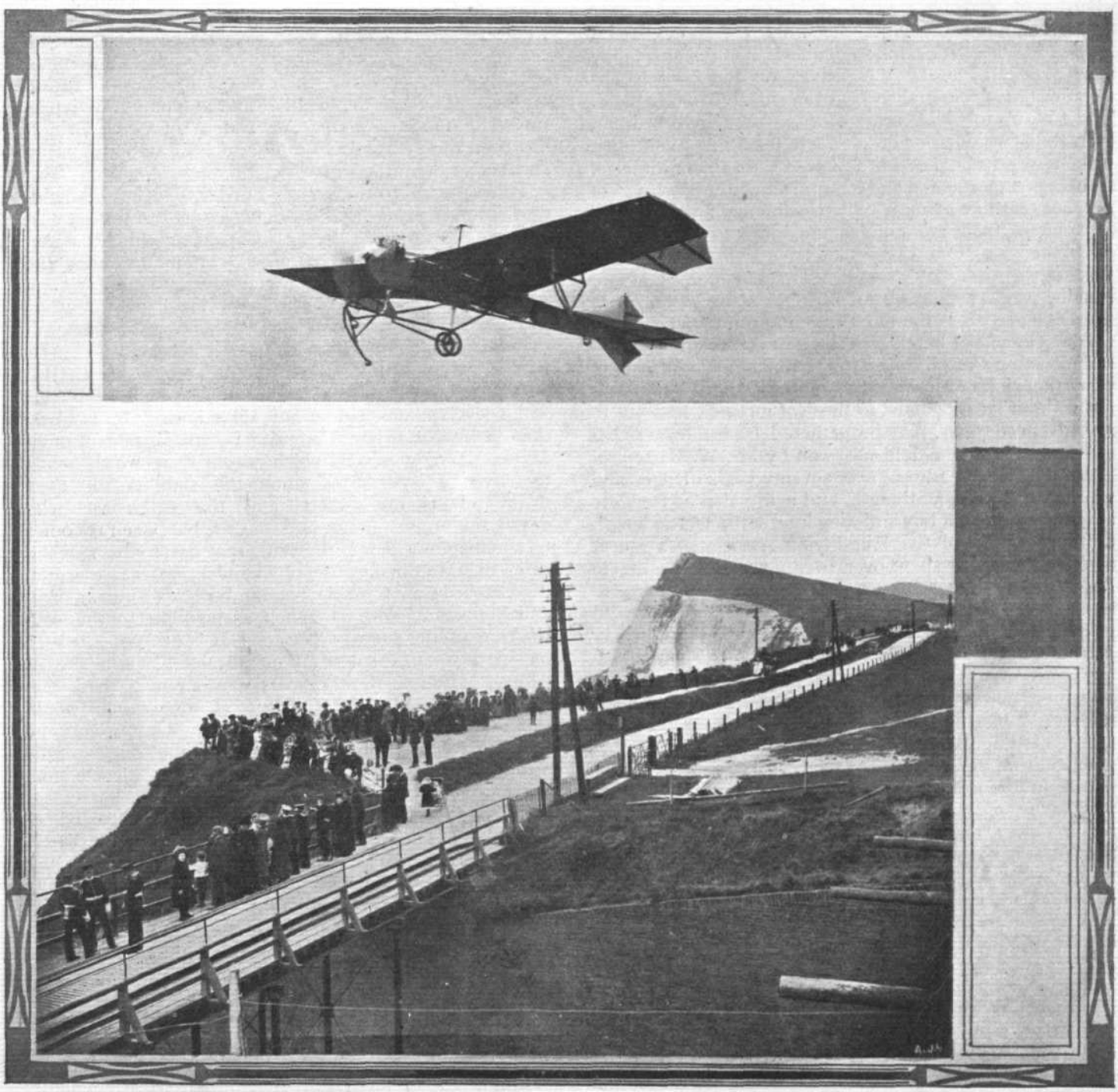
Flight

First Aero Weekly in the World.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE AERO CLUB OF THE UNITED KINGDOM.

No. 29. Vol. I.] JULY 17TH, 1909. [Registered at the G.P.O. as a Newspaper.] [Weekly, Price 1d. Post Free, 1½d.



HUBERT LATHAM AND THE CHANNEL FLIGHT.—View on Shakespeare's Cliff at Dover, showing some of the expectant visitors awaiting his arrival. Above, Mr. Latham is seen in full flight on his Antoinette monoplane.

THE USE AND MISUSE OF KITE-FLYING.

KITE-FLYING—which only last week formed the subject of a special article in connection with the Kite-Flying Association's competition—deals with an extremely interesting phase of aeronautics, and one that can be of great service in connection with certain lines of development in the matter of mechanical flight. From what has been achieved, it is already plain that vast improvement in the qualities of kites has been made of late years, and in no feature is their present excellence more marked than in the matter of automatic stability, which is one of the minor lessons they are especially able, and suited, to bring home to everybody. The relative degree of automatic stability which has been achieved in man-lifting kites, such as those of Cody, is very great indeed; and when it is realised what such devices can do, even the least initiated should be able to appreciate a little of what the full conquest of the air may mean by judging of the utility of that which has already been accomplished, even in this small field. The size up to which some of these kites are now built, even those which are not intended for lifting men, must strike anyone who has not followed the subject hitherto, as being extraordinary, and as furnishing at once proof of the fact that kite-flying is not a pastime confined to boys, for some of them are quite large enough to have carried off Sinbad.

It is to the very young idea, however, that we imagine the pastime of kite-flying must in the main appeal, and this is the more important, inasmuch as the encouragement of intelligent interest in aviation at this earliest age may well bring to the ranks in flight in later years the pick of the world's genius. That the hobby is not without its attractions to those of maturer, and not to say advanced years, may be gathered from the fact that the Baden-Powell Shield was won by Mr. W. Barton, of Thornton Heath, who is over seventy years of age, and who—with a vigour, strength, and agility that any athlete might envy—flew a box and wing kite, seven feet in length on the occasion of the Kite-Flying Association's recent meeting. Having spent over twenty years of his life in India, he attributes his hale old age in many ways to kite-flying, a sport which he holds to be superior even to golf. He sallies forth on kite-flying expeditions every morning, never giving in until he has "flown something," while his evenings are for the most part devoted to designing new kites which he makes himself. This is the more interesting in that kite-flying itself is a relatively inexpensive hobby that keeps people in the open, so that practically all that is necessary for carrying out experiments in the matter is leisure. There are thousands who have that, and kite-flying is a hobby that does not require one's entire time. On the contrary, wherever there is suitable space and five minutes to spare, one can try to fly a kite. We have all known from our earliest days that, whereas in this country we have been wont to look on a kite as a child's toy, in the Orient kite-flying has been reduced to very much of a science.

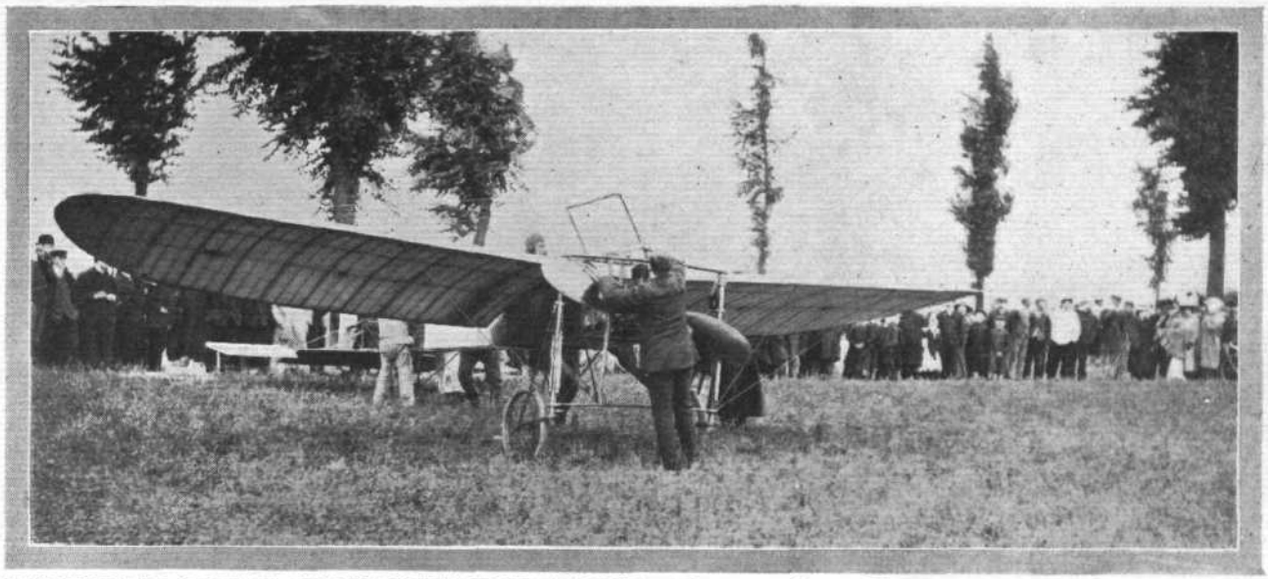
While we have marked that one of the first lessons a kite teaches the observant manipulator of the string is the importance of the factor of automatic stability in aerial navigation, we would particularly give a serious warning against making the erroneous but too common deduction that using a glider or a flyer as a kite is a good way of learning to control it. Flying a glider as a kite is a scientific means of testing its efficiency, but riding a glider while it is towed behind a motor car is a foolish and dangerous proceeding; and another instance of its consequences is before our readers this week in our account of the Morris Park Meeting in America.

Control and automatic stability are two entirely different factors, both equally important.

What one may style stability is a matter of the most imminent concern in regard to the problem of navigating the air. The matter presents itself in two aspects. The first relates to its purpose, which is that of providing a mechanical substitute for the human brain. The second touches on its necessity, which is a matter of opinion in certain cases, as instance sundry flying machines, among which may be named the Wright variety, in connection with which it is maintained that automatic stability is not needful to any greater extent than it obtains in the case of a bicycle. On the other hand, there are such instruments as man-lifting and meteorological kites, wherein automatic stability passes from the realm of opinion into the region of fact. The leading feature in the competition promoted by the Kite-Flying Association of Great Britain has been the demonstration of automatic stability during an hour's ride in the wind.

