

FLIGHT

The
AIRCRAFT ENGINEER
AND AIRSHIPS

Founded in 1909 by Stanley Spooner
**FIRST AERONAUTICAL
WEEKLY IN THE
WORLD**

DEVOTED TO THE INTERESTS,
PRACTICE AND PROGRESS
OF AVIATION

OFFICIAL ORGAN OF THE ROYAL AERO CLUB

No. 1333. Vol. XXVI. 26th Year

JULY 12, 1934

Thursdays, Price 6d.
By Post, 7½d.

Editorial, Advertising, and Publishing Offices: **DORSET HOUSE, STAMFORD STREET, LONDON, S.E.1**

Telegrams: Trudittur, Watloo, London.

Telephone: Hop 3333 (50 lines).

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RATES:**

Home and Canada: Year, £1 13 0; 6 months, 16s. 6d.; 3 months, 8s. 3d.
Other Countries: Year, £1 15 0; 6 months, 17s. 6d.; 3 months, 8s. 9d.

Night Air Mails

LAST week we published a leading article on the subject of air mails, and mentioned the need of Government assistance to develop night flying and also the desirability of a flat rate for Empire mails. Since those words were printed, there has been a debate in the House of Commons on the subject, initiated by Mr. O. E. Simmonds in one of the best speeches he has made since he was elected Member for the Duddeston division of Birmingham. He based his appeal for help by the Government for night air mails on four grounds—the commercial need, Imperial unity, military training, and increased export. The mention of military training was rather unfortunate, for Sir Philip Sassoon, on behalf of the Government, pounced upon that point, tore Mr. Simmonds' argument to pieces, and sat down with the air of having scored a great victory. On other and more important points raised by Mr. Simmonds the Under-Secretary for Air had very little to say, and, in fact, on those points it would be very difficult for any Government spokesman to find a convincing answer.

It may be comforting to many if we recount briefly Sir Philip's announcement about practice in night flying. If a subsidy were granted for flying the Empire mail by night, only a few pilots, perhaps not more than a dozen, would gain experience in night flying, and this number would not add anything appreciable to our safety in war. Already there are about seventy squadrons of the R.A.F. which in one way or another practise night flying all the year round and in all conditions of weather except fog. The pilots are trained in instrument-flying, ignorance of which was given by Sir Philip as the cause of the fatalities in the American Army flying corps when it took over the trans-continental mails. The amount of night flying done by the R.A.F. is already so great that the addition to the Reserve of a dozen or so civil pilots with extensive night-flying experience would not make any material difference.

Sir Philip also scored somewhat as regards the demand for a night air mail from this country to the Continent, stating that the total daily air mail from this country to Europe amounts to 353 lb., of which 129 lb. is carried by the Luft Hansa night service between London and Cologne. Increased facilities might, however, produce more traffic. But as regards the question of helping night flying on the Empire routes, Sir Philip would only state his conviction that night flying on Empire air routes will come some day, "and the sooner it arrives the better." From the Under-Secretary of State for Air that cannot be called a satisfactory pronouncement.

One mail aeroplane has been ordered by the Air Ministry. It has been crashed. Why has another not been ordered? If a special mail aeroplane is desirable, then obviously night flying is desirable. Sir Philip admitted that. "From the air-mail point of view, if there is a separate air-mail line, the more night flying there is done the better." The Post Office surplus should surely be able to make a contribution to the cost. In fact, Sir Philip Sassoon has left us more convinced than ever that the Government is leaving undone something which ought to be done.

Ground Defences

THE R.A.F. Display prompts us to return once more to the subject of the ground troops and equipment which are an essential part of our air defence organisation. Every one who saw them must have admired the smartness of the Territorial artillery and engineers who manned the anti-aircraft guns and the searchlights. As for their keenness, we understand that most, if not all, of the officers and men had sacrificed a day's pay in order to be present at the Display. That shows a fine spirit.

All that can be criticised is the equipment provided by the War Office for these fine units. Guns, searchlights, sound locators, lorries—all are of ancient pattern. Attention was drawn to the matter in the House of Commons

not long ago, and the War Office promised to do something to remedy the scandal.

The fact is that the War Office is the wrong department to deal with matters of air defence. We have often expressed that opinion before, and our opinion has been confirmed by the best possible authority, Maj. General Ashmore himself, in his book *Air Defence*. The War Office has to pay for the material, but it does not control the work of these units. For operations they are under the command of the Air Officer Commanding-in-Chief Air Defence of Great Britain. Naturally, the War Office is not very enthusiastic about providing these units with the most up-to-date equipment. That department is not going to stint its tanks and mechanised formations of one spanner or one gallon of petrol in order to give new lorries to units which work with the R.A.F. and not with the Army.

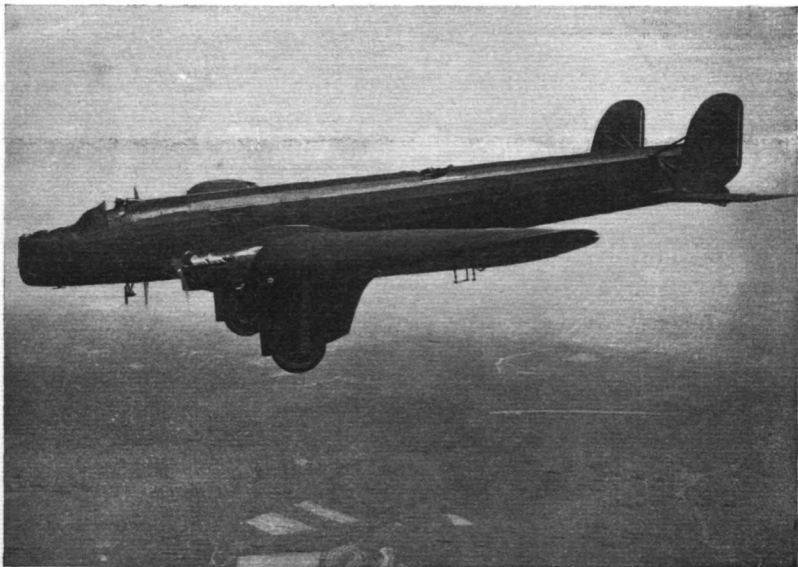
We cannot altogether blame the War Office. The fault lies with the prevailing system which declines to regard air defence, naval defence, and military defence as three separate subjects, each of which ought to be self-contained. The present system divides responsibility according to elements, and because the A.A. guns and searchlights are located on the ground, therefore they must be provided by the War Office. It is a pernicious system, and may lead us to disaster. The ground units of air defence ought to be handed over completely to the Air Ministry. The personnel, we have reason to believe, would have no objection to being transferred to the Auxiliary Air Force.

