The Croydon Tragedy

We wish to offer our deepest sympathy to the Air France company, as well as to the relatives of the victims, on the terrible tragedy which has happened at Croydon.

As the daily papers have told everyone, the newspaper machine from Croydon for Paris took off about 5 a.m. on May 31 in foggy weather and one of its wings hit the wireless beacon mast which stood almost directly in the line of the take-off. The machine crashed between two houses and the pilot, Capt. Raymond Derives, and the wireless operator, M. Roger L'Huillier, were killed.

For months past our Croydon correspondent has been drawing attention to the danger caused by the position of this mast. He has asked whether we wanted a fatal crash at our very doors before this mast was moved or lowered. The wisdom of his warning has now been most terribly justified. On the aerodrome there is a white line to guide pilots when taking off in conditions of bad visibility, and this mast was not at a safe distance out of the direction of this line. Protests had been made to the proper department of the Air Ministry by companies which make regular use of Croydon aerodrome, but they had produced no result. So long ago as last January the Air Ministry authorities called a meeting of the parties concerned to discuss the results of the working of this wireless beacon, and at the meeting the question of the danger which it caused was raised. A resolution was passed, calling either for its removal to another situation or else that it should be shortened to the height of the neighbouring houses. No action has been taken on this resolution, and now, as a result of this inaction, a French aeroplane has been destroyed and two valuable lives have been lost. The tragedy is a disgrace to the airport of the capital city of the British Empire, and to those who boasted that the terminal aerodrome of London was a model of what an airport ought to be.

Of course there were reasons why the beacon was placed where it was, and of course there were reasons why it was not promptly moved or lowered when the attention of the authorities was called to the danger. We are not concerned with those reasons. In organised flying on air routes there is one supreme rule, and that is "Safety First." No sort or number of reasons concerning expense or technical difficulties have any weight at all when opposed to the question of safety to life. We do not suppose or suggest that the delay in taking action on the resolution passed last January was due to mere dilatoriness, with which all Government offices are popularly supposed to be badly infected. That files pass slowly through the official channels of communication is true enough, but the Air Ministry is no dormitory for lethargic bureaucrats, and action can be taken very promptly when important issues are at stake. In this case the most important issue in civil flying was at stake, namely the lives of those who fly. We take it for granted that there was some reason for the failure to take action, but, as we said before, no reason was or could be adequate. The warning had been given, and the warning was well justified. A very heavy responsibility rests upon those who should have acted upon that warning and who failed to act.

Fighters or Bombers?

A RUMOUR is afloat, which the Air Ministry will neither confirm nor deny, that some of the squadrons of the Auxiliary Air Force are to exchange their "Hart" day-bombers for "Demon" two-seater fighters. One can rather understand the reluctance of the Air Ministry to open their hearts to the public if the matter is actually under consideration because the
two-seater fighter is itself still in the nature of an experiment. So far the experiment has showed sufficient promise for the number of regular squadrons so equipped to be increased from one to two. It is generally expected, however, that a class of aeroplane will be thoroughly tried out by the regulars before it is given to non-regular units. Technically the change would not be a great one, for the chief difference technically between the "Hart" and the "Demon" is in the engine. The former has a normal "Kestrel" and the latter a supercharged "Kestrel." The equipment of the two types of aeroplane course differs, but a pilot who can fly one would not find any difficulty in flying the other.

Tactically, however, the change would be of no small importance. For one thing, there would be a certain effect on the Auxiliary squadrons themselves. Despite the similarity between the "Hart" and the "Demon," much greater precision in handling a fast machine is required of a fighter pilot from what is demanded of the pilot of a bomber. His whole frame of mind must be different. Hitherto it has been the general opinion that only the continuous, incessant practice which is impossible outside a regular squadron would fit a man to handle fighters with good effect. This opinion may have been modified by the extraordinarily high standard which all the Auxiliary squadrons have shown themselves able to attain. Their keenness is such that in their spare time they put in a goodly number of flying hours, and so perhaps have convinced the authorities that they would be able to handle fighters as well as they have handled bombers.

It is just possible, too, that the Auxiliary squadrons would gain in popular estimation if they were able to call themselves fighters. The proceedings at Geneva have, quite unjustifiably, made the word bomber rather unpopular. Thoughtless propagandists have associated the word with poison gas and baby-killing. Actually bomber aeroplanes are only the artillery of the air, and as the Royal Regiment of Artillery carries no stigma, there is no reason at all why such should attach to bomber squadrons of the Royal Air Force. Certainly there is no lack of applications for commissions or for enlistment in the Auxiliary Air Force, and so its popularity could hardly be increased. Still, perhaps some parents might feel happier if their son were a pilot in a fighter squadron.

In general, Geneva has found it impracticable to distinguish between a weapon of offence and one of defence. The fighter aeroplane is one case where no confusion is possible. Strategically it can only be used for defence. It has not the range or the carrying capacity to be used for invasion. Defence, not aggression, is the air problem of the United Kingdom. Gen. Denain, the French Air Minister, stated the other day that "in Great Britain aviation was wholly directed to the defence of the country," and that despite our possession of some bomber squadrons. If our proportion of fighter squadrons is to be increased, we shall consider the move a wise one.

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**FAST FIGHTERS FOR PORTUGAL:** One of a batch of Hawker "Furies" (R.R. "Kestrel") which have been purchased by the Portuguese Government. (FLIGHT Photo.)
**The Outlook**

**A Running Commentary on Air Topics**

**England—Australia**

**Stalling**

It is more than extraordinary that, when scientists can discover the exact composition of distant stars, an aeroplane’s stall should still remain so mysterious. After so able a worker as Prof. McVill Jones had delivered his lecture before the R.A.S., the one outstanding impression was that we really know very little of the phenomena which have caused, directly or indirectly, the deaths of so many good pilots. There are machines that can be held up in a complete stall without evincing any curious tendencies, and there are machines that flick immediately into a spin—and no one appears to be able to make a reliable forecast one way or the other. Perhaps it is as well that, when the stick is held right back, one cannot actually see the flow of the air. If every machine’s wings were covered with tufts of wool, those used for Prof. Jones’s experiments, and if the pilot could watch them “running” like mice leaving a sinking ship, then there would not be half as many climbing turns made on low-powered aeroplanes!

**Manners and Common Sense**

The flying meeting season is again with us, and pilots will be visiting aerodromes, sometimes when there is a large crowd to watch their arrival. We do hope that they will remember to observe local or special occasions; e.g., rules stipulating a mass start, but this will obviously be impossible, and the present idea is that the machines should be sent off at half-minute intervals. With the fastest machines in the world on the line, “zero hour” at Hatfield on the twentieth of October will be a moment in a million.

**Straws**

The appearance of three new “feeder line” types is just another indication of the way the wind is blowing. All of them have very much higher top speeds than we have been accustomed to expect in this country and one of them should almost touch the “mystic two hundred” at ground level. It is significant, also, that two are low-wing monoplanes with retractable undercarriages. This long-awaited and much-advertised “air age” appears to be almost here.

**Third Party**

The first step towards an international understanding on certain aspects of aviation insurance was taken on Monday when a conference was arranged. The problems are considerable. Not only must property owners be adequately protected, but the insurance rates must not be allowed to become prohibitive, and yet some understanding must be reached if air touring is to become as popular as it should be. Lord Wakefield, at the dinner following, explained that the insurance companies did not wish to see rules and regulations placed as obstacles in the way of international travel.

**Prospective Ownership**

There are any number of keen amateur pilots and any number of people with enough money to buy light aeroplanes—yet, judging from statistics, the list of privately-owned aeroplanes has remained virtually unchanged during the past few years. The explanation is simple, and rests largely on “facilities.” Given more aeroplanes, or, alternatively, a machine that would be independent of aerodromes, and there would be little to prevent the figures from soaring skywards year by year in the future.

**Anti-Aircraft**

A question in the House of Commons on May 31 elicited the information that the War Office is quite aware that the Territorial anti-aircraft batteries are grievously short of technical equipment and that what they have is exceedingly antiquated. Mr. Duff Cooper, Financial Secretary to the War Office, said that steps were being taken to improve the position as far as financial circumstances permitted. This revelation merely emphasises the necessity, on which Flight has frequently commented, on transferring these batteries, and the searchlight companies, from the War Office to the Air Ministry. They are a part of air defence, and they take their operational orders from the Air Officer Commanding-in-Chief Air Defence of Great Britain. On the trifling excuse that the guns and searchlights are situated on the ground, it has been decided that they must be provided by the War Office and manned by the Territorial Army instead of by the Auxiliary (or regular) Air Force. Hence arise the evils of dual control. As General Ashmore wrote in his book Air Defence, “The ground troops have two masters pulling in opposite directions; the R.A.F. only want them efficient, the War Office only want them cheap.”
MOROCCO
BOUND

By FLIGHT-LIEUT. R. C. PRESTON, A.F.C.,
A.M.I.Ae.E.

A well-known writer on aero subjects
recently stated that organised air tours of flying
club members would shortly become popular.
If this is the case—and from all accounts it is
most likely—then Morocco is surely a country
well deserving the attention of the organisers

MORE than once it has been said that the future
air route to South Africa lies down the West
Coast of Africa. Whilst it is difficult to reconc
cile oneself altogether to this view, there is no
doubt that there will be big future developments along
this coast in the direction of South America, and it will in
any case be interesting to outline a few features of a tour
to Morocco, Bathurst, and the Canary Islands, undertaken
recently with Her Grace the Duchess of Bedford in her
"Puss Moth," G-ABOC.

Perhaps one's only excuse for calling attention to this
very interesting tour is the hope that others who contem
plate a similar itinerary may derive some useful information.
Hitherto private aircraft have been few and far between,
even as far only at Bathurst, which, as a glance at the map
will show, is barely "round the corner." It is, in fact,
on the same degree of latitude as Aden, and if, in thinking
of Africa, one conjures up visions of heat, black savages and
exotic birds and flowers, then it is only when one reaches
Bathurst that one can truly say "This is the Africa we
have been looking for."

On such a tour one point is most forcibly demonstrated,
and that is that the English language carries one a very
little way. Spanish may be a luxury, but French is almost
a necessity, and prospective travellers will do well to rub
up any conversational capabilities.

Having arranged all preliminaries and obtained all neces
sary maps, permits, and so on, through the good offices of
the enterprising Aviation Department of the Automobile
Association, one starts south through France and Spain,
and a stop should always be arranged at Granada.

The tendency, perhaps, is to reach Alicante or Malaga
for the night's rest, but he who has not seen Granada has
missed one of the brightest jewels of that land, for the
Alhambra Palace, the last Moorish stronghold in Spain, is
a relic of rare beauty. Moreover, the airport is "super-
Hunter," and one receives very adequate attention from
the Spanish Air Force stationed there.

