? Suppose we were to rush an army to the point of attack, by the time the army reached its destination the invaders would be working devastation in another place hundreds of miles away.

This is a subject for very serious consideration for our Congress and every patriotic citizen in the country.

When we witness frequent flights back and forth across the English Channel, when we witness the whole European sky patrolled with aeroplanes as it is to-day, when we witness a continuous flight of four thousand miles across the American continent by Rodgers, we must realize the truth that aviation has come in earnest, and that it is no longer to be called the dream of fevered imagination. The aeroplane is no longer to

be looked upon as the foolish fangle of the crank inventor. It has come, and come as a great war potentiality, which must be recognized.

Such, then, I hold to be the coming fighting aeroplanes of land and sea warfare.

THE DUTY OF OUR CONGRESS.

Our army and navy ordnance officers are very progressive, and they have readily grasped the significance of aviation as a war potentiality. Although they may not, many of them, fully grasp its importance, nevertheless, their recommendations for Congressional appropriations to keep this country abreast of the times in war are always far in advance of Congressional acquiescence.

Congress should immediately appropriate sufficient money to enable the United States Army to construct and build at least a thousand aeroplanes to be devoted to the training of officers and men in military aeronautics. This would insure the avail-

ability of an efficient corps of officers and men as a nucleus of the enormously large operations which would follow the breaking out of a war between the United States and any of the great powers.

Even should these aeroplanes cost in the aggregate half as much as a modern dreadnought they could be well afforded. But they would not cost the government anything like that sum for such a number. They would not cost a quarter as much as a dreadnought, even though they should be made to meet the most exacting requirements.

Aerial war games by such a corps of military aviators would do more than anything else further to develop the aeroplane to meet military requirements, while the lesson taught to the people at large about the enormous possibilities of aerial warfare would arouse the whole country and make it alive to our needs for an adequate aeronautical equipment to meet the exigencies which are sure to arise in the event of war.

The French Military Aeroplane Competition and Description of Machines Entered

By W. H. Phipps

That the French Government made no mistake in fostering and encouraging the art of military aviation is a proven fact. The recent success attained by the Italian military aeroplanes in the war in Tripoli has removed once and for all the doubts which have existed in the minds of many, and has firmly established the value of the aeroplane as a most important and necessary military adjunct.

In view of these facts, it will readily be seen that the French military aeroplane trials just completed at Rheims assume an added significance, and for this reason we feel confident that the following detailed description of the trials and machines will not be untimely.

CONDITIONS OF THE COMPETITION.

At the suggestion of General Roques, Inspector-General of Military Aeronautics, it was decided to hold a military aeroplane competition, with the end in view of testing the various makes of aeroplanes and selecting those most suitable for military use. A sum of one million one hundred thousand francs (\$220,000) was given by the French Government for prizes and the purchase of aeroplanes in connection with the competition, the winning machine to be purchased by the Government for the sum of one hundred thousand francs (\$20,000), and the constructor to receive an order for ten similar machines for the sum of forty thousand francs (\$8,000) each, this price being subject to an additional bonus of five hundred francs (\$100) for every kilometre that the average speed during the final run of 300 kilometres exceeds 60 kilometres per hour, up to a maximum limit of 80 kilometres per hour.

The constructor whose machine is placed second to receive an order for six machines at the price of forty thousand francs (\$8,000), is subject to the same speed bonus, while the builder of the machine securing third place is to receive an order for four machines on the same terms. In the event of only one machine satisfying the conditions, the builder is to receive the price of 100,000 francs and also the full order for twenty aeroplanes. It was necessary that the machines be entirely constructed in France, but the builders did not necessarily need to be French subjects.

The rules, however, stated that each machine was to be fitted with three seats, one for the pilot, another for the mechanic and the third for the observer. The machines also had to be capable of carrying a useful load of 300 kilograms, which does not include the weight of fuel, oil and water. The minimum average speed of 60 kilometres an hour had to be maintained for a distance of 300 kilometres, and the machines had to be capable of landing and restarting on plowed land, prairies, stubble fields or meadow land. The machines had also to be constructed in such a manner as to be capable of easy transit, either by road or railway, without being taken entirely to pieces.

The elimination trials consisted of six separate tests; in the first three the machines were required to start fully loaded and alight on plowed land at a fixed point 50 kilometres from the start. Here the machines had to demonstrate their ability to start again. Each time the machines had to be demonstrated and transported back to the starting point, either by road or rail.

In the fourth test the machines, fully loaded, were timed over the 50 kilometres to a certain speed condition; the course being an out and home one, the machines being required to land at the point from which they started.

The last two tests were for altitude; the machines being required to attain a height of 500 meters within fifteen minutes. In the final tests

the selected machines are drawn up and started at five-minute intervals, with their useful load of 300 kilograms, and required to complete their journey of 300 kilometres maintaining a speed of at least 60 kilometres an hour.

DESCRIPTION OF MACHINES.

Antoinette.

The military Antoinette monoplane, specially built for these trials, is perhaps one of the most novel and interesting machines brought out up to the present date.

The general feature of the design of this machine has been to cut down head resistance. Although, in general plan, it resembles the usual Antoinette models, it differs essentially from these in that the wings are made tremendously thick and that there are no stay wires bracing the wings to the fuselage.

Passengers, motor and controls are all enclosed in the forward part of the fuselage, which at this part is quadrangular, but converges towards the rear, giving the frame the shape of a boat; the whole being completely closed in. The forward section of the fuselage is so constructed that the motor is always under the hand of the mechanic, who sits directly in front of the pilot. The mechanic is thus able at all times to watch and adjust the motor while in flight. To each side of the forward part of the fuselage are attached the two enormous wings. The under surface of each wing is very flat, while the top side has a considerable curve.

It was found necessary, owing to the absence of external bracing, to make the interior of the wings very strong, and in furtherance of this end the interior of the wings is strengthened by an elaborate system of biplane trussing, thus each wing is constructed with uprights and cross-braces similar to the manner in which the ordinary biplane cellule is assembled.

The longitudinal stability is controlled by two elevator flaps at the rear of the tail.

The landing chassis consists of two wheels, each wheel completely enveloped in a frame work of wood and cloth, which aids in cutting down head resistance. The bottom parts of this framework around the wheels also act as skids in the event of hard landings.

Blériot Monoplanes.

The most noticeable feature of the Blériot machines entered is the arrangement for the passengers, who sit one behind the other, with the pilot in front.

Another feature is the attachment of three separate wheels to each shock absorber in triplicate. This gives a total of six wheels in place of the usual two. It will also be noticed from the accompanying photographs that on this machine Blériot has reverted to the use of the lifting tail and elevator tips.

As a type these machines differed but little from the early Blériots and showed few improvements.

Paulhan Triplane.

The machine entered by Louis Paulhan resembles in many respects his earlier biplane, which was shown at the last Paris Salon, with the exception that in this case a third plane of the same size as the others had been attached without materially altering the design of the rest of the machine.

It was evidently Paulhan's idea in adding this third plane to simply increase the carrying surface without the necessity of redesigning and building a very broad machine.

The main cellule is formed of three superposed planes in the same vertical line, which are braced with steel tubes and the usual truss wires. In

front of this cellule is the front elevator and in the rear the tail plane, which is hinged and connected to the front rudder. These two rudders are simply supported by four wooden stays and are held and braced in position by wires. At each side of the tail is mounted two vertical rudders.

The landing chassis consists of two long skids doubly braced and fitted with six wheels, two at the nose of the skids and four Farman type wheels under the central part of the body.

The supporting surface is covered on the under side only and treated with a special varnish. The ribs of the planes fit into pockets in the covering and are so constructed as to be capable of being detached from the main spars and the whole covering, ribs and all, rolled up.

The rudders and the tail are constructed in a like manner, as may be noticed from accompanying photographs. The ailerons, six in all, are attached to the end of the planes.

A neat cabin, made entirely of aluminum, houses the passengers and protects them from the wind. The apparatus is constructed almost entirely of steel tubing, and the whole can be dismantled in very quick time.

A 75 H. P. Renault motor, placed directly behind the cabin and a little above the bottom plane, furnishes the motive power.

The Nieuport Monoplane.

Winner of the Competition

In general design, the military Nieuport monoplane differs but little from the Nieuport machine which was described in the August number of "Aircraft." As usual, the fuselage is entirely covered in with cloth. The two trapezoidal wings attach to the front of this fuselage, while the semicircular tail, tail elevators and rudder are carried in the rear. The motor used was a 100 H. P. Gnome and the propeller a four-bladed one. This machine, piloted by Weymann, was one of the first to successfully pass the elimination tests.

The Voisin "Canards."

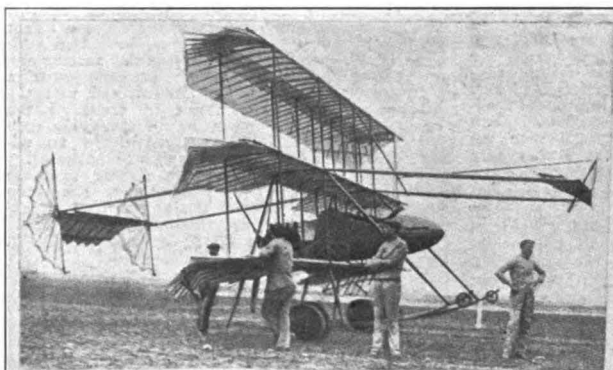
The Voisin firm entered three military machines, two of the "Canard" type and a headless military biplane. The Canard machines were fitted, one with a Renault 75 H. P. motor and the other with a Gnome 70 H. P. Apart from the difference of the motors, these two machines were exactly alike.

They presented, however, several interesting innovations. The cellule is constructed in the usual Voisin manner. The main spars and the uprights being of nickel steel tubes, while the ribs, which have been carefully designed and studied out, are of wood. The planes are double surfaced and the cloth is laced tight along the rear edges. The covering is coated with a special varnish, which assures its preservation indefinitely and also keeps it at a constant tension. This cellule is attached to the rear end of the long fuselage body, which carries at its front end the elevator and front rudder and at the rear the motor and tanks.

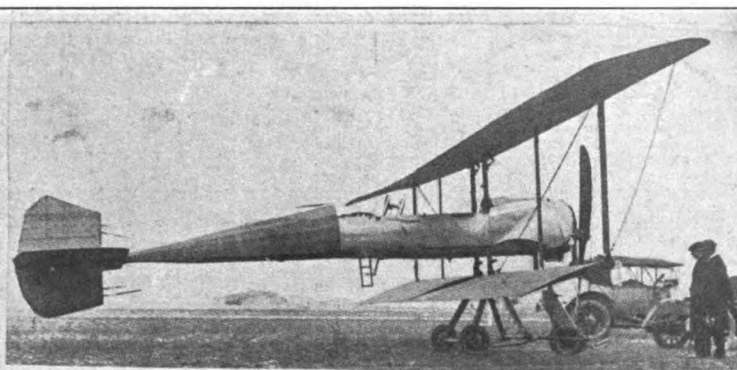
Just in front of the cellule is situated the place for the pilots. At the front of the fuselage is attached the front landing wheels, which are so mounted that they turn with the rudder.

This swiveling chassis permits of the machine being transported by road on its own wheels after the main cellule has been dismantled and packed alongside of the fuselage. In addition to being capable of easy dismantling, this machine presents the following additional advantages: First, owing to the extreme length of the fuselage the front of the machine has a tendency to glance off on striking the ground and thus ease the shock of rough landings. Secondly, in the case of a bad landing or a fall the pilot is protected to a large

NEW MACHINES ENTERED IN FRENCH COMPETITION



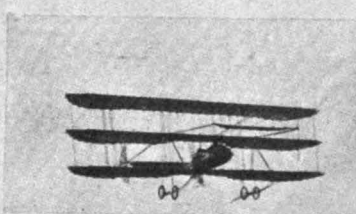
PAULHAN TRIPLANE



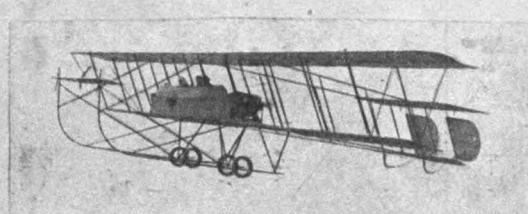
BREGUET BIPLANE



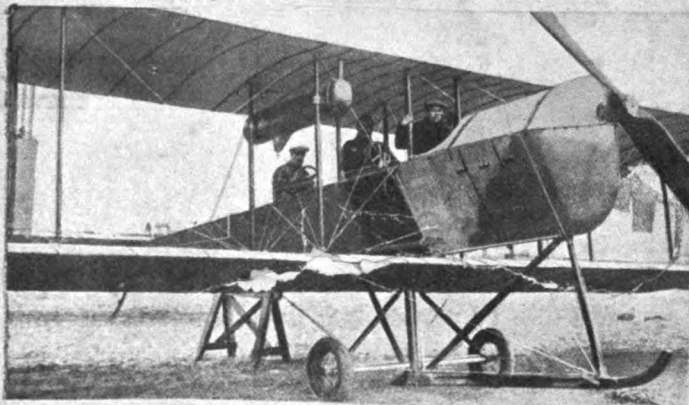
ZODIAC BIPLANE



PAULHAN TRIPLANE



MAURICE FARMAN BIPLANE



ASTRA BIPLANE



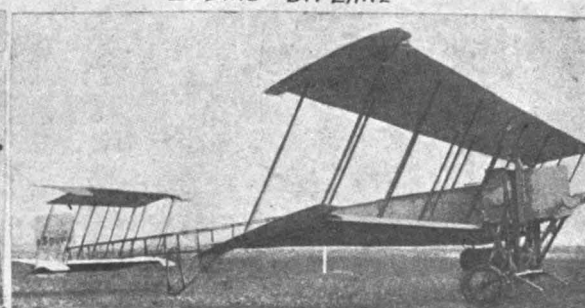
ANTOINETTE MONOPLANE



ZODIAC BIPLANE



HENRY FARMAN BIPLANE



GOUPY BIPLANE



ASTRA TRIPLANE



BLERIOT MONOPLANE

Types of New Machines which took part in the French Military Aviation Trials. As will be noticed there is a prevailing tendency of the French constructors towards the use of triplanes and staggered plane biplanes. Note also that the machines are all of large surface and fitted with large wheels and tires.

extent by the extreme length of the fuselage, which projects in front of him.

Perhaps the greatest advantage, however, of this tailless type is the absence of all framework and rudders behind the machine. Thus, in the case of a propeller breaking there is no danger of the rear framework being carried away or control wires broken.

The Voisin Biplane.

The third machine entered by the Voisin firm was a biplane of the regular standard type without any rudders in front. Its advantage lies in the fact that the passengers sit out in front and have a clear view of the ground beneath them. It was in a Voisin machine of this type that Mahieu recently broke the world's height record with a passenger.

This machine, like the "Canards," is fitted with a 100 H. P. Gnome.

The Zodiac Biplane.

The Zodiac biplane has the appearance of an Antoinette monoplane in which the monoplane surfaces have been replaced by a staggered biplane cellule. The motor is placed in the front of the fuselage and covered by a hood and projects out in front of the biplane cellule. The

pilot is placed quite far back, as in the case of the Antoinette, there being quite some distance between the pilot and the motor.

The fuselage is completely covered in and terminates in the rear in a triangular non-lifting plane to which is hinged an elevator flap.

Above and below the tail plane are fitted two small fins, to the ends of which are hinged the two vertical rudders. The biplane cellule consists of two long narrow double-surfaced planes, which are mounted staggered fashion one in advance of the other. The top surface, which projects forward, has a greater spread than the lower surface, measuring as it does almost fifty feet across.

The landing chassis consists of two wheels mounted one on each side of a central vertical tube and braced in a triangular fashion by steel tubes. The central tube supports all the weight of the machine.

A single skid running from the top projects out in front of the nose of the machine, where it turns up in the form of a skid and carries at its end two small wheels.

The ribs are a special study and have proved to be remarkably effective.

Lateral stability is obtained by ailerons. One of the machines is mounted with a 75 H. P. Renault, the other with a 70 H. P. Labor.

The Henry Farman Biplane.