Autogiros for the Indian Frontier

A SOLDIER from the North-West Frontier of India has written a very suggestive article in the *Army, Navy, and Air Force Gazette* of June 28.

He starts by insisting that responsibility for order among the Pathan tribes is a matter for Frontier police rather than for the regular Army, and that principle has usually been more or less recognised in India. Local knowledge of the tribes and of individual law-breakers is very desirable. The principle is all the more applicable now, he writes, since the R.A.F. "has practically put an end to anything like 'war' by making it impossible for any large number of tribesmen to assemble together, at least in daylight, in order to have a 'battle.'" But he points out that the fixed-wing aeroplane has disadvantages in dealing with small gangs, because it cannot tell which are friendly tribesmen and which are hostile. Also, the R.A.F. men are regulars, and lack the local knowledge possessed by the constabulary.

The remedy which the writer suggests is that the Frontier police should be equipped with direct-control Autogiros, which can easily be flown by a police officer, and which can be flown slow and low. In places, the writer points out, the Autogiro could land and take fingerprints. Also, though the writer does not heavily stress the point, forced landings on that desperately rough terrain present far less terrors to the men in an Autogiro than to the crew of an aeroplane.



THE FAIREY LONG-RANGE NIGHT BOMBER. The Air Ministry have placed an order to equip one squadron with this type. Flt. Lt. C. Staniland on a test flight. (Flight photo.)

The Outlook

A Running Commentary on Air Topics

The King's Cup

PROGNOSTICATION of the King's Cup Race results is a pastime which will keep many slide rules running hot during the few days before the race starts. We do not pretend that winners can be spotted and should hate to be called racing tipsters, but past experience over many years has enabled us to give some indication, at least, of the speeds which may reasonably be expected (see table on p. 703). No one can pretend to do more than average the speeds, so probably our list will be found to be low at one end and high the other: on the whole there is, however, good reason for the range we have given.

Every year the speed of the scratch man goes up, and this year it is over 200 m.p.h. It is worth noting that even the Schneider Trophy Contest did not pass that speed until the year 1925.

Handicap Chances

NO one machine stands out as having an especially good chance—that could not happen with Capt. Dancy and Mr. Rowarth attending to the handicapping!—but naturally one or two look slightly better favoured than some of the others. The three Hawker "Tomits," with their Wolsley engines, appear to have a few miles an hour in hand when compared with the speeds they put up last year, and the "Moth Major" of Mr. Aga ought not to have great difficulty in achieving something like 112 m.p.h. Unless our figures are too low throughout, then Capt. Broad, on the "Dragon Six," has at least one m.p.h. in hand over the published speed of this machine.

On the other hand, Capt. de Havilland is being asked to average better than a "Leopard Moth." At first sight this looks a bit hard on him, but it must be remembered that new De Havilland types have a way of running away from the field when least expected. He should also score on the last lap wherein the competitors have to negotiate some seventeen acute corners. The little "Hornet Moth," with its small span biplane wings, should, more especially in the well experienced and practised hands of Capt. de Havilland, lose less time than some of the faster monoplanes.

The British Klemm Company claim 170 m.p.h. for their "Gipsy Six" engine "Eagle," so here again, on handicap, the fortunate pilot seems likely to have something in hand. People naturally expect anything which is flown by Capt. Hope to do a little more than it has ever done before, but it does not seem probable that he will be able to exceed by much the 168 m.p.h. he is asked to do on his Percival "Gull."

The scratch man this year, Capt. Percival, flying the "Mew Gull" entered by Prince George, will need to do nearly 10 m.p.h. better than 200 m.p.h. if he is to arrive home first. Last year the Comper "Swift" with a "Gipsy Major" engine, was expected to make 172 m.p.h. when scratch, but only managed just over 160 m.p.h. for the one lap in which he remained in the race. The same machine this year is only asked to do about 161 m.p.h., a figure which, on the face of it, looks pretty fair.

Design in the Race

CANTILEVER versus retractable undercarriages makes one aspect of the race. The former will be seen as pure cantilevers on the D.H. "Dragon Six" and the Miles "Hawk," and in semi-cantilever form on the "Mew Gull." The latter class has to be divided into two types: those which retract fully like the Hendy "Heck" and British Klemm "Eagle," and those which protrude slightly when retracted as in the Airspeed "Courier," the Comper "Kite," "Streak," and "Mouse," and the Monospar "S.T.6."

Flaps for decreasing the landing speed of heavily loaded aeroplanes, which have not hitherto appeared on civil machines, will also be seen. The Hendy "Heck" has slotted flaps of the Handley Page type along the whole length of the trailing edge of wing, and the "Mew Gull" has a form of Zap flap on the inner portion only.

Youth in the Air

A NOTICE to airmen has been issued confirming the order which came into operation on June 29, making it unlawful for a person under the age of 17 years to have sole control of an aircraft in motion. Probably any order fixing a minimum age for solo flying would inflict hardship on some precocious individual, but most people will agree that this particular interference with the liberty of the infant subject is not unjustifiable. If one must fix an age, 17 is about as low as any authority would care to go. A few days before the order was published a youth was killed in a flying accident, but the Air Ministry have asserted strongly that the order was not made in consequence of that accident, but had been contemplated for some time previously. Now one can only regret that the order was not published a few days earlier.