From Granada it is 200 miles to Tangier, the first African
aerodrome, but at present a stay there is not advised.
The town lies in an International Zone, and it can only be
presumed that the airport, which is thirty kilometres from
anywhere, is "nobody's baby." Sufficient fuel should be
taken on at Granada to carry one through to Rabat or
Casablanca.

Both these towns are pleasant Moroccan resorts, but the
former is undoubtedly the more intriguing of the two, with
its very picturesque Jardins des Oudyahs. Casablanca is
little more than Marseilles in miniature. Each town, how
ever, has a fine airport and good hangarage, and the
tourist may safely undertake his first "routine" after
leaving England—and perhaps his last before the sand
blasted shores farther south.

Here it is opportune to mention that sand and wind
during the greater part of the year will be the daily ration
for the next 1,500 miles or more. A stiff breeze off the
Atlantic may dispel heat, but this is also apt to ruffle the
temper.

After leaving Rabat or Casablanca, one can say that the
flesh pots of Morocco are behind. Agadir, a dullish resort
one hazily connects with a pre
war "incident," is actually about
the last link with civilisation.
The only incident we noted was a
40-m.p.h. gale which blew the
sand off the dunes like smoke, a
most peculiar effect when viewed
from aloft.

The journey from Agadir to
Cape Juby takes the traveller into
Spanish territory, a rather miser
able coast and a foretaste of what
is to come. There is a Spanish
military aerodrome at Hni, a slice
inserted for some unknown reason
in French territory, and from her it is well to fly high and to
seaward, for les Moors have an

AT VILLA CISNEROS: The
Duchess of Bedford with the
Governor of Rio di Oro and his
family.
evil reputation, of which more anon. Cape Juby is merely an example of a fort as depicted in a P. C. Wren novel, the Spanish Air Force in residence in lieu of the Foreign Legion. For accommodation one must take what one is given and be thankful, and if the aircraft must be left to look after itself, lock it up, for the native element which surrounds the fort is ever curious. Now the advantage of a thermos full of good Casablanca coffee and some such sustenance as Ryvita is apparent, for the meal to be taken in the aviation mess may be long deferred, and, when it comes, not altogether to one's taste. There is no question of lack of hospitality for the garrison is most generous, but c'est la guerre, and it is hard living.

Thence the next stage is to Villa Cisneros, a similar outpost situated on a long sandy promontory some 360 miles onward. There is nothing between but sea, sand, and sun. They call part of it Rio di Oro, but one might be excused for interpreting it as Rio de 'Orror, for a less attractive coast would be hard to find.

The injunction to fly high has to be considered in conjunction with wind force and direction. At certain times of the year the trade winds blow on the surface, whilst at 6,000 ft. one may find contrary ones which, unless allowed for, may cause anxiety as to fuel. It is well to inquire on such matters prior to leaving the ground.

Villa Cisneros is the headquarters of the Governor of Rio di Oro. I do not envy him his job: sand must blast his brain even if it does not hinder the growth on his chin. He is a domesticated man; his family of four thrive in such uncongenial surroundings, and their hospitality on both our visits to his fort was more than merely formal.

A third two-hundred-mile stretch of miserable coast takes us to Port Etienne—another realistic example for P. C. Wren. A kindly Air France representative and his madame offered hospitality—and shelter from the wind. One sleeps in the fort, and may rest secure in the knowledge that a hundred Senegalese troops are roosting under the battlements.

Another 360 wasted miles over a country known as Mauretania bring us to Saint Louis. There is an emergency ground rejoicing in the name of Nouakchott, some 145 miles before, but there is nothing to be obtained there except by special arrangement.

Saint Louis is interesting, for in the days when the Senegal River was a link with the interior it must have been a busy town. Now its quays are deserted and, but for being a seat of government, it has relapsed into almost complete obscurity. Accommodation, by the way, is a problem here, but for us it was solved by the Shell agent, who took us under his roof.

It is now but a short flight to Dakar, but the tourist should first get permission to land, as it is a very "purple" patch. We made Thies direct from Port Etienne on our way south, and obtained permission there.

Of Dakar itself, one can say but little, as we saw it from an advantageous viewpoint as guests of the Governor-General of Afrique Occidentale Francaise at their magnificent Palais. But there do appear to be fairly adequate hotels, and there is enough to amuse for two or three days.

Finally Bathurst—ninety odd miles away—but the character of the country changes quickly from the sub-tropical to the tropical, and one descends with eagerness at the excellent aerodrome at Cape St. Mary, glad to talk English again to the officers of the W.A. Defence Force, who come to greet one and carry one off to their delightful mess on the edge of the ocean. A glass of cold beer and gaze out at 3,000 miles of lapis sea. Should the tourist be a bird lover, there is enough to interest him or her for a month—birds are protected in the Gambia and provide the equivalent in W. Africa to big game in E. Africa.

**Bathurst "Blues"**

This little colony—it is only some seventy square miles in area, though it has Protectorate rights up the Gambia River for some 250 miles—is almost surrounded by French territory. It has become the jumping-off place and point of arrival of the S. American mails, no doubt largely through its geographical position. Apparently realising the importance, it has introduced a flat rate of charges for its aerial visitors, and this rate is £1 a day or part of a day. Now, if a hangar were provided, this might be reasonable, but as the only shelter is the local sword, and beside of which one tethers the machine like a cow, it appears that someone has perpetrated a rather expensive joke. This little matter of landing fees has been pointed out by others, but one might be excused for referring to it again, as it may, if persisted in, give flying folk a bad impression of the Gambia which it does not otherwise deserve. Furthermore, though it occupies an important position, it is small, and unless it encourages tourist or operator, it may find itself missed out.

Our two days at Bathurst will not easily be forgotten. The Governor, Mr. Richards, and his wife had only just themselves arrived from Borneo, but they were lavish in their hospitality and kindness. Nevertheless, as they can hardly be expected to act as hosts to all intending visitors, it is time good alternative accommodation in the way of a rest house should be planned.

The tourist will be well advised to give his engine careful scrutiny here—whether he proceeds south towards Freetown, east of Tambacunda, or as we
leaving a country where flying is almost a normal means of transport. We stopped at Rabat, and then, omitting Tangiers after previous experience, made direct for Granada. The Straits of Gibraltar in this instance were in pleasant contrast to their appearance on our way south, when one of the depressions off the Atlantic, which use the Straits as a tram line, was entering the Mediterranean.

The route from Granada takes one along the edge of the Sierra Nevada, which is a range of snow scenery well worth a camera. It is a longish flight from Alicante to Perpignan, and much bad weather can be met along the Spanish coast. It is not advisable to be too clever and fly either above the clouds or in them on this stretch, unless one can claim considerable experience of it, for the coast is very rugged. We omitted to call at Barcelona this time because, obviously, the appearance of Spanish Customs outwards from Spain is optional. Anyway, neither Alicante nor Perpignan seemed to mind.

Hence we made Geneva for that very enterprising event, the International Aero Show, but Switzerland will probably not only be included in the return journey if the purse still remains to be emptied, for it is now a rather most expensive country.

For a change we returned to England via Zurich, and the one-and-a-half hours' flight from Geneva carries one over the finest scenery imaginable.

**Hints for Tourists**

For those whose appetite is whetted the points of such a flight may be summed up. If it is for pleasure, do not try to do too much; take a rest every four days or so. Both the human and the aircraft motor want attention, and the fitness of both is paramount. Always carry food and water, and a Thermos will not come amiss. It is amazing how a stick of barley sugar and a few Horlick's malted milk tablets help to while away thirty thirty kilometres. To those who like mental recreation, a stock of cross-word puzzles and a backgammon board are recommended.

When all is said and done, for every hour flown there will be seven more to be put away, and they cannot all be passed in eating, sleeping, and exercise, though each plays its part.

Touching the important matter of finance, it is curious how opinions will differ as to the cost of a trip of this nature. Out of 24 nights, 17 were spent in hotels, many of which provided more than ordinary comfort. If one assumed that the hospitality enjoyed on the remaining seven nights was not available and that one was prepared to accept a slightly lower standard of comfort to balance the extra expense so involved, one can safely say that the cost for two people will not exceed £150, to which, of course, must be added charged on the Shell Carnet for some eighty hours' flying.

For the interest and independence enjoyed, surely this compares favourably with some of the "cruses" advertised as "from 42 guineas" touring the Mediterranean ports, and on which the tourist will be led up the garden path of further expenditure, and be left a helpless victim of surroundings usually comparable to Hastings Pier on a Bank Holiday?

**Dogs and Canaries**

All this is not described just to make a story but to illustrate to others that even Gipsy engines feel the burden and heat of the day and do not thrive on a diet of dust. The Canaries (incidentally, the name is derived from dogs and not birds!) are very well worth the detour of some 300 miles. The airport at Gando, on the Grand Canary, is an hour's drive from Las Palmas, which is a drawback, but private tourists seldom arrive, and if information is wirelessed beforehand from Cape Juby, as it certainly should be, the visitor will probably be met by the ever enterprising Shell organisation.

A flight we made over Tenerife, another sixty miles farther on, was one of the most magnificent. A joyriding company might well do good business if it included this as an attraction to passengers of the liners, though a more convenient aerodrome would be essential.

The fact that we carried two very well-defined bullet holes in our starboard wing, though we knew nothing about them until found in course of inspection, testified to that enjoy the Rio di Oro and its neighbouring coast. For a change we returned to England via Zurich, and the one-and-a-half hours' flight from Geneva carries one over the finest scenery imaginable.

**WINFRED SPONNER MEMORIAL**

*Bronze Unveiled by Mr. LindsayEverard, M.P.*

O N Thursday of last week honour was paid to the memory of the late Miss Winifred Spooner by the Woman's Automobile and Sports Association when Mr. W. Lindsay Everard, M.P., unveiled a bronze of Miss Spooner, presented to the Association by a member who wishes to remain anonymous. The Viscountess Elibank, President of the Association, opened the ceremony. Mr. Everard, to whom Miss Spooner acted as pilot for two years before her death, spoke at length of her achievements, which, he declared, had done more real good for aviation than any of the much boomed long-distance flights of others. Miss Spooner, he said, had shown that flying was a reliable means of transport, and that was far more important than feats which come to the rows of enthusiasts who_Bool aviation is still in its infancy.

The bust, which is the work of Mr. Donald Gilbert, is to occupy a position in the entrance hall of the hotel. It will be unveiled at 17, Buckingham Palace Gar-"
BRIEF particulars of the de Havilland "Comet" have been released, and the manufacture of component parts has now been started by Three of these machines are being built for the England—Australia Race, and will be flown by Mr. and Mrs. J. A. Mollison, and Mr. Ken. Waller (who recently made a survey flight to Australia and back in a "Leopard Moth" in less than six weeks), and Mr. C. W. A. Scott and Mr. T. Campbell Black. The de Havilland Company gives an assurance that the aircraft will conform as nearly as possible to the "ideal" for the race, having regard to the route, length of stages, climate and other conditions likely to be encountered. The type is a low-wing cantilever monoplane, with accommodation for two pilots seated in tandem behind the main planes, and, following recent de Havilland practice, the wings have a pronounced taper. Two special "Gipsy Six" racing engines, developing 230 h.p. each, are fitted, and it is probable that variable pitch propellers, adjustable on the ground or in flight, will be used. The undercarriage consists of two independent wheels, which retract into fairings behind the engines. The span is 44 ft. and the length 29 ft. A rumour puts the figure for the cruising speed at about 230 m.p.h. and the range at about 1,810 miles.