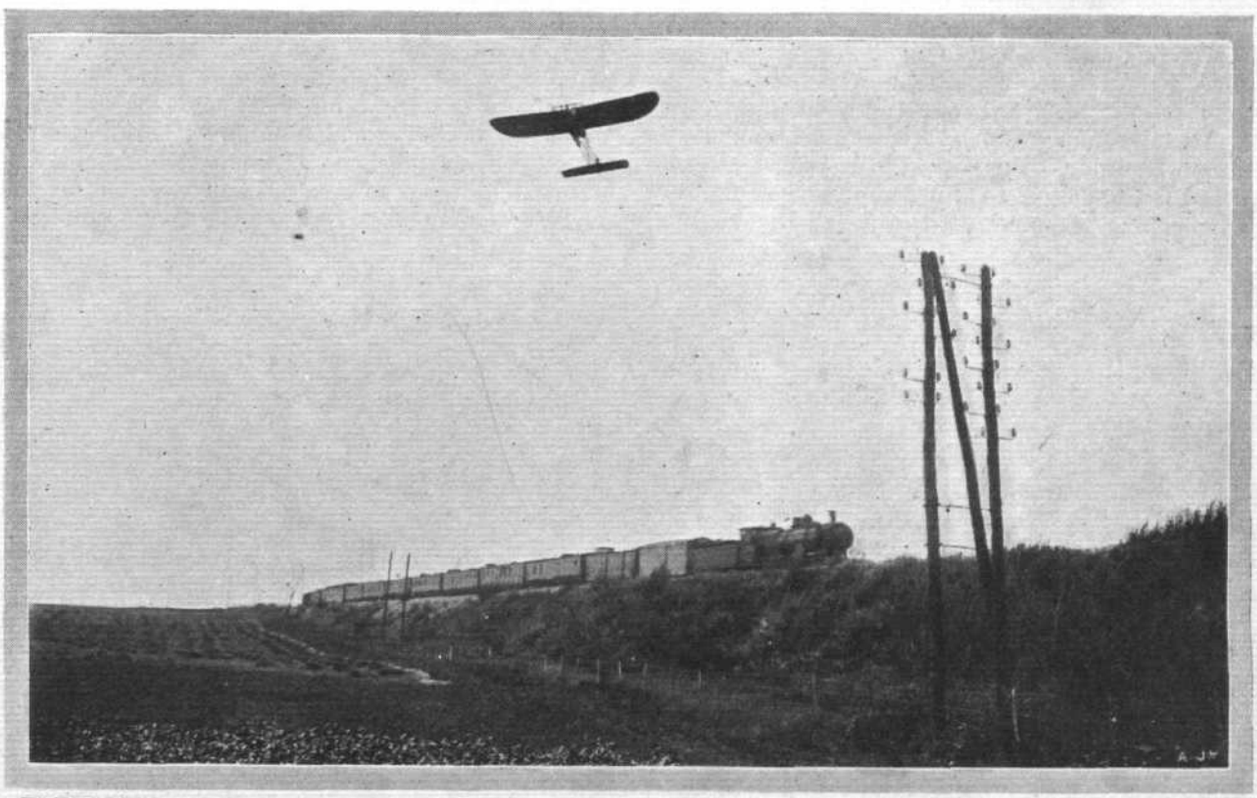
It is essential to the progress of all branches of flight, that automatic stability should be studied to the greatest possible extent. We need to know everything that can be learnt about it. Even if, in certain instances, the necessity does not exist at the moment to employ automatic stability, nevertheless it is obvious that in the years to come it will be desirable to apply the principles of it in a variety of ways that are not yet necessary. Therefore it behoves us to make parallel progress with this particular branch of the science that it may keep pace with developments in other directions. It is from this point of view that it is so significant that Messrs. Wright should have deemed it worth while to cover a system of automatic stability for their flyers. It is the experts and the enthusiasts who devise the original ways and means, but when it comes to commerce, which is the stage that has to be reached when mankind makes use of an invention, it is essential that as little as possible should be left to human skill and judgment and as much as possible to the self-working of the laws of Nature. It is not necessary to have every part of a machine absolutely automatic, of course. Indeed, if fifty years ago anybody had pretended that hundreds of thousands of people would ride bicycles he would have been laughed at because he would have been told exactly what the critics argue against Messrs. Wright to-day, that riding a bicycle is an acrobat's business. As a fact, there is not a movement which one has to make when handling a Wright machine that is any swifter or in any sense more acrobatic than is employed in the case of a bicycle. Nevertheless, if it were possible to make a bicycle automatically stable, without in any way making it more complicated or increasing its weight and bulk, there is no gainsaying that it would be a decided improvement. So it is in the matter of those flying machines to-day which do not aim at automatic stability. But in any case, since experiments in this direction can be made without undue cost, and since it is open to practically every class of the community to strive towards solving the problem more completely than has been done hitherto, it is eminently desirable that all encouragement should be afforded to kite-flyers and others, to the end of inducing them to understand this aspect of the problem of flight.

TWENTY-FIVE MILES ACROSS COUNTRY— BLERIOT'S GREAT FLIGHT.

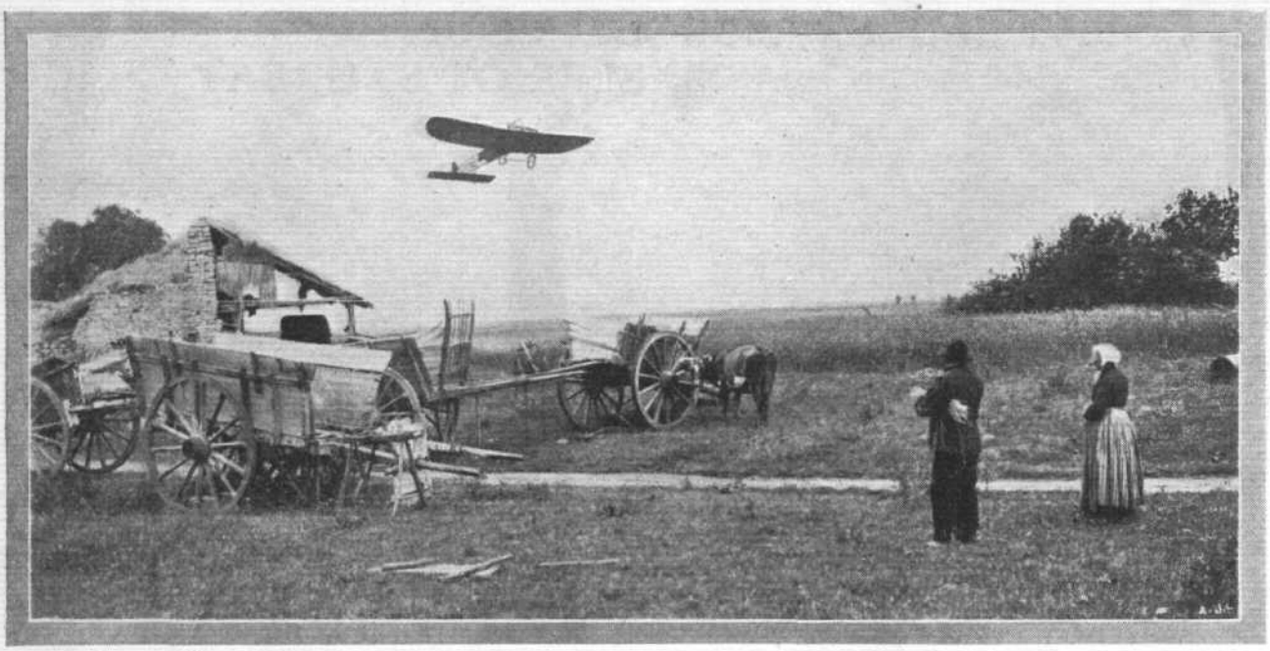


M. BLERIOT'S GREAT CROSS-COUNTRY FLIGHT.—The start from Mondesir, near Etampes. M. Bleriot is in the aviator's seat, and M. Anzani is just starting the motor of which he is the maker.

NOT the least interesting part about the whole affair of M. Bleriot's wonderful flight is the almost casual manner in which it was undertaken. M. Bleriot has indeed been a busy man of late, and what with trotting to and fro between Douai, Paris, Mondesir, and other places, he has really had very little time to himself. Only on Saturday last he was making some very successful flights at Douai with one of his other machines, and he just left his small-span flyer to more or less look after itself until conditions promised favourably for his long flight. It was on Monday evening that he really decided that "to-morrow" should be the day, and having seen that the Anzani engine was working properly, he had the flyer taken from the farmyard, where he had "lodged" it, a kilometre and a half down the road to the south of Etampes. There he stored it, covered up in ticking against a haystack in a field overnight, while he went to stay at Toury with M. Lambert. At 3.30 a.m.,



M. BLERIOT'S GREAT CROSS-COUNTRY FLIGHT.—During his great flight from Etampes to Orleans, M. Bleriot passed over the railway line just before reaching Artenay at the same time as the Bordeaux express was on its way. This unique incident is seen above.



M. BLERIOT'S GREAT CROSS-COUNTRY FLIGHT.—M. Bleriot in full flight on his long cross-country journey passing over the village of Monerville.

on Tuesday, July 13th, he was up again, and together with his host, M. Leblanc, M. Fournier, and his wife, set off in motor cars for the scene of the trial, where they were met by M. Guyot, who had come over from Orleans by road. Thus were the officials of the Aero Club of France in readiness to observe the flight, and record it in the world's history. Under fifty yards' start sufficed to get the flyer aloft, and hardly had M. Bleriot passed the word that he was ready than he was flying along at a height of some 25 metres above the ground. Off chased the three motor cars in pursuit, and soon the cavalcade was spinning along over the high road to Orleans, while Bleriot himself sped over hedges, ditches, fields and trees as he cleaved his own course in a direct line for his destination. Now ascending a little, now coming closer to the earth, the Bleriot flyer kept steadily on, and those awake at this early hour could only stare in amazement at the wonderful episode. Presently the railway between Etampes and Orleans hove in sight, and the locomotive of an approaching train whistled with all its might. Heads were thrust out of carriage windows, first in alarm, then in amazement as the astonished occupants had the experience of witnessing under unique conditions the new locomotion which needs neither road nor rail. It was an inspiring moment, as Bleriot, gracefully increasing his altitude to clear the telegraph wires, sailed calmly over the railway high above the train, waving his hand to the excited and cheering passengers.

One of the great questions which is always advanced when the subject of flight is on the tapis, is what will happen if the pilot has to descend *en route* in the middle of his journey. The conditions of the Prix de Voyage afforded an opportunity for the competitor to give a demonstration on this point, and M. Bleriot, sportsman that he is, took advantage of the rules by voluntarily descending in a field near Barmainville, although as a matter of fact he gained nothing by so doing, and stood to lose on the chances of failure which are naturally inseparable from a re-start. At the expiry of 10 minutes the timekeepers who were on the spot again gave the

M. BLERIOT'S GREAT CROSS-COUNTRY FLIGHT.—After covering the 25 miles across country, M. Bleriot alighted at the pre-arranged spot—La Croix-Biquet—about 15 kiloms. from Orleans. Immediately after his descent the whole machine was dismantled ready for transport back to its shed. The process of dismantling is seen above.

word to "go," and with a shorter run that before M. Bleriot at once flew up in the air. Toury was the next place passed, and as M. Bleriot has been staying there, and making therefrom many of his splendid flights, there was naturally additional enthusiasm among those who had got up early enough to witness his further prowess. Passing Chateau Gaillard on the left, and leaving Dambron on the right, Bleriot hove in sight of Artenay and approached his goal as the wind freshened up from the west. This caused the aviator to describe a semi-circle in the air while he cleared the railway and the telegraph wires before coming down to earth upon the selected spot at Croix-Briquet-Cheville, which is about 13 kiloms. out of Orleans. In alighting somewhat rapidly slight damage was done to one of the propellers.

Having started from Chicheny at 4.44 a.m. official time, the landing took place at 5.40. a.m. The distance is given at 41·2 kilometres, and the net time 44 mins. In accomplishing his task, M. Bleriot has established the right to receive 5,000 frs. as pilot, 4,000 frs. as constructor, while M. Anzani receives 3,000 frs. for having made the engine, and M. Chauviere 2,000 frs. as builder of the propeller. Half of these sums will be paid over as soon as the record trial has been certified, but the other half will only be acquired if the performance is not beaten before the 1st of January, 1910.