In India

THERE are seventy-six aerodromes in India, according to a list published by *Indian Aviation*, and Capt. Tynms, Director of Civil Aviation in India has recently been on a tour round them, as well as those of Burma. The conclusions, it appears, are rather gloomy, for many of the aerodromes are stated to be too small, and therefore dangerous, while others are very badly equipped, and both criticisms may be levelled at some of them.

Dum Dum, near Calcutta, has been so adversely criticised that it has been decided to prepare a new aerodrome at Alipore, though that is not likely to be ready for use for another twelve months. The aerodrome at Dacca, the most important city in Eastern Bengal, is described as large enough by just a yard, but it has no hangars and only a small passenger shelter. Even in the delightful cold weather of India the sun is powerful, and people do not care to wait for long in the open.

The aerodrome at Chittagong, to the east of Calcutta, is most inconvenient and cannot be used during the monsoon. The same is true of Bassein, and so in the South West monsoon months from about June 20 to September 20, Akyab is the only possible landing place between Calcutta and Rangoon. Lack of proper aerodromes is evidently a big handicap on the development of civil flying in India.

Selling Points

A FEW weeks ago a member of the staff flew an amateur archaeologist over some fruitful ground in the Cotswolds. The machine was a plain two-seater light biplane, and the passenger one who has driven cars and motor cycles since the very earliest days. Though unused to the slightly extraordinary sensations in normal flight, he was not in the least disturbed—even under the changing pressures of steep turns in either direction—and made only one complaint. The noise, he explained, was altogether abominable, both with and without a helmet, and prevented him from enjoying the experience.

Now the average private pilot treats the continuous droning and rattle as a necessary evil and simply ignores it on a long flight, but such an impression gained by a newcomer is worthy of consideration. If noise is going to deter prospective owners, then it must be eliminated, even at the cost of a lower all-round performance. Furthermore, interior decoration must be attended to. The newcomer is not at all impressed by the very ordinary pieces of wood and wire that encumber his compartment, and can be excused for wondering why the interior is not at least as attractive as that of the cheapest sports car. Admittedly considerations of weight and price are dissimilar to those with which the mass production car maker must contend, but such a point, again, is worth noting.

Judging from some of the modern examples, interiors are now being considered, and only when aeroplanes cease to be "contraptions" will many ordinary men and women start to buy and use them for ordinary purposes.

KING'S CUP AIR RACE

43 Aeroplanes in Great Event at Hatfield, July 13th and 14th

WITH the object of making it more attractive from the point of view of the general public, the race for the King's Cup will be flown this year in the form of two Eliminating Rounds, a Semi-Final, and a Final. The Eliminating Rounds will be flown to-morrow, July 13th, and the Semi-Final and Final on Saturday, July 14th. In all cases the starting and finishing point will be at the De Havilland aerodrome at Hatfield. In the First Round there will be six heats, one with eight aeroplanes competing and five with seven machines in each. The competitors in the six heats are shown in the table on the opposite page, in which will also be found their handicap allowances. From each of the six heats the first four competitors will pass into the Second Round, which will therefore include twenty-four machines.

There will be four heats, each with six machines in it, in the Second Round, and the first four from each heat will pass into the Semi-Final, which will thus include sixteen competitors. The Semi-Final Round will consist of two heats with eight machines in each, the first five from each heat passing into the Final, in which latter the ten machines remaining will compete in a single heat.

The Courses

A glance at our sketch map of the courses will show that these have been chosen in a way to make them progressively interesting, so to speak. The long courses of the First and Second Rounds are quadrangles, and are covered but once, so that competitors do not return to Hatfield until the finish of the course. On Saturday, however, the course for the Semi-Final is a triangle, and has to be covered three times, so that visitors will see the machines start, will see them round the Hatfield turning point twice, and will witness the finish.

In the Final the course is even shorter, and has to be covered six times. As there will be ten aeroplanes in the Final there should not be a dull moment from the time the limit man starts until, theoretically, all ten machines cross the finishing line together. On Friday the racing will begin at 8 a.m., as there are two long courses to be covered, but on Saturday the start in the Semi-Final is timed to take place at 1.30 p.m. The finish will probably take place about 5 p.m.

Machines and Engines Analysed

It is rather surprising to find that no fewer than twenty-eight different aircraft types are entered for this year's King's Cup Race. Of these quite a large proportion are new types, or, at least, older types so much modified as to constitute new types. These are described and illustrated on pp. 704-709.

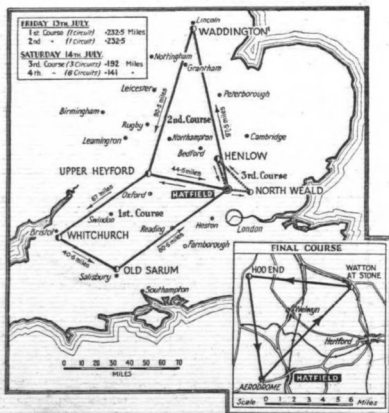


His Majesty's Cup, offered for this year's Air Race. (Flight Photo.)

The De Havilland "Leopard Moth" is the type most extensively represented, five machines being entered. Next come the following, with three each: Comper "Swift," De Havilland "Moth," Hawker "Tomtit," Miles "Hawk," and Percival "Gull." The General Aircraft Co.'s Monospar S.T.4 is represented by two examples, and the rest of the types by one machine each, as follows: Airspeed "Courier," Blackburn B.2, Comper "Kite," "Mouse" and "Streak," De Havilland "Hornet Moth," "Dragon Six," "Fox Moth," "Puss Moth," "Tiger Moth," and "T.K.1," Desoutter Mark I, Hendy "Heck," "Hobo," and "302," Klemm "Eagle" and "Swallow," Monospar "S.T.6" and "S.T.10," Percival "Mew Gull," and Southern "Martlet." Five of the machines are twin-

engined, the rest single-engined.

Among the power plants there is less variety. The forty-three aeroplanes entered are fitted with forty-eight engines of fourteen types, in the following numbers: "Cirrus IIIA" 1, "Gipsy I," 1, "Gipsy II," 1, "Gipsy III" 4, "Gipsy Major" 12, "Gipsy Six" 8, "Hermes II" 1, "Hermes IV" 2, Napier "Javelin" 1, Napier "Rapier" 1, Pobjoy "R" 9, Pobjoy "Catact" 1, Pobjoy "Niagara" 3, Wolseley "A.R.9" 3.