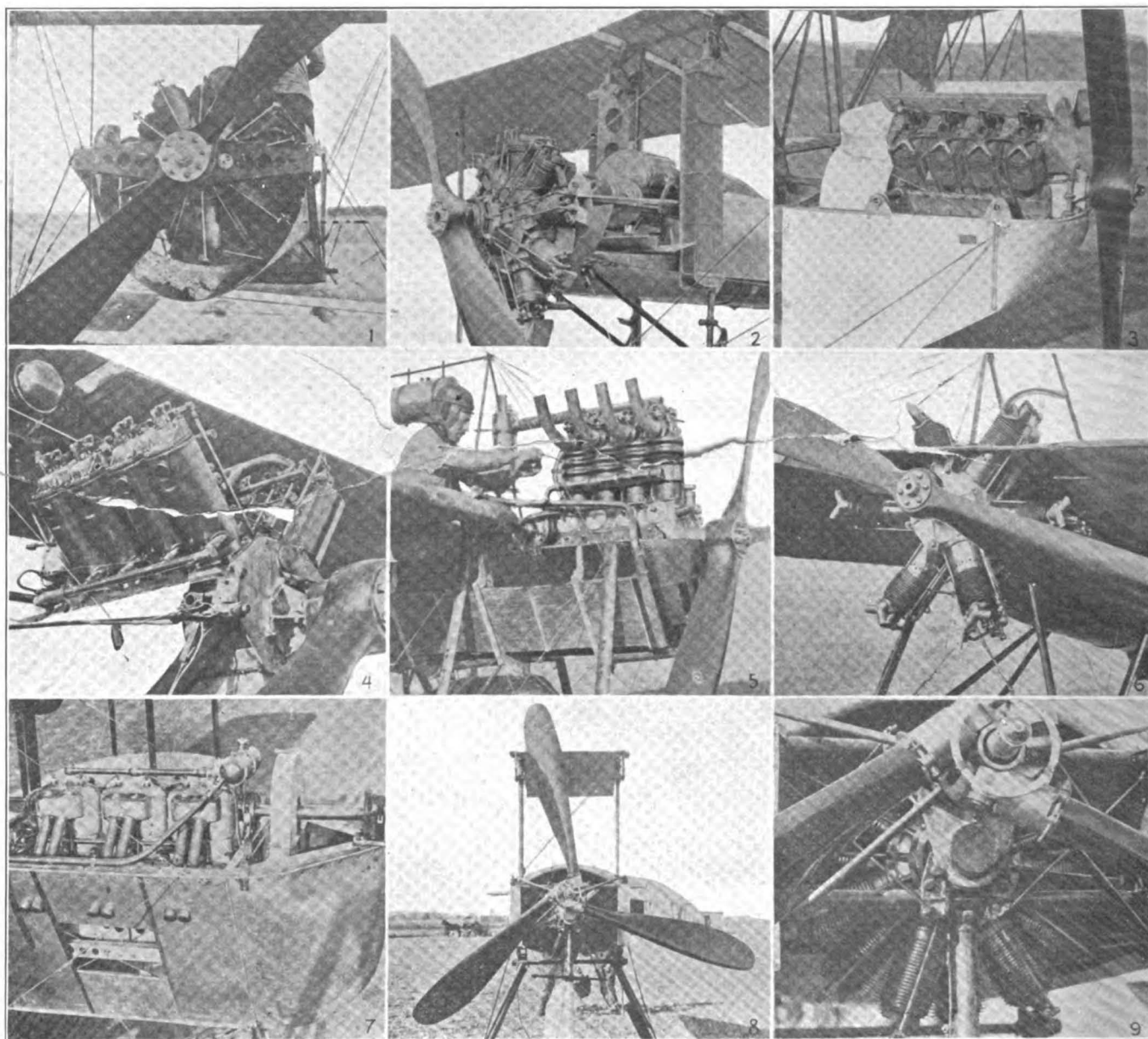
Henry Farman entered two machines, one of the usual headless military type, the other a larger machine of the same general type, but fitted with staggered planes. As can be seen by accompanying photographs, this machine presents quite a peculiar appearance. It will be noticed that the three passengers sit way out in front of the machine in what appears to be an extremely dangerous position, although without doubt an admirable one for scouting and military purposes.

The landing chassis, although similar to those fitted to the regular military types, has been somewhat strengthened by the addition of an extra skid in the centre and sloping upright braces.

The motors used are 70 H. P. and 100 H. P. Gnômes.

The Maurice Farman Biplane.

Maurice Farman entered two machines. One, a standard military type, such as was used by Fourny in his flight of September 2nd, when he made the world's record, non-stop flight of 11 hours 1 minute and 29 seconds, during which he covered a distance of 720 kilometers.



TYPES OF AEROPLANE MOTORS USED IN FRENCH MILITARY TRIALS.

Figure 1 shows a 100 H. P. 14-cylinder Gnome engine fitted to one of the Military Voisin "Canards." Figure 2 illustrates a 9-cylinder, water-cooled, 110 H. P. Canton-Unne motor, mounted in one of the latest Breguet biplanes. Figure 3 shows a Renault 75 H. P., 8-cylinder, forced-draught, engine mounted at the front of the Astra military triplane. Figure 4 illustrates an 8-cylinder, water-cooled, 100 H. P. Danstette engine mounted in the bow of the Breguet biplane. Figure 5 shows the mounting of a 4-cylinder water-cooled, 100 H. P. Clerget motor in the military Hanriot monoplane. Figure 6 illustrates the method of mounting the new 6-cylinder, 80 H. P. air-cooled Anzani in Vedrines military Deperdussin. Figure 7 shows a 75 H. P. 6-cylinder, water-cooled Chenu motor mounted in the bow of the new Astra tractor biplane.—Note how the engine is set low down in the fuselage and the propeller driven at reduced speed through a short chain and sprocket transmission. Figure 8 is a front view of the Breguet fuselage and its 100 H. P. Gnome, which drives through reduction gearing the special three-bladed flexible propeller shown in the cut. Figure 9 is a closer view of the same machine giving a more detailed view of the mounting of the motor with its reduction gearing and special flexible propeller.

TABLE OF MACHINES ENTERED IN THE FRENCH MILITARY AEROPLANE TRIALS

Make	Type	Pilot	Seating Arrangement of Passengers	Surface in Sq. Ft.	Span in Feet	Length in Feet	CONTROLS			MOTOR			
							Elevator	Lateral	Chassis	Make	Oyl.	H. P.	Revolutions in- Cooling
Antoinette	Monoplane	Latham	Tandem	602	52' 6"	35'	Two elevator flaps	-----	2 wheels and tall skid	Antoinette	3	60	1200 Water
Astra	Biplane	Labouret	Tandem	530	40'	34' 3"	Two elevator flaps	Warping	1 skid and 2 wheels	Chenu	6	75	1300 Water
	Triplane	Goffin	Tandem	510	43'	31'	Rear elevator	Farman ailerons	4 wheels	Renault	8	75	1800 Air
Astra-Wright	Biplane	Gaubert	Pilot front, 2 behind	---	52'	34'	Rear elevator	Warping	Farman type	Renault	8	50	--- Air
Blériot	{Monoplane	Desparmet	Tandem	267	36'	27'	Twin rear elevators	Warping	2 wheels	Gnome	14	100	1050 Air
	{Monoplane	Beaumont	Tandem	267	36'	27'	Twin elevators	Warping	2 " "	Gnome	14	130	1200 Air
	{Biplane	Breguet	Tandem	451	53'	29'	Universal tail	Warping	3 " 3 skids	Gnome	14	100	1050 Air
Breguet	"	"	"	860	41' 4"	28' 6"	Universal tail	Warping	3 " 3 "	Gnome	14	130	1050 Air
	"	Bregé	"	360	41' 4"	28' 6"	Universal tail	Warping	3 " 3 "	Gnome	14	100	1050 Air
	"	Montalent	"	451	53'	29'	Universal tail	Warping	3 " 3 "	Danisset	8	110	1200 Water
	"	Montalent	"	800	41' 44"	28' 6"	Universal tail	Warping	3 " 3 "	Canton-Una	9	110	1200 Water
	"	Moineau	"	451	53'	29'	Universal tail	Warping	3 " 3 "	Canton-Una	7	80	1200 Water
Deperdussin	{Monoplane	Prevost	Tandem	310	40' 6"	30'	Elevator flap	Warping	2 " 2 "	Gnome	14	100	1050 Air
	"	Vidart	"	800	38' 6"	30'	Elevator flap	Warping	2 " 2 "	Anzani	6	80	1300 Air
	"	Vedrine	"	310	40' 6"	30'	Elevator flap	Warping	2 " 2 "	Clerget	8	100	1050 Water
H. Farman	{Biplane	Bill	Tandem	749	61'	38'	Rear elevator flap	Ailerons	6 " 3 "	Renault	8	75	1800 Air
	"	Bill	"	749	64'	38' 6"	Rear elevator flap	Ailerons	4 " 2 "	Renault	8	75	1800 Air
	"	Fischer	"	588	52' 10"	32'	Rear elevator flap	Ailerons	4 " 2 "	Gnome	7	70	1050 Air
M. Farman	"	Beaud	"	588	52' 10"	32'	Rear elevator flap	Ailerons	4 " 2 "	Gnome	14	100	1050 Air
	{Biplane	Renaux	Tandem	749	64'	37' 8"	Front & rear elev.	Ailerons	4 " 2 "	Renault	8	75	1800 Air
	"	Barra	"	749	64'	33'	Front & rear elev.	Ailerons	4 " 2 "	Renault	8	75	1800 Air
Goupy	{Biplane	Ladougne	Tandem	508	41'	33'	Biplane tail & elev.	Ailerons	2 " 1 "	Chenu	6	75	1300 Water
	"	Bouvier	"	508	44'	33'	Biplane tail & elev.	Ailerons	2 " 1 "	Gnome	14	100	1050 Air
Morane-Borel	Monoplane	Verrept	Tandem	---	---	---	Elevators rear	Warping	4 " 2 "	Gnome	14	130	1050 Air
Nieuport	{Monoplane	Weymann	-----	257	41'	29'	Elevator flaps	Warping	2 " 1 "	Gnome	14	100	1050 Air
	"	Chevallier	-----	257	41'	29'	Elevator flaps	Warping	2 " 1 "	Gnome	14	100	1050 Air
Paulhan	Triplane	Paulhan	1 front, 2 behind	630	41' 6"	33'	Front & rear elev.	Ailerons	4 " 2 "	Renault	8	75	1800 Air
R. E. P. Savary	Biplane	Gilbert	Tandem	430	36'	33'	Rear flaps	Warping	2 " 1 "	R. E. P.	5	60	1200 Air
	{Biplane	Level	Pilot front, 2 behind	729	62'	38'	Rear biplane elev.	Ailerons	2 " 1 "	Labor	4	70	1200 Water
	"	Frantz	Tandem	729	62'	38'	Rear biplane elev.	Ailerons	2 " 1 "	Labor	4	70	1200 Water
	{Biplane	Colleux	Pilot front, 2 behind	599	48'	33'	Front elevator	Ailerons	4 " "	Gnome	14	130	1050 Air
Voisin	"	Benoit	Pilot front, 2 behind	500	48'	33'	Front elevator	Ailerons	4 " "	Renault	8	75	1800 Air
	"	De Ridder	Pilot front, 2 behind	492	48' 8"	33'	Rear elevator	Ailerons	4 " "	Renault	8	75	1800 Air
Zodiac	Biplane	J. Labouchere	Pilot front, 2 behind	350	48'	32'	Rear elevator flaps	Ailerons	2 " 1 "	Renault	8	75	1800 Air

This machine is characterized by the larger top surfaces of both the main cellule and the tail cellule.

The landing chassis consists of two stout skids, which run right up to the front of the elevator, and Farman type shock-absorbing wheels.

The second Maurice Farman biplane is another example of the prevailing tendency of the French constructors towards the use of the staggered planes. This machine is practically an exact duplicate of the other machine with the exception that both the main cellule and tail cellule have been built up staggered fashion. Both machines are fitted with 75 H. P. Renaults.

Société Astra.

The Société Astra entered three machines in the competition, one an Astra biplane, 80 H. P. Chenu motor. The second an Astra triplane with a 75 H. P. Renault, the third an Astra-Wright with a 50 H. P. Renault.

The Astra Biplane, Type C. N.

This machine is another of the now quite popular tractor-screw biplanes. The long fuselage, which is entirely covered in, carries at its front end the motor and biplane cellule and at the rear the flat tail.

The forward part of the fuselage is in the shape of a racing motor boat, and is fitted with a shield to protect the passengers from wind and oil.

The landing chassis consists of two wheels and a single central skid, which projects out in front to protect the propeller and keep the machine from capsizing.

Lateral stability is obtained by warping. The main planes are demountable and can be attached to the side of the fuselage for transportation.

The Astra-Wright Biplane.

This is a modification of the headless Wright machine, and was designed by Mr. La Chapelle, an American engineer and Wright pilot. Lateral stability is obtained by warping. The two propellers, as usual, are driven in opposite directions through chains. The novelty, however, has been the fitting of a 50 H. P. Renault motor and a cabin for the passengers.

The Astra Triplane.

The Astra triplane, which was designed by Gabriel Voisin, is one of the distinct novelties, both from the point of view of general disposition as well as construction. The motor is placed out in front of the triplane cellule. The fuselage is quadrangular and completely covered

in, and carries at its front end the motor and direct connected propeller, and the main cellule, while at the rear are the tail and rudders. There are no landing skids. The landing carriage consists of four very large wheels, whose axles are in the same plane as the bottom front main spar and, in fact, form a part of this spar. Two wheels support the rear of the fuselage.

Lateral stability is obtained by four ailerons placed at the extremity of the two upper wings. The chief constructional novelty of this machine has been the dispensing of wire trussing and the substitution of steel tube braces in their places.

The Breguet Biplane.

Louis Breguet entered six machines in the trials, one of which was piloted by himself, the others being in the hands of such capable pilots as Bregé, Montalent and Moineau. All six of these machines were almost identically the same in type, differing only as to size, make of motor and propeller. In this respect, it is interesting to note that the machines were fitted, three with two-bladed propellers, two with four-bladed propellers and one with a three-bladed propeller.

The peculiar feature of the Breguet machine is the use of only four uprights in the biplane cellule and the extremely flexible and special constructed ribs. The landing chassis is a combination wheel and skid arrangement, using either 3 or 5 wheels and three skids.

The Deperdussin Monoplane.

The Deperdussin firm entered three of their regular type machines, one fitted with a 100 H. P. Gnome; the other with an 80 H. P. Anzani and the third with a 100 H. P. Clerget.

These monoplanes were all of practically the same type. The fuselage, which is very long and shallow, carries at its front end the motor, main wings and passengers, and at the rear the large, flat pigeon tail, elevator and vertical rudder.

The landing chassis consists of two skids and two wheels on a single axle, which is attached to the skids by rubber shock absorbers.

The Goupy Biplane.

The Goupy firm entered two of their latest type machines, which were almost identical in construction. These machines were the first to be built with staggered planes and Mr. Goupy deserves a lot of praise in having originated, or, at any rate, first used this method of plane mounting.

As Mr. Goupy pointed out when he produced his earlier machines back in 1908, the staggered

plane construction has a distinct advantage over the usual vertical method of mounting biplane wings. In the event of motor stoppage and the machine falling there is more of a self-righting and parachuting effect to this type than to the ordinary type.

The Goupy biplanes make use of a Blériot type fuselage, carrying the motor and main cellule at the front end and the staggered biplane tail, with Blériot type elevator tips at the rear.

The landing chassis consists of the usual Blériot arrangement with the addition of two small skids, which are attached at the end of the steel columns upon which the shock absorbing collars slide.

The Morane-Borel Machine.

The Morane-Borel monoplane entered in the trials is simply a large copy of the smaller machine made famous by Vedrine. The landing chassis has, however, been greatly strengthened; two heavy skids being fitted and four Farman type wheels.

The R. E. P. Biplane.

The R. E. P. biplane resembles the regular R. E. P. monoplane with the addition of another set of planes in front. This machine is constructed almost entirely of steel tubing and has a central fuselage, which carries at its front end the motor and biplane cellule and at its rear extremity the flat pigeon tail, elevator and rudders, absorbing wheels and a specially constructed shock absorbing skid. A detailed description of the R. E. P. monoplane appeared in the September issue of "AIRCRAFT," page 244, and shows clearly the construction of the R. E. P. chassis.

The Savary Biplane.

The Savary biplane is the only biplane entered which had two tractor screws.

As a type it somewhat resembles the Wright machine, but has the two chain-driven propellers situated in front and the pilot and passengers directly behind.

Lateral equilibrium is obtained by ailerons fitted between the two planes. The biplane tail elevator is fitted in the rear, while the rudders are fitted to the extremities of the main planes. The power plant consists of a 70 H. P. four-cylinder Labor.

Results of the Competition.

As "AIRCRAFT" goes to press news is received that the competition has been won by Weymann on a Nieuport with Prevost on the Deperdussin second.



EDITORIAL

TWO BAD FACTORS

EUGENE B. ELY, one of the very greatest of American aviators; the man who first demonstrated the feasibility of alighting on and flying from warships, lost his life during an exhibition flight at Macon, Georgia, on October 19th, 1911. He fell to the earth attempting one of his spectacular dips, while too near the ground.

The death of Ely brings up the question as to whether exhibition flying really is a benefit or a detriment to the progress of aerial flight. There is a vast difference between flying to please a crowd and flying for the pleasure of flying or for the purpose of transporting oneself safely from place to place. The crowd before which a man gives an exhibition is not usually satisfied by the demonstration of a machine moving through the air with exactness and precision. It wants to be thrilled by acrobatic and dangerous performances; and the people who actually urge the man on to his death, are the first to cry about the terrible danger of aviation, causing others to fear it as they would an earthquake, thus impeding its progress.

There is no more danger to flying than there is to automobiling, steamboating or railroading, on condition that the science of flying is understood equally as well as the others, and the construction of the machines equally as good.

The principle of flying is correct, but the art of construction and of manipulating machines must be acquired. That takes time. No man is permitted to run a steamboat or a steam locomotive without months and years of training, and no man, no matter how long his training, would undertake to do tricks with the steamboat or the steam locomotive. They utilize them for purposes of transportation, and transportation is the chief aim of those who are most interested in the development of aviation.

The man who builds and the man who utilizes a flying machine for useful purposes is a great benefactor of mankind.

No doubt two-thirds of all the deaths that have been registered against aviation could have been avoided by the aviators themselves, while one-third can be charged up to faulty construction of the machines. Of the deaths chargeable to the aviators probably one-half were expert drivers who lost their lives through

their own carelessness, while the other half were novices who knew little or nothing about the first principles of aviation.

Flying is apparently so easy that most men, after having taken one or two lessons, see no reason why they cannot fly wherever they please. Few of them realize that it is just as necessary for a long and strict course of training to fly a machine properly, as it is to learn to run a steamboat without mishap. Also the sense of security while flying is so great that the flyer himself, and especially the expert, cannot feel that it is possible for the machine to fall, until, of course, it is too late.

Therefore carelessness upon the part of the expert and non-experience upon the part of the novice, are two bad factors which have caused so many fatal accidents; accidents which frighten the ordinary mortal and impede aeronautical progress to a large extent, and which should be guarded against to the utmost limit.

A MAMMOTH COMBINATION MEET.

WE suggest to aeronautical promoters a combination grand circuit meet for the year of 1912 in which several meets could operate simultaneously and in conjunction with each other.

During the same week a meet could be held in New York, Buffalo, Cleveland, Detroit, Chicago, St. Louis, Louisville, Cincinnati, Pittsburg, Washington, Baltimore and Philadelphia. The ordinary races and events could be held in each of these cities at the same time while the two big races took place around the entire circuit. For instance, on the first day a race for monoplanes could start from New York making it obligatory for each one of the machines to stop at the grounds where the meet was taking place in each of the other cities. The prize could be made sufficiently large, say fifty thousand dollars divided into first, second, third, fourth and fifth prizes, with a bonus offered by each of the different meetings for every aviator who reached their grounds. In this way the spectators in every city could be posted on each aviator flying either to or from the grounds, and by an immense blackboard system showing the aviator's progress around the entire circuit intense interest could be kept up at all times in all of the cities, and therefore

the enthusiasm would never be lacking, as the people would have the benefit of both the local events and the long distance races to keep them interested.