**Modified Service Types**

There are several other interesting British entries to record this week. A Fairley III*, fitted with a Napier "Comet" engine, has been entered by F. O. G. D. Davies. The III*, for several years, has been one of the standard General Purpose types used in the R.A.F., and when "cleaned up" a speed of about 160 m.p.h. might be obtained. Although the normal flying range of the standard IIIF (G.P.) is 400 miles, auxiliary tanks will be fitted, increasing this figure to 1,520 miles. Two "Foxes," also Fairley Service (or rather ex-Service) types, are also to be used. One of these has been supplied to the New Guinea Syndicate will be considerably modified, and it is probable that the top speed will be in the neighbourhood of 170 m.p.h.

A special three-four seater cabin-type Miles "Hawk," fitted with a "Gipsy Major" engine and long-range tanks, has been entered by Mr. H. L. Brook. Other British entries include two de Havilland "Moths" and two "Dragons." One of the "Moths," fitted with a "Gipsy Major" engine, has been entered by F. O. G. D. Davies, and the other, a "Gipsy I Moth," by Mr. William Courtenay. This latter machine is to be piloted by Capt. W. L. Hope, who won the King's Cup Race in 1928. Two de Havilland "Dragons" appear on the entry list. One has been entered by the Oliver Nicholson New Zealand Centenary Race Committee and the other by Mr. Alan S. Butler, Chairman of the de Havilland Aircraft Co., Ltd. It is possible that the New Zealand entry may be a "Dragon VI" (two "Gipsy Sixes"), but Mr. Butler's machine is likely to be a standard "Dragon."

**New Airspeed Designs**

Airspeed, Ltd., are busy at present, preparing quite a collection of machines for this year's races. One has entered a Siddeley "Lynx"-engined "Courier" having a top speed of 162 m.p.h., a cruising speed of 143 m.p.h., and a range of approximately 1,500 miles. A similar aircraft, but fitted with a Siddeley "Meteor" engine, has been entered by R. K. Dundas. The top speed of this version is 170 m.p.h., cruising speed 150 m.p.h., and range approximately 1,600 miles. Three twin-engined "Airspeeds" are being built. Two of these are known as "Envoy's," and bear Airspeed's numbers A.S.7, as they differ in matters of equipment. They have been entered by Lord Nuffield and Lady Cobham. Each is fitted with two Woisey radial engines, and will have a top speed of 170 m.p.h., and a cruising speed of 155 m.p.h., at a landing speed of 60 m.p.h., and a range of about 1,500 miles. Fastest of all the "Airspeeds," however, is the A.S.8, to be flown by Capt. Neville Stack and Mr. Turner. This type, fitted with two supercharged "Cheetah" engines, should attain a speed of over 200 m.p.h., and have a range of about 2,000 miles.

Fit. Lt. G. Shaw has entered a British Kleinn "Eagle." When fitted with a Napier "Javelin," this type has a top speed of 160 m.p.h., but when fitted with a more powerful "Gipsy Six," this figure is improved by about 10 m.p.h. Carlos Cudell Goertz (Portugal) has entered a Comper "Kite," one of the latest British "sports" type two-seaters. This aircraft was described in FLIGHT for May 10, 1934. A Lockheed machine, probably a "Vega," has been entered by Lt. H. K. A. Kidston, R.N. It is most likely that this is the machine in which Lt. Kidston's brother, Lt. Com. Glen Kidston, R.N., made a fast flight.
to the Cape in 1931. A "Wasp" engine is fitted which gives the aircraft a top speed of roughly 185 m.p.h. Although competitors of several nations are entering American machines, Salvador Farre (U.S.A.) will use a Percival "Gull" ("Javelin").

**Seven More Lockheeds**

Lockheeds continue to be favoured by many entrants. Seven have been entered since our last issue went to press. Of these entries only three have been received from America. Wiley Post, as expected, has entered a Lockheed, probably his famous Winnie May of "round-the-world" fame. The machine has, of late, been considerably modified. An "Altair," the fastest of the Lockheed range, is to be flown by Ruth Nichols. The "Altair" general is generally similar to the "Orion," but has accommodation for only one or two persons and, when fitted with a "Wasp" S.I.D.1 engine, the top speed, at 2,200 ft., is 230 m.p.h. As the machine is designed as a long-range freight carrier, there should be ample storage for auxiliary tanks. Mr. Walter Varney, an American, has also entered a Lockheed, and this will probably be an "Orion." Two "Douglas's" of unknown type, but both, it is rumoured, twin-engined "Airliners," will be flown, one by Harold Gatty, who went round the world with Wiley Post in the Winnie May, and the other by Roscoe Turner, hero of many fast-long distance flights. Clyde Pangborn has chosen a "Gee Bee" monoplane with a "Whitney" engine. It is probable that this aircraft is either the "International Courier" or the "International Super Sportster," both of which were described in *Flight* for February 22, 1934. Com. G. R. Pond and Mr. C. Sabelli have entered a Bellanca. The size, General Aviation, G.A.28 triple-engine monoplane of which we published a drawing in *Flight* of February 1, 1934, has been entered by Mr. Roy W. Ammel. A low-wing monoplane fitted with a Wasp engine will be used by Keith Reider. Two of the latest American entries are from Mr. Stanley C. Huffman and Mr. David W. F. Clough. The former has entered a Stinson "Reliant," examples of which type are now frequently seen in this country. Although unquantitatively comparable, the probable performance of the machine for long-distance racing remains to be seen. A "Lycoming" engine of 225 h.p. is usually fitted giving a cruising speed of 115-120 m.p.h.

Mr. Clough's machine is a Cessna monoplane of unknown type. Mr. John H. Wright (U.S.A.) has chosen a Lambert Aircraft Corporation's "Monocoupe." This is a two-seater enclosed-cabin, high-wing, strut-braced monoplane, usually fitted with an engine of from 90 to 145 h.p. The "Monocoupe" model D., using a Warner "Super Scarab" of 145 h.p., has a maximum speed of 165 m.p.h. A "Vance" monoplane with a "Wasp" engine entered by Murray B. Dilley also figures in the list. We have no details of this aircraft, but recall that a "Vance" monoplane appeared some months back, a tractor machine with the tail carried on two booms. The cruising speed was rumoured to be 220 m.p.h. Yet another American entry is from Capt. Lyon, who will use a Lockheed "Orion."

Five French entries have lately been received, MM. André Roussey de Sales and Jean Lacombe, with a Bernard 84 (Gnome-Rhone "Mistral"). And Vicomte Jacques de Sibouir with a Couzinet. It is not definitely known if this latter machine is the low-wing monoplane described in *Flight* of April 12, 1934. A Potez with a Lorraine engine and a Bleriot have been entered by M. Freton and Bleriot Aéronautique respectively. There are rumours that the Bleriot is a low-wing monoplane with a Gnome-Rhone "Mistral," geared and supercharged radial engine and with a retractable undercarriage. As expected, Detroyat has entered the "Orion" he purchased during his recent honeymoon to U.S. He has installed a Hispano-Suiza engine, which is probably one of the American Wright series built under licence in France.

**Pander "Postjager" Entered**

From Holland comes the "Postjager" monoplane with three Wright "Whirlwinds." This machine, which has been entered by a Dutch syndicate, is credited, in its standard form, with a cruising speed of 186 m.p.h. and a maximum speed of 225 m.p.h. There should be ample room for extra tanks.

Lt. Marshall Lindholm, of Sweden, has entered a Northrop "Delta" with a Pratt & Whitney "Hornet" engine. It is possible that this aircraft is the one at present being used by A.B. Aerotransport. The maximum speed is about 223 m.p.h., the cruising speed 187 m.p.h., and the range of the standard version 1,850 miles.

Up to the present one entry from Denmark has been received, that of Mr. M. Molvig II, with a "Gipsy III" engine, from Lt. Michael Hansen. An entry of a "Messerschmitt" has been received from Herr Wolf Hirth. One would deduce that the machine is to be fitted with a Hirth engine. Two other foreign entries, from Mr. V. L. Chand (India) and M. André Gueit (Algiers), have been received. The make and type of Mr. Chand's aircraft is not yet known, but M. Gueit has entered a Caudron low-wing monoplane.

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**THE GLOSTER "GAUNTLET"**

Performance of the Latest Version

We are now able to publish "maker's" performance figures of the latest version of the Gloster "Gauntlet" single-seater fighter, fitted with the Bristol "Mercury VI.S" engine, which has been adopted as the standard Day and Night Fighter of the R.A.F. Both in top speed and rate of climb this aircraft is superior to the specialised interceptor fighters put into service only three or four years ago, and it carries night-flying gear, wireless reception and transmission equipment with which these machines were not equipped.

Much of the credit for the excellent performance of this machine must go to the Bristol "Mercury VI.S" engine, which uses the new fuel of 87 octane value and delivers a maximum of 600 h.p. at 2,400 r.p.m. This engine is similar in general arrangement to the "Pegasus," but is fully supercharged, runs at a higher speed and has a higher compression ratio and shorter stroke. It is fitted with a combined Townsend and exhaust collector.

### GLOSTER "GAUNTLET"
#### Bristol Mercury VI.S. Engine

<table>
<thead>
<tr>
<th>Performance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed at 15,900 ft. (4,812 m)</td>
<td>226 m.p.h. (367 km/h)</td>
</tr>
<tr>
<td>Stallling speed</td>
<td>49 m.p.h. (79 km/h)</td>
</tr>
<tr>
<td>Climb to 1,500 ft. (457 m)</td>
<td>16.6-28 min.</td>
</tr>
<tr>
<td>Climb to 20,000 ft. (6,096 m)</td>
<td>9 min.</td>
</tr>
<tr>
<td>Service ceiling</td>
<td>35,500 ft. (10,820 m)</td>
</tr>
<tr>
<td>All-up weight</td>
<td>3,880 lb. (1,760 kg)</td>
</tr>
<tr>
<td>Petrol capacity</td>
<td>97 gall. (364 litres)</td>
</tr>
<tr>
<td>Oil capacity</td>
<td>5 gall. (57 litres)</td>
</tr>
</tbody>
</table>
MISSION FROM NEPAL AT CROYDON
Inspection of Aerodrome and Aircraft and a demonstration by No. 17 (F) Squadron

GEN. BAHADUR SHUM-SHER JUNG BAHADUR RANA, the Special Envoy from Nepal, members of his staff and attached British Officers, visited Croydon Airport on Thursday last. The Mission was received on behalf of the Secretary of State for Air by Air Vice-Marshall F. W. Bowhill, Air Member of Council for Personnel. Diana, the first D.H. 86 (four "Jupiter Sxes") to be delivered to Imperial Airways was waiting on the apron when the Mission arrived. The whole Mission was taken for a flight over London in this aircraft by Maj. Brackley and all were obviously impressed by the machine's beautiful lines and outstanding performance.