THE FOUR COURSES: Rounds 1 and 2 will be flown to-morrow, and the Semi-Final and Final on Saturday.

KING'S CUP—1934

LIST OF COMPETITORS, WITH HANDICAP ALLOWANCES

Racing No.	Entrant	Aircraft	Engine	Registration	Pilot	Handicap Allowances				Speed m.p.h.
						Rd. 1	Rd. 2	Semi-Final	Final	
FIRST HEAT										
1	T. A. K. Aga ...	D.H. Moth ...	Gipsy Major...	G-ACPH	T. A. K. Aga ...	m. 57 04	m. 57 04	m. 47 08	m. 34 44	m.p.h. 112
2	Sqd. Ldr. O. W. Clapp ...	T.K.1 ...	Gipsy III ...	G-ACKT	G. R. de Havilland ...	47 29	47 29	39 12	28 54	121
7	Lord Nuffield ...	Hawker Tomtit ...	Wolsley A.R.9 Mark II A.	G-ABOD	G. E. Lowdell ...	40 06	40 06	33 07	24 24	130
5	Lord Nuffield ...	Hawker Tomtit ...	Wolsley A.R.9 Mark I A.	G-AASI	W. H. Sutcliffe ...	36 44	36 44	30 20	22 22	134
6	Lord Nuffield ...	Hawker Tomtit ...	Wolsley A.R.9 Mark I A.	G-ABAX	Wing Com. J. W. Woodhouse	36 44	36 44	30 20	22 22	134
4	A. Henshaw ...	D.H. Leopard Moth	Gipsy Major...	G-ACLO	A. Henshaw ...	33 12	33 12	27 25	20 12	139
8	Sir Norman J. Watson, Bart.	Comper Kite ...	Pobjoy Niagara	G-ACME	Flt. Lt. E. A. Healey ...	24 30	24 30	20 14	14 55	162
3	A. H. Cook ...	Comper Swift ...	Gipsy Major...	G-ABWW	A. H. Cook ...	19 06	19 06	15 47	11 38	161
SECOND HEAT										
14	Major H. Musker ...	British Klemm ...	Pobjoy Catalina Mark I.	G-ACTP	E. G. Hordern ...	57 04	57 04	47 08	34 44	112
12	H. R. A. Edwards ...	Southern Martlet...	Gipsy I ...	G-AAYZ	H. R. A. Edwards ...	51 33	51 33	42 34	31 23	117
9	H. F. Broadbent ...	D.H. Fox Moth ...	Gipsy Major...	G-ACSW	H. F. Broadbent ...	49 29	49 29	40 52	30 07	119
13	A. C. M. Jackman ...	Monopar S.T.4 ...	2 Pobjoy R ...	G-ABVP	A. C. M. Jackman ...	47 29	47 29	39 12	28 54	121
15	W. S. Stephenson ...	Monopar S.T.10 ...	2 Pobjoy Niagara.	G-ACIS	Flt. Lt. H. M. Schofield	46 30	46 30	38 24	28 18	122
11	F. J. A. Cameron ...	D.H. Leopard Moth	Gipsy Major...	G-ACOO	F/O J. Beaumont ...	33 35	33 35	27 44	20 26	138
10	Sir Derwent Hall Caine ...	D.H. Leopard Moth	Gipsy Major...	G-ACHC	T. W. Morton ...	33 12	33 12	27 25	20 12	130
THIRD HEAT										
17	Mrs. Wise Parker ...	Blackburn B2 Trainer	Hermes IV A.	G-ACAH	Flt. Lt. H. M. David ...	57 04	57 04	47 08	34 44	112
21	W. S. Stephenson ...	Desoutter Mark I ...	Hermes II ...	G-AAPZ	Flt. Lt. R. B. Wilson ...	55 36	55 36	46 11	34 02	113
18	Flt. Lt. R. P. P. Pope	Comper Swift ...	Pobjoy R ...	G-ACML	Flt. Lt. R. P. P. Pope	41 51	41 51	34 34	25 28	123
16	E. Hicks ...	D.H. Leopard Moth	Gipsy Major...	G-ACPK	V. G. Parker ...	33 35	33 35	27 44	20 23	138
22	Sir Norman J. Watson, Bart.	Comper Mouse ...	Gipsy Major...	G-ACIX	Flt. Lt. C. S. Staniland	29 54	29 54	24 41	18 12	141
20	Sir Charles Rose ...	Miles Hawk M2 ...	Gipsy VI ...	G-ACTE	Sir Charles Rose ...	12 19	12 19	10 10	7 29	175
19	H.R.H. Prince George	Percival Mew Gull	Gipsy VI ...	G-ACND	E. W. Percival ...	Scratch	Scratch	Scratch	Scratch	207
FOURTH HEAT										
23	Capt. G. de Havilland ...	D.H. Tiger Moth...	Gipsy Major...	G-ACJA	Peter J. de Havilland ...	55 56	55 56	46 11	34 02	113
27	Major F. S. Moller ...	Hendy Hobo ...	Pobjoy Catalina	G-AAIG	A. L. T. Naish ...	48 28	48 28	40 02	29 30	120
24	E. L. Gandar Dower ...	D.H. Puss Moth ...	Gipsy III ...	G-ABLS	O. Cathcart Jones ...	43 40	43 40	36 04	26 24	126
28	W. R. Porter ...	D.H. Leopard Moth	Gipsy Major...	G-ACKN	S. W. Sparkes ...	33 35	33 35	27 44	20 26	138
26	Sir John Kirwan ...	Percival Gull ...	Napier Javelin	G-ACGR	J. D. Kirwan ...	23 15	23 15	19 12	14 09	154
29	Miss Diana Mary Williams...	Percival Gull ...	Gipsy VI ...	G-ACUP	Flt. Lt. H. H. Leech ...	16 54	16 54	13 57	10 17	165
25	Mrs. D. Whitney-Elmhirst...	Hendy Heck ...	Gipsy VI ...	G-ACTC	G. W. Ferguson ...	7 45	7 45	6 24	4 43	186
FIFTH HEAT										
32	Miss E. M. Jackman ...	D.H. Moth ...	Gipsy II ...	G-AAZE	D. Shields ...	57 04	57 04	47 08	34 44	112
34	L. Lipton ...	D.H. Moth ...	Gipsy III ...	G-ABVV	L. Lipton ...	48 28	48 28	40 02	29 30	120
35	S. P. Symington ...	Comper Swift ...	Pobjoy R ...	G-ABZZ	S. P. Symington ...	46 30	46 30	38 24	28 18	123
31	C. E. Gardner ...	Monopar S.T.6 ...	2 Pobjoy Niagara.	G-ACIC	C. E. Gardner ...	38 23	38 23	31 42	23 22	132
30	Capt. G. de Havilland ...	D.H. Hornet Moth	Gipsy Major...	G-ACIA	Capt. G. de Havilland	30 37	30 37	25 17	18 38	142
33	Lt. Com. E. W. B. Leake, R.N.	Percival Gull ...	Gipsy VI ...	G-ACPA	Capt. W. L. Hope ...	15 50	15 50	13 04	9 38	168
36	Lady Wakefield of Hythe ...	Comper Streak ...	Gipsy Major...	G-ACNC	Flt. Lt. N. Comper ...	7 43	7 43	6 24	4 43	183
SIXTH HEAT										
41	A. L. Patterson ...	Miles Hawk ...	Cirrus III A ...	G-ACIZ	Mrs. G. Patterson ...	55 56	55 56	46 11	34 02	113
38	R. G. Cazalet ...	Monopar S.T.4 ...	2 Pobjoy R ...	G-ACHU	R. G. Cazalet ...	40 06	40 06	33 07	24 24	130
40	C. S. Napier ...	Hendy 302 ...	Hermes IV ...	G-AAVT	C. S. Napier ...	39 14	39 14	32 24	23 53	132
42	Capt. G. R. D. Shaw ...	Miles Hawk ...	Gipsy III ...	G-ACDT	Thomas Rose ...	32 04	32 04	26 29	19 31	140
39	E. L. Gandar Dower ...	British Klemm Eagle	Gipsy VI ...	G-ACPU	A. C. S. Irwin ...	18 32	18 32	15 19	11 17	162
43	Viscount Wakefield of Hythe	D.H. Dragon Six...	2 Gipsy VI ...	G-ACPM	Capt. H. S. Broad ...	17 26	17 26	14 24	10 57	164
37	Air Vice-Marshal A. E. Borton.	Airspeed Courier ...	Napier Rapier	G-ACNZ	AVM. A. E. Borton ...	9 58	9 58	8 14	6 04	180