Not only could there be a race around the circuit for monoplanes, but on the second or third day a race for biplanes could start around the circuit, which would make one continual going and coming of racing machines at every meet thereby creating constant excitement everywhere.

The Editor of this magazine thought of this plan over two years ago, but of course considered the time inopportune for its adoption then, but now we feel that the growth of aviation has reached a stage that will warrant undertaking such a mammoth aerial spectacle.

INTERCITY PASSENGER SERVICE.

THE remarkable success attained by Zeppelin's latest ship of the air—the Schwaben—causes us to wonder why it is not possible for Americans to establish intercity airship service.

At the time this editorial is written, the Schwaben has made eighty-one ascensions without the least mishap, and among these ascensions were nine long voyages, ranging from 125 to 250 miles. She was in the air 187 hours altogether and carried 1,675 persons.

The Schwaben has demonstrated its ability not only to carry passengers long distances in luxurious drawing room and with excellent dining service, but it has also demonstrated its ability to make money through the process.

While we have not the figures at hand to give to our readers, it is an easy matter to multiply 1,675 passengers by fifty dollars each and reach the sum total of \$83,750.

We ask our American financiers if they do not think the time has arrived to warrant their beginning to figure on the commercial probabilities of airship service. For instance, could an air-line not be established and made to pay between New York, Philadelphia, Baltimore and Washington, a regular trip being made every day, in which thirty passengers could be carried from city to city?

Presuming, to begin with, that there are enough people among the great population of the East willing to pay \$50.00 for a ninety mile trip and \$25.00 for a forty-five mile ride, we figure that such transportation in one day would net, first \$1,500 from New York to Philadelphia, where either a change of passengers could be taken on or the same passengers charged again a like amount from Philadelphia to Baltimore, where another stop could be made and another charge be made of \$25.00 from Baltimore to Washington, making altogether \$3,750 for the day's journey, which should not consume more than from four to six hours. At this rate one hundred days' service would bring \$375,000, or more than enough to pay for the airship, a hangar at each end of route and the operating expenses.

Aircraft advocates such a line being established

next Spring, and hopes there are sufficient numbers of leading men of this movement who will get together and undertake the task. Surely our boasted American enterprise should at least equal the so-called slowness of the German.

WATCH THE LAW MAKERS.

LAST year five States of the United States considered laws for the regulation of aircraft. Connecticut succeeded in putting a chapter on the subject into her statute books, which becomes effective on January 1. This year probably half the States will consider such legislation, the bills in most cases being the work of men not familiar with aviation. The public, thanks to the increase in cross country flying, will be more interested in this legislation than last year, and a larger proportion of it will undoubtedly be passed. Those who make laws will not have any stake in such legislation; aviation scientists, fliers themselves, above all, the manufacturers, will. We do not believe that there will be need for lobbying to protect the reasonable needs of aviation in its present stage, but we do believe that there is need for intelligent co-operation among aviation organizations to see that no law is passed that will be prejudicial to the interests of this great new field of endeavor and without benefit to the public. The manufacturers have the greatest interest, and the objects of their association cover just the activity we advise. The Association's constitution also provides for a legislation committee to "take an active interest in furtherance of legislation in relation to the air craft industry and in the formulation of laws affecting such industry and the manufacture and business of aeronautic supplies, and when possible to secure legislation favorable thereto."

We therefore suggest: That the Legislation Committee of the Aeronautical Manufacturer's Association arrange to co-operate with the Law Committees of the Aero Club of America and the Aeronautical Society. The Aero Club of America should encourage its affiliated societies throughout the country to organize law committees. These should report all contemplated legislation in their own territory to the parent club. The committees of the three organizations mentioned, representing the industrial, sportive and scientific sides of aviation, should constitute themselves a joint committee to study all bills, and local societies should be encouraged to act in accordance with their decisions.

IT is reported that Lord Northcliffe, the proprietor of the London Daily Mail, intends to offer a one hundred thousand dollar prize for the first man who will fly across the Atlantic in a heavier-than-air machine.

Whether there is any foundation to this report or not, the fact that Lord Northcliffe has already given one hundred thousand dollars in prizes to aviators for their flights in Europe, shows him to be a man who evidently believes in deeds to a far greater extent than he believes in words.

The Aeroplane Without Engine and Without Screw Propeller—A Gliding or Soaring Machine Automatically Balanced, Automatically Kept Head Against the Wind and Steered at Will of the Aviator

By THEOD. GIBON

This performance will be accomplished in the following comparatively simple manner.

Any of the present-day monoplanes or biplanes and any glider can be changed to answer the purpose.

The way is:

1. Let there be no engine and no screw propeller.

2. Put in the automatic system of balance as described in AIRCRAFT of October a. c., page 279.

3. Fix to the rear of the flying-machine one or more stationary vertical planes, the square surface of these planes combined being larger than the square surface of the main planes (supporting surfaces), so that in a wind the flying machine will be kept head against the wind automatically.

4. To accomplish steering, make the square surface of the steering rudders sufficiently large to be powerful enough to counteract at will of the aviator. The work of the automatic balancing device and counteract at will the work of the vertical planes, which hold the flying-machine head against the wind.

5. Start from an elevation, a hill, or in any manner as the glider of today takes its start against the wind.

6. Let the flying-machine take an upward course by working the horizontal steering rudders.

7. If risen high enough, turn the horizontal steering rudders to make a downward glide and when getting too close to the earth, put the rudders so that the upward course against the wind is again taken up.

In that manner, as explained in my American patent 710,266, September 30, 1902, Fig. 7, the aeroplane will progress against the wind or with the wind, the aeroplane going up and down on a zigzag line, as a vessel on the water makes progress against the wind on a zigzag line, going to the right and to the left alternately.

Long flights can be accomplished in that manner with little power for balancing and no power for propulsion, the wind and gravity being pressed into service to accomplish the task.

That a gliding machine is not bound to take a continuous downward course is illustrated in the appendix of Mr. Octave Chanute's book, Progress in Flying Machines, on page 287 in the article: "The Flying Man," by Otto Lilienthal, where it is shown in the illustration that the glider after a long downward glide, has by the impulse of the wind alone and without any mechanical means for propulsion risen to a point as high or higher than the starting point.

On page 289 in the above mentioned article Otto Lilienthal says that he intended to employ a 2 H. P. motor to further increase the lifting power by a beating action of the wings.

To this I say: Instead of making "beating wings" it will be much more simple and more practicable to have stationary wings and produce the beating effect by the reactive force of explosions coming out of the wings. In that manner the aeroplane is more independent of wind and can climb to greater heights quicker and surer. The explosion outlets on the balancing system ought to be set at an angle of about 45 degrees to the horizontal of the planes and in that manner furnish power for propulsion and balancing at same time.

The straight forward push of the aeroplane is constantly maintained, even when outlets close for balancing purposes, by a certain arrangement of the outlets of the power supply in the surface of the planes, a detailed description of which is contained in my U. S. Patent 730,107, June 2, 1903, and it would go too far to explain in this article.

Very long flights and soaring for hours can be accomplished in the described manner.

The following is a description of how the location of the outlets for explosions has to be arranged in order to combine in the same outlets automatic balance with straight horizontal forward push:

Figures 1-7 represent a circular disk turnable around its center.

Figure 1 shows one pipe with outlet for reactive explosions on the outer margin of the disk. This disk would, of course, turn in the direction of the arrow. At figure 2 the disk would turn in opposite direction, while at figure 3 the disk would not turn at all, because the turning forces exactly oppose and equalize each other. At figure 4 the disk would again turn in the direction indicated by the arrow, on account of the location of the outlets because outlet *h* is more forcible than outlet *i*. Therefore, to avoid turning and to have equal straight forward push with outlets set at an angle of 45 degrees to the horizontal of the planes, the outlets have to be geometrically located on a circle and on the corners of a square a rectangle, etc., as shown in figures 5, 6, 7, 8 and 9.

But when, as for example at figure A, outlet *a* is closed for balancing purposes, the straight horizontal forward push for propelling purposes would be disturbed and the aeroplane would turn in the direction of the arrow.

But this difficulty is overcome in a simple manner by arranging the outlet as shown in Figure 10-14.

A detailed description of the weighted automatic valve which is employed and a detailed description how the connections from the valve to the outlets has to be, is shown in my American patent 730,107, June 2, 1903.

The sketches which are reproduced with this article are only made to explain the principle.

Experiments with this system of balance have been made, using streams of water. It was found that the distribution of the power was such that not only automatic balance was established, but also straight forward horizontal push all the time, even when outlets for balancing purposes were automatically closed.

How was this complicated thing done?

Explanation:

Figure 10-14 represent a square frame. At figure 10 the frame is horizontal and on each of the four corners are four streams of water, of which two go upward and two go downward. Therefore the upward and downward push is equalized all round and the frame stays horizontal, and were the outlets set at 45 degrees to the horizontal as indicated—Figure 15, the forward push would also be equalized and continue straight forward.

Figure 11. The frame is tilted downward with the edge *C* and upward with the edge *D*. It will be seen that of the 16 streams of Figure 10, four have disappeared because on the tilt the automatic valve which was employed closed the outlets. Therefore, the pressure increased in the remaining 12 streams, Figure 11, and it will be seen that underneath of the depressed edge *C* four streams push upward, while only two push downward, and on the lifted edge *D* just the reverse is the case, four streams above push downward and only two push upward, restoring the horizontal position of the frame.

If the frame tilts too far, getting edge *C* too high and edge *D* too low, the streams shift automatically and immediately by the action of the weighted valve, putting the streams as shown in Figure 12. On each corner two streams work against one stream and restore the horizontal position of the frame.

Figure 13. In case the frame is tilted over a corner, depressing corner *f* and lifting corner *g*, then at *f* two streams push upward, and at *g* two streams push downward, while on each of the other two corners one stream pushes downward and one upward, equalizing each other. At a tilt over a corner eight of the original sixteen outlets are automatically closed and the remaining eight streams go at double force.

Again the streams shift automatically if, as at Figure 14, corner *f* gets too high and corner *g* too low.

This is a veritable system of equalization to restore the horizontal every time and all the time when the aeroplane tilts.

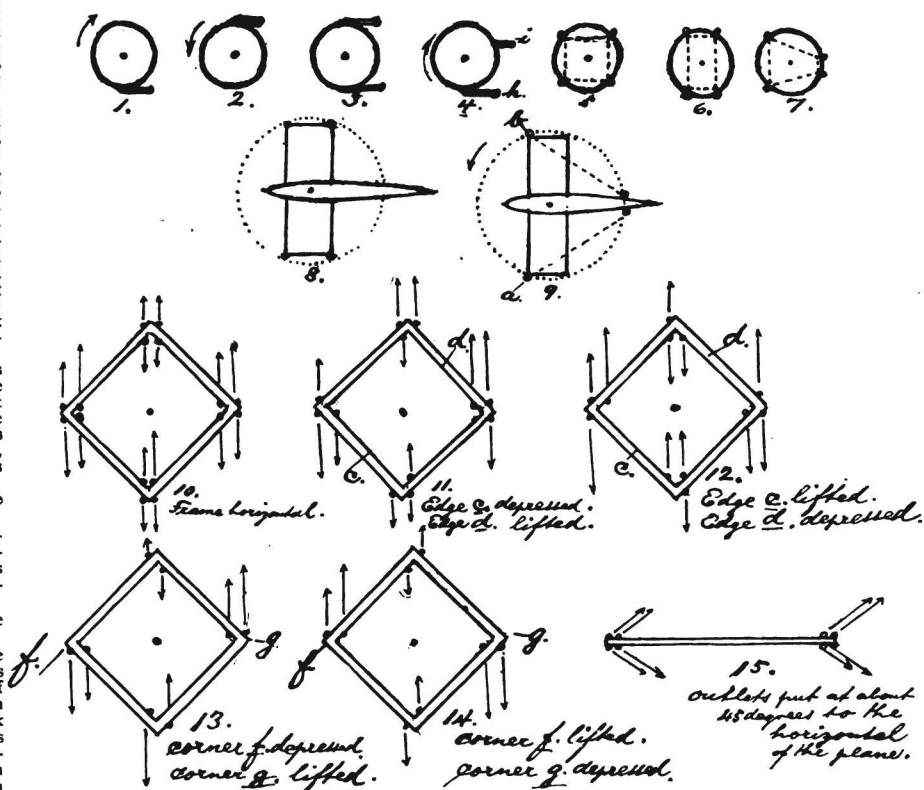
And this is not all!

Imagine the outlets are set 45 degrees to the horizontal (Figure 15) to furnish power for propulsion and automatic balance at the same time. It will be seen that if all the outlets, Figure 10-14, are put as indicated in Figure 15, the forward propelling push is all the time straight forward, even when outlets are closed for balancing purposes. In Figure 10, if the outlets are set at 45 degrees, four streams furnish equal forward push on each corner. In Figure 11 and Figure 12, there are three streams pushing forward on each corner and in Figure 13 and 14 there are two streams pushing on each corner.

So the automatic up and down balance, as well as the automatic straight forward propelling push, is ensured every time and all the time.

Steering a balanced aeroplane is a comparatively simple matter, which anybody could do. So anybody without skill and without much practice could fly.

In the future the steering will also be done through direct reaction of power streams. All movable rudders and screw propellers will be done away with.



See Patent 730,107, June 2, 1903.
Theod. Gibon. Aeroplanes.

A NEW AERO CAMERA

By W. Nicholson Jennings

THAT the aerial highway will soon be invaded by a countless fleet of aeroplanes is now an assured fact. Within five years we shall motor out to a suitable rising place, unfold our wings and seek a higher level with a dustless, limitless outlook.

Aerial photographs from the basket of a free balloon have hitherto been more or less a matter of chance so far as any desired locality was concerned.

But now that we can glide at will in any direction and at any elevation, the camera will doubtless be a very important instrument in aeronautics.

The aerial scout from cloudland heights will take tele-photoc snapshots of fortifications—the enemy's position and a thousand and one details of military maneuvers.

American checker-board cities are being beautified by diagonal boulevards and circular breathing places. Aerial photographs of congested districts upon which the municipal architect may plot his proposed improvements will be of the greatest value for advertising purposes where the merchant wishes to show the locality of his establishment in relation to the railroad stations, chief hotels, etc., and the bird snaphottist will be called upon to exercise his aerial art.

Land companies will be able to display aerial photographic records of suburban development, and the real estate agent the desirability of his "For Sale" property from a sky-view point.

Genuine motion pictures showing the various phases of a journey through cloudland will some day be as common as our present day snapshots.

To meet new conditions we must modify our presents methods. The aeroplane aloft is a thing of jumps and jerks and ceaseless throbbing. The highest speed of the "roller-blind" shutter in the camera of the newspaper photographer will show sure signs of this vibration while the curtain slot passes along the face of the plate. The blue haze between lens and landscape will hopelessly "fog" the plate, and should the sky operator lean far enough over the hood of his graflex camera to view the image on the ground glass, he will find the instrument a poor substitute for a parachute.

From actual experience on several occasions, I have found the regular photographic camera quite unsuited to aerial work for the following reasons:

The usual view camera, with its bulgy bellows and ground glass focusing screen, is bulky and difficult to operate as a hand camera, the use of a tripod being, of course, out of the question in a balloon basket.

No photograph less in size than $6\frac{1}{2} \times 8\frac{1}{2}$ will be found satisfactory, as the fine detail of the distant landscape will be lost on a smaller plate or film. Hence kodaks are of little service for serious aerial view work.

The "graflex" type of reflecting camera, in addition to its great weight, is objectionable for the reason that to direct the lens downward it is necessary to lean so far forward in order to see the reflected image in the "finder" as to place the operator in danger of floating off into space.

My new camera is designed especially for aerial photography and eliminates all the above bad features. It consists of a cone-shaped leather covered box. An 8x10 plate holder slides under an opaque spring-compressed door at the wide end. The lens—a Turner-Reich of $10\frac{1}{2}$ inch focal length—is screwed in its flange at the smaller end. The lens is equipped with a multi-speed shutter with any exposure up to the 2,000th part of a second.

The shutter can be instantly "set" and released with the index finger without changing the position of the camera. No rack or

focusing screen are required, the camera being of the "fixed focus" type. The wide open lens gives good sharp definition at 25 feet. When stopped down to F 16 (a good working aperture for balloon views) everything is sharp beyond 25 feet.

By reversing the lens combination front and back the wide open lens gives a clear image at 10 feet, while stopped down to F 66 gives a sharp range of view from 6 to 15 feet. This is useful for detail and figure work before leaving the ground.

A square "look through" finder enables one to instantly "sight" the desired object or locality.



The cone-shaped box, having no outside projections of any kind, may be quickly passed between and withdrawn from the guide ropes of the balloon.

In an aeroplane the camera, with little wind resistance, may be placed upon the photographer's knees, tilted downward, and snapshots made without the trouble of focusing or "sighting" in the finder.

A glance at the accompanying photograph will clearly show the construction and operation of the camera.



FROM LEFT TO RIGHT, MR. GRENFALL, ALAN R. HAWLEY, G. F. CAMPBELL WOOD, JAMES A. BLAIR, JR., CHAS. JEROME EDWARDS.

CLUB NEWS



ROBERT J. COLLIER, THE NEW PRESIDENT OF THE AERO CLUB OF AMERICA.

Aero Club of America

The annual meeting of the Aero Club of America was held at the Club House, 297 Madison Avenue, New York, on Monday, November 13th, beginning at 8.30 P. M., and the following officers were elected: President, Robert J. Collier; first vice-president, James A. Blair, Jr.; second vice-president, Major Samuel Reber, U. S. A.; third vice-president, Harold F. McCormick; fourth vice-president, Henry A. Wise Wood.

The following governors were also elected: Class A—Robert J. Collier, William W. Miller, Dave H. Morris. Class B—Russell A. Alger, Jerome H. Joyce, Albert B. Lambert, Harold F. McCormick, A. Lawrence Rotch, George M. Myers, Rodman Wanamaker, Dr. A. F. Zahm.