During the morning No. 17 (F) Squadron, R.A.F., had flown down from Kenley, where this squadron is now stationed. The nine "Bulldogs" ("Jupiter VII.F") were lined up on the aerodrome and were inspected by Gen. Bahadur, who displayed great interest in the complex armament and equipment of the machines. The "Bulldogs" of No. 17 Squadron have lately been modified and are now fitted with wheel brakes and a tail wheel. The inspection completed, the machines took off in squadron formation. From this formation they changed to line astern and flew towards the centre of the aerodrome. Suddenly the leader came down in a very steep dive towards an R.A.F. lorry which had Imperial Airways was waiting on the apron when the Mission arrived. The whole Mission was taken for a flight over London in this aircraft by Maj. Brackley and all were obviously impressed by the machine's beautiful lines and outstanding performance.

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Several civil aircraft were later inspected, including the Handley Page 42 "Harrier" (four "Jupiters"), Monospar S.T.6 (two Pobjoys), Westland "Wessex" (three "Genet Majors") and an Armstrong-Whitworth "Argosy" (three "Jaguars").

Later the Mission inspected the administrative buildings of the airport and were given an explanation of the organisation of the airport and of the control of civil air services. Night lighting and other airport equipment was inspected.

ORD LONDONDERRY, Secretary of State for Air, opened the Exhibition of Aerial Photography and Survey at Bush House on Monday, June 4. In his opening speech Lord Londonderry said that he had great pleasure in opening this Exhibition of yet another application of the aerial camera to the uses of mankind. The Exhibition was organised by Aerofilms, Ltd. Hundreds of air photographs and air surveys and maps prepared from these pictures, a variety of types of cameras, plotting instruments, and a host of other scientific accessories are on view. Among the cameras are the "Eagle" which took the Mount Everest photographs, and a new experimental five lens camera covering miles of country at each exposure. Ingenious apparatus to measure the contour of the ground, camera guns, huge air photographic posters, scale models of aircraft and of "ideal" airports are other items of interest. Public schools are sending parties of scholars to the Exhibition as an aid to their education. Perhaps the greatest attraction is a collection of photographs taken by the Houston Mount Everest Expedition last year.

The Exhibition is open free to the public from June 4 to June 9, from 10 a.m. to 7 p.m. (on Saturday until 1 p.m.).
The Air-France Tragedy
Shortly after 5 a.m. on May 31 an Air-France mail aeroplane struck a wireless mast at Croydon after taking off. Both the pilot, Capt. Raymond Defives, and his assistant, Roger L'Huillier, were killed. The accident is commented on in a leader and in the Croydon Notes.

"The MacRobertson Interceptor"
According to an American contemporary, the British Government will seriously consider the adoption of the winning machine in the England-Australia race for modification as an interceptor fighter.

A School Aerodrome
The masters and boys of Bryansrone School, Dorset, are constructing an aerodrome. Two of the masters are qualified pilots, but flying will not be taught at the school.

Canadian Airways
Although the mileage covered by Canadian Airways, Ltd., last year was slightly smaller than in 1932, both freight and passenger loads increased considerably.

Wear and Tear
The aviation correspondent of a particularly well-informed daily remarked not so long ago that a certain machine operated "... within a radius of 780 miles, while a used model in good condition has a normal radius of about 500 miles." The odd quarter would be difficult to explain.

THE RAPIER "COURIER"; Air Vice-Marshal A. E. Borton, Director of D. Napier & Son, Ltd., has had one of his company's "Rapier" engines fitted to this Airspeed "Courier," and has entered the combination in the King's Cup race. A high performance is expected. (Flight Photo.)

Jean Batten at Sydney
Representatives of both the Australian and the New Zealand Governments welcomed Miss Batten when she arrived at Mascot Aerodrome, Sydney, on May 30.

Customs
Both Liverpool (Speke) and Hull (Hedon) have been officially approved as Customs aerodromes for clearance of passengers and goods.

An American Monster
According to a provincial paper, Col. Fitzmaurice's MacRobertson racer will be "fitted with a double row of Wright engines." No doubt Bellanca is "putting it over" on the Dornier Do-X.

Speed in Europe
The first of a fleet of Northrop "Delta" ("Hornet") machines ordered by the Swedish air lines has started work by flying from Stockholm to Paris, a distance of 1,000 miles, at an average of 214 m.p.h.

Douglas "Dolphin" for France
The famous Parisian clothing manufacturer, M. Esders, has purchased a Douglas "Dolphin" amphibian (two P. & W. "Wasps"). This machine, incidentally, will be the fifth operated by the Esders works, and will be housed at Le Bourget.

Mr. Pirow's Reply
Speaking of the South African Government's policy in connection with Union Airways, Mr. Pirow repudiated the suggestion that negotiations were being spun out by the Government without any intention of coming to an agreement, and that he was forcing Imperial Airways on to a route which they did not want.

The "Joseph le Brix"
An inspection of the Bleriot monoplane flown by Codos and Rossi revealed the fact that one of the propeller blades was split, and this probably accounts for the vibration complained of during the Atlantic flight. Incidentally, this five-year-old machine has already taken off, with full load, some twelve times, and has flown about 100,000 miles.
Wireless
A decision was adopted by the International Air Navigation Committee at Lisbon by which all aeroplanes carrying more than 2,000 km. must be fitted with wireless.

German Air Day
Air celebrations were held throughout Germany on Sunday as part of an Air Sports Week which is intended to increase "air-mindedness."

Liverpool’s Airport
An aviation section is to be formed in the Liverpool Chamber of Commerce now that the K.L.M. is running a service through Hull to Speke.

Cord in England
The American car and aeroplane magnate, Mr. Errett Lobban Cord, was at Heston last week with a Stinson monoplane. Apparently he is over here to escape kidnappers! Among the many firms in which he is interested are: Stinson, Lycoming, Smith Propellers, and American Airways.

A Private Venture
Some interesting facts have come along from Mr. L. G. Reid, who recently purchased the Mollon's "Dragon" (G-ACJM) with the idea of making a purely private attack on the long-distance record. On June 18 he will, with his co-pilot and partner, Mr. J. R. Hyling, and the "Dragon," sail for Canada, and will be ready to take off from Wasaga Beach, Toronto, whenever weather conditions are perfect for an attempt to fly to Baghdad or beyond.

During the past week or two they have been practising take-offs, at Pen- dine, with gradually increasing loads, and the machine, which has been renamed Trail of the Caribou, is now at the Havillands undergoing a complete overhaul. The partners will, until June 18, be at Hambled taking a special blind-flying course in order that they may learn to fly up to three hours "under the hood" without fatigue.

BAPTISMAL: Miss Fiona Mackinnon, aged thirteen months, christens her father's new "Dragon" at Penhurst Aerodrome. The machine is equipped with Marconi directional wireless.

Nottingham Airport
The Nottingham Corporation has approved the sale of ground on the west side of the city to the London Scottish and Provincial Airways, Ltd., as an airport for East Midlands.

Into the Stratosphere
A new ascent into the stratosphere is being arranged by M. Cosyns, who accompanied Prof. Piccard.

Improving the Touring Aeroplane
Under the auspices of the French Government, the Association des Inventeurs et Petits Fabricants Francais is to organise a national competition for the improvement of touring aeroplanes. The awards will be made after consideration of the following points:—(1) The controllability and stability of touring aeroplanes under varying aerodynamical conditions; (2) the possibility of landing on small areas surrounded by obstacles; (3) the ability and rapidity of rising from small areas; and (4) the production of a machine which will embody low power, low weight, and low cost, while, at the same time, providing maximum safety.

U.S. Naval Review
Two hundred aeroplanes escorted the fleet into New York Harbour during the giant American Naval Review, which was held up by fog for two hours.

Aerodrome for Councillors?
The Liverpool City Council last week recommended the purchase of a aerodrome to take Council delegates to business journeys to various parts of the country.

Guyn Madocks Cup
The results of the Household Brigade Flying Club's competition were as follows:—

<table>
<thead>
<tr>
<th>Place</th>
<th>Competitor</th>
<th>Distance</th>
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Aerodrome for York?
A proposal has been submitted to the York City Council for the compulsory purchase of 16½ acres of land, just over the city boundary, for use as a municipal aerodrome. An expert has advised them that the land is eminently suitable for use by the largest type of aircraft.

"Wings over Everest"
We have had "Storm over Asia" and "Thunder over Mexico"—both photographically superb—but cramped quarters, and fed with oxygen, the photographers on the Houston-Mount Everest Expedition have produced something that even the great Eisenstein would admire. In "Wings Over Everest," shown for the first time at the Curzon opening, there is pictorial perfection, and even the story, unfortunately necessary to make the show more palatable, is not too melodramatic. The Everest film producer has used the best of the Russian technique, and if Bonnitt's camera work is a little overshadowed by the "story," the latter is at least as excellent as possible.

Diary of Forthcoming Events
Club Secretaries and others are invited to send particulars of important fixtures for inclusion in this list:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>June 9</td>
<td>Reading A.C. Annual &quot;At Home.&quot;</td>
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<td>June 10</td>
<td>R.A.F. Reserve Flying Club Annual Flying Display, Hatfield.</td>
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<td>June 23</td>
<td>Lancashire A.C. Air Display, Woodford.</td>
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<td>June 26</td>
<td>Henley Rally, Heston Airport.</td>
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<td>June 29</td>
<td>R.A.F. Twelfth Annual Dinner.</td>
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<td>June 30</td>
<td>Royal Air Force Display, Henlow.</td>
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<td>July 7</td>
<td>Opening of Leicester Airport.</td>
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<tr>
<td>July 8</td>
<td>French International 12-Hours Reliability Trial.</td>
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<tr>
<td>July 8</td>
<td>Competition for Model Aircraft, Great West Road Aerodrome, Cambridges.</td>
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<tr>
<td>July 13-14</td>
<td>King's Cup Race. Start and finish at Hatfield.</td>
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<td>July 21</td>
<td>Round the Isle of Wight Air Race.</td>
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<td>July 22-23</td>
<td>French Grand Prix.</td>
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<td>July 28</td>
<td>Bristol and Wessex A.C. Garden Party.</td>
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<tr>
<td>July 29</td>
<td>London-Sherburn Race (York County Aviation Club).</td>
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<tr>
<td>Aug. 13</td>
<td>Air Tour of Italy.</td>
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<tr>
<td>Aug. 17-Sept. 6</td>
<td>Copenhagen Aero Show.</td>
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<tr>
<td>Aug. 18</td>
<td>Cotswold Aero Club Air Rally and Garden Party.</td>
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<tr>
<td>Aug. 25</td>
<td>Liverpool and District A.C. Garden Party, Speke Aerodrome.</td>
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<tr>
<td>Oct. 6</td>
<td>London-Cardiff Air Race and Cardiff A.C. Air Pageant and Dance.</td>
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<tr>
<td>Oct. 7</td>
<td>Aviation Golf Meeting, Royal Porthcawl Golf Club, Porthcawl.</td>
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<tr>
<td>Oct. 20</td>
<td>England-Australia Race for MacRobertson Prize.</td>
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<tr>
<td>Nov. 16-Dec. 2</td>
<td>14th International Aviation Exhibition, Grand Palais des Champs-Élysées, Paris.</td>
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</table>
PARTICULARS of three fast commercial aircraft of the "feeder line" type now being built, are contained in a "Résumé of Commercial Information" compiled by the Directorate of Civil Aviation. The fastest of these three, a Blackburn monoplane, will probably be the first completed, the fastest multi-seater commercial aircraft constructed in Great Britain. This machine is an all-metal, low-wing, cantilever monoplane, with retractable undercarriage, and will be fitted with two Napier "Rapier VT" sixteen-cylinder air-cooled engines, each giving 305 h.p. at 3,500 r.p.m. at 10,000 ft. (3,048 m.). Ten passengers and a crew of two will be carried at an estimated cruising speed of 173 m.p.h. (278 km./hr.) at 5,000 ft. (1,524 m.). The total weight, which includes the crew of two, electrical and general equipment, is 8,600 lb. (3,901 kg.). It seems likely that this aircraft will have a Duncanson single-spar wing.