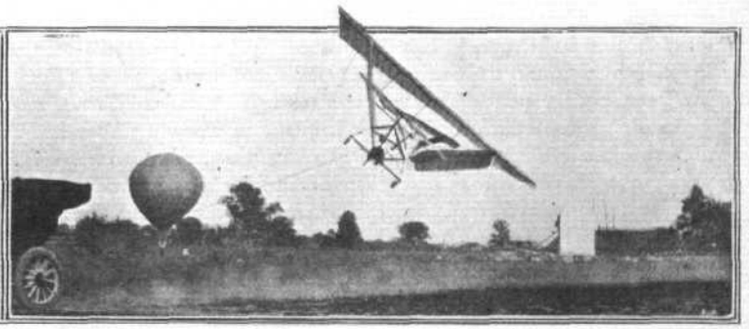
Having finished his journey, M. Bleriot without delay proceeded to dismantle the machine, and having detached the wings and tied them on to the main framework in readiness for transport, he made arrangements for its removal to Vichy, *via* Paris, in anticipation of the competitions which take place there. In 35 mins. the flyer was already on its way to the Bleriot establishment at Neuilly, and by mid-day it had arrived there. And there are those who say these machines are not portable.

M. Bleriot, who has thus accomplished the longest cross-country flight, has performed an even greater achievement in making such a successful attempt with what can with some justice claim to be the smallest practical flyer in existence. It is perhaps a little heavier than the Curtiss biplane in America, but it is smaller.

M. Bleriot has always been a great advocate of the monoplane principle, although among other machines he has built a very large biplane. The flyer with which he accomplished his present record is the smallest of his series of monoplanes, and was one of the great attractions at the Paris Salon, where it was not unusual to find doubts expressed as to its capacity for flight at all.

THE MORRIS PARK MEETING.

The scene at Morris Park Race Track, New York, during the aeronautical experiments arranged under the auspices of the American Aeronautic Society. The machine seen in the picture is the Martin glider.



One of the events in connection with the American Aeronautic Society's experiments was the testing of the Martin glider by towing it into action behind a motor car. The machine came to grief, and our picture shows the glider at the critical moment.

CONSIDERABLE success attended the meeting of the American Aeronautic Society's flight exhibition in the grounds of Morris Park, for although the actual flying was confined to the exhibitions of Mr. Glenn H. Curtiss, the fact remains that flight took place, and that visitors turned up in their thousands to see the sport. As we announced last week, Mr. Curtiss easily carried off the prize offered for a flight of a kilometre in length. In fact, he did far more than was necessary to fulfil any such condition, and altogether succeeded in showing the Aeronautic Society that they had every reason to suppose they had secured a good thing in their latest acquisition, for, as our readers know, they are to buy the Curtiss flyer for the use of their members.

Of the other demonstrations which were given, the most notable was that made by Mr. Martin on a motor-towed glider. His experiments afforded one more example of the foolhardiness of tests of this character, for we have always maintained that there is little or nothing to be learned through being towed behind a car in this manner, and that a great deal of unnecessary risk attaches to the operator. Merely regarded as a method of initial ascent, the exigencies of the situation may doubtless justify the means, but as a test in itself the towing of a glider behind a car is absolutely inconclusive. The presence of the tow-rope is a restriction on the operation of the machine, and a menace to what natural stability it may possess. Indeed the conditions do not represent the problems of flight in the least. Mr. Martin at Morris Park was no more successful than others have been before him at this game, for he ended up his short and erratic aerial journey by being pitched off his machine over a picket fence, which the machine itself demolished.

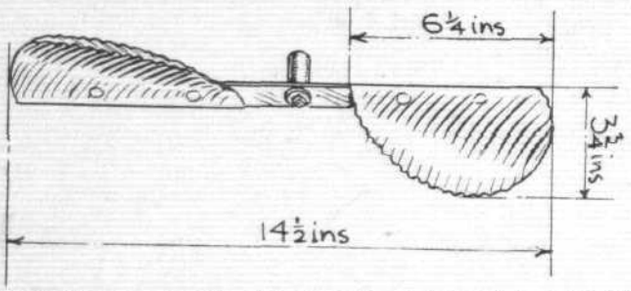
Apart from the actual demonstrations, various devices were on view for the inspection of visitors, and as there was mostly sufficient wind, a certain amount of diversion was created by kite-flying amongst the youngsters.

"Morning Post" National Airship Fund.

AT the time of going to press the National Fund, started by the *Morning Post*, to present to the nation an airship, is now well on the way to £10,000. Among the latest contributions by influential people are the Duke of Bedford and Messrs. Rothschild and Co. All donations should be sent to the National Airship Fund, *Morning Post* Offices, 346, Strand, W.C.

MODEL PROPELLERS—RESULTS OF A "FLIGHT" CHALLENGE.

THOSE who have followed our correspondence columns will have observed the challenge issued by Mr. Cochrane a few weeks ago and will also have noticed its acceptance by Mr. E. M. Wildey. Those who are interested in the question of design for small model propellers will doubtless desire to know what subsequently transpired between these two gentlemen, as also what manner of



The Cochrane propeller for models consists of two flexible blades made of corrugated aluminium riveted to a strip of the same metal. The material of the blades is lapped round the driving arm in order to give a thickened entering edge. The corrugations slant diagonally from the extremities towards the centre.

propellers they were that led to so great a paternal confidence in them. These things are easily reported upon by us inasmuch as our services were enlisted to act in the capacity of judge when the trial of the two types of propeller were carried through in our presence one day last week. Incidentally there are certain points in connection with the whole question of small propeller design which may to advantage be mentioned at the same time.

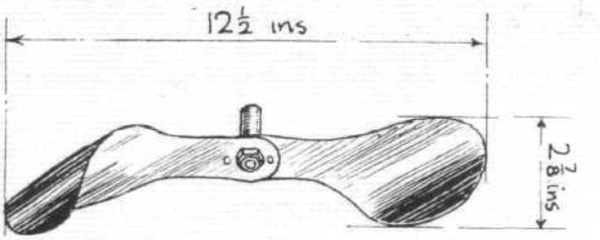
To recall the terms of Mr. Cochrane's challenge, he claimed to be able to obtain more thrust from a Cochrane propeller of a certain weight than could be obtained by any other make of propeller of equal or less weight when fitted to his $\frac{1}{8}$-h.p., 200 volt, electric motor. A rival propeller had, in fact, to weigh less than $5\frac{1}{2}$ ozs. without its boss, or less than 6 ozs. with its boss, and had then to show a greater thrust when driven by Mr. Cochrane's motor if it were to win his proffered five-pound note. It is true that originally he spoke of "best thrust for a given weight and horse-power," and it is also a fact that subsequently the motor in question was said by him to take 1 ampere when running at 970 revs. per minute on a 200 volt circuit; but nevertheless no actual stipulation was made as to brake horse-power that was to be absorbed nor as to speed of revolution, and consequently Mr. Cochrane's challenge meant little or nothing on the score of actual efficiency, or even on the score of weight in relationship to capacity or mechanical strength.

This point was brought forward by us and was admitted both by Mr. Cochrane and by Mr. Wildey prior to any tests being carried out, but at our suggestion both an Elliot speed-recorder and an ammeter were requisitioned in order that some definite figures of a useful character might be obtained while the various propellers were on trial. At the same early stage in the proceedings, too, Mr. Wildey disclaimed any hope of obtaining good results with his propellers at the relatively low speeds at which Mr. Cochrane's motor would run, since the very nature of the Wildey propellers precluded the possibility of heavy thrusts until very high speeds indeed had been attained.

As regards this type of test, in which a propeller is simply used as a fan (*not* as a propeller on a machine that is being propelled through the air) it must be borne in mind that no really reliable figures can, even under the very best of circumstances, be obtained that are applicable to aeroplane practice or even for the design of helicopteres. The propellers were merely spun round by the motor, the latter being mounted in one pan of a pair of scales, while the downward thrust of each propeller was measured in turn by ascertaining the increased weight needed in the other pan to restore equilibrium to the scales. How little bearing this kind of test of very small propellers—particularly those having a varying pitch like the Cochrane and the Wildey—can have upon any type of flyer may be judged from the very excellent article on "Propeller Mathematics For Novices" which we published a couple of weeks ago.

Actual Figures Obtained.

For what they are worth, however, we give herewith the data obtained from the Cochrane and Wildey "*fans*" on the occasion when Mr. Cochrane retained the five-pound note he had voluntarily hasarded. If the figures do nothing else, they will bring to the notice of some experimenters the fact that the current consumed by an ordinary direct-current shunt-wound electric motor increases considerably at lower speeds of revolution and that therefore the energy expended (*i.e.*, the horse-power developed) is—unlike a petrol or steam engine—greater at lower speeds than at high speeds. We also place on record details of the two types of propeller to which these tests refer, the accompanying illustrations, taken in



The Wildey propeller for models is made up entirely of thin sheet steel, two strips of which overlap at the boss. The extremities, which are enlarged to form the blades, are curled round nearly 180 degrees. When in action, the air pressure on these extremities tends to flatten them out so that they automatically adjust the pitch. The propeller is intended for use at very high speeds.

conjunction with their respective inscriptions, enabling a thoroughly lucid conception to be obtained of each.

Propeller.	Cochrane.	C. 2.	Wildey.	W. 2.	W. 3.
Total weight ...	$5\frac{7}{8}$	$2\frac{1}{4}$	$5\frac{1}{4}$	$3\frac{1}{8}$	$6\frac{3}{8}$ ozs.
Weight without boss	$5\frac{5}{8}$	$1\frac{11}{16}$	4	$2\frac{1}{2}$	$5\frac{1}{8}$,,
Overall diameter ...	$22\frac{1}{2}$	$14\frac{1}{2}$	$14\frac{1}{2}$	$12\frac{1}{2}$	$15\frac{1}{2}$ ins.
Exerted thrust ...	68	$26\frac{1}{2}$	16	12	20 ozs.
Current absorbed ...	1·85	·80	·88	·62	1·12 amp.
Equivalent e.h.p. ...	·496	·215	·235	·166	·30
Thrust per e.h.p. ...	137	134	68	72	67 ozs.
Speed of motor ...	1040	1640	1600	1720	1410 r.p.m.

In the table of results the propeller to which the original challenge referred is that indicated by the word "Cochrane," while, C. 2 relates to another of the same make which was tested for the sake of obtaining comperative data and because its overall dimensions were identical with one of the three produced by Mr. Wildey. That indicated by the word "Wildey" was the

nearest in point of total weight to the terms of the challenge, but the propellers W. 2 and W. 3 were also brought by Mr. Wildey, although, as we have already explained, the tests of Mr. Wildey's models were no real criterion as to their lifting power or their efficiency (thrust per e.h.p.), since they could only become effective at those very high speeds for which they were designed.

Another Acceptance.