At the meeting it was decided to increase the number of directors or governors of the Club from twenty to twenty-four, and the four new directors elected were: G. F. Campbell Wood, Henry A. Wise Wood, Charles E. Knoblauch, W. Redmond Cross.

There was no opposition ticket in the field so that the above elections were made unanimously.

Mr. G. F. Campbell Wood, Secretary of the Aero Club of America, reports that the club year ending on the 31st day of October, 1911, was the most successful and prosperous the Club has ever known, during which time the individual membership was increased from 390 to 540. The Affiliated Clubs now number 24 and are showing greater activity and more earnest support to the Club than in any previous year. The number of Aviation pilots' certificates granted by the Club is now 74 as against 26 on October 31st, 1910. The acquisition of the Clubhouse, which affords its members living-rooms and restaurant service, has proven a success.

The granting of aviation pilots' certificates has been so systematized that applicants can pass their tests all over the country under the supervision of the Aero Club of America's special delegates. These certificates have been recognized already by the U. S. Army and Navy as qualifying standards and several military and naval officers figure in the list of pilots.

A new trophy has been presented to the Aero Club of America by Robert J. Collier. It is a group in bronze conceived by Ernest Wise Keyser of New York and will be awarded to the American champion chosen in the elimination contest to defend the Coupe Internationale d'Aviation. The chief figure, the genius of man, youth, buoyant with hope, crowned with victor's laurels, soars from the earth with arm outstretched and hand just closing upon a gull in full flight typifying control of the wind. Beneath his feet, Gravity, represented by a male figure, falls conquered, with another form, that of a woman with puffing lips, representing the contrary winds. Garments and hair of all the figures convey the impression of

Mr. G. F. Campbell Wood, as a special representative of the Aero Club of America, has been sent to Europe for the purpose of inducing foreign manufacturers to enter the show and at the same time he will also attend the annual meeting of the Internationale Federation Aeronautique to be held in Rome.

The Aeronautical Society

The Aeronautical Society continue to hold their regular meetings at their club rooms, 250 West 54th street, New York, on the second and fourth Thursdays of each month. Papers by well-known aeronautical experts are usually delivered, followed by a general discussion of various subjects.

At the Aeronautical Society's club-rooms during the afternoon of Friday, November 10th, a Womens Auxiliary Branch of the Aeronautical Society was formed and a temporary organization effected in the election of Mrs. Hugo C. Gibson as chairman, and Miss Daisy E. Ball as secretary. It was decided to hold another meeting on November 21st to effect a permanent organization. There were nine ladies present which is a very good showing for a beginning and those present were most enthusiastic for the future prospects of the Association and promised to work hard toward its further development. At this meeting it was decided that the dues would be five dollars per year. All mail in reference to this organization can be addressed to the Secretary, 37-39 East 28th street, New York. Those present were: Mrs. H. C. Gibson, Miss D. E. Ball, Miss A. Shady, Mrs. Anna O. Hagstedt, Mrs. Harriet Atkinson, Mrs. Eva Phipps, Mrs. W. D. Suydam, Miss Irene Lupo and Mrs. G. Loveday.

Kansas City Aero Club

George H. Myers, President, and E. H. L. Thompson, director, of the Kansas City Aero Club, made a 95 mile trip in the balloon, "Kansas City II," on Saturday, November 4th. Captain H. E. Honeywell acted as pilot and John Watts as aide. The ascension was made from the balloon field in Kansas City and the party descended five miles from Bosworth, Missouri, at 3.30 P. M.

This was the first ascension made by Captain Honeywell since his recent attempt to win the Lahm cup in connection with the International Balloon race, which started from Kansas City.



CORTLANDT FIELD BISHOP, PAST PRESIDENT OF THE AERO CLUB OF AMERICA AND VICE-PRESIDENT OF THE INTERNATIONALE FEDERATION AERONAUTIQUE.

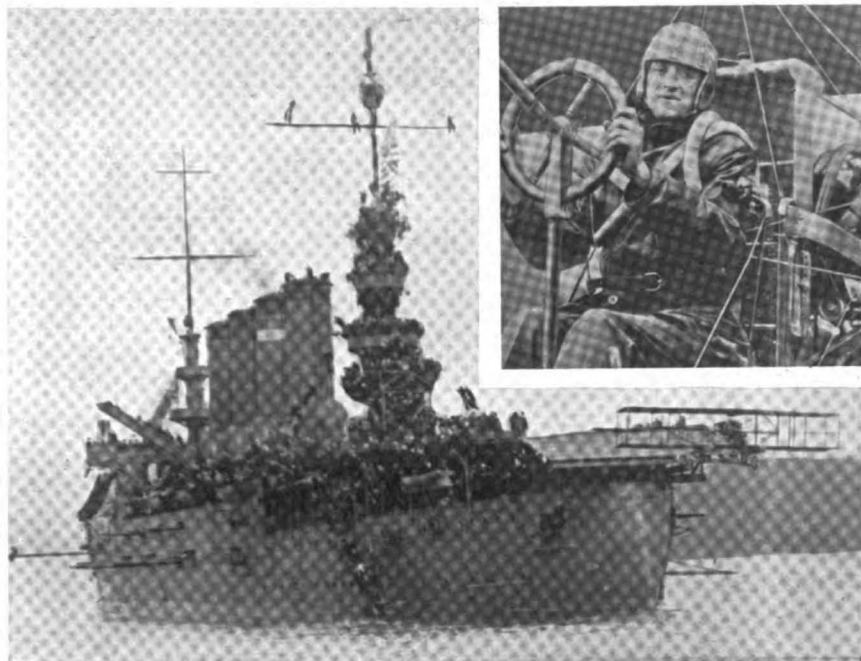
sweeping winds. Much admiration of the graceful lines of the group and the ideas it conveys have been expressed by all who have seen it.

At a recent meeting of the Board of Governors of the Aero Club of America it was decided to hold an aeronautical show at the New Grand Central Palace, New York, next May. While the show will be held under the auspices of the Aero Club of America it will be conducted by the International Exposition Company which will finance the Exposition and attend to the business end of it.

The Club feels that the time is now ripe to give the public an opportunity to judge the great progress made in aeronautics by getting together under one roof all of the latest products relating to the new industry. By a special Act of Congress the foreign machines shown at the New Grand Central Palace can go in free of duty and it is hoped that this will lead to a strong foreign representation although, of course, the Club is counting on domestic manufacturers to provide the bulk of the exhibitions.



ALLAN A. RYAN, PAST PRESIDENT OF THE AERO CLUB OF AMERICA.



At a Meeting of the Directors of the AERO CLUB OF CALIFORNIA

Held in the
CLUB ROOMS, OCTOBER 24, 1911

the following preamble and resolutions were unanimously adopted:

WHEREAS, Almighty God, in the exercise of His divine will, has removed from this world and the busy cares of life,

EUGENE B. ELY
of
Davenport, Iowa,

Therefore, We, the Directors of the Aero Club of California, have assembled here to-night to pay our last sad tribute to the memory of the departed, and to express our deep appreciation of the many and lasting obligations that we, as fellow-workers, owe to him, and by words and tokens to express our sincere sorrow for the loss Science has sustained by his death.

His good judgment and intrepid daring placed him in the front rank of the world's best aviators. His battleship flight—to embark and disembark from a sea-going vessel—was a marvel of skillful engineering and opened to the science a field whose future usefulness is inestimable. In this age of the world any man whose life has been a success can be justly called great, but there is a greatness even greater than this; to be crowned with the love and admiration—after his grave is closed—of all those who knew him. Such men were born to live in our affections, and in years to come the name of Eugene B. Ely will be recalled with an honest sense of pride that such a man lived and labored among us as a pioneer in the field of Aviation.

Resolved, That the Secretary be instructed to spread upon the minutes a copy of this preamble and resolutions, and that a copy be sent to her who was nearest and dearest to him, his sorrowing wife, as a token of our respect for the deceased, one who was, in every way, worthy of our deepest respect and highest regard.

VAN M. GRIFFITH,
Secretary.

L. P. BARRETT,
Vice-President.

Record of Calbraith P. Rodgers's Flight Across U. S.

Started from New York City, Sheepshead Bay,
September 17, 4:33 P. M.

	Miles.	Dates.
Middletown, N. Y.	84	Sept. 17
Callicoon, N. Y.	179	Sept. 21
Elmira, N. Y.	289	Sept. 22
Canisteo, N. Y.	315	Sept. 23
Salamanca, N. Y.	442	Sept. 24
Kent, Ohio	646	Sept. 28
Rivarre, Ind.	851	Sept. 30
Huntington, Ind.	887	Oct. 1
Hammond, Ind.	1,010	Oct. 5
Chicago, Ill.	1,062	Oct. 8
Springfield, Ill.	1,227	Oct. 9
Marshall, Mo.	1,398	Oct. 10
Overland Park, Kan.	1,493	Oct. 11
Vinita, Okla.	1,682	Oct. 14
McAlester, Okla.	1,854	Oct. 16
Fort Worth, Tex.	2,064	Oct. 17
Dallas, Tex.	2,096	Oct. 18
Waco, Tex.	2,302	Oct. 19
Kyle, Tex.	2,311	Oct. 20
San Antonio, Tex.	2,576	Oct. 22
Spofford, Tex.	2,708	Oct. 24
Sanderson, Tex.	2,876	Oct. 26
Sierra Blanca, Tex.	3,107	Oct. 28
El Paso, Tex.	3,198	Oct. 29
Wilcox, Ariz.	3,420	Oct. 31
Maricopa, Ariz.	3,656	Nov. 1
Stoval Siding, Ariz.	3,786	Nov. 2
Imperial Junction, Cal.	3,837	Nov. 3
Banning, Cal.	3,942	Nov. 4
Pasadena, Cal.	4,017	Nov. 5

Exceeds Atwood's world's cross-country flight record of 1,265 miles by 2,752 miles.

Including detours in order to avoid dangerous places and mileage not counted in schedule because the aviator had wandered off his course, it is estimated that Rodgers flew about 4,231 miles in fifty days.

His flying time was 4,924 minutes. These figures are his manager's.

He made his best day's flight between Sanderson and Sierra Blanca, Tex., on October 28, covering 231 miles.

Fowler's Transcontinental Flight

Robert G. Fowler left Los Angeles on October 19th on his second attempt to cross the American continent. The start was made from Fremont Park at 4:55 P. M. and the first stop was made at Pasadena at 5:40 P. M. After being delayed at Pasadena, he restarted on October 21st and continued to Riverside, where he stopped for the night.

The following day he succeeded in getting as far as Banning, and on October 23rd reached Mecca, where he was delayed for one day by engine trouble.

On October 25th he got as far as Yuma, Ariz., having succeeded in crossing the desert and mountains. After four days' delay in Yuma, he finally left there on October 29th, and got to Maricopa, a distance of 165 miles.

At the time of going to press Fowler is continuing his flight eastward and apparently making good progress.

Curtiss Doings

A large amount of equipment, in the shape of aeroplanes, parts, machinery and staff of employees, was sent recently from the Curtiss aeroplane factory at Hammondsport, N. Y., to the Curtiss training ground and experimental station on North Island, near San Diego, Cal. The Curtiss training school is already open at San Diego with about a dozen pupils in attendance, including one officer of the Greek army.

The experiments which are in contemplation, and which have been thoroughly worked out by the Hammondsport manufacturer, are the most important that he has ever undertaken, and will undoubtedly bring further improvements in aerial vehicles that will cause world-wide interest.

Lincoln Beachey, the famous Curtiss flyer, will go to San Juan, Porto Rico, on November 25th, to fill a week's contract with the government fair at that place. The inhabitants of the Island of Porto Rico are reported to be eagerly awaiting Beachey's exhibitions. Following San Juan, Mr. Beachey will go to Caracas, Venezuela, to carry out a contract made with an official of the Venezuelan Government.

Aviator Charles F. Walsh, another of the Curtiss flyers, has given exhibitions recently at Broken Bow, Neb.; Alva and Thomas, Okla., and Laredo, Texas, together with J. A. D. McCurdy, who has returned to the Curtiss management.

Mr. Beckwith Havens, having concluded an engagement of ten days at the Texas State Fair at Dallas, has given exhibitions at Fort Smith, Ark., in conjunction with Mr. Lincoln Beachey, and at Marlin and Temple, Texas, and Houston, Texas, where, together with Aviators Hugh Robinson and Eugene Godet, he made flights for the Houston Carnival Association covering a period of seven days.

The Curtiss Exhibition Company is carrying on an active campaign throughout the South and Southwest during the Winter months. Two of its aviators, J. A. D. McCurdy and Charles F. Walsh, will give exhibitions in the City of Mexico in connection with the Presidential inauguration.

THE EIANE BIPLANE

And New System of Control for Lateral Equilibrium

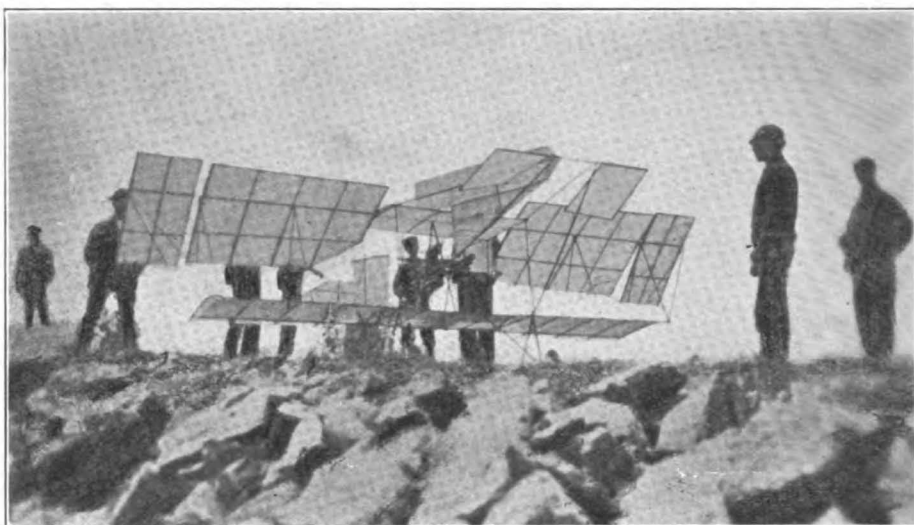
By H. O. Eiane

The Eiane machine is a biplane with the propeller in front, and has the upper planes mounted pivotally on a transverse bar, while the lower surface is rigidly held in place. The uprights from the lower surface converge and join together at the point where they attach to the top planes (see accompanying drawings), making the frame very strong and doing away with a large number of wires.

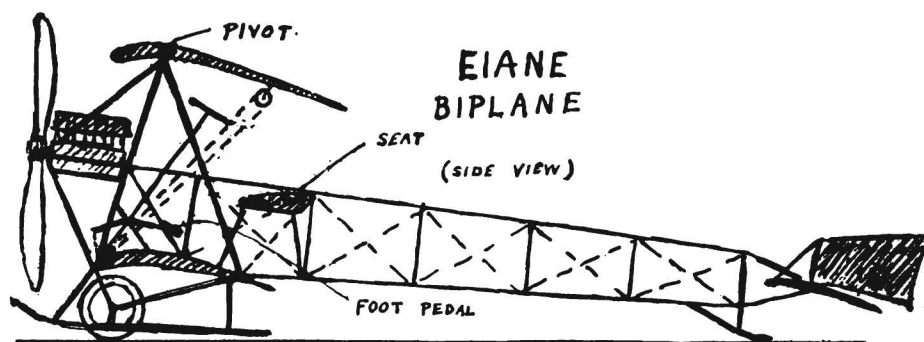
The upper planes serve the purpose of ailerons, and also serve to slow up the machine in the air, when making landings aboard vessels or in other limited spaces by moving the planes against the course of flight. Control of the machine is attained by a pair of foot levers and a hand wheel. The bar from the hand wheel passes through a hinged yoke and the lower end of said bar is secured by a universal joint to a winding drum; from this drum runs a number of wire cords, preferably three to each side, along the front edge of the lower plane, where guide sheaves are placed at certain intervals from which the wire cords run up to pulleys placed under the rear parts of the upper planes, and thence return to a point at the drum, where all returning wires form a junction which in turn is connected to a pair of foot levers; thus, by turning the drum, both upper planes are moved down. Simultaneously and by working the foot levers, the planes can be moved oppositely in regard to each other, thus acting as ailerons; moving the hand wheel fore and aft operates the horizontal rudder, and the sidewise movement of the wheel works the vertical rudder, the drum is provided with a ratchet which can be disengaged by lifting the hand wheel a little. The advantages of this machine are its ability to descend at a steep angle on an even keel; this can be done by allowing the propeller to run, after the upper planes is thrown against the course of flight, thus creating a strong air current in which to operate the tail rudders. And secondly to bring the machine to a quick stop when alighting on the ground. Thirdly, to avoid the fatal downward plunges by winding down the planes, thus greatly retarding the speed.

It is likewise possible to connect up the top planes to two pivoted vertical fins, which are so placed as to be capable of turning sidewise when struck by gusts and thus through wires automatically operate the top planes as ailerons and so restore the balance of the machine.

The writer, not being a manufacturer, is desirous of co-operation with some manufacturing concern or individual who is in a position to build or market his invention, and will be glad to receive any correspondence on the subject at the following address: Mr. H. O. Eiane, U. S. S. Perry, Mare Island, Cal.



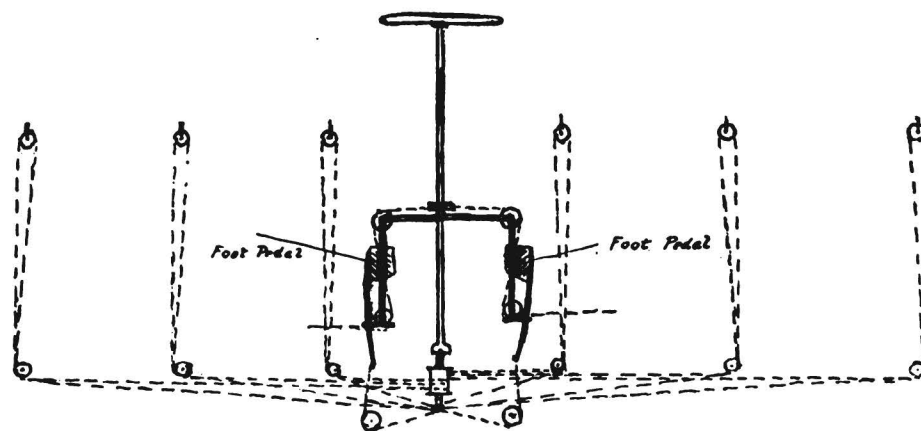
Front view of the Eiane experimental biplane showing how the upper main plane can be pulled down to act as a brake in alighting or as an aileron when only one is pulled down.