An "Scaled Down" Mailplane

Rather smaller and slightly slower than the Blackburn monoplane are two Boulton & Paul biplanes now under construction for "feeder line" work with Imperial Airways. These machines may be said to be "scaled down" versions of the Boulton & Paul "Mailplane" (two "Pegasus"). They are to be fitted with two Armstrong Siddeley "Jaguar VIA. engines giving 450 h.p. each, which will be mounted in similar fashion to the "Pegasus" in the "Mailplane." The figure given as a top speed (175 m.p.h.) is interesting in that there is a four-engined aircraft already being used by Imperial Airways, which, though having a lower power, carries a considerably greater payload at about the same speed. The new Boulton & Paul is, however, designed to operate from very much smaller aerodromes, and therein lies the explanation. With a wing loading of 15.6 lb./sq. ft. (76.7 kg./m.²) the landing speed should be rather lower than that of the four-engined machine. For which the figure is 196 m.p.h. (315 km./hr.)

BUENOS AIRES-CORDOBA SERVICE

The Government aviation works at Cordoba, Argentina, have constructed the machines which are operating on the service between Cordoba and Buenos Aires. In general layout, these aircraft resemble a French design. The type is a low-wing monoplane with 480-h.p. air-cooled engine driving a metal aircrew. Wooden construction is used for the wing and the fuselage of chrome molybdenum steel tubes. The weight empty is 5,888 lb. (2,676 kg.), gross weight 6,185 lb. (2,760 kg.), range 6 hours, or 684 miles (1,100 km.), maximum speed 140 m.p.h. (225 km./hr) and cruising speed 121 m.p.h. (195 km./hr.)

ANOTHER AIR MAIL PENNANT

A new air mail service between Inverness and Kirkwall, Orkney, was inaugurated on Tuesday of last week (May 29) at Lossiemouth Aerodrome, Inverness, when the Royal Air Mail Pennant was presented by Sir Frederick Williamson, Director of Postal Services, to Capt. Fresson, of Highland Airways.
The first air line to operate between the continent of Europe and the North of England was started on Thursday last, May 31, by K.L.M. between Amsterdam and Hull.

Alderman and Mrs. Benno Pearlman alighting from the K.L.M. airliner on its arrival at Hull to inaugurate the first direct air service between Hull and Amsterdam. (FLIGHT Photo.)

save a large amount of their valuable time. The journey from Hull to Amsterdam now only takes two hours, and for the present, at any rate, K.L.M. will be carrying the service through Hull on to Liverpool, where the machine will be housed for the night. Connecting with this service at Hull, Southern & Central Air Lines and London, Scottish & Provincial Airways are operating machines from Southampton and Croydon, via Nottingham, to Hull, and the first machine on this service arrived shortly after K.L.M.’s Fokker had landed. This was one of the, now well-known, Airspeed “Couriers.”

The whole occasion created considerable interest among

His Excellency the Dutch Minister, speaking during the inaugural proceedings at Hull. Behind him, wearing his chain of office, is the Sheriff, Councillor Arthur Cargill. Facing him, with a paper in his hand, is Alderman Benno Pearlman, the Chairman of the Aerodrome Committee, and on the extreme left, wearing glasses, is the Lord Mayor, Alderman Arthur Shepherd. (FLIGHT Photo.)
the local public, who flocked to the aerodrome to witness the arrival of these machines. During the interval between lunch and the arrival, the spectators were both entertained and thrilled by a very fine display of aerobatics given by No. 57 (Bomber) Squadron, R.A.F., who came over in their Hawker "Harts" (R.R. "Kestrels") from Upper Heyford, under the command of Sgd. Ldr. F. W. Walker. Their formation flying was a foretaste of that which will be seen at the R.A.F. Display at Hendon on June 30. Also of considerable interest to the spectators over in their Hawker "Audax" machines from Catterick, the roar of their R.R. "Kestrel" engines lending a contrast to the more subdued note of the commercial machines.

During the evening the Lord Mayor, the chairman of the Aerodrome Committee, and Sir Arthur Atkinson, first President of the Hull Aero Club, entertained a large number of guests to an Inaugural Banquet at the Guildhall. The toast list was a long one, during which the vicissitudes through which the aerodrome has gone since it was started were explained, and the hopes entertained for its future were enlarged upon.

Mr. Pearson, with his happy knack of "saying the right thing at the right time, in responding to the toast of "The Success to the New International Air Service," very aptly pointed out that aviation was international, and to do a great deal towards bringing back prosperity to all countries. He also said that he expected cruising speeds were enlarged upon.

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HESTON

The British Air Navigation Company announce that they will commence operating a regular daily service to Pourville on June 23, and a similar service to Deauville on July 12. The popularity of their present Le Touquet service indicates that these new air- lines should be well supported by those who have acquired the habit of week-ending on the Continent. During the past month this company carried 280 passengers, 9,087 lb. of baggage, and flew 141 hours, covering over 19,000 miles.

Last week again marked a steady increase of the traffic to the Isle of Wight, via "The Island Air Express," the service operated by Portsmouth, Southsea & Isle of Wight Aviation, Ltd., for whom B.A.N.C.O. manage the London terminal.

The Magna Carta atmosphere was diffused over the airport on Tuesday of last week by a number of performers in the Runnymede Pageant who arrived, complete with hauberks, halberds, shifts, wimples and all the appropriate panoply, to be photographed in a modern setting.

During the past month the total hours flown by the Airwork School showed an increase of 96 per cent. on the figures for May, 1933. This is remarkable when taking into consideration the very rough winds experienced throughout almost the whole month.

Wrightson & Pearse have received a contract from a large distributing firm to carry newspapers six days a week to Paris. They transport a daily load of from 800 to 1,000 lbs. in a de Havilland "Dragon," and the start is made at 4.20 a.m.

The Prime Minister landed at Heston on May 28, at 6 p.m., after a flight from Lossiemouth, with his son and daughter, in a "Dragon" belonging to Midland & Scottish Air Ferries. Air Vice-Marshal Borton returned on May 25 from Brussels in his Napier "Gull," and Mr. Francis Francis left with his wife (Sunny Jarman) and child for Geneva, on May 26, in his Sikorsky amphibian.

BIRTHDAY HONOURS

The following names appear in the official list of honours conferred by His Majesty the King on the occasion of his sixty-ninth birthday:

Viscount
Charles Cheers Wakefield, Baron. C.B.E., Honorary Colonel, 2nd City of London Regiment (The Royal Fusiliers). For public services, especially to civil aviation.

FOREIGN OFFICE LIST
Air Force Rewards
Air Force Cross
Sgd. Ldr. Francis Joseph Fogarty, D.F.C.
Fit. Lt. Guy Lloyd Carter.
Air Force Medal
973 Fit. Sgt. William Robert McChery.
36429 Sgt. (Pilot) Edward Norman Rooms.
Civil Awards
C.B. (Civil Division)
Wing Commander Eric John Holdscoll, Royal Air Force. Assistant Secretary, Committee of Imperial Defence.

DOMINIONS SERVICES LIST
Order of the British Empire
Military Division
M.B.E.
Quartermaster and Honorary Flight Lieutenant John Joseph Swift, Royal Australian Air Force.
Civil Division
M.B.E.
Mrs. Maud Rose Bonney. For the first solo flight by an Australian woman from Australia to England.

ORDER OF THE BRITISH EMPIRE
Royal Air Force
K.B.E. (Military Division)
C.B.E. (Military Division)
Air Commodore John Tremayne Babington, D.S.O., Royal Air Force.

IMPERIAL SERVICE ORDER
Companions
Home Civil Service

BRITISH EMPIRE MEDAL
Military Division
For Meritorious Service
Royal Air Force

KING'S CUP ENTRIES

Five last-minute entries have been received for the King's Cup Race. One, a D.H. "Tiger Moth" ("Gipsy Major"), entered by Capt. G. de Havilland, will be flown by Mr. Peter de Havilland, the de Havilland Technical School. These latest entries bring up the total number of those taking part to 44.

T. A. K. Aga ... D.H. "Moth" ... "Gipsy Major." 
Capt. G. de Havilland "Tiger Moth" ... "Gipsy Major." 
A. C. M. Jackaman ... Monospar S.T.4. ... "Pojagi-K." 
Sir J. Kirwan ... Percival Gull "Napier" "Javelin." 
Mrs. Wise Parker ... Blackburn ... B.2 "Trainer."
CARDFIFF
The monthly landing competition for the half-pint tankard will be held on Sunday, June 10th, at 2.30 p.m.

CATWICK
The B.A.T. School have flown 83.10 hours during the week, making a total of 260.25 for the month. Mr. A. T. Day, successfully undertook the night flying test for his “B” licence.

HANWORTH
Flying time on Club machines for the week amounted to 84 hours 30 minutes, with two first solo flights and one “A” licence. Four new members joined the Club this week, and one is taking an instructors’ course with Capt. Wilson.

LIVERPOOL
Cross-countries have been made on club machines from Hooton to Heston, Cambridge, Berck, and several nearer aerodromes during the past fortnight, in which 179 hours were flown. In fact, Hooton has had the best weather for a long time.

BENGAL
During April the Bengal Flying Club managed to put in nearly 191 hours at Dum Dum Aerodrome, and four members passed their licence tests. F/O. Knocker flew Mr. W. W. K. Page, President of the European Association, to Chittagong, but they were delayed for one night by a heavy storm.