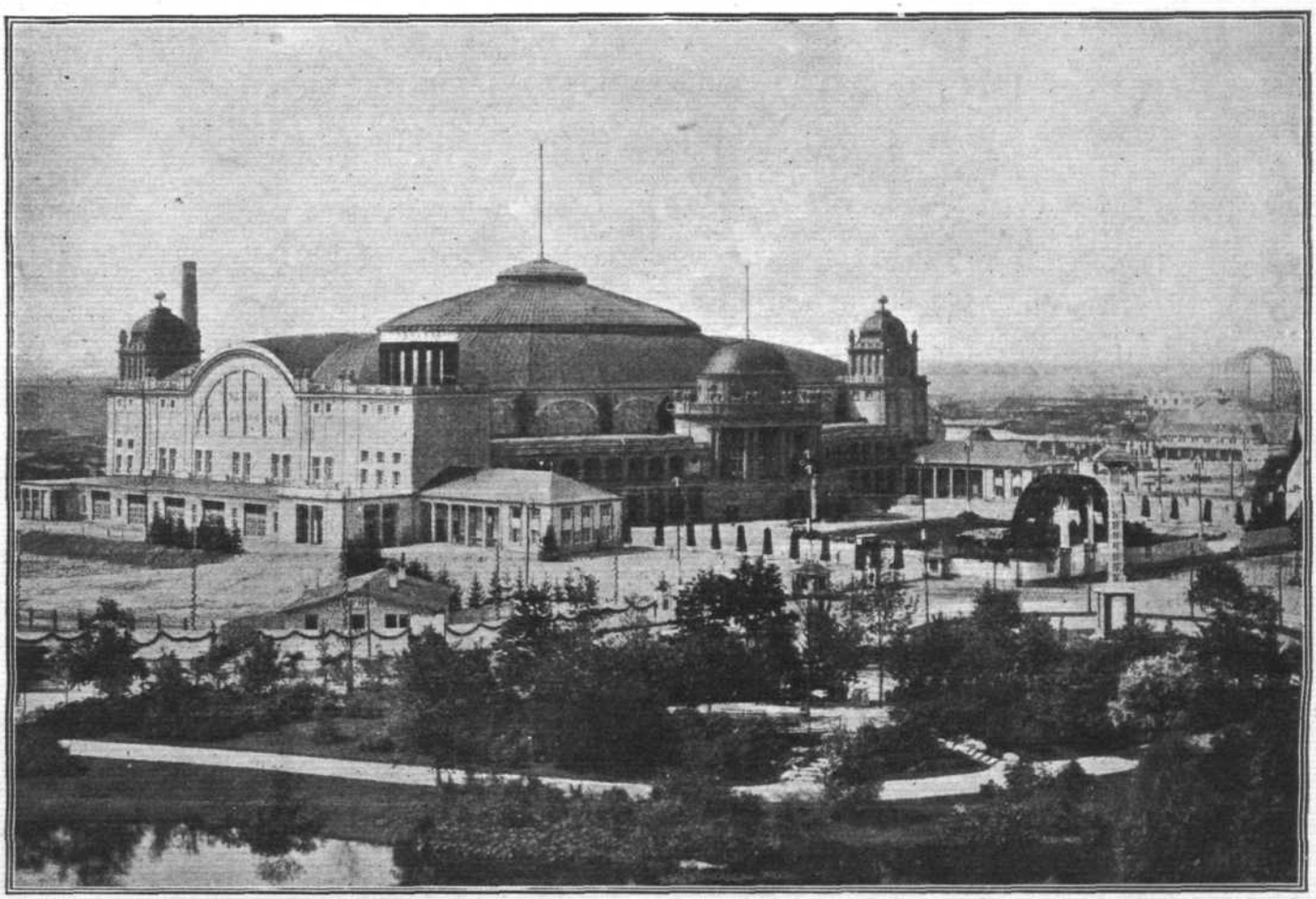
We also hear from the Watford Engineering Works that the propeller which they have made in response to Mr. Cochrane's challenge is ready for trial as promised in the letter which we published from them on June 12th.

They ask, "under what circumstances he wishes it to be tested," and we have been asked by Mr. Cochrane to again take charge of the arrangements for putting his and their propellers through the same set of trials as those reported upon above. Doubtless, therefore, this further test will be carried out at an early date if a convenient day can be arranged.

FRANKFORT FLIGHT SHOW.

THE great International Flight Exhibition at Frankfort opened its doors under somewhat depressing climatic conditions on Saturday, July 10th, but remains as an attraction for the public for a clear run of 100 days. In the huge Festhalle measuring 435 feet in length, and having a span of 200 feet, are collected together, or rather will be collected, when everything is in place, a remarkable assortment of aeronautical devices, and on the whole the Frankfort show will be far more "aeronautical" than "flight" in its leading characteristics. It is the dirigibles which will constitute the great attraction, and four huge hangars have already been erected on the open ground outside the hall, while plant has been laid down for inflating the mammoth envelopes. All being well, two Parseval airships, one by Clouth, of Cologne, one by Erbsloh, of Elberfelde, and another by Dr. Gans, of Munich, should remain in evidence during the whole time that the show is open, and it is further anticipated that "Zeppelin III" will be available for a series of exhibition trips. "Zeppelin III" is, in fact, to be the attraction of the show, and evokes the greater interest among residents since they hope that it may be quartered as a permanency among them. Inside the hall is the famous Preussen balloon, which holds the world's record for the highest ascent—over six miles. In the airship section the N.A.G. show a large "car" with its engine, for a dirigible.

There is an active side to the Exhibition in addition to its purely static display, for some £6,000 worth of prizes are to be competed for by flyers, kites, balloons, dirigibles, and all manner of aerial appliances. Among them is a Kaiserpreis, and another has been offered by the German Foreign Office; while Count Zeppelin, together with Herr Krupp and other leading men of the nation, have contributed largely to the general prize fund. There is plenty of room outside in the grounds for all manner of experiments, and among other conveniences a gliding hill has been built.



FRANKFORT INTERNATIONAL AERONAUTICAL EXHIBITION.—General view of the Exhibition building at Frankfort, which was opened on Saturday last.

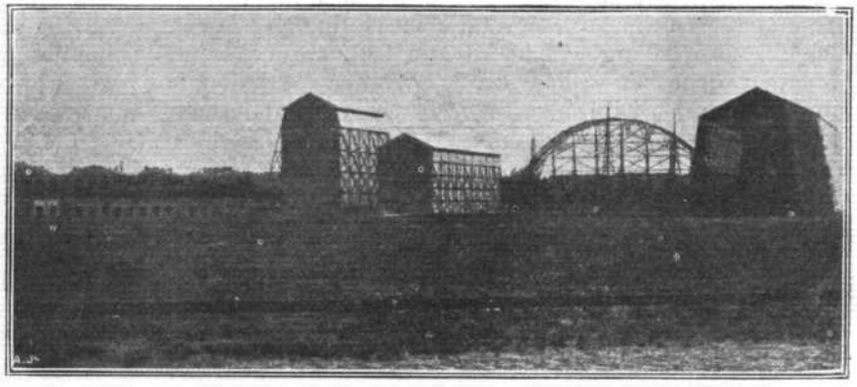
In the grounds of the Frankfort Flight Exhibition, showing the structure which has been erected for the jumping off of the competitors in the various events on the flying ground.

Fabris. The model section is, on the whole, interesting on account of the good workmanship displayed by many exhibitors, but it still contains, of course, a large percentage of "impossible" devices. Some of the best models in the show are those exhibited by firms prepared to undertake the construction of airship sheds. Perhaps the most important feature of the exhibition is that it is so entirely German in its "make up," a fact which, while it may not add to the attractions, certainly gives all the more cause for reflection upon the things on view.

The inaugural ceremony took place in the presence of Prince Frederick Karl and Prince Henry.

Considered separately, the exhibits come under either of twelve groups, as follows: (1) balloons, (2) airships, (3) military, (4) signal service, (5) gas plant, (6) aerial navigation (science), (7) special apparatus, (8) equipment, (9) flyers and kites, (10) engines, (11) works of art, (12) toys. As a matter of fact, however, the grouping is in no wise self-evident in the arrangement of the exhibits, which seem to have been dumped down on the first convenient spot. The gallery is given over to models. In the military section are some interesting high-angle guns by Krupp and Ehrhardt.

In the flight section there are German-built flyers of the Voisin type, a Wright machine, and a curious monoplane by



Four balloon sheds erected in connection with the Frankfort Flight Exhibition. The buildings are, from left to right, the dock for the Fessel balloon, for the "Clouth," for the Gans-Rodeck, and for the Parseval airship.

AERO CLUB OF THE UNITED KINGDOM.

OFFICIAL NOTICES TO MEMBERS.

Fixtures for 1909.

July 17 ... "Hare-and-Hounds" Balloon Race, Hurlingham Club (Cup presented by the Hon. C. S. Rolls).
August 28 ... Gordon-Bennett Aviation Cup, Rheims.
October 3 ... Gordon-Bennett Balloon Race, Zurich.

Committee Meeting.

A meeting of the Committee was held on Tuesday, the 13th inst., when there were present: Mr. Roger W. Wallace, K.C., in the chair, Mr. Ernest C. Bucknall, Mr. Martin Dale, Mr. John Dunville, Prof. A. K. Huntington, Mr. V. Ker-Seymer, Mr. F. K. McClean, Hon. C. S. Rolls, Mr. J. Lyons Sampson.

"Hedges Butler" Challenge Cup Race, July 10th, 1909.

Owing to the bad weather on Saturday last, the Long-Distance Race for the Cup presented by Mr. F. Hedges Butler was cancelled.

"Hare-and-Hounds" Balloon Race, Hurlingham.

The race for the Rolls Trophy will take place from the Hurlingham Club, Fulham, S.W., to-day, at 3.30 p.m.

Members of the Aero Club will be admitted to the Hurlingham Club free on presentation of their Aero Club Membership Cards.

Members of the Aero Club can obtain special tickets for the admission of their friends, who are not members of the Aero Club, to Hurlingham, from the Secretary of the Aero Club, price 10*s.* each.

The following balloons will take part:—

Hare.—The Hon. C. S. Rolls.

Competitor.	Balloon.	Pilot.
1. Mrs. John Dunville	La Mascotte	John Dunville
2. B. H. Barrington Kennett ...	The Comet ...	B. H. Barrington Kennett
3. Ernest C. Bucknall	Enchantress	Ernest C. Bucknall
4. Hon. Mrs. Assheton Harbord	Valkyrie ...	C. F. Pollock
5. Baroness von Heeckeren ...	L'Esperance	Griffith Brewer
6. A. M. Singer	Satellite ..	A. M. Singer
7. C. A. Moreing	Thistledown	Maj. Baden-Powell

The Club balloon "Aero Club IV" will follow the race in charge of Major Sir A. Bannerman, Bart., R.E.

Shellbeach Flying Ground.

Erection of Sheds.—Members wishing to erect sheds at Shellbeach are requested to apply to the Secretary, who will supply all information. Six sheds have been erected there, and the flying machines which are now being constructed will be ready for experiments in the course of the next few weeks.

Members visiting the grounds are requested to have with them their membership cards, as strict instructions have been given to admit only Members to the flying ground.

HAROLD E. PERRIN, Secretary.

The Aero Club of the United Kingdom,
166, Piccadilly, W.

THE CHANNEL FLIGHT.