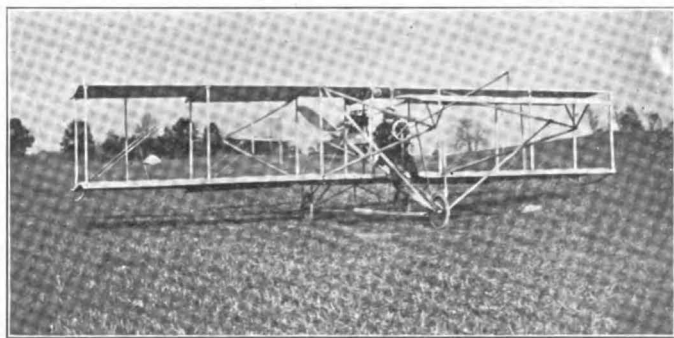
Diagrammatic side view of the Eiane biplane. Note the method of pivoting the top plane and the method of connecting it to the foot pedals.



The Eiane experimental glider, fitted with the Eiane system of automatic balance, making a towed flight in a high wind.



Diagrammatic sketch showing the workings of the Eiane system of control. The two foot pedals operate through wires the upper plane while the column is used for steering up or down. By turning the wheel and column the two planes can be pulled down together to change the angle of incidence or to act as a brake.



Biplane built for the Chinese Revolutionary party by the Wolverine Aeronautic Construction Co., of Albion, Mich.

FOREIGN NEWS

Austria

A new record for height with two passengers besides the pilot has been put up by Lieut. Bier on his Etrich monoplane. He rose to a height of 1,220 metres, thus considerably bettering the previous performance of Moineau on a Breguet at Douai, last August, when he reached a height of 876 metres.

Belgium

Chevalier Jules de Lamine is one of the few gentlemen who has an aeroplane stable and who uses his aeroplanes solely for pleasure as one would an automobile. On October 8th de Lamine and his wife decided to accept an invitation of the Baroness de Gaiffier d'Hestry to lunch at Marchewette Castle, near Namur. He made up his mind to make the journey *en aeroplane*. Mounting his racing Henry Farman machine, and taking as passenger his friend, Lieut. Selliers de Moranville, the Chevalier left his castle grounds, at two minutes to ten and arrived at his host's residence at half-past ten, having covered 25 miles in 33 minutes, and beating the motor car by which his family made the journey by about 20 minutes. About a quarter to two the aviators remounted the machine and were back at Oudoumont Castle at ten minutes past two. After landing the Chevalier was asked by Baron de Macar to carry an urgent message to Major Vischers at Rimièr Castle. Taking the Baron with him as passenger, the Chevalier started from his Castle grounds and soon had his destination in sight. The Rimièr Castle being surrounded by thick forests no possible landing place could be found, but this predicament had been guarded against, the message having been fixed to a tennis ball to which had been attached a long strip of fabric, and the aviator was able to throw it to the crowd on the Castle Terrace which had assembled on hearing the humming of the Gnome motor. After making a circle above the Castle the two aviators returned home, having covered a distance of 25 miles in 30 mins. 50 secs.

England

Cody Wins Second Michelin Cup.

Mr. Cody is an easy winner of the British Empire Michelin Cup No. 2, as his was the only successful attempt, the other competitors having left the matter too late. Several had intended making an attempt but the bad weather frustrated them, and so when the competition closed on October 14th, Mr. Cody was the only one who had covered the 125 mile cross-country course stipulated in the regulation.

On October 21st, Mr. Pixton made a trip on a Bristol biplane to Hayling Island with the object of making some flights over the sea. Starting from Amesbury at 2 P. M., with Lieut. Burney, R. N., as passenger, they arrived at Hayling Island at 5 o'clock, having stopped at Durdley near Eastleigh, for lunch. After Mr. Pixton's arrival the weather was so gusty that he was only able to fly on three occasions, the wind going steadily from bad to worse.

Testing the new Short twin-engine biplane recently, Mr. Frank McClean flew it from Eastchurch over Capel Hill to Leydown, returning to Eastchurch. There was a stiff breeze, but with the new control system the minor air currents scarcely affected the machine. A similar biplane is now being built by Messrs. Short Brothers, and they will shortly commence another biplane embodying one or two new features and fitted with two 100 H. P. engines driving four propellers.

France

The special benefit meet recently held for Frey, the aviator who, it will be remembered fell and broke both his legs while attempting to complete the last leg of the Paris-Turin race, attracted a

large crowd to the Juvisy aerodrome. Verrept came out first on a Morane monoplane and gave an exhibition of high flying. He was followed by Audemars who made a very amusing flight on his Demoiselle. Pischoff on his monoplane, Henry on a Henry Farman, Demazel on a Caudron biplane and Divetaïn and Ladougue on Goupy biplanes, all made splendid flights which were greatly appreciated by the spectators.

On one of the new Morane monoplanes built especially for altitude climbing, Verrept has been putting in some good practice preparatory to trying for the world's altitude record. On one of his flights he got up to 1,150 metres in 7 minutes and came down in 4½ minutes, while on another he reached a height of 2,450 metres in 21 minutes and descended in 15 minutes.

A splendid cross-country trip was made by M. Sommer on October 18th, when he carried six passengers besides himself on a biplane from Rheims to Mourmelon and back in 55 mins. The passengers were Mdle. Marvingt (weight, 67 kilogs.), Kimmerling (87 kilogs.), Crombez (68 kilogs.), Bordier (60 kilogs.), Brocart (72 kilogs.), Molla (86 kilogs.). In addition, at the start, there were 80 litres of petrol and 20 litres of oil on board.

On October 13, trial flights were carried out at Mourmelon, before a deputation of military officers, of four Nieuport monoplanes intended for use in the French Army. The total flying time of the four machines was 9 hours. Two of them were fitted with 2-cyl. 28-h.p. engines, and two with 50-h.p. Gnome motors. The altitude test of rising to 500 metres was made in times ranging from 7 to 9 minutes.

Recently Marcel Hanriot, on one of the biplanes, flew from Rheims to Mourmelon and back without stopping, in 58 minutes. The elder Hanriot was out testing a new machine fitted with a 100-h.p. Clerget engine.

At the Deperdussin school at Courcy-Betheny, on Oct. 19th, Gaillard was flying on a new machine fitted with a 3-cylinder Anzani engine for 1 hr. 40 mins. On the following day, Delacour flew over to Montcornet at a height of 1,200 metres. At the Deperdussin school at Etampes, Grassi made five figure-eight tests for his license in 7 mins. 35 secs.

On Oct. 19th Molla, on a Sommer biplane, succeeded in carrying five passengers from Rheims to Mourmelon and back.

The Quentin-Bauchart Prize.

The official results of the competition for the Quentin-Bauchart prize have now been given out. Renaux (M. Farman) is awarded first prize of \$6,000 his distance being recorded as 6,830.75 kiloms.; Hellen (Nieuport) is second with 5,248.8 kiloms., and taking \$3,000; Tabuteau (Borel-Morane) third, 3,030.2 kiloms., \$1,000; and Vedrines (Borel-Morane) fourth, 2,334 kiloms., \$500.

It has now been definitely decided to open this year's Aeronautic Salon at the Grand Palais, on December 16th, and it will continue till January 2nd. Present indications show that this exhibition will exceed the two previous ones, some forty-five machines having already been entered against thirty-seven in 1910.

An anonymous and patriotic donor has offered 100,000 francs (\$20,000) for the purpose of encouraging and aiding military aviation in France. A condition attached to it stated that the amount shall be raised by patriotic subscription to 1,000,000 francs, (\$200,000) which it is thought will not be difficult owing to its national character.

Germany

THE JOHANNISTHAL MEETING.

The official results of the Johannisthal Meet show that Pietschker, on his Albatross biplane, was first in the duration competition with 13 hrs. 46 mins., and Suvelack, on a Rumpler-Taube monoplane, was second with 12 hrs. 13 mins.; Grulich on a Harlan monoplane, third, 10 hrs. 10 mins.; Fraulein Beese, Rumpler-Taube monoplane, fourth, 9 hrs. 22 mins.; Kahnt, Grade monoplane, fifth, 7 hrs. 32 mins.; and Engelhard, Wright biplane, 6 hrs. 49 mins. There were eleven other competitors whose aggregate ranged from 5 hrs. 35 mins. to 1 hr. 16 mins. Hirth, on a Rumpler-Taube monoplane, was awarded a medal for his height record of 2,475 metres.

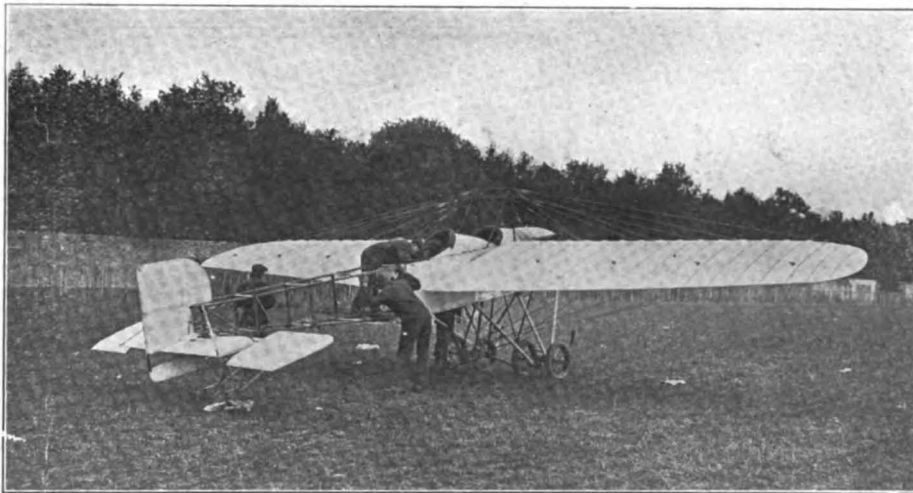
While flying at Hanover, on Oct. 21st, Tachs fell from a height and subsequently died from the injuries received.

GERMAN NEWS.

By ARTHUR WIENER.

The past month has wrought wonderful events in the world of aviation; not as one would be apt at first to suppose for the aeroplane, but for the dirigible balloon, in which Germany to-day possesses a means of transportation, more ideal than anything else which can be found in the whole world. The Zeppelin ship which I mentioned in my previous report and which was being built by order of the military department, has been completed in the meanwhile, and has proved its worth in the highest degree at its trial flight. All attempts of the aeroplane fliers to equal the feats of this giant bird failed miserably, and to-day there is no longer any doubt that for practical transportation only the dirigible balloon comes into question. The new ship has no cabins like the "Schwaben" but it has many more extensive military equipments; in fact it even has a stairway leading to a small platform on the top of the ship, on which Maxim guns can be erected. During the twenty hour test flight, which the military officials had made a condition, the seventy-three-year-old Count Zeppelin steered the ship, which responded to each touch of the rudder in the most satisfactory manner. But that was not the only triumph of the Zeppelin system this month; and it is through the second much greater success that the first gains its strength. The "Schwaben," which was built for passenger transportation and which the middle of last month made the trip to Berlin for the second time has, since it was finished three months ago, completed one hundred trips. In an aggregate time of two hundred and twenty-four hours (224) the ship traveled over eight thousand (8,000) miles and transported two thousand and fifty-three (2,053) persons without the slightest damage having been done to it. The perseverance and the indomitable energy of the aged Count hereby triumphed over all doubters and over the enemies of the "rigid system." If now that this system has withstood the severest test, equally successful work be continued, Germany will in less than a year have control of an air flotilla in comparison with which the combined aeroplanists of all the nations will appear like a collapsible house of cards. While the aeroplanists must reach the desired height by circling their way upward through the air, the Zeppelin shoots like an arrow 5,000 feet and more into space by the impetus of its own machinery; and where is there an aeroplane that can show the record of an uninterrupted twenty hour trip with fifteen passengers?

The airship "Schuette-Lanz," which was constructed of wood, also made its first trip the middle of October with good results. It is about 450 feet long, and its diameter in its broadest part is about 60 feet. Like the Zeppelin it has within it numerous cells, but unlike the Zeppelin it works with but two screws which are fastened directly to the boat. The motor power is about 500-600 h. p.



The latest 100 H. P. 5-passenger Borel-Morane monoplane, which was used in the French military trials, and a duplicate of which will be flown in this country by Arthur Stone. Note the extra heavy landing chassis and roomy cockpits for pilot and passengers.

More long trips are anticipated in the very near future.

The autumn week in Johannisthal gave the aeroplanes the opportunity to show what they have been doing in the meantime toward making men masters of the air. Of especial interest was the successful appearance of Miss Blesse, a young sculptress, on the field of aviation; this young woman directed the Etrich Rumpier "Taube," by which she gave evidence that woman, also in this branch of modern sport, is not inactive, and that she aspires to equal men in every respect. A shadow was thrown upon the otherwise brilliant meet by the death of Captain Engelhardt. With Engelhardt, who was a Wright pilot, one of the oldest German pilots passed away.

The week of flying showed several technical improvements among which a few very elegantly built monoplanes were most conspicuous. Especially successful was, as always, the Rumpier'sche "Taube," perhaps the most beautifully built monoplane up to the present time. On the last day Hirth ascended with it to a height of about

7,500 ft., within fifteen minutes; the descent was accomplished in but four minutes, an evidence of the assurance of the flyer and of the excellence of the machinery.

The fact will probably be of general interest that a combined Committee of the Imperial Automobile Club and the Society for German Locomotion Industry worked out a competition contest for the flying machine motors which is set for the spring of 1912. The competition is to be international and is supposed to fit as nearly as possible the conditions existent in flying apparatus. In accordance with this not only motors alone, but also all the parts necessary in the construction such as coolers, tanks containing propelling supplies, and other accessories will be taken into account. The valuation of the competitive machines will be estimated not only by the weight of the entire apparatus but the weight of the material used in running will be taken into account, and in addition to this the average result shown during a seven hour run. By the decision being made in this way it is expected that the economy of motors and their surety during the run will be

given more attention. As large money prizes will be given and as the contest receives practical assistance by the authorities it is to be expected that the motor manufacturers of domestic and foreign countries will take a very lively interest in it.

Italy

ACROSS THE APPENINES.

A notable flight was made on October 20th, when Le Lasseur de Ranzay, accompanied by Baron Della Noce, on a Blériot monoplane, succeeded in flying from Bologna to Florence. The distance is about 100 kilometers, but the aviators had to cross the Appennine mountains, which rise to about 1,300 metres. Nevertheless they got over their task without much difficulty, and landed safely in Florence about an hour after leaving Bologna.

Switzerland

THE SWISS MEETING.

The opening of the meeting at Berne on Oct. 21 was marred by a bad accident, in which the aviator Hans Schmidt lost his life. He had made a fine flight of 31 mins., when the machine was seen to oscillate and then suddenly dive to the ground from a height of 50 metres. The wreckage burst into flames, and before anything could be done the pilot was burnt to death. Flying was immediately suspended for the day. On the following day some good flying was put in by Durafaur (Dufaux biplane), Grandjean (Blériot), Taddeoli (Morane), and Wyss (Blériot), but on Monday the wind prevented any of the machines being seen in the air. It was also decided to abandon the proposed circuit from Berne to Bienne, Avenches, Neuchatel, Geneva.

Tripoli

AERIAL SCOUTS AND ITALIAN ARMY.

On October 23rd Captains Piazza and Miozzo proved to the world the great value of the aeroplane for military purposes. The two Italian aeroplane scouts went out to reconnoitre and sighted the Turkish cavalry closing in on their ranks and immediately reported to the commanding officer, with the result that the Turks were repulsed and badly beaten.

On several other occasions the aeroplanes proved of great value, and on one occasion Capt. Piazza successfully dropped bombs among the enemy, in spite of the fact that he was shot at and his machine riddled with bullets.

NEWS IN GENERAL

Professor John J. Montgomery of Santa Clara College died at San Jose on October 31st, from the effects of a fall from a glider with which he was experimenting in the foothills near Evergreen.

The glider was about twenty feet from the ground when it fell.

Professor Montgomery was the inventor of a double monoplane glider, which according to his claim was the first to make use of wing warping

on curved surfaces. The glider was very successful when operated without power and the machine, at one time, glided safely to the ground from a height of about 4,000 feet, having been dropped from a balloon. As far as is known Professor Montgomery's experience with a motor driven machine was never successful.

Professor Montgomery first became interested in aeronautics in the year of 1877, but it was not

until 1903 that he built his first flying machine, which was of the wing flapping variety.

During 1904 and 1905 three gliders were built, one of which with wings curved to imitate those of a sea gull made a flight of 1,600 feet. It was equipped with ailerons hinged to the rear of each wing and demonstrated the value of curve lifting surfaces. In the third machine the stability was maintained by pivoted wings.

When it is considered that Montgomery's first glide was performed eight or nine years before Lilienthal's experiments it shows that he had constructed a machine that was far in advance of its time and well worthy of development.

Plew's Letter on Montgomery

November 8, 1911.