The speeds are quite unofficial and are based on the assumption that the slowest machines do 112 m.p.h.



SCRATCH: Entered by Prince George, the "Mew Gull" has had the wing and undercarriage modified and wing flaps fitted. (*Flight Photo.*)

NEW AEROPLANES IN KING'S CUP RACE

THREE entirely new aeroplanes will take part in this year's race for the King's Cup: the De Havilland "Hornet Moth," the Hendy "Heck," and the Comper "Kite." Apart from these, there are eight others which are aeroplanes of existing design into which new and larger engines have been fitted. Among these are some of the fastest machines in the race. The Napier "Rapier"-engined Airspeed "Courier," flown by A.V.M. A. E. Borton, is, according to the handicappers, little slower than the Hendy "Heck" and the Comper "Streak." The "Mew Gull," which starts scratch, has been altered since it was first described in *Flight* by the substitution of an unstrutted undercarriage and by the addition of flaps to

decrease the landing speed. Among other machines using the "Gipsy Six" engine, which have not appeared before with this power plant, are the British Klemm "Eagle" and the Miles "Hawk." The latter is also represented with another new model having a "Gipsy III" engine. The General Aircraft Company's entry is one of their latest models, the "S.T.10"; their entry last year suffered bad luck, and many will hope that Fate will be kinder to them this year. The De Havilland Technical School's machine, the "T.K.1," has not been seen before with the "Gipsy III" engine, nor has the little single-seater Hendy "Hobo" with the Pobjoy "Catacract." On the whole, the entry list is rather more interesting this year than it has been for some time.

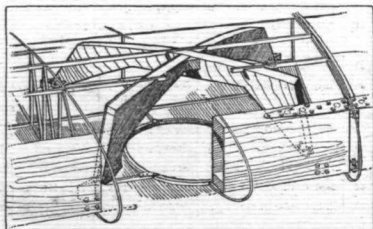
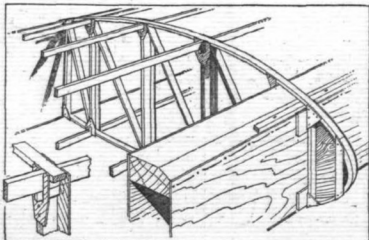
BRITISH KLEMM "EAGLE"

Among the aeroplanes in the race with retractable undercarriages, one of which great things are expected, is the British Klemm "Eagle," with a "Gipsy Six" engine. This is entered by Mr. E. L. Gandar Dower, and will be flown by Mr. A. C. S. Irwin. Structurally, this low-wing cantilever monoplane is of wood, with a plywood-covered fuselage which normally is arranged to carry a pilot in front, with two passengers side by side behind him. The wing, which folds quickly and easily, is also of wooden

construction and plywood-covered, and is heavily tapered, giving the machine an aspect ratio of 7.75 to 1. The undercarriage, which, as already mentioned, is retractable, is one of the type so arranged that the wheels and under-

BRITISH KLEMM "EAGLE"