CAMBRIDGE
Eighty-six hours were flown during the past fortnight at Marshall’s Flying School, with one first solo and several charter flights. Quite a crowd visited the aerodrome on Thursday. On Saturday, H.R.H. Prince George arrived, in the Prince of Wales’ “Dragon,” to open the Fair at Madingley Hall. Mr. David Garnett, the author, left during last week for a tour in his Klemm.

BROOKLANDS
Perfect weather during the past week has led to increased flying hours, and 110 hours have been completed—50 dual and 60 solo—with four first solos. Capt. Findlay has been doing more taxi work for Mr. Fred Darling, the famous trainer, and has also been very busy in the sales dept. Incidentally, it was Capt. Findlay who took up Mrs. Leech, who is over 80 years of age, for her first flight.

NOTTINGHAM
A total of 142 hours have been flown by the Nottinghamshire Club during the past month, thus beating the record by a handsome margin. Fourteen new flying members have joined, and the club-house is being improved by the addition of a verandah and other offices. Two Club members have made flights abroad during the month.

HATFIELD
H.R.H. Prince George has promised to attend the Royal Air Force Flying Club’s Display on June 16th. A number of famous pilots will take part, and it will be one of the most ambitious “unofficial” affairs of the year, and assistance and encouragement have been forthcoming from both the Air Ministry and private flying organisations.

READING
At the Club “At Home,” which takes place on Saturday next at 3 p.m., there will be an “arrival prize” for the pilot of a machine landing between 2.30 and 3 p.m., demonstrations by eleven manufacturers, and a half-hour visit by No. 900 City of London (B) Squadron. Owing to lack of entries, the ladies’ race has unfortunately been cancelled for this year.

On Saturday, Mr. and Mrs. Powis and others flew over to the Brooklands Meeting, and on Sunday more members flew to the London Aeroplane Club Garden Party, where Mrs. Higgs and Mr. Bishop carried off the “bottle race” prize! The registration (G-A COP) of the new school “Hawk” is vaguely familiar.

SCOTTISH
Landings competitions and a race will be held on the 9th and 10th of June.

The Prime Minister called at Renfrew last week on his way from Lossiemouth to London in an M.S.A.F. machine. He was accompanied by his son and daughter and by Mr. J. C. Sword, who entertained the party at a tea at the Club.

Completion of the new clubhouse is still being delayed by the plasterers’ strike, but flying goes on, and 55 hours were flown last week.

CINQUE PORTS
The flying time for the week was 41 hours, and included solos by Dr. N. and Dr. B. Grellier, who, incidentally, are twins and who went off on the same day. The “Leopard Moth” in which Rubins and Waller flew to Australia and back, came in here with its new owner, Van Der Leew, a Dutchman who is starting this week for Capetown. This machine should certainly have an interesting log book before it gets much older. F/Lt. Nick Comper also landed here with the Comper “Streak” on his way back from Paris and, before leaving, he demonstrated it to the Club, and its performance certainly left its mark.

LEICESTERSHIRE
During the past month 37 cross-country flights were made by Club aeroplanes, and, in addition, Mr. W. Lindsay Everard, M.P., Lt. C. W. Phillips, and Messrs. Reiss, Synnington and Heycock made a tour of Europe in Mr. Everard’s machines. On Empire Air Day the Club operated at Ratcliffe aerodrome in Mr. Everard’s absence, and about 3,500 people were admitted to the aerodrome. Air Commodore J. A. Chanié paid a flying visit, and Mrs. Amy Mollison took children for flights.

The Club officials are very busy preparing for the move to the Leicester City Airport, and the official opening will be on July 7th, 1934.

BOMBAY
On or about June 4 four “Moths” should have left Jehu aerodrome on an instructional tour to England. The route will be Karachi, Baghdad, Tunis, Rome, Cannes, Paris, and Heston, and should be covered in about nineteen days. The flight will be led by F/Lt. Lt. Binkley, chief instructor of the Bombay Flying Club, the Club engineer, Mr. L. E. Readie, will accompany the flight, and each of the pupils will lead the formation in turn. While in London the pupils—Indians, by the way—will see aircraft factories, will receive a complete blind and night flying course, and will be taught the theoretical side of the “B” licence examination, for which they will also sit. Such a tour may become an annual feature.

MIDLAND
Three new members joined the Midland Aero Club, and a good deal of cross-country flying was indulged in during the week.

The team of “Puss Moths” entered for the Doncaster Navigation Race and flown by Messrs. Hodgson, Davison, and Johnson were only successful in obtaining third place, arriving 7th, 9th and 9th, the order in which they started. Although they were disappointed, they had a most enjoyable time. A party, incidentally, flew over to the Hatfield show on Sunday.
Bristol and Wessex
F.O. C. V. Ogden has joined the staff of the Bristol and Wessex Aeroplane Club as assistant instructor, and a new "Major Moth" was delivered on June 1. During the week the Club aircraft flew 63 hours with two first solos.

The race for the S.B.A.C. Challenge Trophy is to be flown at the Bristol Club Garden Party on July 28. The course consists of three laps of a closed circuit—a total distance of approximately 45 miles. This race is open to all aircraft of British manufacture, which must be the bona fide property of a recognised light aeroplane club or of a member of the club entering, and pilots must have been trained ab initio by this club.

Herts and Essex
Last week constituted a record for hours flown—117. Those for May, incidentally, totalled 375, only 10 short of record month, July, 1933. Two further members are taking advantage of the contract rate, receiving 50 hours' solo flying for £50.

The Club's new Miles "Hawk," G-Acto, has been received, looking very smart in club colours, orange and brown, and is being kept extremely busy satisfying the long-standing demand of the members for a variety of type. The fleet now includes four "Moths" (two "Gipsy I" and two "Cirrus II"), and one Miles "Hawk." The competition for the "Shelmerdine" Challenge Bowl commences next Sunday.

South Africa
In spite of the distinctly anti-British trend in South African civil aviation, the Rand Flying Club decided to open its new clubhouse—the first for the Cape in South Africa—on Empire Day. The clubhouse is from all accounts the most magnificent place, on modern lines, with a large lounge, pilots' room, flight booking office, locker rooms, tea room, office, kitchen, and bar, while the roof has been designed to be either a grandstand or an open-air dance floor.

The membership of the R.F.C. now totals 280, and a second "Gipsy Moth" has recently been purchased. Considering that the club only came into existence eighteen months ago, this is a really good show.

Vincennes Again
The Annual Two-Days Whitsonside Aviation Meeting run after a lapse of Three Years

As usual at Vincennes, the programme for the Whitsonside Meeting was more than varied, with races, precision landing contests, glider and autogiro demonstrations, parachute jumping, trapeze work, and the customary aerobatics. The meeting covered two days, Sunday and Monday, and was run under the management of the Société pour le Développement de l'Aéronautique of which the well-known pilot, Maurice Finat, is the chief.

Some fifty machines of various types were ranged in front of the well-filled grandstands, which had been built for the previous Doret-Detroyat contest, and these included Maryse Hiltz's Bréguet seaplane, Kronfeld's latest glider, a C.30 autogiro brought over by Brie, the record-breaking Caudron "Rafale" low-wing monoplane, and several Bériot "Spad" pursuit machines. Furthermore, development could be studied by a glance at the "cross-Channel" Bériot and that hardy perennial the Farman "birdcage."

The first event on Sunday consisted of the eliminating trials for the contestants in the Georges Dreyfus Speed Race, who covered twenty-five laps of a fifteen-mile course encircling the field. The finals of this contest, in which there were some twenty entries, were flown the next day, and were won by Boris, flying a "Puss Moth" ("Gipsy Major"), at a speed of 101.90 m.p.h., and were won by Boris, flying a "Puss Moth" ("Gipsy Major"), at a speed of 101.90 m.p.h., but removes his wing extensions for such work as stunt flying. The wings, incidentally, are of trapezoidal shape.

A demonstration which must be "something new and strange" to French people followed, when Mr. Brie put the direct-control autogiro through its paces. Mr. G. L. Harrison, of Sale, Cheshire, who was flown over by Mr. Stephen Cliff in a Miles "Hawk," was another English visitor. Two Portuguese officers, flying a Junkers "Junior" (Siddeley "Lyne"), and a D.H. "Tiger Moth" ("Gipsy Major"), respectively, gave the usual aerobatic display.

One of the most interesting machines at the meeting was the Caudron "Rafale" (Renault-Bengali), which made several flights around the field. Equipped with split flaps having a chord of 30 per cent, that of the wing and a Ratier variable-pitch propeller, the take-offs and landings of this machine were quite remarkable in view of its top speed.

Before the meeting closed, the Air Minister, Gen. Denain, arrived from a similar affair in a three-motor Dewoitine Colonial type monoplane, with Col. Davy and several members of his staff.

R. C. W.

VARIETY AT VINCENNES: The upper illustration shows the Junkers "Junior" flown by Capt. Placebo Abreu, of Portugal. Below, left, is the record-breaking Caudron "Rafale" low-wing monoplane, and right, G. L. Harrison (centre) and Stephen Cliff (right) who flew the Miles "Hawk" from Heston: with them is R. A. C. Brie, who came over on the autogiro.
SUCCESSFUL CLUB MEETINGS

The season of Club flying meetings opened last week-end with gatherings at Brooklands and Hatfield

RAPID growth in the volume of private-owner air traffic was an outstanding feature of last year, but judging by the attendance at both Brooklands and Hatfield during the week-end, that growth is likely to be considerably greater during the present season. Both these meetings were private ones to which the friends of the organisers came by invitation, the general public not being admitted. Therefore, both were rather more Garden Parties than purely spectacular flying meetings. For a long time now FLIGHT has advocated this form of social activity for flying clubs rather than the big public flying meetings, at which the financial risks are greater and the gain seldom equal to the trouble involved to the members.

Well over 60 visiting aeroplanes, of what might be called the private-owner type, lined the edge of Brooklands aerodrome last Saturday, besides which a very considerable number of Service machines arrived with guests. Hawker Aircraft, Ltd., and Vickers Aviation, Ltd., were joint hosts with Brooklands Aviation, Ltd., while the Masonic Flying and Country Club had accommodation
A SUNNY SITE: Guests of the London Aeroplane Club enjoying the sun on the terrace at Hatfield.

(FLIGHT Photo.)

for their own members. The two manufacturing companies had special marquees for the entertainment of their friends, and both companies had invited not only Service pilots, members of the aircraft trade and of the Air Ministry, but also a large number of foreign visitors. Among these we noticed the Acceptance Commission from Portugal, who were no doubt pleased to see the very fine performance put up by Mr. E. G. Sayer on a "Fury" (R.R. "Kestrel"), which was one of those now being supplied to the Portuguese Government.