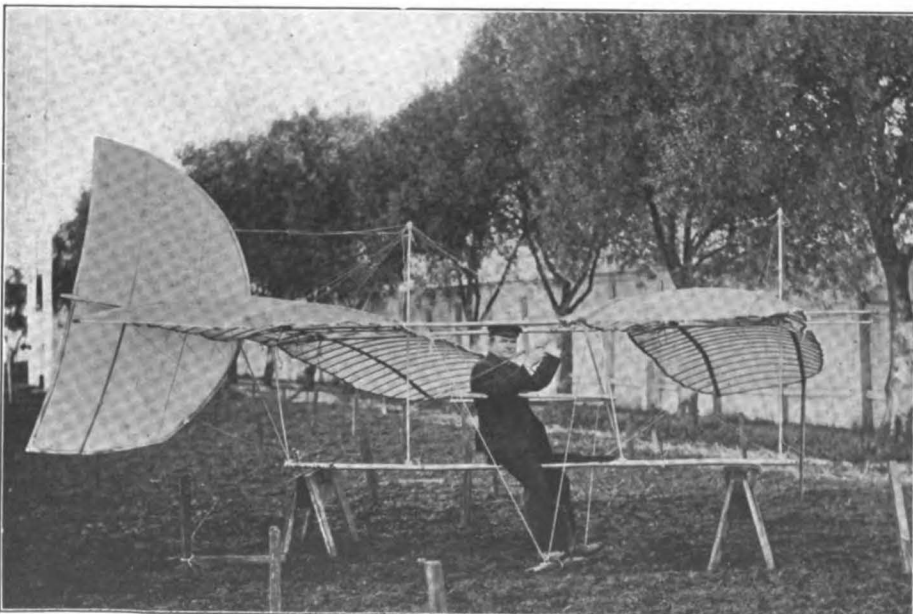
MR. A. W. LAWSON,

37 East Twenty-eighth Street, New York.

MY DEAR SIR—Replying to yours of the 6th instant, we have not yet recovered from the shock of Professor Montgomery's death. It came like a thunder clap from a clear sky. We have had so much confidence in his judgment and ability that we had come to feel that it was impossible for any accident to happen to him, all of which goes to prove the fallibility of the human being.

I am informed that the Professor made his last attempt at flight after making fifty or more successful trials. He had assisted in pulling the aeroplane to the top of the hill to the starting point and had undergone great exertion just prior to his attempt. His brother is of the opinion that his nervous condition, as a result of the above, was largely responsible for the accident.

I consider his loss a hard blow to the science, as Professor Montgomery was undoubtedly one of the most profound students of the science of aerodynamics. His knowledge was deep and far-reaching. He seemed to know more of the whys and wherefores than any other man with whom I have talked. He had a most interesting personality. To know him was to respect, admire and love him. A casual acquaintance would not have been strongly attracted to him, yet after knowing and talking to him one could not but recognize his great learning and ability along the lines of his chosen work.



Prof. John J. Montgomery seated in the glider, on which he was killed at San Jose, Cal., on October 31. Prof. Montgomery was one of the pioneers of aviation, and claimed to have been the first to use wing warping.

No matter how much one might know of the subject of aviation, in the presence of Professor Montgomery the inclination was all to listen and not to talk. His ideas were so beautifully expressed that they were not only enlightening, but extremely interesting. I specially remember one visit which he made to my home. After dinner we sat in the library and talked about various subjects, but the conversation naturally drifted to aeronautics. Before we realized that the evening had scarcely begun we discovered that it was 11 o'clock. We seemed to be under a spell. The evening was one of the most delightful I have ever experienced, and the most enlightening. His illustrations were so simple and his language was a poem. I shall never forget that visit, and am sorry that I cannot look forward to its repetition.

Ever since I have known the Professor I have been anxious to be in closer touch with him, but on account of his living in California his visits have been few and far between.

When his theories are finally reduced to practice I believe then the world will recognize his great ability. His untimely taking away is another proof that the master mind should not attempt the hazardous feat of the physical demonstration of their ideas. The master mind should be conserved for planning and the execution left to people who are a less loss to science. The general should not be allowed to be on the firing line. Aeronautics is still in its infancy, and it is a hazardous proposition at best. We are making rapid strides, in fact, almost too rapid, but we should have a greater regard for the safety of our scientists. Of course, Professor Montgomery's death will only check the progress. Others will take it up and it will be fought to a final successful conclusion.

This death is more nearly personal than any which has yet occurred among the many connected with aviation who have lost their lives in recent months, and many of them have been personal friends. I trust, however, the time has come when a smaller percentage of lives must be sacrificed and the work from now on can be along more safe and conservative lines.

I am enclosing under separate cover a picture of Professor Montgomery, which you can use and return at your convenience.

With my kindest regards, I am,

Yours very truly,
JAS. E. PLEW.

Aeroplane Mail Carrying

Postmaster General Frank H. Hitchcock states that he considers the aeroplane all right for practical mail carrying to a limited extent as they are today, but adds that he believes they must continue to improve.

"Even with the aeroplane as it is now, it will be useful to us, particularly in some parts of the country," said the Postmaster-General. "Take it along the Colorado River in the canyon district of Arizona, for instance, or in parts of Alaska. Along the Colorado there are places where detours of fifty miles out of the way are made in mail routes to get to a bridge. An aeroplane could hop right across the river."

Since the Nassau Boulevard meet in September, mail carrying by aeroplane has become one of the most popular and attractive features at aviation meets. The Curtiss aviators have carried mail at Rochester, N. Y.; Fort Smith, Ark.; Temple, Tex., and other places. The long-distance aeroplane mail carrying record is now held by Hugh Robinson, one of the staff of Curtiss aviators. Mr. Robinson carried a bag of mail from Minneapolis, Minn., to Rock Island, Ill., in a Curtiss hydroaeroplane on his flight down the Mississippi River. The distance covered in this trip is 375 miles, and mail matter put in the bag at Minneapolis was turned over to the post office at Rock Island, Ill., by Mr. Robinson.

The Airship Akron, Built by Melville Vani- man with which He Expects to Cross the Atlantic Ocean

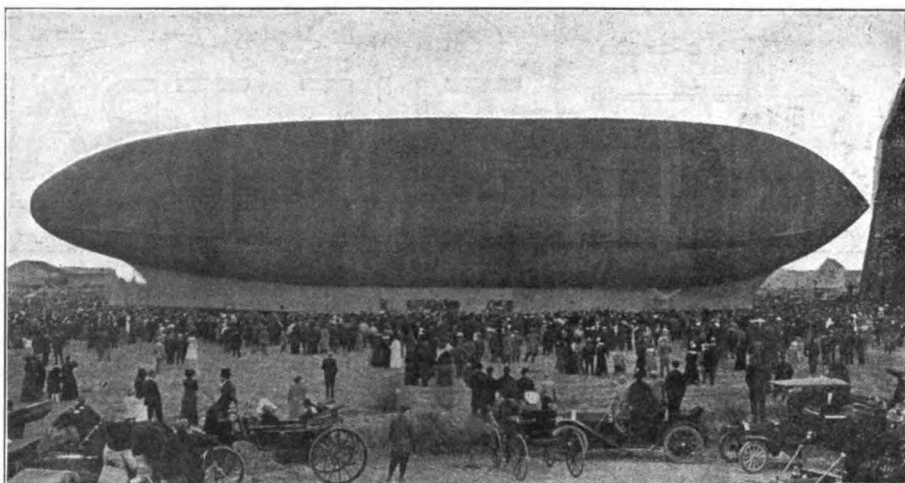
The construction of this dirigible was begun at the Goodyear Tire and Rubber Plant at Akron, Ohio, and finished at Atlantic City, where it is housed in a he old hangar used for the Wellman-Vanaman expedition of last year.

The Akron is longer but of smaller diameter than the "America." It is 258 feet long and 47 feet in diameter. The body of the car, which runs along below the gas bag is made of steel and acts as a reservoir for five tons of gasoline. A platform is built on this tank, which forms the deck of the ship.

Three engines are provided to drive the dirigible, one forward of 100 H. P. is fitted with propellers that rotate only in the vertical plane, the other two propellers of 100 and 80 H. P. respectively, drive the propellers whose plane of rotation may be turned to any desired angle. Normally only, the forward engine will be used, which should be sufficient to create a speed of about 30 miles per hour.

About 60 pounds of gasoline will be consumed per hour, so that the supply should last about a week.

The propellers of the other two engines when not in use will be turned to a horizontal position so as to eliminate resistance to the forward move-



The Vaniman transatlantic airship "Akron" leaving its shed for a trial trip. The dirigible was designed by Melville Vani-man and built at the Goodyear Tire and Rubber Company's works at Akron, under his personal supervision. The expedition is backed by Mr. Seiberling, president of the Goodyear Company.

ment of the ship. In addition to these engines there is a 17 H. P. engine directly connected with a dynamo, which will be used for lighting, wireless telegraph purposes and also to operate a blower with which the ballonets of the gas bag may be filled. It will also drive a countershaft by which any one of the large engines may be started.

For the purpose of maintaining the dirigible at a constant elevation above the water a system of taking on and throwing overboard water, as ballast, has been devised, as well as fore and aft stabilizing planes. In case of an emergency the elevating and depressing engines can be used.

There are three planes on each side of the car at the forward end, each are curved upward while those at the rear, mounted on a rudder, are reversely curved. These planes may be tilted to any angle desired and will serve to keep the car on an even keel.

When dipping down to take up water ballast, the forward planes will be used for depressing the bow and as these planes are more powerful than those at the rear, they will cause the bow to be more rapidly depressed than the stern, thus giving the ship its greatest possible downward thrust. These planes are controlled separately by hand wheels, at each side of the binnacle.

The level of the vessel may also be controlled by inflating the ballonets forward when it is desired to make the bow heavier than the stern or vice versa, if the opposite effect is desired.

The ship can be driven near the level of the sea to take on water ballast by tilting either pair of the adjustable propellers to the proper angle. The hydrolevitor with which the water ballast will be taken up is similar to the America's equilibrator and consists of tanks about 6 inches in diameter and 24 inches long strung upon cables in the same way that the gasoline tanks of the equilibrator were connected. These water ballast tanks have openings near the upper end of each so that when dragging them along they scoop up the water.

Three different sets of tanks are stored in the body of the craft, when not being used. During the day time when the gas in the balloon is expanded by the heat of the sun, much water ballast will have to be taken on, but at night when

the air is cool and the gas contracts this ballast will be thrown overboard.

Below the car is suspended the same life boat which was used on the America. In this boat a wireless telegraph apparatus is stored.

The crew of the expedition consists of the commander, aviator, a wireless operator and three engineers.

Wright Soars Nearly Ten Minutes

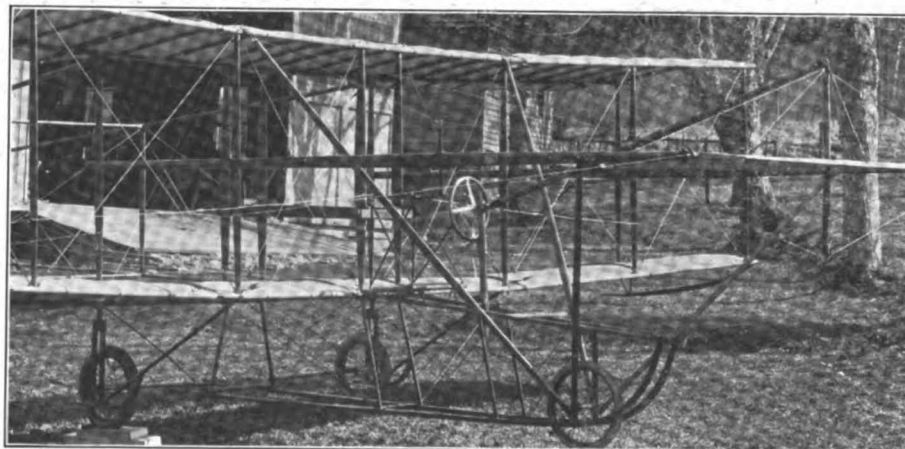
Newspaper reports state that on October 24th Orville Wright accomplished the unprecedented feat of remaining aloft in a glider for ten minutes at Kitty Hawk, N. C. This flight was the most sensational and instructive of the series of flights which were being conducted by Orville Wright and Alec Ogilvie, the English aviator, and was made in the teeth of a fifty-mile gale. The machine used was a small copy of the standard headless Wright biplane, with the exception that it was built low to the ground, had a large vertical fin in front and a larger vertical rudder in the rear.

On October 28th the new Burgess hydro-aeroplane was successfully flown at Narragansett Bay by W. Starling Burgess, Clifford L. Webster and Harry N. Atwood.

During one of the trial flights, Webster rose to a height of 1,500 feet and descending *en vol-plane*, with the motor just turning over, alighted on the water and then, speeding up his engine, rose again without the slightest trouble. The machine is a regulation Burgess Model F and the hydroplanes are attached in place of the regular skids. The hydroplanes are of the single step type, 14 feet long and 18 to 24 inches wide and are of canvas, stretched over a frame.

On October 20th Frank Coffyn, accompanied by Russell A. Alger, flew over Lake Michigan, covering a distance of 23 miles in 26 minutes. The flight was made in the vicinity of Detroit.

The machine used was a standard Wright biplane, which was fitted with two hydroplanes in the place of the usual skids.



DETAILED VIEW OF THE WITTELMANN BIPLANE, SHOWING THE NOVEL SHOCK-ABSORBING LANDING CHASSIS AND SINGLE SPARS SUPPORTING THE FRONT ELEVATOR.



ATENTION of the American manufacturers is herewith called to the advisability of opening up correspondence with the various governments of South America for the purpose of supplying them with war machines.

The very successful debut of the aeroplane in the war between the Italians and Turks at Tripoli has demonstrated the practicability of the aeroplane for scouting service even in its present crude state, and we feel sure that the various governments of the world will now begin to consider the flying machine as a necessary adjunct to their Armies and Navies and begin to look about to make purchases.

The American manufacturer should make his presence known to them before they have decided to buy their machines from Europeans, therefore a flood of correspondence to the Secretaries of War and the Secretaries of Navies of the different South American countries might mean the bringing of considerable business to this country that otherwise would go elsewhere.

Further than this, it would not be a bad idea to let our own Secretary of War and Secretary of the Navy know just what you have to offer, as there will no doubt be something doing by this government in the near future.

The Aeronautical Manufacturers' Association

At a meeting of the Aeronautical Manufacturers' Association, held on the evening of November 10, the following correspondence was recorded:

November 2, 1911.

Aeronautical Manufacturers' Association.

DEAR SIR:—We are holding an aeronautical show next May at the Grand Central Palace and earnestly solicit your co-operation to make it a success. With this end in view, we have named Mr. E. La Rue Jones, your president, as a member of our show committee. Where your interests will thus be well represented, we would be glad to have your ratification of this representation of the Aeronautical Manufacturers' Association Committee.

Yours sincerely,

(Signed) GEORGE F. CAMPBELL WOOD,
Secretary, Aero Club of America.

November 10, 1911.

*George F. Campbell Wood, Esq., Secretary,
Aero Club of America, New York City.*

DEAR SIR:—Replying to your courteous invitation of November 2, I am instructed to advise you as follows:

At a special meeting of the Aeronautical Manufacturers' Association, held November 10, 1911, it was unanimously

Resolved, That this Association heartily endorse the International Aeronautical Exposition to be held at Grand Central Palace, May 9-18, 1912, under the auspices of the Aero Club of America.

It was the consensus of opinion of the members present that it would be unnecessary for this Association to be represented on your Show Committee.

Respectfully yours,

(Signed) F. D. WOOD, *Secretary,
Aeronautical Manufacturers' Association.*

It was the general opinion of the members present at this meeting that the Aeronautical Show which will be held at the Grand Central Palace in May, would act as a stimulus to the industry in this country. It was agreed that at the next meeting of the Aeronautical Manufacturers' Association a committee would be appointed to look after the interests and welfare of the members of the Association who become exhibitors at the show. Mr. Alfred W. Lawson reported that Mr. Frank A. Seiberling, President of the Goodyear Tire and Rubber Company and also President of the Chamber of Commerce of Akron, Ohio, had accepted the office of Second Vice-President of the Aeronautical Manufacturers' Association. This announcement was greeted with an unmingled display of satisfaction on the part of the members present who recognize in Mr. Seiberling one of the coming big men of the aeronautical movement.

The Wolverine Aeronautic Company, of Albion, Mich., manufacturers and dealers in motors, propellers and aeroplanes, report a steady growth of their business during the past year. One of the new aeronautical devices that this company handles is a wire stretcher which they use in the place of turn buckles on all their machines. This company has just finished a 30 by 4½ foot biplane for the Chinese Revolutionary party. The machine is double surfaced and covered with Naiad No. 2 C cloth. Each plane is in five sections and everything arranged to pack flat in the very smallest space and be easily taken from the crates and assembled by two men in less than two hours.

A concern which has proven itself to be both conservative and progressive in conducting its business during the past year, and which gives promise of becoming a permanent establishment in the aeronautical movement is the **Chelsea Aero Company**, of New York, builders of the well known and much used Charavay propellers. It is understood that this concern has not only met with considerable success in the constructing and marketing of their propellers, but that they are also planning even greater things for the future.

The Frontier Iron Works, of Buffalo, N. Y., is the latest big manufacturing concern to enter the aeronautical industry. This concern has just completed a new V type, eight-cylinder, four-cycle aero motor, which they believe will meet with considerable success among the flying men and constructors of aeroplanes in this country.

The coming of this big concern into the aeronautical trade is only another instance of the sure and ever-increasing growth of the movement. About fifty or a hundred more such concerns as the Frontier Iron Works coming into the aeronautical industry and spending their money towards its development, will insure, beyond any question, its substantial and permanent existence.

The Queen Aeroplane Company, of New York, has opened a school of aviation at Los Angeles, Cal., for the Winter, and has sent several machines to the coast for that purpose. The school will be conducted under the personal supervision of Mr. Ladis Lewkowicz, the well known aviator, who, it will be remembered, was the first aviator to fly over New York City, which he did last July in a monoplane at a very high altitude. Mr. Lewkowicz will be assisted by other licensed pilots and a corps of expert mechanics. The school will be conducted on entirely French lines, as Mr. Lewkowicz is a great believer in the French methods of conducting schools.

The Curtiss Exhibition Company of New York, who act as the sales agents and foreign representatives for the Curtiss Aeroplane Company and under whose management all of the different Curtiss aviators of the world operate, have adopted a

clever method to ascertain the exact progress made by the aeronautical movement in this country.