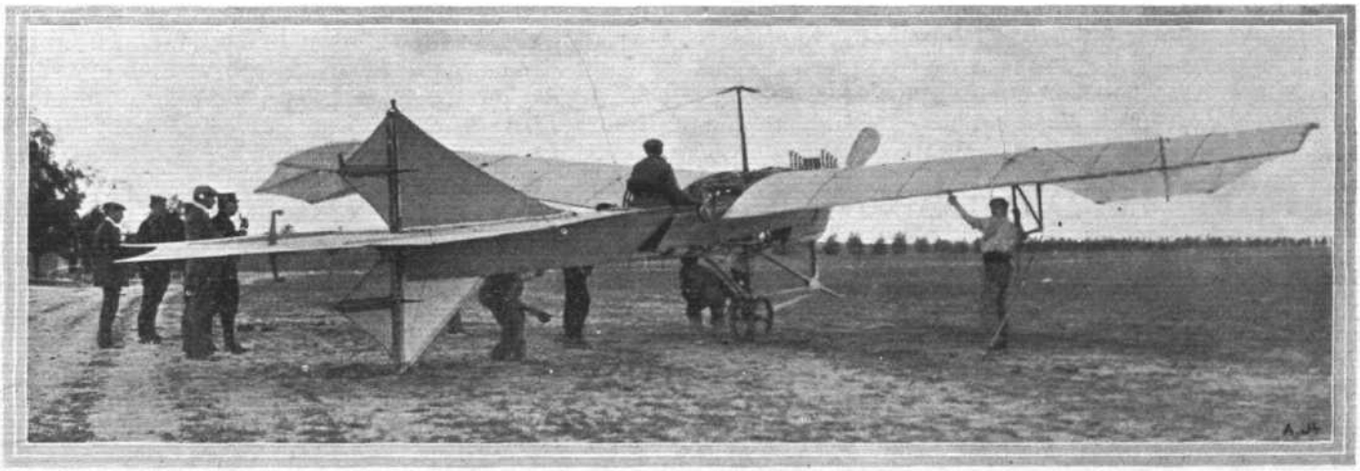
Mr. Hubert Latham (on the left) and M. Levavasseur, the constructor of the Antoinette monoplane with which Mr. Latham has created such wonderful records, at Sangatte.

WHATEVER interest may have attached to Mr. Latham's arrival at Sangatte, and to his subsequent proceedings at the old Channel Tunnel works, it bears no comparison with the sudden enthusiasm aroused by his giving the *Daily Mail* the required 24 hours' notice to fly, on Friday of last week. When it is actually realised that a man has seriously notified his intention of attempting to achieve a feat which has never before been accomplished in the history of the world and of doing so within 24 hours, the project comes down from the clouds with a run, and it is, indeed, no wonder that Calais and Dover should have been seething with excitement ever since. As luck would have it, our famous July weather made flight impossible, first on Friday, then on Saturday, Sunday, Monday, Tuesday and so on up to the time of going to press, when Mr. Latham is still on French soil and still continues to calmly scan the horizon between times when he is not in touch with his Antoinette machine or renewing his notice to fly.

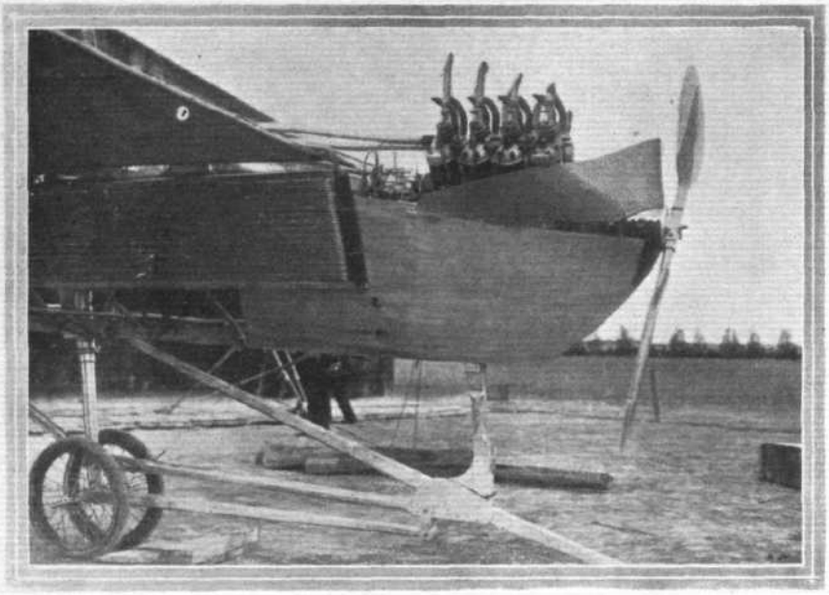
Although up to the last moment hardly anything was done in the way of special preparation for the attempt, arrangements were very quickly elaborated once the project had taken definite shape, and one of the first preliminaries was the installation of a wireless service by the Marconi Co., who established communication between Sangatte and the roof of the Lord Warden Hotel at Dover. All being well, it was decided to land on the Rope Walk Meadow of Shakespeare Cliff. This spot was Mr. Latham's own choice, and except for the obstruction of two telegraph lines, it is fairly convenient.

Dover and its officials have given themselves up to preparing a suitable welcome, and Mr. Walter Emden, the Mayor, last Saturday postponed a trip to the Continent in order to be personally present. *En route* the British Motor Boat Club had made arrangements to patrol the course with speedy motor craft, but Mr. Latham, in expressing his thanks for the offer of their services, stated that he had made arrangements for this work to be done from the French side by the torpedo destroyers, "Le Harpon" and "Le Calaisien," the latter boat being equipped to haul the flyer on board should it fall into the sea. Mr. Perrin, the Secretary of the Aero Club of the United Kingdom, also offered the assistance of a similarly equipped tug from the English side if it was required.

Mr. Latham himself remains cool and collected amid his unique surroundings, and seems little affected by the undeniable excitement of the moment. Although his father was an Englishman, Mr. Latham, who is now 26 years of age, is a French citizen, and was born in Paris. He has served in the French army, and was for fifteen months at Baliol, Oxford. His first experience in aeronautics was obtained in 1905, when he accompanied M. Jacques Faure in a balloon trip across the Channel. This also was a record voyage, for in six hours he travelled from the Crystal Palace to the outskirts of Paris. He is a great advocate of high speed in flight, and intends to double the power of his flyer "after this Channel business is over."



"ANTOINETTE IV."—The monoplane with which Mr. Hubert Latham contemplates flying the Channel, and with which he has already made such splendid records in France. In this view the entire general construction of the machine is well shown.



An enlarged view of the front portion of the Antoinette monoplane used by Mr. Hubert Latham, showing the details of construction of the nose, the disposition of the motor, the propellers, and the radiator, and the protecting support underneath the machine attached to the wheels and the lower part of the nose.

On Tuesday morning of this week Mr. Latham decided upon a trial flight, merely to see that his machine was in proper order. There was no idea of attempting a crossing, although a tremendous crowd of spectators very quickly arrived on the scene directly there was a rumour to the effect that the flyer was about to be taken out for an airing. Wheeling the machine on to the highway, a start was made in the direction of Calais by running along the flat grass-land by the side of the road. This was one of the few convenient starting points in the vicinity, for although Mr. Latham has chosen a spot with natural facilities for working upon his machine—to wit, the Channel Tunnel works—his surroundings do not form altogether an ideal land aerodrome. Once he gets beyond the cliff and away to sea, however, that is a difficulty which will not bother him much. It was just after 8 o'clock when the flyer lifted, and rose steadily to an altitude of 30 ft. or so; it required a run of nearly a quarter of an hour to get off the ground.

For a duration of 6½ minutes the flyer remained aloft, and then a descent was made in a cornfield, when some damage was done to the chassis on which the machine is supported. The cause of the mishap, which was in no way serious, was due to the unexpected rapidity of the descent; this was attributed by Mr. Latham to the failure of the wind, which was shielded below a certain altitude by surrounding obstructions. Repairs on the machine were immediately put in hand, and speedily finished in readiness for the favourable moment for starting. The insistent wind and rain, followed by fog, has continued with scarcely a break, and at the time of closing for press Mr. Latham had found it inexpedient to attempt the much-looked-forward-to flight.

Count de Lambert at Wissant.

COUNT DE LAMBERT, who is another prospective competitor for the cross-Channel prize, is at Wissant with one of the Wright flyers, which, however, had not even been unpacked on Tuesday of this week. Count de Lambert intends to use another machine for practice flights before making the actual crossing. As the result of his presence, and the interest aroused by the projected attempt, Wissant is rapidly filling with visitors, where Countess de Lambert and her little daughter are also staying.

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THE AIRSHIP SHEDS OF FRANCE.

BEARING in mind that such a thing as an airship shed wants finding in this country, it is rather a matter for reflection to call to mind those which are already in evidence in France. After the hangars at Chalais-Meudon, Saint Cyr, Sartrouville, Moisson, and Meaux-Beaudal, there is the great Clement-Bayard shed at Issy-les-Moulineaux, near the Aero Club ground, while alongside is another belonging to the Astra Co., and in a short while there may be yet one more, but of a different character, since Melvin Vaniman has in hand the construction of a portable shed. It is said that six of these new portable sheds altogether are at present contemplated.

The dimensions of the Clement-Bayard shed are 120 metres long, 22 metres wide, and 30 metres high (394 ft. by 72 ft. by 98 ft.). The Astra shed measures 100 metres by 38 metres by 30 metres (328 ft. by 125 ft. by 98 ft.). Melvin Vaniman has been influenced in his designs by his knowledge in the construction of an airship shed used for the housing of the Wellman dirigible at Spitzbergen.

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CHEAP HYDROGEN—AN INTERNATIONAL COMPANY.

UNDER the auspices of the Disconto Gesellschaft of Berlin, a company has been formed with a capital of 1¼ million marks, and registered offices in Frankfort-on-Main, to work the patents of the Dellwik-Fleischer Hydrogen Co. The new firm are undertaking the construction of special hydrogen works under the superintendence of Mr. H. Dicke, and we are informed that they anticipate being able to produce hydrogen of 99 per cent. purity at a price of only *2d.* per cubic metre, and are willing to undertake the manufacture under a guarantee of a minimum purity of 98 per cent. under all circumstances. The plant for the Dellwik-Fleischer process, further particulars of which we shall publish in due course, can be erected anywhere and for any capacity, and should thus do away to a large extent with the necessity of transporting compressed hydrogen. We further understand that the Prussian Minister of War has placed an order for a large Dellwik-Fleischer plant to be erected, and that other Government contracts are impending. Altogether this development should be of considerable importance to aeronautical interests.

NEWS OF THE WEEK.

The "Daily Mail" Garage.

PERMISSION has now been accorded by the London County Council for the erection at Wormwood Scrubbs of the airship garage which the *Daily Mail* is presenting to the War Office, and all being well the shed will be finished by September 1st in readiness to receive the French Clement-Bayard airship, which the Parliamentary Aerial Defence Committee have arranged to visit London.

The sanction of the L.C.C. Committee was recommended by the Parks and Open Spaces Committee, and was necessary because Wormwood Scrubbs is vested in the Council by Act of Parliament dated 1879. This Act provides that the site with certain exceptions may be used for such military purposes as the Secretary of State for War may direct, but it does not enable a permanent building to be erected without the L.C.C. permission.

The Northampton Institute and Flight.