Other types of Hawker aircraft which were shown off were the "Hart" (R.R. "Kestrel"), flown by Mr. P. W. S. Bulman, Hawker’s Chief Test Pilot, and another "Hart," but with a Bristol "Pegasus" engine, flown by Mr. P. G. Lucas. Vickers provided entertainment by putting a twin-engined "Velox" (Bristol "Pegasus") and a "Vildebeest" ("Pegasus") into the air. The former can be arranged for passenger, troop or freight carrying, and the latter is the well-known torpedo bomber used in the R.A.F. and abroad. Displays were also given by Mr. George Lowdell on a Hawker "Tomtit" (Wolseley), Mr. Harris, Chief Instructor of the London Aeroplane Club, on a "Tiger Moth," and Mr. Tangye on his Comper "Swift" (Poljou). The outstanding event was, perhaps, a display of synchronised aerobatics by two flights of No. 48 (Fighter) Squadron from Tangmere flying Hawker "Furies" (R.R. "Kestrel"). They performed in a manner which permits of no criticism. This squadron has become known as one from which everyone may justifiably expect aerobatics of outstanding accuracy, and their display on Saturday was rather in the nature of practice for what we shall see at Hendon later.

During the afternoon Mr. Raymond Quilter and Mr. A. W. Fairlie jumped out of Brooklands School "Moths" and made safe descents, despite the high wind, with G.Q. parachutes. This parachute was also shown in its various forms in the school hangar, which housed a widely varied show of items of aeronautical interest especially arranged for the occasion.

The London Aeroplane Club’s Garden Party on the following day was a very happy combination of amusing non-aeronautical events and flying displays. There was not too much of either, so that the interest was sustained and the Club’s visitors enjoyed themselves thoroughly. Flying displays were given by Fit. Lt. W. E. P. Johnson, whose aerobatics on a "Tiger Moth" have many times been commented upon most favourably in our pages. The finished manner in which he shows, not only how
controlled type (7-cyl. "Genet Major"). A contrast was given by Mr. F. G. Lucas, a test pilot of Hawker Aircraft Co., Ltd., in the company’s demonstration "Hart" ("Kestrel VI"). Mr. Lucas not only "roared up" the aerodrome, following with an almost incredibly sustained climb, but also showed that the "Hart" could fly quite comparatively slowly.

Since the De Havilland Aircraft Co. took over the direction of the London Aeroplane Club many amenities have been added to those originally provided there. For example, the swimming bath is an attraction, and this was enhanced on Sunday by a bathing costume parade and a swimming demonstration by Miss Betty Blanks, the 100 yd. Southern Counties Breast Stroke Champion for 1932. The visitors were entertained to a tea dance in the bhouse, and they could also sit comfortably on the terrace while they watched various amusing events, like the wheelbarrow race, which was won by Mr. Humble and his passenger; the hat-trimming competition for men, which was won by Mr. Graham MacKinnon; the bottle race by Mr. Bishop, of the Reading Aero Club, who steered his passenger, Mrs. Higgs, along a tortuous course and disturbed the least number of bottles; and finally a pilot’s obstacle race, which was won by Mr. W. Yamamoto.

During the afternoon, Nos. 18 and 57 (Bomber) Squadrons, R.A.F., and Nos. 600 and 601 Squadrons, A.A.F., flew over in the course of exercises, forming part of their practice for the R.A.F. Display at Hendon.

The machine park was also open so that the visitors could inspect the many machines—over 40 of which arrived during the afternoon—and there they evinced great interest in the many types, among which was the "Martlet" ("Genet") in which Mr. E. M. Wright won the arrival competition. It was disappointing, however, that the D.H. 86 four-engined airliner, or Diana, as she is called by Imperial Airways, which had been expected, could not be brought over.

"STALLING"

A Summary of the Twenty-second Wilbur Wright Memorial Lecture, given by Professor Melvill Jones before the Royal Aeronautical Society

FEW places could be more suited to the delivery of the Wilbur Wright Memorial Lecture than the Science Museum, South Kensington, and last Thursday evening Professor Melvill Jones spoke almost in the shadows of the original Wright machine and of the Supermarine S.6b. The lecturer was introduced by Mr. C. R. Fairey, President of the R.Ae.S., who also presented the year’s awards, which are given elsewhere.

The Lecture

Were it not for the dangers inherent in the stall, the art of flying would probably have been mastered in very early times, and until this phenomenon is thoroughly understood aviation will not be free to play the great part it is destined to play. He stood still in the air and landed vertically, flew fast and slow, took off in a very short space and climbed rapidly. He was flying the latest C.30 direct-manoeuvres should be made, but also how they should not be made. Both educational and amusing. Mr. R. A. C. Brie handled an Autogiro in a manner which proved its wonderful utility. It was found that aerofoils could be divided into three main groups, according to the way in which lift and drag varied during the stall. In the first the lift rises and the drag increases slightly at incidences above 7 deg., whilst the second, severe fluctuations persist over an incidence range of some 5 or 6 deg., and the onset of these fluctuations coincides with the passage of the incidence of maximum mean lift. In the third, the fluctuation increase does not occur until an incidence several degrees greater than that of maximum lift, which passes without any marked fluctuations.

A study of the flow changes over an aerfoil shows that the first noticeable sign of approaching stall is the forma-
tion of a region in which the "total head" falls below the constant value which it would have in installed flow. This is no definite separation of the stream from the surface. During this stage, which precedes the true stall, the air stream may separate from the leading edge, but quickly rejoins the surface. It is of theoretical interest and merely gives warning that the true stall is at a distance. It is in advance with what happens in the next stage that the aerofalls into one of the three previously-mentioned groups. In the first case the definite separation of the stream from the leading edge, which was responsible for the initial separation and complexity of the lift obtained in the conventional way, is caused by increasing Reynolds number, rear separation is then postponed to incidence considerably greater than that of maximum lift. The wings of the aeroplane used have a section for which the flow separates from the leading edge and is clearly defined towards the front. In the other form the boundary is also clearly defined towards the front, but remains within three or four inches of the surface about half the length of the aeroplane, and then becomes difficult to define. The alternations of the flow between these two forms are very rapid when thought of in terms of measurement of forces on a small model, but they are surprisingly slow when thought of in terms of the distance travelled by the aeroplane through the air. Either kind of flow can persist while the aeroplane travels through a distance equal to 20 or more times the length of its chord. These alternations are responsible for the violent fluctuations indicated by the sudden widening of the space between the lift and drag curves.

Flow Separation

Disregarding the shallow "bubble" of turbulence which may form behind the leading edge at relatively low incidences, the first clear sign of the separation of flow from the leading edge always coincides either with a complete discontinuity in the force curves or with the onset of violent fluctuations. This, however, does not necessarily happen at the incidence of maximum lift; with some aeroplanes, particularly when they are thick and have the maximum camber far back from the leading edge, the flow of the free air stream passes well clear of the remainder of the aeroplane, and a permanent region of "dead air" of uniform low pressure extends over the upper surface. This change coincides with the discontinuity in the force curves, and occurs only when there is a large difference between the values of the lift before and after the critical change. If the difference is not so large, the first complete separation is followed by a remarkable and inexplicable phenomenon. It appears that the boundary of the main stream may alternate between two fairly distinct forms. One is that in which the boundary passes well away from the trailing edge and is clearly defined towards the front. In the other form the boundary is also clearly defined towards the front, but remains within three or four inches of the surface about half the length of the aeroplane, and then becomes difficult to define. The alternations of the flow between these two forms are very rapid when thought of in terms of measurement of forces on a model, but they are surprisingly slow when thought of in terms of the distance travelled by the aeroplane through the air. Either kind of flow can persist while the aeroplane travels through a distance equal to 20 or more times the length of its chord. These alternations are responsible for the violent fluctuations indicated by the sudden widening of the space between the lift and drag curves.

The Remaining Problems

When measurements of lift and drag were obtained, it was noticed that though the lift curve changes direction rather abruptly at 16 deg., there was no indication of any sudden change in the forces themselves. When, however, this aeroplane was stalled in a manoeuvre in which the aerofoil was perfectly clean, the change of flow over the unslotted parts of the wings, from the unstalled to the fully-stalled state, may occur very suddenly and permanently so that the full effects of a discontinuous force change may be observed. This phenomenon of sudden stalling was met for the first time when we were attempting to discover the cause of a very disconcerting sudden change of behaviour of the aeroplane in steep turns, begun at some 40 years above the stalling speed in straight flight and the dead air. There are many variations in the behaviour of the tufts, but at present we are concentrating upon broad features only. The wings of the aeroplane used have a section for which the flow separates from the leading edge and then fluctuates between the two forms previously mentioned. The incidence at which these flow variations begin coincides exactly with the incidence at which the pilot begins to notice those errant plunging movements which everyone knows as characteristic of the stall.

Fluctuations and Discontinuities

The occurrence of "rear stalling" modifies the main flow so as to reduce the danger of "front stalling," and hence when "rear stall" wins the race, even by a small margin, violent fluctuations or discontinuities may be postponed until many degrees beyond the incidence of maximum lift. It does not take much imagination to see how this state of affairs may account for the peculiar sensitivity of some wings to small changes of shape and to other variables.

A general study of the published records of experiments on wings suggests that while front separation is postponed by increasing Reynolds number, rear separation is encouraged. This would explain most of the complicated effects of change of scale which have hitherto been so puzzling.

It appears that the flow may alternate through wide limits, even when the incidence is maintained strictly constant. In manoeuvres of an aeroplane in flight, sudden changes of the forces on parts of the wings may have very disconcerting effects, and the point is that it is these effects which are the principal remaining dangers of the stall and for the difficulties which we experience in predicting behaviour from calculations based on model experiments of conventional type.

It should therefore be our aim to eliminate these sudden changes altogether or postpone them to incidences which cannot be reached in ordinary manoeuvres, and since we cannot hope to locate them by studying aerodynamic phenomena obtained in the conventional way, we must find other means of doing so.

In the experiments on aeroplanes in flight at Cambridge, the flow is studied by wiggled pitot, by pressure movements, the movements of little tufts of wool fastened to the fabric of the wings, and to very light points temporarily erected upon their upper surface. In unstalled flight these tufts remain practically still, but when "rear stall" wends its way, they are violently agitated for a certain distance from the surface, but beyond this distance they stand out steadily in the air stream. The divining rod, of course, marks the boundary between the main stream and the dead air. There are many variations in the behaviour of the tufts, but at present we are concentrating upon broad features only. The wings of the aeroplane used have a section for which the flow separates from the leading edge and then fluctuates between the two forms previously mentioned. The incidence at which these flow variations begin coincides exactly with the incidence at which the pilot begins to notice those errant plunging movements which everyone knows as characteristic of the stall.
Changes in the Higher Command

Important changes in the Higher Commands of the Royal Air Force are announced by the Air Ministry.