On page 329 an advertisement appears in which an autograph photograph of Glen H. Curtiss is offered free of charge to any reader of AIRCRAFT, who will send in his reasons for being interested in aviation.

The Aerial Construction Co. of New York report a conservative increase in their business of building propellers and complete aeroplanes. They are also planning to keep their men employed during the winter months building a stock of Nieuport type monoplanes, so as to be ready for the rush which is expected next spring.

It speaks well for the optimism of Mr. Sanford, the president of the Aerial Construction Co., that they have recently taken possession of an additional two-story building 25x100 directly adjoining their present location on West Forty-third St.

The New York Aeronautical Supply Company, of New York are compiling a new catalogue of aeroplane parts which will be ready for distribution at an early date. This concern is making preparations for an increased volume of business by enlarging their office facilities both in space and equipment. The growth of this company speaks well for the rapid advancement of the aeronautical industry.

Mr. J. T. Seely has recently been appointed Special Representative for **The Roberts Motor Company** of Sandusky, Ohio. He may be reached at 781 Golden Gate Ave., San Francisco, and will cover the three Pacific Coast States, California, Oregon and Washington.

Mr. Seely is admirably fitted for his new work, having been connected with the Elbridge Engine Company of Rochester, N. Y., for the past three years as Secretary and Sales Manager. In this capacity he has had a great deal of valuable experience in aviation and marine work.

The American Propeller Company reports a most satisfactory season of trade with but little cessation of demand notwithstanding the very unfavorable weather throughout the country during October. Their business extends to every state in the union, including foreign countries to the north and south. This company is making extensive plans for the season of 1912, having the advantage of a most enviable reputation for fair and frank business methods as well as for the beauty and excellence of their product, and being especially well fortified with patents covering the special structural features which distinguish all their Paragon Propellers, and also covering the peculiar technical variations of pitch which are regarded as a most important element contributing to the well known efficiency of their product. It is also understood that their patents cover certain peculiar methods and processes of manufacture whereby they are able to put up special work with great speed and efficiency and which contribute greatly to the excellence and economy of their regular production. Paragon propellers are reported as

being used by hosts of amateurs and other beginners whose success in many instances has depended absolutely upon the careful selection and designing for the requirements of special cases for which this company has become known. A good trade is also reported from numerous well known professional aviators, including some of the French aviators flying abroad.

Very recently the **Detroit Aeroplane Company** announced their 1912 model. While the chief difference between the 1910 and 1911 models was noticeable from their outside appearance, the new 1912 model power plant distinguishes itself from its predecessor through constructional and internal changes. For instance, the omission of cap screws by replacing same through machined bolts locked with castle nuts and split key is decidedly an advance. In fact, in the present type there is not a single nut that remains unsecured. Another constructional detail is the introduction of chrome nickel steel as crank shafts and steel alloy as connecting rod material. This change was made necessary through the additional power and speed gained by the use of higher compression. The additional heat developed by the more instantaneous combustion was compensated through arrangement of auxiliary holes in the cylinder walls and the necessary change of the valve timing which is now slightly over lapping. It is a well known fact that auxiliary holes have a certain unwelcome reaction on the lubrication and therefore one will find on the new model the necessary arrangement in form of an oil pump driven from the cam shaft and feeding the cylinder from a lubricating supply in the tank.

The power plant itself develops according to the manufacturers 28 brake-horsepower and when equipped with a seven-foot $3\frac{1}{4}$ foot propeller delivers a stationary thrust of 250 to 260 lbs. at 1,100 R.P.M.

The Rocky Mountain Aviation Company has been organized in Denver, Colorado with the following officers: President, F. D. Taggart; Vice-President, Frank King; Secretary, W. C. White; Treasurer, M. M. Koser. Georges Renel, the French aviator, has been retained as chief instructor in flying, and Mrs. H. J. Kuhm as assistant instructor.

The American Aeroplane Supply House, of Hempstead, New York, reports the sale of one of their Blériot type monoplanes to E. J. Marley, of Sumner, Miss., which machine was satisfactorily tested by Professor A. Houpert in an eight-mile cross-country flight at Nassau Boulevard.

R. O. Rubel, Jr. & Company, have leased for a period of five years a tract of ground about two and a half miles from the city of Louisville, on the Interurban car line, where it is intended to open up a school of aviation. Mr. Frederick Morlan will act as instructor. It is stated that already seven students have been enrolled.

California News

By ERNEST OHRT.

Lieutenant J. W. McClaskey, U. S. M. C., seven students and five Curtiss biplanes arrived in San Diego October 21, and immediately went into camp on the aviation field on North Island, across the bay from San Diego. These students will take up the study of aviation, instructed by Glenn Curtiss.

Murry C. Gunnison, of San Rafael, Cal., is seeking a good place to try out his large passenger carrying aeroplane. C. E. Hagen, of San Francisco, who demolished his Farman type biplane at the recent aviation meet, is completing his second machine.

Robert G. Fowler, the aviator who started on a transcontinental flight from San Francisco and who failed to cross the Sierras in the northern part of California, arrived in Los Angeles October 6 to make a new start. After being delayed day after day by a series of mishaps, Fowler finally started at 5.30 on the afternoon of October 19 and got as far as Pasadena the first evening.

Flying has been very popular at San Francisco's new aviation field, which is located at the Presidio reservation, and the field is known as Calvary Flat. Among the new machines on the field are two Blériot monoplanes, one belonging to Jeff De Villa. The two machines were used by Aviators Walker and Masson in their recent trip to the South Sea Islands. Aviator Criblet and Sergeant Seely, who have a Curtiss type equipped with a Maximotor, have made many short flights around the field. While attempting an extended flight on October 29, Criblet met with engine trouble and after being struck by a sudden gust at the same time, the flight ended in a bad smashup for the machine. In attempting to avoid colliding with his automobile, Aviator De Villa ran into a small ditch and demolished the entire landing gear of his Blériot monoplane. C. C. Bradley, who was practising with his Farman type biplane equipped with a Ford automobile engine of 20 H. P., has put his machine in storage until he gets a more powerful engine.

The New Frontier Aero Motor

MODEL A-1.

This engine is the product of the Frontier Iron Works, Buffalo, N. Y., who have spent the past two years developing and testing this motor for aerial purposes. It is of the V-type, eight cylinder, four cycle.

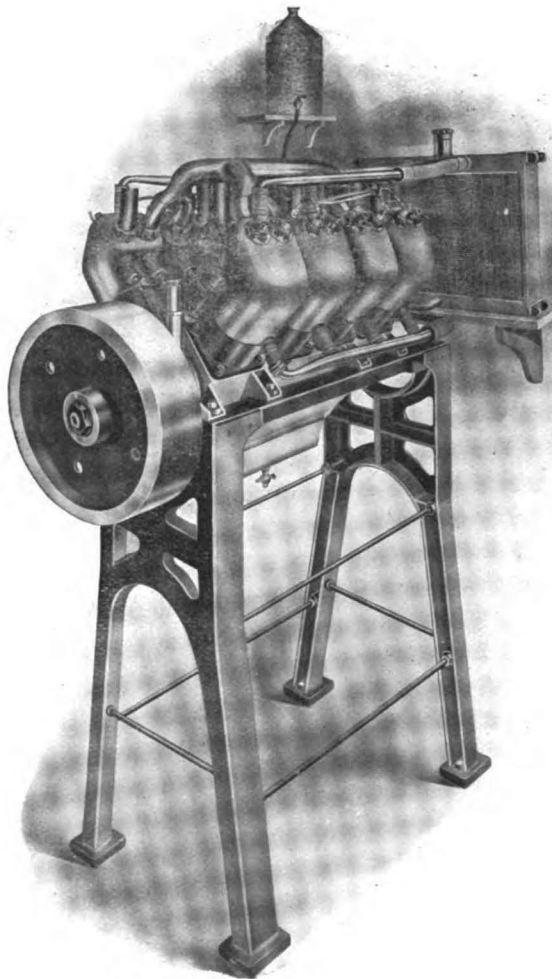
The cylinders, pistons and rings are of a mixture and grade of iron that is non-overheating metal. The crank case is aluminum, box type and is ribbed and braced in such a manner as to give stability and to resist undue strain.

The cam chamber is cast integral with the case and machined out to insure perfect alignment with no danger of parts loosening or becoming false timed.

The crank shaft is made from Krupp $3\frac{1}{2}$ chrome nickel steel, hollow, as is also the connecting rod and piston wrist pins, through which the lubricating system pumps a continuous flow of oil from the reservoir, which is returned strained and continually used. All revolving shafts are run in imported anular ball bearings supported in specially designed housings with connections to the lubricating system.

The valves are of special alloy and construction which has been thoroughly tested to withstand long runs without adjustment or cleaning. The valve stems are operated through push rods adjustable for wear, they are hardened and run on steel balls, this feature eliminates the improper timing of valves. The intake and water manifolds are of copper, well designed for strength and capacity. All bolts and nuts are provided with ample protection against looseness through lock washers, castle nuts and copper pins.

This motor is equipped with carburetor, magneto, oil and gasoline tanks and radiator, this being the standard equipment.



Aviators are being sent invitations to take part in a meet on a new field at San Rafael, Cal., on which it is planned by the owners to bring aviators from all parts of the world during the Panama-Pacific Exposition in 1915.

The field comprises one hundred acres and is controlled by M. C. Tunison, who is the inventor of a monoplane. It is stated that twenty-five acceptances have been received from aviators, who will be accommodated with hangars free of charge during the exposition.

Mr. Tunison is associated in the enterprise with N. E. Clemenson, secretary of the Marin County Promotion League. A big amusement park, with scenic railways and other concessions, is to be attached to the aviation field if the promoters are able to carry out their plans. An effort is being made to arrange an international meet at the same place in July of next year.

An aviation meet has been announced to be held at Winnipeg, Canada, next June, and preliminary arrangements are now in progress by aeronautical enthusiasts in that city.

New American Endurance Record

On October 26th Howard Gill established a new American record for duration, remaining in the air for 4 hours 16 minutes and 35 seconds. This flight was made at Kinloch Field, St. Louis, Mo., in a Wright machine, which was over a year old and was once fitted with front elevators.

This flight was the main feature of the Kinloch meet, but others who made creditable flights were: Elton, Andrew Drew, Clifford Turpin, G. W. Beatty and Dr. Henry Walden, who made an 18-minute flight in his original monoplane.

It has been announced that seven aviators will go to Mexico to take part in an Aero Meet on the occasion of the inauguration of President Francisco G. Madero.

The promised prizes aggregate \$100,000. The aviators who are to take part are: Miss Matilda Moisant, Harriet Quimby, André Houpert, George M. Dyott and Captain Donald Patrick, J. A. D. McCurdy and Charles F. Walsh.

It is said also that these aviators will afterwards visit several other Mexican cities.

Robert J. Collier recently held a private flying meet at his country home at Wickatunk, N. J., in which O. G. Simmons, T. O. M. Sopwith and A. L. Welsh took part.

On the first day, October 14th, Simmons opened the meet with a flight of 30 minutes, which was followed by a flight of A. L. Welsh, with James A. Hare, a well-known war photographer of Collier's Weekly, as a passenger.

The two flew to Freehold, N. J., to witness a fox hunt and take several pictures from aloft. Later in the day passenger carrying was indulged in and over twenty guests were taken on flights.

On the next day the feature was the passenger carrying flights of Sopwith, who carried Mr. L. Thompson and Robert Collier on lengthy trips.

On the third day, Simmons, in Collier's Wright machine, flew with Robert Collier from Wickatunk to Lakewood, N. J., landing on John D. Rockefeller's estate, which journey occupied 57 minutes. After resting there awhile, they ascended bound for Alliers, which is 10 miles away, but had only gone a little more than half the way when the engine stopped and they were forced to make an abrupt landing, but fortunately neither Mr. Collier nor Simmons were hurt and the machine only slightly damaged.

It is announced that James V. Martin will shortly make an attempt to break the American records for speed and endurance. For the endurance flight Mr. Martin has procured a new Queen-Martin biplane of the type illustrated and described in the November "Aircraft," but fitted with a 50 H. P. Gnome in place of the 100 H. P. For the speed record, however, he will use a 100 H. P. Gnome.

The Young Aviation Company has been organized in Topeka, Kan., with the following officers: President, H. Young; Manager, J. B. Larimer. The chief aviator of the company is Alvin K. Longren, while E. J. Longren is the machinist. The company manufactures the Curtiss type aeroplane, which they equip with Hall-Scott power plants.

CLASSIFIED ADVERTISING

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

FOR SALE

IF you want passenger balloons, dirigibles, cap-tives or aeroplanes; large stock; immediate shipment; any size built to order. Teach purchaser to operate. Exhibitions furnished throughout United States and Canada. G. L. Bumbaugh, builder and operator. Indianapolis, Ind., U.S.A.

CURTISS latest improved type (Pigeon tail) 1912 Model. Made over 300 very successful flights 1,000 ft. high, 30 miles cross-country. My construction is strongest in the world. New, complete, ready to fly, tested and guaranteed. including free lessons to buyer, \$2,500. Buy direct from Builder and Aviator of 10 years' experience. H. C. Cooke, Aviator and Builder, 128 West 65th St., New York City.

WOULD like to sell my patent for a dirigible airship, latest construction, or would like a capitalist to build a small or a large airship. The airship consists of 7 aeroplanes and 12 balloons. You can cross the ocean to France or Germany. The aeronaut can land on the water and can also fly against the strongest wind. Model to be seen at G. Scheel, 418 East 9th St., New York City.

FOR SALE—Biplane, Curtiss type, 26 H. P., A. B. Motor. Send for photos and particulars. Chas. Edw. Hathorn, Mason City, Iowa.

GENUINE Glenn H. Curtiss aeroplane, good as new. Plane or 4 cyl. Curtiss motor separate; will ship for inspection; cash or prompt payment to responsible party. George Russell, 1370 Broadway, Room 16, New York City.

OUR New All Aluminum Cellulose Turbine is ready for your model. This motor will deliver $\frac{1}{2}$ H. P. for 3 minutes. Complete motor $\frac{1}{2}$ pound. Watch it take prizes, but be sure that it is on your model. \$2.00 postpaid. The Co-Operative Aero Association, Muncie, Indiana.

ENTHUSIASTS; six perfect photographs of prominent aviators, machines, flights, etc., with interesting description, 25c.; sample 10c. Aero Photo Specialty Co., Revere, Mass.

A \$100 DRAFT will purchase my patent just issued. Airship Propellers and a Contract. \$100 paid on an option for the purchase of my vastly more valuable pending application for a patent. Homer A. King, Box 474, Colton, California.

FOR SALE—Detroit 2-cylinder opposed 35 H. P. motor; propeller, carburettor and magneto, just overhauled, 250 lbs. thrust. First draft \$285 takes it. Address H. D., 321 Lake Avenue, Rochester, N. Y.

FOR SALE—One 50 H. P. DeChenne Power Plant complete. Cheap if taken soon. Reason, have closed for season and can make more by spring. DeChenne Motor & Aeroplane Co., Monett, Mo.

WANTED

WANTED—A second hand Gnome motor about 75 h. p., cheap. Theo. Stockman, 721 Maine St., Cambridge, Mass.

BLERIOT (TYPE) MONOPLANES \$790.
CURTISS (TYPE) BIPLANES \$890.
COMPLETE, GUARANTEED TO FLY. ORDER NOW OR WRITE FOR INFORMATION. F. O. AEROPLANE CO., BOX 384, MATTOON, ILL.