THE authorities of the Northampton Institute at Clerkenwell have decided to teach flight and aeronautics as a technical science during next session, and have arranged for a four years' course to cover workshop calculations, drawing and laboratory work, in addition to lectures.

The Wrights' Delay.

FOR some extraordinary reason, the Wright Brothers do not seem to be getting along very quickly with their Government contract work, and there are signs of dissatisfaction in some quarters at the delays which have occurred. As our readers know, they have had one or two little mishaps in getting their machine rigged up, and these facts, coupled with the very characteristic methods of the Wrights themselves, appear to have had a somewhat irritating effect upon the public. The Signal Corps Department, in particular, is anxious to bring things to a climax, as it hopes by their success to induce Congress to pass a substantial vote for further experiments. On Monday Orville had some success by flying round the Fort Myer drill ground nearly seven times.

Ill-luck once more, however, returned to Orville Wright on Wednesday of this week, when he again made a couple of unsuccessful attempts to fly his machine. On the second occasion the landing, which was performed with the engine still running, resulted in damage to the runners.

Decorations for Pilots.

THE French Senate formally passed the Bill relating to the award of decorations for achievements in flight and aeronautics, without discussion, on Saturday, July 10th.

Paulhan Training for a Prize.

AT Douai on Saturday, July 10th, M. Paulhan was training for the Société d'Aviation 1,000-franc prize, with his biplane. He accomplished a circuit of 2 kiloms. at 60 kiloms. per hour.

On Tuesday he was again practising at Douai for this, as also for the Prix du Nord and Mahieu prizes, and executed some very successful flights, one of which was a circuit of 12 kiloms. lasting over 15 minutes.

Bleriot at Douai.

UNDAUNTED by the rain, Bleriot made several successful flights before a crowd of 20,000 spectators at Douai on Friday of last week, and followed these up with further successful attempts on the Saturday. On Saturday evening he left Douai in readiness for his cross-country flight, which is described elsewhere.

Tissandier Enters for Vichy.

PAUL TISSANDIER has sent his name to the Aero Club of France as an entrant for the Vichy meeting, which takes place from the 18th to the 25th of this month. He will, of course, use a Wright biplane.

Rheims Meeting—New Entries.

TWO more entries have been received for the Rheims meeting, from MM. Gobron and Sommer. Notification has also been received that Mr. Glen H. Curtiss intends to bring over two American-built flyers, one of which is of higher speed and more solidly built than that with which he has been making his successful flights in America.

Following the action of President Fallières, who has notified his intention of being present at the Rheims Meeting, General Picquart, the French Minister for War, has also promised to attend, and it is not improbable that he will give permission for a military airship to be present during the meeting.

Gobron Wins 500 Metre Prize.

JEAN GOBRON, the latest of the successful French flyers, who has entered for the Rheims meeting, won the Aero Club of France 500-metre prize on July 9th by making a flight of over 5 minutes' duration. In two other flights, lasting 6 minutes each, he ascended to an altitude of 20 metres. On Tuesday of this week he flew for 7 minutes at an altitude of 12 metres, in a 20 kilom. breeze. He is practising at Chalons.

Laminne Flyer.

OF Belgian construction, and designed by Chevalier L. de Laminne, a machine has been built near Liege, weighing 500 kilogs. and fitted with a 60-h.p. Vivinus engine. Within the next fortnight trials with it are expected to commence, and will take place on the Herbaye Plains, some 21 kiloms. from Liege.

Demanest with His Antoinette.

M. DEMANEST took his Antoinette monoplane out again at the end of last week, and made several successful circuits of the Chalons ground. On Sunday, however, after a couple of flights of 16 minutes each, a sudden gust of wind brought him down unexpectedly, the machine being damaged, but no hurt coming to the aviator.

Three Ae.C.F. Prizes.

THREE new prizes have been received by the Aero Club de France. Two are of a value of 1,000 frs., one from M. Buirette, Mayor of Suippes, who stipulates that the start of the competition for it shall take place at Chalons, and the other offered anonymously for low-speed aeroplanes. The third prize has been offered by the Marquis of Ganay and will be given to the aviator who after flying at least 67 kiloms. shall land in front of the Chateau of Courance, close to Milly, Seine-et-Marne.

Weiller High-Flight Prize.

IN respect to the 1,000 fr. prize offered by M. Lazare Weiller for the first pilot who succeeds in beating Wilbur Wright's record of 100 metres, the Ligue National Aerienne, who have control of the event, have issued information to the effect that competitors must clear a ballonette riding at least 110 metres above the ground, and must send in their entries in writing to the L.N., 27, Rue de Rome, on the preceding day. The entry fee of 25 fr. will cover two consecutive days.

Chalons to Issy Prize.

THE conditions relating to the prize of 10,000 frs. which was given to the Ligue Nationale by M. Alphonse Falco some months ago, have just been accepted by the Commission Aerienne-Mixte. It will be remembered that competitors have to start from the military camp at Chalons and land on the parade ground at Issy, after maintaining an average speed of 30 kiloms. an hour during the journey.

Prizes Officially Confirmed.

THE C.A.M. has confirmed the award of the following prizes :—

Goupy Prize.—Mr. Latham, for his flight over the village of Vadenay on June 6th, 1909.

Roland Gosselin Prize.—M. F. de Rue, for 5 kilometre circuit flight made at Juvisy on June 13th.

Mme. Edmond Archdeacon Prize.—M. Bleriot, for his flight of 51 minutes' duration at Juvisy on July 4th.

Sports Committee of the L.N.A.

THE Sports Committee of the Ligue Nationale Aerienne has elected the following officers: President, Major Renard; Vice-President, Major Ferrus; Secretaries, Andre Risler and Louis Gaudart. The Committee have decided that events organised under their auspices must be controlled by officers chosen from a list of their Committee.

Curtiss and the "Scientific American" Trophy.

THE wind has been too strong for Mr. Glenn H. Curtiss to succeed in carrying off the *Scientific American* trophy up to the time at which we go to press. The conditions necessitate his making a flight of 15½ miles between sunrise and sunset, but so far his longest flight at Morris Park has been about a mile and two-thirds in length.

Cody Still Practising.

FURTHER practice flights were carried out by Mr. Cody on Laffan's Plain last Monday, and demonstrated a still further improvement in his control of his flyer. He has now removed some of the supplementary surfaces, and apparently with advantage, for although he made no lengthy flights, he showed considerable ability to manœuvre in mid-air.

Russian Airship Leaves France.

THE Lebaudy airship, built for the Russian Government, was dispatched to its destination by boat on Thursday of last week.

Dirigibles at the French Review.

DURING the march past before President Fallières at the Longchamps review, on the occasion of the National Fête on Wednesday, two dirigibles, the "Ville de Nancy" and "Republique," arrived from opposite directions to perform manœuvres over the race course. Captain Merchal and Major Bois were on board the "Ville de Nancy," while M. Kapferer and Captain de Lassus were on the "Republique." Immense enthusiasm was aroused in the public at the sight of the evolutions which the two airships performed with such ease.

Fulton Centenary.

FOR the New York–Albany dirigible competition in connection with the centenary of Fulton's navigation of the Hudson river by steamboat, Captain T. S. Baldwin is at present the sole entrant with an airship constructed at Hammondsport by the Herring-Curtiss Co. The first date of closing was July 1st, but other entrants will, it is hoped, send in their names before September 1st. The New York State has voted $25,000 in connection with the event, and the *New York World* the sum of $10,000. The commemoration, it will be remembered, takes place from September 26th to October 6th.

Baldwin Airship.

CAPTAIN BALDWIN, who has entered an airship in the New York–Albany event, recently made a trial voyage at an altitude of 2,000 feet.

Over New York by Dirigible.

MORE progress. Residents of New York City rubbed their eyes on Monday of this week, on looking heavenwards, to see a dirigible calmly riding above them. It was navigated by Mr. F. Goodale, who, starting from New Jersey, crossed the river and travelled southwards over Manhattan for a distance of about four miles, when he returned against a moderate head wind and made a safe descent outside his shed.

Prizes for Model Flyers.

IN connection with the exhibition which is being organised by the *Model Engineer* to take place at the Horticultural Hall, from October 15th to 23rd, three prizes, consisting of Silver Medal and £2, Bronze Medal and £1, and Bronze Medal and 10s., will be awarded to the three model aeroplanes which in the opinion of the judges possess the greatest merit in point of design and workmanship. Models must not exceed 4 ft. in any one dimension, and only those connected with the trade of model making or aeroplane building are ineligible to take part. It will be noticed that the flying qualities of the models will not be taken into consideration, but only their construction and finish.

German Aerial Navy League.

AT the annual general meeting of the German Aerial Navy League, held on the 5th inst. at Leipzig, it was reported that the membership had risen to close upon ten thousand. The League is run very much upon the lines of the German Navy League, and local associations have been formed in most of the German States, and these do a great deal to educate and maintain public interest in the progress of flight.

Triptyques for Aerial Tourists.

IN our issue of May 1st we recorded the fact that in consequence of the large number of foreign balloons descending upon French soil, the French excise authorities had decided to strictly enforce the heavy Customs duties upon such "imported" balloons. It will be remembered that a request that a system of triptyques should be instituted was met with a blank refusal, but the International Touring League at the Conference in

London last week discussed the question and decided to approach the various European Governments and endeavour to get such a system established so that aerial voyagers may not be mulcted in the full import duties when making trips to the Continent. It should not be overlooked that at the present time the French Government is arranging an International conference for the discussion of this question.

Gordon-Bennett Balloon Cup, Starting Order.

THE starting order for the Gordon-Bennett Balloon Race was declared at Geneva on Sunday last, and is as follows:—1, 10, 16, Italy; 2, 11, 17, Belgium; 3, 12, 18, France; 4, 13, Spain; 5, 14, 19, Germany; 6, America; 7, 15, 20, Switzerland; 8, England; 9, Austria. The Swiss Club are endeavouring to change the venue of the next International Congress from Milan to Zurich, to be held during the Gordon-Bennett meeting.

Hedges Butler Cup Race Abandoned.

INCLEMENT weather again spoiled the prospects of ballooning on Saturday last, when ten competitors should have ascended from Hurlingham in competition for the Hedges Butler Cup. The day was a sample of July weather, impossible, we hope, beyond our shores, and although there were interludes of sunshine, it was generally agreed that the Committee had done wisely in abandoning the race. As a matter of fact, too, they had little latitude for decision, since the final of the Inter-Regimental polo match was down to take place at four o'clock, and it was essential that all of the balloons should have been clear of the ground by that time. It was, therefore, necessary to come to a conclusion at a comparatively early hour.

Dollfus Kite Prize.

To be competed for under the auspices of the Ligue Nationale Aerienne, Major Dollfus has offered a prize of 10,000 frs. for man-lifting kites. Competing kites must raise 110 kilogs. to an altitude of 300 metres, and maintain their position for a quarter of an hour. A minimum wind of 10 metres per second must prevail for the event. Entrants must submit plans of their kites to the L.N. before December 1st next, and the committee reserve the right to exclude any devices from the competition as the result of this preliminary examination. Intending competitors should communicate with the secretary, 27, Rue de Rome, Paris.

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THE PRACTICAL APPLICATION OF AERONAUTICS.

By COL. J. E. CAPPER, C.B., R.E.