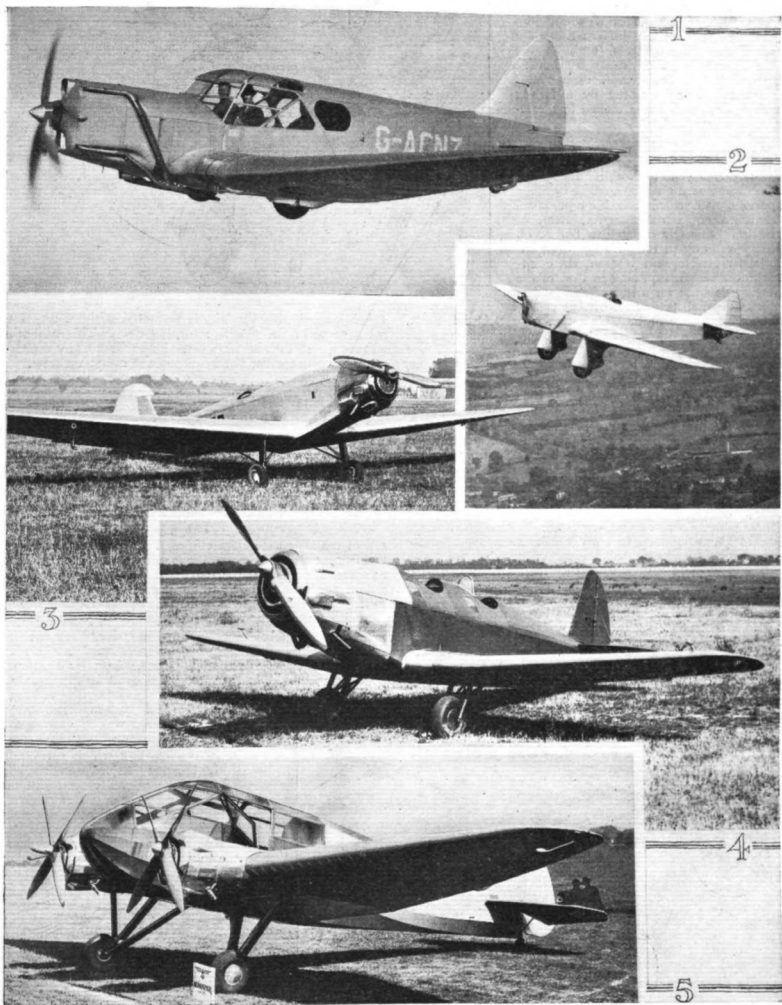
	D.H. "GIPSY SIX," 200 H.P. ENGINE.
Span ...	39 ft. 3 in. (11.9 m)
Aspect ratio ...	7.75 to 1
Wing area ...	200 sq. ft. (18.6 m ²)
Gross weight ...	2,400 lb. (1,088.5 kg)
Tare weight ...	1,510 lb. (684.9 kg)
Wing loading ...	12 lb./sq. ft. (58.6 kg/m ²)
Power loading ...	11.7 lb./h.p. (4.3 kg/hp)



BRITISH KLEMM DETAILS: On the left is shown how the spruce ribs are stabilised with stringers and carried over the box spars. The right-hand sketch is a view of the special bracing over that portion of the wing into which the undercarriage wheel retracts.

LOW WINGS FOR SPEED

Types of Machine in the King's Cup Race



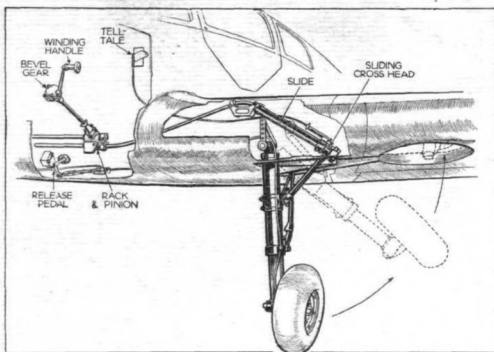
(1) Airspeed "Courier," Napier "Rapier" 325 h.p. engine. (2) Miles "Hawk," D.H. "Gipsy III" 120 h.p. engine. (3) British Klemm "Swallow," Pobjoy "Cataract" 80 h.p. engine. (4) Comper "Kite," Pobjoy "Niagara" 90 h.p. engine. (5) Monospar "S.T.10," two Pobjoy "Niagara" 90 h.p. engines. *FLIGHT Photos*

TO LESSEN DRAG: This is how the undercarriage on the "Eagle" is lifted up out of the air stream.

carriage struts disappear completely when retracted. By means of a winding-up gear, two sides of this undercarriage are raised straight outwards, and, in the "up" position, the wheels are housed in recesses in the wings, each recess being completely covered by a fairing which is permanently attached to the inside of each wheel.

COMPER "KITE"

Early this year (in *Flight* of May 10, 1934) we gave the first details of this new sports model, which has been produced by the Comper Aircraft Co., Ltd., of Heston. The one which Flt. Lt. E. H. Healy is flying in the race has been entered by Sir Norman Watson, the chairman of the company, and, in view of the present demand for a high-speed touring machine which is both light and cheap, its performance will be watched with particular interest. Basically, it is a two-seater version of the Comper "Streak" which Flt. Lt. Comper flew in the Coupe Deutsch, and is also flying in the King's Cup Race; but, whereas the latter machine has the "Gipsy Major" engine, the "Kite" will be powered with the new Pobjoy "Niagara." Structurally, the "Kite" is very like the "Streak"—that is to say, the fuselage is of spruce with strut bracings, and fabric-covered, while the wing, which also is mainly of timber, is plywood-covered. Both the "Kite" and "Streak" will, of course, be in the "aristocratic" class of machines having retractable undercarriages. The two wheels are mounted in pyramids of steel tubing, pivoted near the front spar of the wing, and interconnected by a tube across the fuselage. When in the retracted position, the two wheels are swung upwards and backwards about this pivot, coming to rest when somewhere about a quarter of the wheel remains exposed beneath the lower surface of the wing. Designers are by no means yet unanimous as to whether this is the best arrangement, or whether the fully retracted wheel is to be preferred. The adherents of the former system maintain that theirs is the best, because a fast, fairly heavily loaded aeroplane can, in a case of emergency, be landed on



rough ground with the wheels retracted without any fear whatsoever of the machine turning over. This has been proved in practice, and has been done without any damage to the machine other than bending the metal airscrew.