The appointments are as follows:

Air Vice-Marshall C. S. Burnett, C.B., C.E., D.S.O., now Air Officer Commanding, Inland Area, Royal Air Force, to be Air Officer Commanding, Coastal Area, Royal Air Force, at the end of September, 1934, vice Air Marshal T. H. Clarke-Hall, C.M.G., D.S.O.,

Air Vice-Marshall C. S. Burnett, C.B., C.E., D.S.O., now Air Officer Commanding, British Forces in Iraq, to be Air Officer Commanding, Inland Area, Royal Air Force, about March, 1935, vice Air Vice-Marshal A. M. Longmore, B.B., D.S.O.,


Air Commodore H. M. Cave-Brown-Cave, D.S.O., I.F.C., now commanding Electrical and Wireless School, Royal Air Force, Cranwell, to be Director of Technical Development at the Air Ministry, about September, 1934, vice Air Commodore J. M. Cave-Brown-Cave, D.S.O., I.F.C.,
During the Great War he commanded a squadron and wing in France and Palestine, and for these services was awarded the D.S.O. and C.B.E. in addition to being mentioned in despatches on four occasions.

Subsequently he commanded No. 31 Wing, Royal Air Force, Mesopotamia, and in 1923 was appointed Deputy Director of Operations and Intelligence, Air Ministry, which post he held until assuming command of the Central Flying School in January, 1927. In the New Year Honours List of the same year he was made a C.B., and, on promotion to the rank of Air Commodore in January, 1929, was appointed Chief Staff Officer, Iraq Command, which appointment he held until January, 1931, when he became Director of Operations and Intelligence, Air Ministry, and Deputy Chief of the Air Staff. He was promoted to the rank of Air Vice-Marshal in July, 1931, and became Air Officer Commanding, Iraq Command, in November, 1932.

Air Vice-Marshal W. G. S. Mitchell entered the Army in 1906 as a 2nd Lieutenant, serving with the Devons and Highland Light Infantry. He was seconded to the Royal Flying Corps in December, 1914, and he served in France from August, 1914, with short intervals until June, 1918. In December, 1919, he was posted to India, and on his return commanded the School of Technical Training, Halton, from January, 1925, to February, 1928. He then proceeded overseas to take charge of the Aden Command, which post he relinquished on appointment as Director of Training at the Air Ministry. In January, 1933, he was appointed Air Officer Commanding Cranwell, and Commandant of the Royal Air Force College, and was promoted to his present rank in July, 1933.

For his services during the war he was awarded the D.S.O., M.C., and the A.F.C., and was mentioned in despatches on four occasions. He also received the award of C.B.E. in 1924 for valuable services rendered in the field in connection with military operations in Waziristan, 1922-23.

Air Commodore H. M. Cave-Browne-Cave joined the Royal Flying Corps (Naval Wing) from the Royal Navy in April, 1914. During the war he served with the Royal Naval Air Service and Royal Air Force, and, in addition to other appointments, commanded the Seaplane Stations at Dunkirk and Malta. For his war services he was awarded the D.S.O. and the D.F.C.

A.A.F., HENDON

"AT HOME"

In the glorious afternoon of Sunday last, the Squadrons of the A.A.F. stationed at Hendon were "At Home" to friends. Two of these Squadrons, No. 600 (City of London) (Bomber) Squadron and No. 601 (County of London) (Bomber) Squadron, both of which are equipped with Hawker "Harts," ("Kestrel"), gave aerobatic displays in co-operation with No. 18 (Bomber) Squadron and No. 57 (Bomber) Squadron, both of which are also equipped with "Harts." This was in the nature of a dress rehearsal of an event on the programme of the R.A.F. Display. No. 804 (County of Middlesex) (Bomber) Squadron, using Westland "Wapitis" ("Jupiters"), also gave a commendable exhibition. During the afternoon, F/O. G. R. A. Elsmie, in a "Hart," and FIT. LT. F. W. Long, who was in the last "Schneider" team, in a "Bulldog," gave aerobatic displays.

After the war, Air Commodore Cave-Browne-Cave served on the staff of the School of Technical Training (Apprentices), Royal Air Force, and during 1922-7 held, in turn, the posts of Deputy-Director of Design, and Deputy-Director of Technical Development at the Air Ministry.

He was in command of the Far East Flight which left England in October, 1927, for Singapore, and afterwards flew from Singapore under command of the Central Far East Command, to Hong Kong and back—a total distance of more than 27,000 statute miles. On the formation of the Far East Command, with Headquarters at Singapore, he was appointed Commanding Officer. In April, 1931, he was posted to the Air Ministry as Director of Technical Development, and was promoted to his present rank in July of the same year.

Air Commodore J. T. Babington was attached as a Sub-Lt. from the Royal Navy to the Naval Wing of the Royal Flying Corps in March, 1913. During the Great War he served in France with the Royal Naval Air Service, and, for distinguished service in connection with the attack on Zeppelin Sheds at Friedrichshafen on November 21, 1914, he was awarded the D.S.O.; in addition, he was mentioned in despatches and had two French decorations bestowed upon him.

In August, 1919, he was granted a permanent commission as Sqd. Ldr. in the Royal Air Force, and was promoted Wing Com. in 1922 and Group Capt. in 1930. He was appointed in command of the Electrical and Wireless School, Royal Air Force, in February, 1931, and gained promotion to his present rank in July, 1933.

For his services during the Great War he was awarded the O.B.E., and was mentioned in despatches.

Air Commodore J. T. Babington was attached as a Sub-Lt. from the Royal Navy to the Naval Wing of the Royal Flying Corps in March, 1913. During the Great War he served in France with the Royal Naval Air Service, and, for distinguished service in connection with the attack on Zeppelin Sheds at Friedrichshafen on November 21, 1914, he was awarded the D.S.O.; in addition, he was mentioned in despatches and had two French decorations bestowed upon him.

In August, 1919, he was granted a permanent commission in the Royal Air Force as Sqd. Ldr., and in 1927 was appointed to command the Royal Air Force Base, Gosport. On November 11, 1929, he was appointed Air Representative to the League of Nations, and has since been promoted to Group Capt. in 1930, and to his present rank in January last.
AIR POST STAMPS
By DOUGLAS ARMSTRONG
(EDITOR OF "STAMP COLLECTING"

"APEX" Impressions

The impression one brought away from the Great International Air Post Exhibition held in London last month was that, whereas the American competitors came off second best of the principal awards by sheer weight of monetary value, the British exponents scored chiefly on the historical and human interest side and by superior arrangement and annotation. The Grand Trophy went deservedly to the truly magnificent array of air post stamps of the world in mint blocks of four and upwards, including even that eclectic rarity, the 24 c. U.S.A. with "inverted centre," a £3,000 item alone. It has been stated that this one collection was insured for £178,000, so that it is impossible even to hazard a guess at the total value of the American entries. Another exhibitor from across the Pond, Mrs. Prentice Cromwell, of New York, who was awarded a gold medal only, showed a mint block of four of the "De Pinedo" stamp of Newfoundland, worth itself little less than £2,000. Remarkable as much for its artistic display as for its comprehensiveness, the collection of mint air post stamps from the United States was in the centre of the American ex.

First Air Mail from the Orkney Islands

NEW ITEMS: A cover received by "FLIGHT" from Kirkwall, Orkney, per the new Official Inland Air Mail. Inset, two designs for the new Costa Rica issues, depicting the San Jose aerodrome (on all values from 5 to 75 centimos), and "Aerial" bearing the Caduceus of Mercury (on the 1 to 10 Colones values).

British Inland Air Mails

The inauguration of an official air mail service between Inverness and Kirkwall, in the Orkneys, marks another stage in the development of British inland air mails, and there seems to be little doubt that before long a number of other services will be in operation in the United Kingdom. Wide-awake air post collectors will follow these activities with close attention, and already they have given a strong fillip to the study and collecting of air mail souvenirs of our own country. The story of the early experiments in the carriage of mails by air in Great Britain and the British Empire generally is the subject of two newly-published brochures, one dealing with the "Coronation Aerial Post, 1911," by Francis J. Field, Ltd., and the other on "Pioneer Air Posts of the Empire," by A. T. Waters (published by Stamp Collecting, Ltd.). In connection with the inaugural flight over the Inverness-Kirkwall line, on May 29, a souvenier "sticker" was provided by the concessionaire, Highland Airways, Ltd., in a special design which was awarded the rubric "first flight" cover. It composed in white on a top-stamp sample, is carried on the twenty-third anniversary of the reorganisation of the Japanese postal system, an attractive souvenir was provided in the form of a complete set of current air mail stamps of Japan, printed together in a miniature sheet with large margins carrying appropriate inscriptions in native syllabics. The issue was a limited one and, despite the fact that no more than three sets could be purchased by any one applicant, the entire supply was sold out on the first day, April 20, 1934.

Costa Rica's New Air Stamps

We illustrate the designs of the new Government air post stamps from Costa Rica, that showing a view of the aviation field at San Jose, the capital, appearing on all values from 5 to 75 centimos (both ordinary and official) and the other representing (apparently) Aerial bearing the Caduceus of Mercury only upon the higher denominations, ranging from 1 to 16 Colones.

PUBLICATIONS RECEIVED


NEW COMPANIES REGISTERED

PETROL FEEDS, LTD., Aston Lane, Aston, Birmingham. Capital, £2,500 in 2 shares (2,000 "A" and 500 "B"). To adopt an agreement, with H. R. Bettinson, 11 and 12, Bennett's Hill, Birmingham, solicitor. The first directors are to be appointed by the subscribers. Solicitors: Forsyth, Bettinson and Co., 11 and 12, Bennett's Hill, Birmingham.

PATENT AERONAUTICAL SPECIFICATIONS

Aerodynamics: Syl. = cylinder; i.e. = internal combustion; m. = motors

The numbers in brackets are those under which the Specification will be printed and abridged, etc.

APPLIED FOR IN 1932

Published June 7, 1934

28,838. FALCON AVIATION CO., LTD., and A. G. FERGUSON. Cooling systems for internal-combustion engines. (410,109.)

28,280. BENDIX AVIATION CORPORATION. Clutch-control mechanism. (410,158.)

31,858. BRITISH THOMSON-HOUSTON CO., LTD., H. W. W. ROSS and R. NEWBORN. Screw-propellers and methods of manufacturing them. (410,104.)

31,921. BENDIX AVIATION CORPORATION. Method and means for operating and controlling internal-combustion engines. (410,108.)

38,447. A. H. SWERISS (Spyglass Gyroscope Co., Ltd.). Apparatus for obtaining the sound-lag correction for a sound locator for locating aircraft. (410,305.)

APPLIED FOR IN 1933

Published June 7, 1934

1,872. J. W. WOOL, Jr. Air port constructions. (410,285.)

21,493. J. F. SMITH. Fan, handle, and chair. (410,346.)

25,284. BENDIX AVIATION CO., LTD., Elastic fluid turbine drives for aircraft. (410,383.)

29,090. J. MARTIN. Aeroplane wings and/or tail sections. (410,405.)

Japanese Air Mail Souvenir

In connection with a postal exhibition held at Tokio on the sixty-third anniversary of the reorganisation of the