AT the Aeronautical Society's meeting on Wednesday last, Col. J. E. Capper, the well-known Superintendent of the Government Balloon Department at Aldershot, made some interesting remarks upon the various directions in which improvements should be aimed at in the conquest of the air, and laid particular emphasis on the need for greater automatic stability in all heavier-than-air flying machines.

Starting on the basis that the real conquest of the air would be achieved when men would be able to travel from point to point to schedule time irrespective of weather, he indicated that it would depend on whether they were needed for sport or war, or for purposes of commerce, including postal service, as to what were their essential capabilities. As regards either of the three sorts of dirigible balloons—the rigid, the partly rigid, and the frameless sort—he thought that at present the prospects of their being used for sport were poor, but that the sort of balloon needed for the minor purposes of war was one which could carry at least five men, including wireless telegraph operators, for spells of three hours, could rise to heights of 6,000 ft., could travel at 30 miles an hour in calm, and could be controlled in a vertical as well as a horizontal direction. It ought, moreover, to be immune from storms when on the ground, and to be capable of being taken to pieces for readiness of transport.

Many improvements were, he said, necessary in connection with dirigible balloons—lighter engines, independence of temperature as regards altitude, and more efficient propellers, &c.—but no one man could achieve all these things at once, and consequently each inventor would be well advised to choose one particular line of investigation and adhere closely to it. Speaking as one who had tried to build dirigible balloons, he observed that only when one attempted to do so did one come to realise what a deal could be learnt from others.

Special dirigibles for naval work could be quite different since it would not be needful for these to rise so high, although, on the other hand, they ought to possess exceptionally good gas-holding qualities, and be capable of wider ranges of use than the military dirigible. They might to advantage be large, and of the rigid type, and they undoubtedly ought, like the military kind, to be equipped with gas-making plants of their own. As regards dirigibles for exploration, these would all need a very ample margin of lift because it is essential that they should be able to cope with rain or snowstorms.

Passing on to aeroplanes, he thought that their immediate future was, for the time at least, confined to the *rôle* of sport. For the purposes of war reliability was essential; they would have to be capable of going up in all weathers for spells of some hours, would have to be automatically stable and not dependent on the skill of the pilot, would have to carry two men, to be capable of landing safely on open ground, and so forth. That stage of development had not been reached yet. Inventors should aim rather at increasing automatic stability than at increasing speed.

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KNIGHTS OF THE CHANNEL.

MR. LATHAM'S enterprise in connection with cross-Channel flight very naturally recalls to mind the similar enthusiasm of others who have made the cross-Channel aerial passage by means of balloons, and if a brief *resumé* of such journeys is made, the very significant fact is noted, that nearly all of them started from England instead of from France. The reason for this is sufficiently elementary. It is merely due to the fact that the prevailing wind has a southerly trend, and balloons being at the mercy of the air-currents must travel where the wind listeth, and not necessarily where the pilot wants to go. The fact that Mr. Latham is attempting to cross the Channel from the French shore, therefore, receives an added importance from this fact, since it opens up a new way into England which the elements have hitherto guarded as it were almost with a closed door.

Looking back over the past history of cross-Channel journeys by air, it may be said that the only passages which have been made from the Continent to our shores have, with the exception of the balloons in the Gordon-Bennett race of 1906, been of an almost accidental nature, and there is no doubt whatever that they have been extremely hazardous, for England after all is only an island, and one moreover which could be quite easily missed in the dark. One of the earliest of the attempts very nearly resulted fatally, when M. Duruof, who persisted in undertaking the journey in spite of the prohibition of the Mayor of Calais, was subsequently rescued at sea near Denmark. During the Franco-German War one of the numerous balloons sent up from Calais during the siege crossed the Channel and was observed drifting out to sea at the north of Scotland. Its mail bag was picked up by a boat, but no news was ever heard of the occupants. Another balloon, the "Jacquard," also failed to make a successful landing. Even M. Lhoste, who succeeded in "trailing" across with a submerged steering device attached to his rope, subsequently came to grief. Probably one of the most successful northerly crossings from the Continent was that made two years ago by Messrs. Koch and Wegener, who travelled from Bitterfeld in Germany and landed in Leicestershire, nearly 600 miles away. The most important occasion on which balloons have visited these shores from France was that of the Gordon-Bennett race of 1906, when seven balloons made a successful crossing. It was one of those rare occasions which favourably coincided with the event, so that when comparing the northward and southward balloons, these seven should be reckoned as a unit flight.

From England to the Continent the cross-Channel passage has been made with frequency and success by

Notable Channel Crossings by Balloon.

From England to the Continent.

Date.	Pilot and Passengers.	Nationality.	Name of Balloon.	Start.	Landing.	Distance.	Duration.
						miles	h. m.
1784, Feb. 22	No occupant	B	—	Kent	Warneton (Belgian Frontier)	—	3 0
1785, Jan. 7	Blanchard, Dr. Jeffries	F	—	Dover	Guines Forêt (near Calais)	31	2 20
1836, Nov. 7	Green, Holland, Monk Mason	B	—	London	Weilberg (Nassau)	370	18 0
1875, Aug. 25	Capt. Webb	B	Natation	Dover	Calais	25	21 45
1882, June 10	Capt. Burnaby	B	Eclipse	London	Dieppe	—	—
1897, Oct. 13	Marton	B	Ally Sloper	Dover	Dunkerque	—	—
1898, Dec. 20	P. Spencer, L. Swinburn	B	—	London	French coast	—	—
1899, Sep. 15	Patrick Alexander	B	—	Dover	Gravelines	—	—
1900, Sep. 1	J. Faure	F	—	London	Etaples	—	—
1905, Feb. 13	J. Faure, H. Latham	F	Aero Club II	,,	Aubervilliers	214	6 30
1905, April 7	J. Faure, de Kergarion, R. Gasnier	F	—	Folkestone	Pont de l'Ardres (near Calais)	—	3 30
1905, Aug. 31	Frank Butler	B	Vera	London	Deborande (Calvados)	170	7 10
1905, Nov. 25	A. Vonviller, J. Faure	I, F	Elfe	,,	St. Quentin	190	8 30
1906, Feb. 3	C. Pollock, Martin Dale	B	Valkyrie	,,	Yvetot	—	—
1906, Feb. 20	F. Butler, P. Spencer, Mrs. Griffith Brewer	B	Vera	,,	Boulogne	—	—
1906, June 27	De Corvin	F	Météor	,,	Dieppe	—	—
1906, Nov. 27	L. Bucknall, P. Spencer	B	Vivienne IV	,,	Nevig-les-Dôles (Juree)	395	16 0
1907, Feb. 21	C. Pollock, Hon. Mrs. Assheton Harbord	B	Valkyrie	,,	Stavelot (Belgium)	218	10 10
1907, Feb. 24	Griffith Brewer, Hon. Mrs. Assheton Harbord	B	Lotus	,,	Marquise (Pas de Calais)	—	—
1907, Oct. 12	Gaudron, Tanner, Turner	B	Mammoth	,,	Lake Wener (Switzerland)	730	19 0
1908, Jan. 31	C. Pollock, Hon. Mrs. Assheton Harbord	B	Valkyrie	,,	Houdiemont (Meuse)	—	—
1908, Feb. 8	Griffith Brewer, Capt. Grubb	B	Lotus	,,	Etaples	—	—

From the Continent to England.

1883, July 3	Morlau, de Conta	Be	—	Contrai, Belgium	Bromley	—	26 0
1883, Sep. 9	Lhoste	F	V. de Boulogne	Boulogne	Hythe	—	6 0
1884, Aug. 7	Lhoste	F	L'Hirondelle	,,	New Romney	—	—
1886, July 29	Lhoste, Mangot	F	Le Torpilleur	Cherbourg	Tottenham	—	7 0
1901, Sep. 21	J. Latruffe	F	La Patrie	Dunkerque	Southampton	—	—
1903, Sep. 26	de la Vaulx, Voyer, d'Oultremont	F	Le Djinn	St. Cloud	Hull	364	16 40
1906, Sep. 30	Lahm, Hersey	A	United States	Paris	Yorkshire	402	22 5
,,	Vonviller, Cranette	I	Elge	,,	,,	369	22 0
,,	Rolls, Capper	B	Britannia	,,	—	387	26 18
,,	de la Vaulx, d'Oultremont	F	Walhalla	,,	Norfolk	298	19 0
,,	Balsan Carot	F	V. deChateauroux	,,	Singleton	199	10 35
,,	Kindelan, de la Horga	S	Montaner	,,	Chichester	196	11 45
,,	Huntingdon, C. F. Pollock	B	Zephyr	,,	Milton	190	19 0
1907, April 10	Wegener, Koch	G	Ziegler	Leipsic	Leicester	580	19 0
1907, Nov. 1	Wegener, Bohm, Sauerwein	G	,,	Bâle	London	—	—
1908, Sep. 17	J. Faure, Franck, Otter	F	Aero Club II	Paris	Kent	—	8 0

Nationality: A = American. B = British. Be = Belgian. F = French. G = German. I = Italian. S = Swiss.

most of the leading aeronauts. Blanchard and Dr. Jeffries were the first to accomplish the crossing in 1785, when, starting from Dover, they landed in the forest of Guines near Calais, and accomplished the journey in under 2½ hours. Green, a notable aeronaut of the thirties, made the crossing with two passengers in November, 1836, and the centenary of Blanchard's performance was observed by Captain Webb performing a similar feat. Coming to modern times, the names of those who have made the crossing are too numerous to mention individually; they include many of those present members of the Aero Club of Great Britain who indulge in the pastime of ballooning.

Mr. Latham himself made the passage in 1905, when he accompanied M. Jacques Faure, and travelled from London to Aubervilliers, a distance of over 200 miles, in 6½ hours. The longest journey including the cross-Channel passage was that made in the *Daily Graphic* balloon "Mammoth" by Messrs. Gaudron, Tanner and Turner on October 12th, 1907, when, starting from London, the occupants decended in Switzerland by Lake Wener, having travelled over 730 miles in 19 hours.

A summary of some of the more notable crossings from England has been compiled by M. Pierre Souvestre, which we reproduce in tabular form.

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THE WOMEN'S AERIAL LEAGUE.

IF any further proof were needed of the thorough manner in which interest in flight and all that appertains to the conquest of the air is taking a hold upon all classes of society, it was given on Monday of this week at the Society of Arts, where a meeting was held, with the Lady O'Hagan in the Chair, to inaugurate the Women's Aerial League.

The objects of this society, as set forth by its prospectus, are to encourage and stimulate the invention of aerial craft and the things appertaining thereto. To disseminate knowledge and spread information, showing the vital importance to the British Empire of aerial supremacy, upon which its commerce, communication, defence, and its very existence must largely depend. To use every constitutional means to bring about the objects for which the League is established, and to invite the support of men and women of all shades of opinion throughout the Empire.

The policy of the League is to start an educational campaign for the purpose of arousing an intelligent interest in the question of aviation by means of lectures and distribution of literature, to encourage the formation of branches throughout Great Britain and the Empire, and to collect money to build an all-British airship by British mechanics of British material, in order that this nascent industry should be established in this country. This fund is also to be devoted to founding scholarships for young British subjects desiring to take up aerial engineering as a profession. Altogether a nice, comprehensive scheme.