COMPER "KITE"

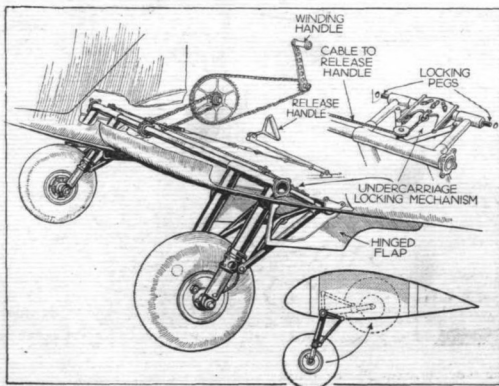
	POBJOY "NIAGARA," 90 H.P. ENGINE.
Span ...	23 ft. 6 in. (7.2 m)
Aspect ratio ...	5.8 to 1
Wing area ...	80 sq. ft. (7.4 m ²)
Gross weight ...	1,350 lb. (612.4 kg)
Tare weight ...	750 lb. (340 kg)
Wing loading ...	16.8 lb./sq. ft. (82.0 kg/m ²)
Power loading ...	19 lb./h.p. (8.5 kg/hp)

DE HAVILLAND "HORNET MOTH"

Everyone eagerly awaits any new machine which comes out of the De Havilland factory. This year their curiosity will be rewarded by the new De Havilland "Hornet Moth." It must be made clear, however, that this machine is not yet in production, nor is it by any means certain that it ever will be put into production in its present form. Actually, it is an experimental machine, which Capt. Geoffrey de Havilland has designed in order to try out the ideas he has about what private owners want in the way of a two-seater, side-by-side aeroplane. As it is at present,

this machine is a small cabin biplane, seating two people side by side in great comfort between the wings. The cabin is as wide as the front seat of any normal middle-weight motor car, and careful attention to the cowling which surrounds the D.H. "Gipsy Major" engine has resulted in an exceptionally clear outlook forward.

In the past, side-by-side two-seaters have usually been criticised because the pilot could not see anywhere on the opposite side to which he sat, but in this new machine his outlook is certainly no worse than that in most tandem machines, and is undoubtedly better than a great many of them. The roof of the cabin has been made transparent, and the side windows carried well back, so that not only can any machine be seen which may be in the air behind and above when taking-



COMPER'S UNDERCARRIAGE: Both the Comper "Streak" and the new Comper "Kite" have their undercarriages retracted straight back by mechanical means.

MORE NEW TYPES

Another Selection of King's Cup Machines



(1) D.H. "Hornet Moth," D.H. "Gipsy Major" 130 h.p. engine. (2) Hendy "Hobo," Pobjoy "Catacract" 80 h.p. engine. (3) D.H. Technical School "T.K.I," D.H. "Gipsy III" 120 h.p. engine. (4) British Klemm "Eagle," D.H. "Gipsy Six" 200 h.p. engine. (5) Miles "Hawk" D.H. "Gipsy Six" 200 h.p. engine. (Flight Photos.)

0-ACTE

S.T.10 FUSELAGE DETAILS: The centre portion of the "S.T.10's" fuselage is built up as a unit of steel tubes. The details show how the girder forming the rear portion is made from drawn sections.

off, but also the pilot has no "blind spots" when circling the aerodrome before coming in to land.

The construction is a combination of accepted De Havilland principles. The fuselage is built up in the same way as that of the "Dragon," and the wings, which may, in any future models, be braced by one strut only between the tips, bear obvious family resemblance to those of the "Dragon Six." The undercarriage has a lot in common with that of a "Leopard Moth," and the nose and windscreen resemble those of the same machine. In fact, the *tout ensemble* is rather a cross between a "Leopard Moth" and a "Fox Moth," with a dash of "Dragon Six."

There are many interesting and ingenious features in this machine. For example, the control column is mounted slightly in front of and below the centre armrest between the two seats. As it is cranked in shape, it falls comfortably into the pilot's right hand—if he is sitting in the left-hand seat—when his elbow is on this armrest. The doors are bowed outwards, thus giving both pilot and passenger plenty of room for their "outboard" arms, and it is also possible to slide one-half of the window in each door forward and one-half backward, thus probably obviating any draught in the cockpit. New De Havilland machines have a habit of winning the King's Cup Race, a fact which will make this popular designer's latest product the cynosure of all eyes on Friday.

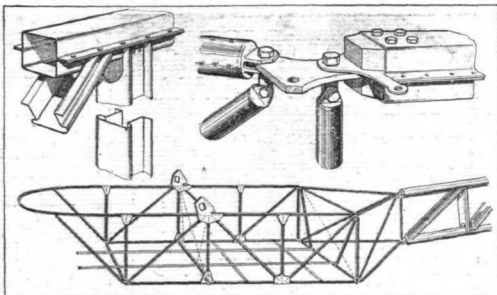
DE HAVILLAND "HORNET MOTH"

D.H. "Gipsy Major," 130 H.P. ENGINE.

Span ...	...	30 ft. 4 in. (9.3 m)
Aspect ratio ...	...	7.8 to 1
Wing area ...	...	187 sq. ft. (17.4 m ²)
Gross weight ...	...	1,800 lb. (816.5 kg)
Tare weight ...	...	1,160 lb. (521.7 kg)
Wing loading ...	...	9.62 lb./sq. ft. (46.9 kg/m ²)
Power loading ...	...	13.83 lb./h.p. (6.3 kg/h.p.)

D.H. TECHNICAL SCHOOL "T.K.1"

This somewhat cryptic name has been given to a light two-seater biplane which has been built in the De Havilland Technical School. It was designed by Mr. M. Langley in order that the students of the school might have more profitable and more interesting work than rebuilding machines of existing designs. It is a fairly straightforward biplane on accepted lines, with very little stagger and no sweep-back on its wings. The gap is unusually large, and the rear flying wires are carried forward from the top rear spar to the bottom front spar root fitting, making it easy to get in and out of the cockpits. The machine was originally designed to use the "Gipsy IV," a small inverted



four-cylinder engine of 80 h.p., with which De Havillands were experimenting some time ago. This has now been replaced by a "Gipsy III" engine, with, of course, a consequent increase of performance. Geoffrey De Havilland, jun., who also acts as instructor to the Technical School Flying Club, will be flying the machine in the Race.