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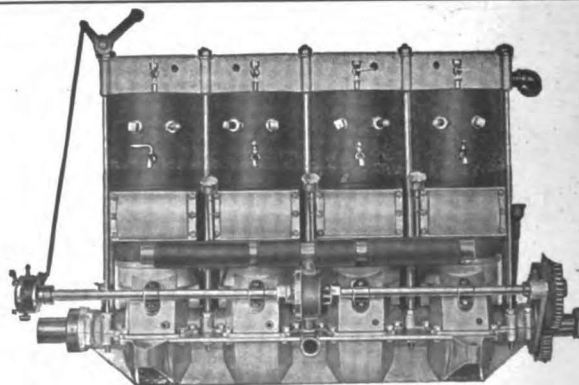
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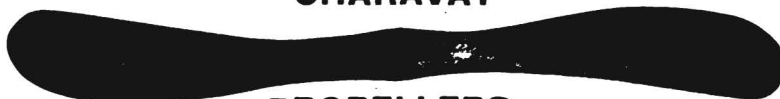
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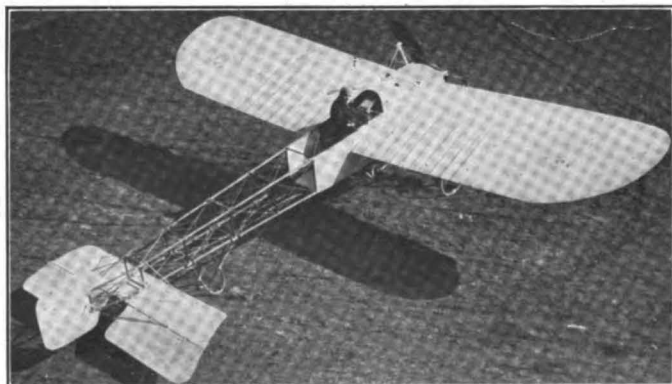
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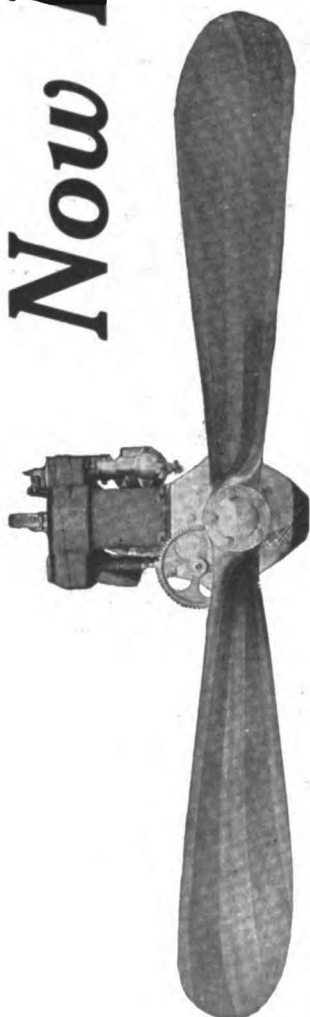
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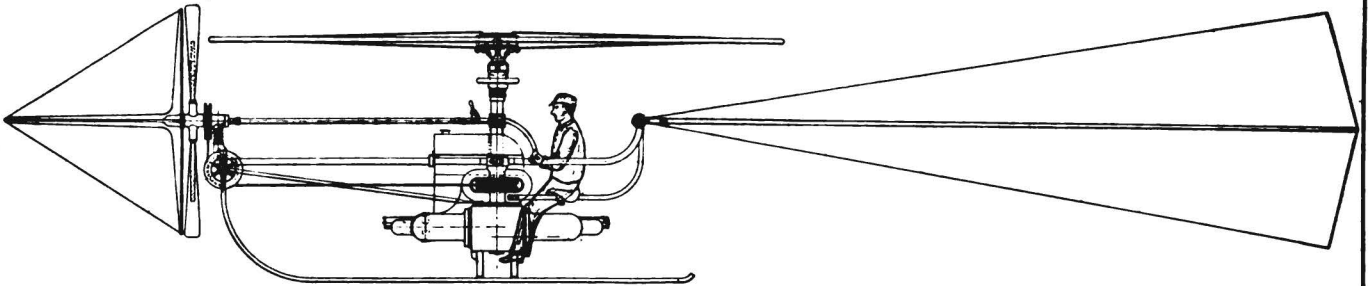
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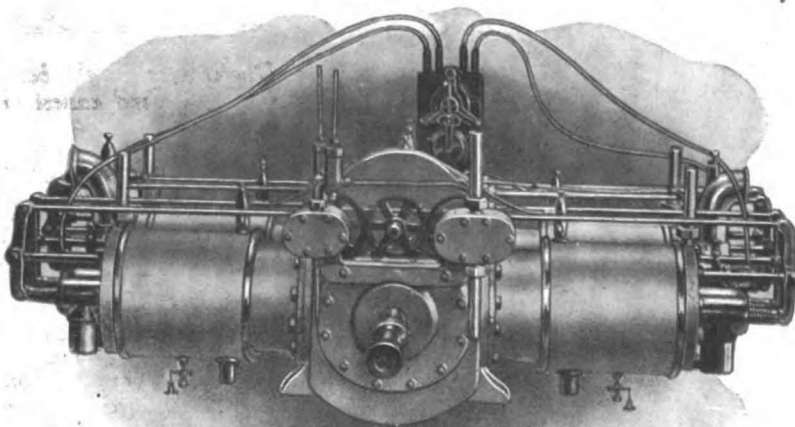
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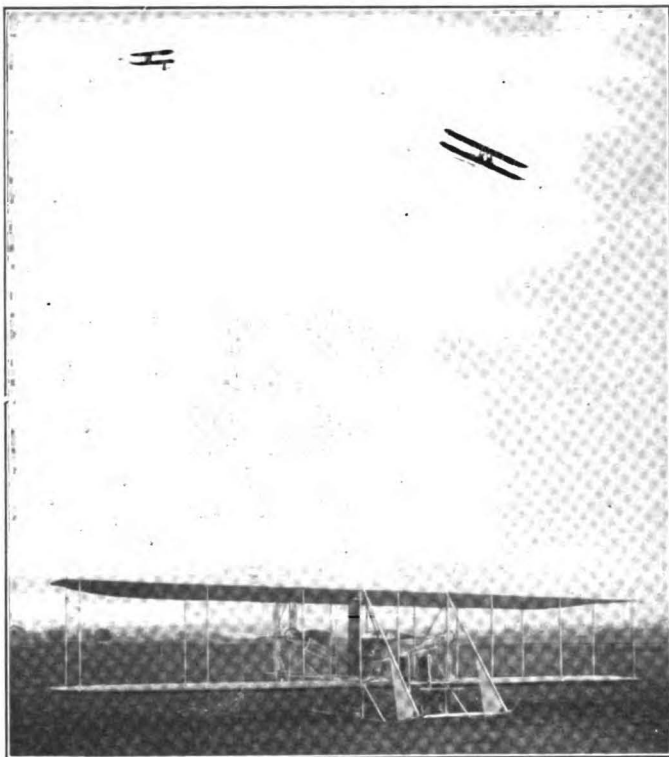
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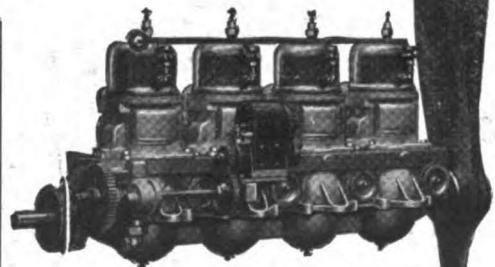
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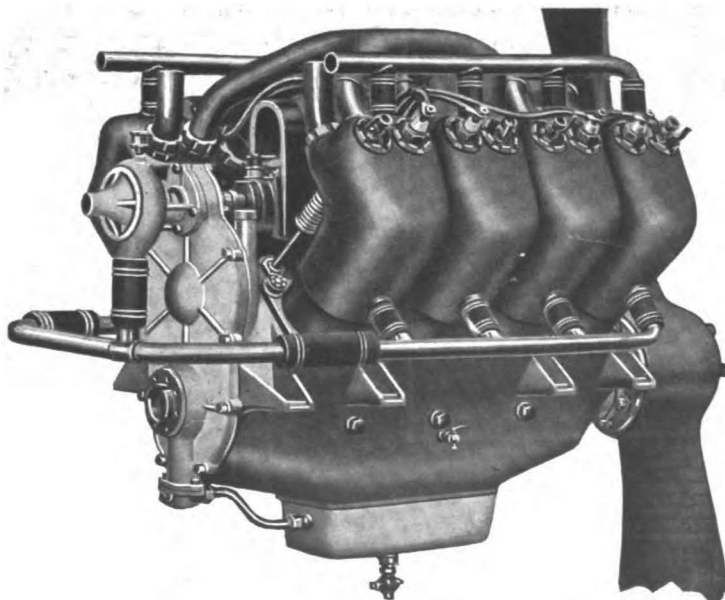
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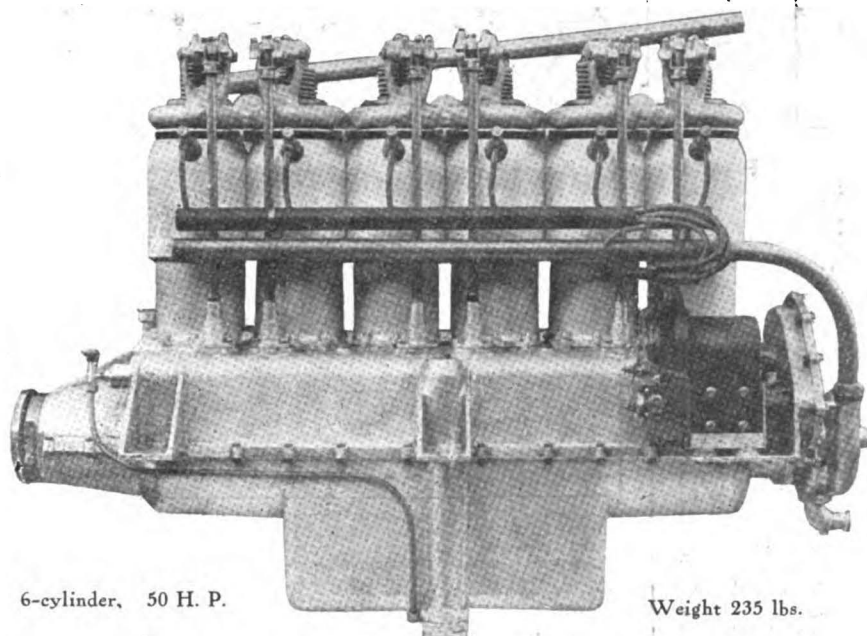
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Kirkham Motors are the final result of years of experience in manufacturing High Grade Light Weight Gasoline Motors, and have always been known as the most reliable produced in America—and this SIX-cylinder Aviation Motor is no exception, as it is designed right, built right and of the right material. Gives the same satisfactory service in aviation as the finest foreign and American engines do in automobiles. They get better by use.

Ask Any Owner



6-cylinder, 50 H. P.

Weight 235 lbs.



MR. JOHN SCHWISTER, OF WAUSAU, WIS., IN HIS "KIRKHAM" MOTORED BIPLANE.

Sausau, Wis., Oct. 18, 1911.

Mr. Chas. B. Kirkham, Savona, N. Y.

My Dear Kirkham—A day or two since I mailed you clippings from local papers respecting the flight I made here on Sunday last. In explanation further I would state—Got the machine out Sunday morning and started for a little town, Mosinee, some twelve miles south of this city, but after progressing some five miles and passing over the town of Rothschilds I found conditions unfavorable (a narrow road below skirted on either side by timber with no open spots in which to make landing if necessary) and turned back over my course, returned over my field and hangar and continuing on due north passed over Schofield village, three miles north of my shed, then on north three miles further into the city limits of Wausau. I skirted the eastern edge of the city, keeping well up over the valley and even above the rolling hill bordering the city on this side, at the northern edge of the town I turned over the St. Mary's Hospital and crossed the Wisconsin River. Up to this time I had been flying at from 300 to 1,000 ft., but just after crossing the river I entered into a bank of fog and was compelled to drop to within 150 ft. of the ground for a short time—reaching clear air again I rose and continued north by west some four miles beyond the city limits, at which point I turned south, striking fog here

and there on my route. When about on a line with the central portion of the town I turned due east, crossing directly over the Big Bull Falls of the Wisconsin, and I continued directly over the heart of the city east of Wausau Junction, thence south over a part of my first path and on over Schofield back to the grounds of the Country Club, just opposite my hangar. Just at the time I crossed the Wisconsin Bull Falls I rose to an elevation of 2,000 ft.

During this flight I travelled as closely as can possibly be estimated some 25 miles, and I remained in the air 45 to 50 minutes. The motor ran perfectly, never so much as missing an explosion during the entire time, and on alighting I found the radiator to be only just well warmed. The flight caused a vast amount of excitement in each of the places over which I passed, and more particularly in the city itself, and I feel that the thing was well worth while in what it may do for me later on. The city is very enthusiastic, and I myself am certainly highly satisfied with results. This is the longest test I have put your motor to and all worked perfectly.

Again, I am very well pleased with the work your motor is doing, and I shall continue to keep in touch with you as to my progress. I am, very truly yours,

(Signed)

JOHN SCHWISTER.

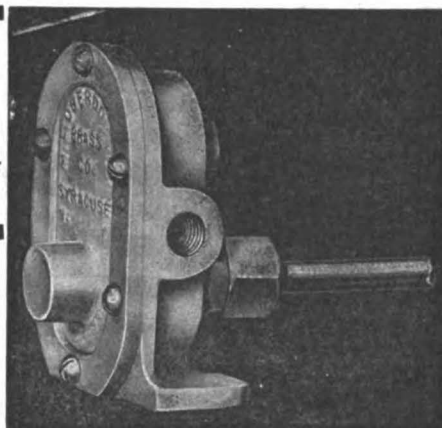
KIRKHAM AVIATION MOTORS can be seen at all of the principal flying centers, or prospective customers are invited to visit the factory, where they can be seen in all stages of construction.

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Manufacturer
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80 lb. per sq.
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Extreme in
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Strength
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All motor builders have long known the virtues of the OBERDORFER BRONZE PUMPS - and every aeroplane builder should know of the OBERDORFER ALUMINUM PUMP which has been designed especially for him.

Although *one-half* of the weight has been saved, all the strength and efficiency have been retained.

The bearings are bushed with positively the best grade of bronze that can be produced. The size of the Drive Shaft has been reduced by replacing the bronze with steel.

Will you let us tell you more of the good news?

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How Veteran Aviators Avert Danger on Landing

A tire tearing loose when the aeroplane lands means injury to its mechanism, a possible wreck and perhaps injury to the aviator.

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That is the *Goodyear Aeroplane Tire*. It is held to the rim in a vice-like grip by 42 wires in the tape at the base - 21 wires on each side of the tire. Hence it *cannot tear loose*!

This is the wing Aeroplane Tire used by Atwood, Ovington, Brookins, and by Rodgers in his remarkable coast to coast flight. They used only Goodyear equipments throughout.

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Wing Aeroplane Tires

Charles K. Hamilton, Rene Simon, Roland Garros, Glenn Curtiss, Eugene B. Ely, Claude Graham-White, Alec Ogilvie, William Hilliard, Harry Harkness, P. O. Farnlee, Capt. Thomas Baldwin, J. A. D. McCurdy and scores of American and foreign aviators have adopted *Goodyear Aeroplane Tires*. Their verdict, prompted by experience with all makes of tires, is vastly significant.

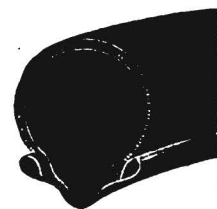
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Paragon Propellers are *different*. Both blades exactly correspond in pitch at every point. We select the wood so that the grain runs the same and the pitch *stays the same*. We guarantee it within one per cent. No other propeller will do this; it is only possible by our patented construction. The grain of the wood in others is *opposite*. One blade warps up or the other warps down. There is often a foot of difference in the pitch. Ours are made right and they *stay right*. They are *different*. Mention any part or detail and we will show you how ours are different and better in that part.

Paragon blades are harmoniously designed; no excess material; no weak spots. Paragon hubs are double laminated and cross laminated. Paragon blades are double laminated near the ends and are now reinforced in the blades. The reinforcing is on the *inside*, not on the surface. An accident will injure their ends and edges, but they are seldom damaged beyond repair.

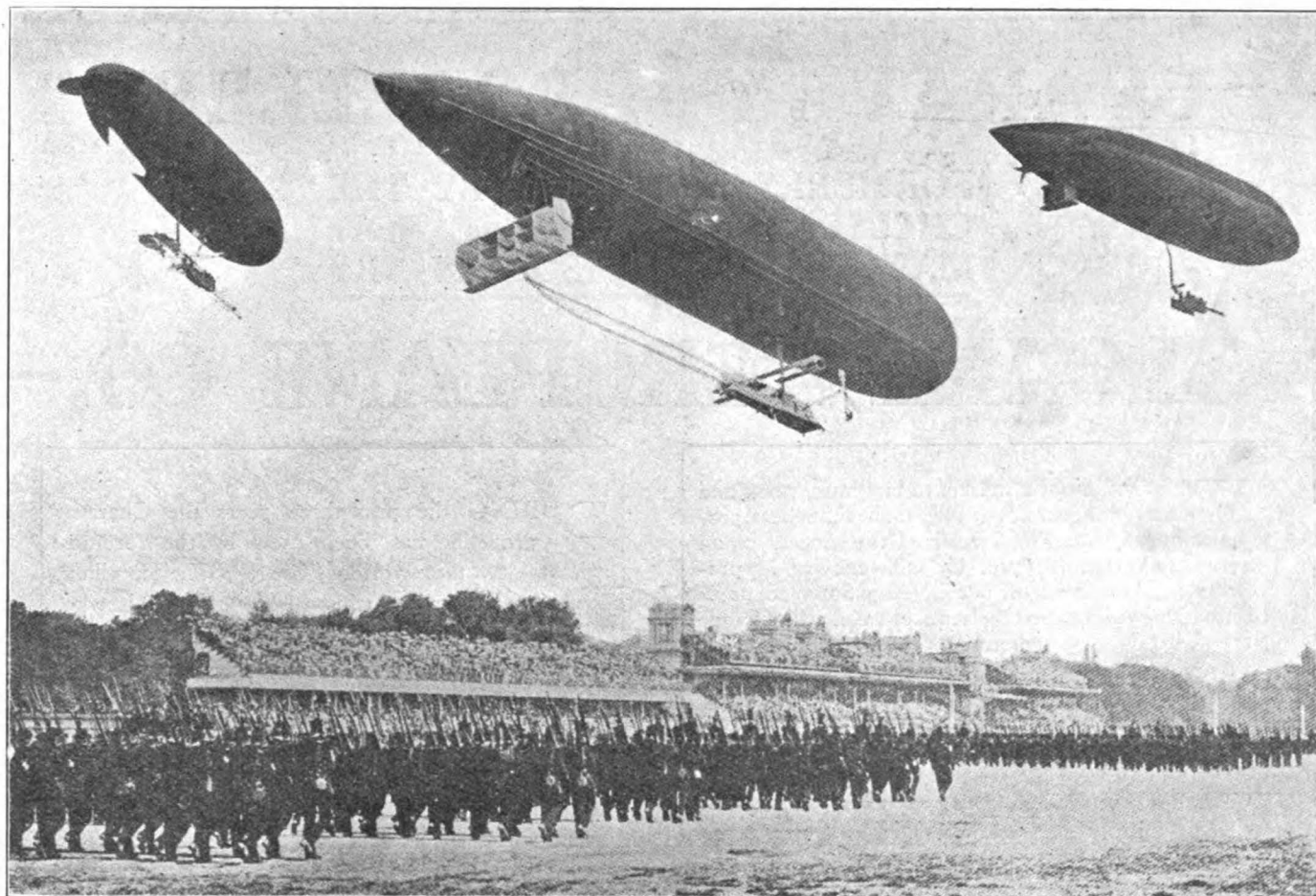
We arrange the weights and materials in an intelligent manner: All edges, ends and thin or exposed portions are of the hardest wood, usually white oak. The massive interior and unexposed parts are of light weight silver spruce. The greatest weight is not at the hub and center, but at the ends of the blades where it helps the engine like the heavy rim on a wheel.

The half cannot be told in an advertisement. Argument may persuade, but a trial will *absolutely convince*. Our *guarantee backs every blade*. We would rather lose a dozen sales than make one dissatisfied customer.

Our expert advice is gratis. Describe your machine and we can tell you just what you want to know and just what you need. The record we have made is the proof.

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616 NORTH G STREET, WASHINGTON, D. C.



THREE FRENCH MILITARY DIRIGIBLES MANOEUVRING OVER TROOPS ON PARADE.

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