The principal method adopted by the League for ensuring the carrying out of these aims, is that of enrolling members, associates, and honorary associates at annual subscriptions of a guinea, five shillings, and a shilling respectively, and in joining the League members are of course expected to further its interests by doing their best to obtain donations to its funds from those who have its interests at heart.

Lady O'Hagan, in opening the meeting, pointed out, in the first instance, that the Women's Aerial League was a strictly non-political body, which had been formed with the object of giving what help they could to their country in order that it might take its proper place among men and nations in this new question of aviation. They desired to awaken in all members of the community a practical interest in the subject. They would like to present to the nation an airship of British construction, made by British workmen and of British material—to present such an airship from the women of the Empire for use in the defence of the Empire. They wished to enable British workmen of all grades, from the lowest to the highest, to acquire the knowledge necessary to carry out such an object, and in order to do this it was their intention to give scholarships at their technical schools and polytechnics, and by so doing to incite in them the desire to take up aerial dynamics and aerial engineering as a special subject of study. They also wished to give scholarships at their great engineering schools and colleges when they had made this subject a special branch in their curriculum.

Lady Beerbohm Tree, in proposing "That this meeting warmly approves the formation of the Women's Aerial League, and pledges itself to support it by every means in its power," said that the League was purely an educational body. They were banded together to show their sympathy with men's work and to help their mankind to the best of their ability. They had collected, and should continue to collect, money which should enable their engineers to start building British airships, to be followed by a fleet—or should she say flight—of British airships. If they accomplished half they hoped to do, they would aviationise society. They were resolved, from purely defensive and patriotic motives, that England should build more airships than any other possible combination of countries, and that she should build them quicker and better. They wanted a supremacy in the air complementary to, but no less absolute than, that supremacy on the seas which had been England's boast since navies were.

Major Baden-Powell, in seconding, said they must carefully consider, before saying that they wanted this or that, what they wanted, how it ought to be got, and the methods by which they should secure it. The idea at the present moment seemed to be to get a French airship built specially regardless of cost. He should like to ask what good would that do us? Would it not be better for us, instead of buying a French airship, to start constructing vessels of our own, British-built. What we wanted was to start in England an industry which would enable us to provide airships for the future. One airship was no good; we wanted a dozen or fifty, and we wanted them British made. Therefore he was strongly in favour of developing this industry rather than obtaining a foreign-made machine. We had built airships—he did not say with the greatest success—but there was one reason why we were not successful, and that was that we had always been stinted for money. If we had the money available, he felt perfectly certain that we in England could build a vessel to navigate the air quite equal to any that could be built abroad. Let the ladies of that League collect all the money they could, and carefully consider what was the best way of spending that money so that it should conduce to procuring the supremacy of the air for the British nation.

Col. H. S. Massy, speaking in support of the resolution, said he was quite in favour of their building an airship which should be all British, but they must not call him an alarmist when he said that there was very little time now left to teach British workmen how to make half-a-dozen or a dozen airships, which we should certainly require within the next twelve months. He was afraid he did not see how that could be done in the time. What was wanted was immediate help. He had been in Paris for the last two months, and every day he spent there impressed him more and more with the idea that the sooner Britain woke up the better.

Among those present, or who had expressed their approval with the objects of the League, were the Earl and Countess of Kinnoull, the Countess of Dartmouth, the Dowager Countess of Desart, Lord and Lady Pirrie, Lady West, Lady Marjorie Erskine, the Dowager Lady Macpherson-Grant, Sir John and Lady Shelley, Sir Buchanan and Lady Scott, Lady Cecilia Rose, Major and Miss Baden-Powell, Colonel and Mrs. Capper, Captain and Mrs. Cave-Brown-Cave, Lady Beerbohm Tree, Admiral and Lady Massie Blomfield, Major-General Arbuthnot, the Hon. Mrs. Assheton Harbord, Colonel and Mrs. English, Mr. J. T. C. Moore-Brabazon, Colonel H. S. Massy and Mrs. Massy, and Mrs. Watt Smyth (hon. secretary).

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The Swale Bridge Tolls.

WHEN the South-Eastern and Chatham Railway Bill came up for second reading in the House of Commons last week there was some plain speaking on the subject of the proposed perpetuation of the tolls over the Swale Bridge, on the grounds of their hardship on the 22,000 people who inhabit Sheppey Island. Eventually the Bill was read a second time, the motion for its rejection being defeated by 183 votes to 97. The tolls at present are: carts, loaded or empty, crossing each way, 1*s.* 6*d.*; wagons 2*s.*, horses 3*d.*, and foot passengers 1*d.* This bridge has to be crossed by visitors to the Aero Club's flying ground at Shellbeach, and the question of the toll is an important one for those driving down.

CORRESPONDENCE.

*** *The name and address of the writer (not necessarily for publication)* MUST *in all cases accompany letters intended for insertion, or containing queries.*

KITE-FLYING COMPETITION.

To the Editor of FLIGHT.

SIR,—*Re* your issue of the 10th inst., I beg to offer the following in answer to what is stated in pp. 409 and 410 for publication in your next number.

1. As to the maker of the Indian kite ("Vakata") which I flew in the competition at Wimbledon on the 3rd inst., if the sign "—" under the name "Gamage" is intended to imply that firm, they were not the makers, although that firm has had the apparatus and kites for the Vakata game from me, and have published the same in their catalogues for sale.

2. The area of my kite on that occasion was 1 ft. 6 ins., and not 1 ft. square or 1 sq. ft.

3. Its stability was pronounced to be "wonderful," and equal to that of any other kite flying at the time, and I think from what follows you will admit, like others did, that its construction must also have been marvellous to have come out unscathed and its line unbroken right to the end of the competition.

4. The angle it was able to accomplish was 90°, as demonstrated to members of the Aeronautical Society who were present. At the termination of the hour, one of the judges allowed me to haul down my kite, and by way of amusement and information, I put my kite through various movements (which this type of kite can accomplish to great advantage), as there were members of the Aero Society and others who wished to see them. I trust none of the judges, nor anyone else, regarded these manœuvres as a part the kite played for the competition of the President's cup, as one of the points in that competition dwelt on the "importance of stability." Stability can be maintained or altered by the will of the flyer of the Indian kite of the Vakata type. After I had put my kite through the above movements and hauled it down, one of the judges said that the kite had been pulled down before the required time (one hour) for the competition; but on my informing him that one of the other judges (whom I named, and who was present close at hand) had permitted me to haul down my kite as he had apparently timed me in his observations, this was ruled in my favour I am glad to say.

5. As to portability, I can only say that my kite being only two *ounces* in weight, and packed flat in a cardboard box, was as portable and light as could possibly be, as it was carried on one finger.

6. As to construction, it evoked the remark "Wonderful!" for the simple fact that being of tissue paper and bamboo, and the line as fine as could be, when it was fouled by three huge kites from 6 to 10 feet each, successively, it entirely maintained its flight with unbroken line; but the aggressors either lost their equilibrium completely, or were made *hors-de-combat*. Under such adverse, nay, violent treatment, what other term could be expressed of the pocket Hercules but "wonderful" on every side? Do not therefore go by superficial examination in the matter of construction, but judge by results and ability to maintain flight when attacked. I notice that one of the conditions in the rules for the President's cup which the judges, it is said, would also attach importance to, is *weight*. Nothing is mentioned about it, although the others are taken into account; but when a light weight is attacked by three heavy-weight champions, and the light weight survives, whilst the heavy ones are discomfited, is not this an argument that quality is superior to quantity, and light construction with strength to heavy in aviation?

In your remarks under the head of "Importance of Stability" (p. 409, para. 2) you compare "two kites of a type with which many extraordinary manœuvres can be carried out." As a matter of fact, there were two other Indian kites of the Vakata type that flew under observation all the time, and these were made by Messrs. Everest and Stewart respectively; the one of tissue paper and bamboo, the other of the same material covered with silk. I notice that you mention a 7-foot kite under the head "Indian," which gained 14 marks for stability. It is a pity, however, that when a comparison is made of kites, the proper names under which they are registered and entered in the entries, for a competition especially, are not adhered to, if it is not desirable to mention the names of the competitors. The "steady-as-a-rock" stability, though maintained by *some* of the large kites, was also maintained by all the small kites to their credit, which were all of the Indian type. There was the misfortune, however, that Mr. Everest's kite was severed by a large kite owing to the weakness of his line; Mr. Stewart's, as he explained to me, had the misfortune of a tear through over-flying—that is, there was great delay in the hour for competition as appointed in the notice and what actually did occur, besides other arrangements failing, which were most unfortunate; and you can fully appreciate that unless a kite be of the true Indian type ("Vakata") the chances are against it for every time it is flown, and Mr. Stewart flew his a considerable time in the hope, I suppose, that the competition would be at the appointed hour, whereas it was not so. The only kite, therefore, that survived the ordeal was the "Vakata Indian."

I am unable to draw comparisons from the tables you have given of the "Kite-Flying Official Results" in p. 410, as there is a serious omission of one of the points to which as great importance is attached when competitors are invited to "submit kites of any size and kind," namely, weight. No other kite, large or small, went through the trying ordeal which the 2-oz. "Vakata" did and came out unscathed, with line intact, kite still in flight, and maintaining its stability to the end; and then after the hour expired for the competition, it manœuvred for the information and amusement of the onlookers and some members of the Aeronautical Society, who were greatly interested.

Yours truly,
Margate. G. H. FINK.

[The official results given in our last issue were supplied by the secretary of the Kite-Flying Association.—ED.]

AUTOMATIC STABILITY.

To the Editor of FLIGHT.

SIR,—In no question on aeronautics is more careful wording required than on the above. In the case of the mono-rail, whose *steering* or direction of motion is controlled by the rails on which it runs, automatic stability—true *stability*—is secured by means of a certain form of gyroscopic mechanism. Now, in the case of automatic stability in aeronautics, what has often been meant by this term is "stability" *plus* steering—which is another question altogether. The one quite possible of attainment, the other, in all probability, most certainly not. Using the term in its correct sense, there are two distinct forms of automatic stability (hereafter called A.S. for short). (1) A.S. under (approximately) constant conditions: as when the aeroplane is proceding in a straight line. (2) A.S. under varying conditions, as when it is rounding a curve. There is more than one system of A.S. which is a solution of problem 1. There is no system yet made public which is a complete solution of problem 2.

The Wrights' system fails in problem 2, and in the writer's opinion, based on personal experiments, can only be a partial success in No. 1.

It is now fully recognised that the stabiliser itself can only act *indirectly, i.e.*, set in motion, stop, reverse the necessary mechanism to adjust the real stabilisers (elevator, adjustable aerofoils, rudders, &c.). Now (and this is *the* point) the automatic stabiliser must not only *not* be *permanently* displaced from its *normal* position by the force expended by it in setting in motion the real stabilisers; but if so displaced (and in practice it *is* so displaced to a greater or less extent) it must show a *strong* and *immediate* tendency to return to its proper normal working position under *all* conditions. No pendulum or wind vane does this.

Yours very faithfully,
V. E. JOHNSON.

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PUBLICATIONS RECEIVED.

Through the Sun in an Airship. By John Mastin. London: Charles Griffin and Co., Ltd. Price 6*s*.

The Most Successful Dirigible Airships, Aeroplanes, and Balloons. London: The Continental Tyre and Rubber Co., Ltd.

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