D.H. TECHNICAL SCHOOL "T.K.1"

D.H. "Gipsy III," 120 H.P. ENGINE.

Span ...	...	27 ft. (8.2 m)
Aspect ratio ...	...	7.6 to 1
Wing area ...	...	183.5 sq. ft. (17.1 m ²)
Gross weight ...	...	1,450 lb. (657.7 kg)
Tare weight ...	...	950 lb. (430.9 kg)
Wing loading ...	...	7.9 lb./sq. ft. (38.6 kg/m ²)
Power loading ...	...	12.1 lb./h.p. (5.5 kg/h.p.)

GENERAL AIRCRAFT "S.T.10"

Being built on the single-spar principle, the General Aircraft machines have naturally created a large amount of interest since they were first placed upon the market. The "S.T.10" is the latest version of the "S.T.4," which was described in *Flight* of April 22, 1932. In its essential features it remains the same—that is to say, the wing has a single girder spar built up from drawn channel-section strip steel and braced for torsional rigidity by a system of king posts and bracing wires. The fuselage consists of two portions. The front portion, carrying the cabin and the wing root fittings, is a normal steel tube, rigidly braced structure, but the rear portion is built up around a girder possessing much the same characteristics as the wing spar. The "S.T.10" has, however, two Pobjoy "Ningara" engines of 90 h.p. each, as against the Pobjoy "R" type of engine, and also there are certain structural alterations which have been proved desirable since the machine was produced. For example, the nose of the fuselage has been made cleaner by sweeping it up in a straight line over the windscreen. The fuselage itself has been increased slightly, both in width and in depth, although the drag has been kept down by clean design. The fuel, instead of being housed in the wing roots, is now in a tank between the spars under the floor of the cabin, thus giving a slightly better weight distribution.

The flying controls have been altered considerably, and now consist of a central built-up column having a swivelling head, whereby the control may be used by either occupant of the front seats. The prototype of this machine had a screwed-in front locking pin, which had to be taken out before the wing could be folded. This has now been replaced by pins working on a lever, with a consequent decrease of the time taken for folding. The wheel brakes now fitted are the latest differentially operated Palmer hydraulic type, and we understand that excellent results have been obtained. The machine in the race will be flown by Flt. Lt. H. M. Schofield, and will not have a retractable undercarriage, although the fittings allow this



A MASS BALANCE: To conform with Air Ministry requirements, ailerons must have a mass balance. This is how it is fitted to the S.T.10.

to be substituted for the fixed undercarriage when desired. When this is done, the machine becomes the "S.T.11."

GENERAL AIRCRAFT "S.T.13."

TWO POROJY "NIAGARA" ENGINES, 90 H.P. EACH.

Span	40 ft. 2 in. (12.2 m)
Aspect ratio	7.45 to 1
Wing area	217 sq. ft. (20.2 m ²)
Gross weight	2,550 lb. (1 156.7 kg)
Tare weight	1,170 lb. (666.8 kg)
Wing loading	11.53 lb./sq. ft. (57.4 kg/m ²)
Power loading	14.16 lb./h.p. (6.4 kg/hp)

HENDY "HECK" AND "HOBO"

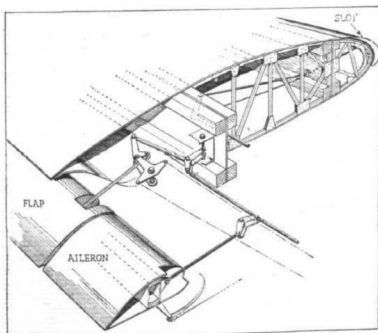
Build for Mr. Whitney Straight, the "Heck" has already been given a good deal of publicity, as it is a special job for this well-known racing motorist, who wanted to have a machine which would enable him to get about between motor races, both on the Continent and in this country, in the shortest space of time. Mr. B. B. Henderson has, therefore, taken considerable trouble to ensure a very high cruising speed together with a comparatively low landing speed when designing this machine.

The "Heck" is a two-seater tandem cabin, low-wing monoplane designed with the well-known "Hendy 302" as a basis. Features which separate the "Heck" from most other machines are the use, not only of a retractable undercarriage, but also of slotted flaps and deeply filleted wing roots. The undercarriage is of the type which, by means of worm gearing operated from the pilot's cockpit, is swung outwards up into the wing, and disappears completely in the retracted position. The shock-absorbing leg, which incorporates two compression units, has been designed by Mr. Dowty, of Aircraft Components, Ltd., and, despite the small space into which the undercarriage has to be stowed, it has been possible to allow a travel of 9 in., a factor which permits better use of the slotted flaps than is generally the case. The flaps run the whole length of the trailing edge of each wing, and the outer sections are used as ailerons. When the inner sections are depressed, they are followed at a lesser angle by the outer sections, which, however, retain their full efficacy as ailerons.

HENDY "HECK."

D.H. "GIPSY SIX," 200 H.P. ENGINE.

Span	31 ft. (9.4 m)
Wing area	150.2 sq. ft. (13.9 m ²)
Gross weight	2,400 lb. (1 088.6 kg)
Tare weight	1,520 lb. (689.4 kg)
Wing loading	16 lb./sq. ft. (7.8 kg/m ²)
Power loading	11.7 lb./h.p. (5.3 kg/hp)



SLOTTED FLAPS: Mr. Henderson achieves a low landing speed on the Hendy "Heck" by means of slotted flaps, the outer portions of which are the ailerons.

The "Hobo" was one of Mr. Henderson's earliest efforts, and when originally designed was fitted with the A.B.C. "Scorpion" engine of only 35 h.p. For the race a new Certificate of Airworthiness has been granted, allowing the use of a Pobjoy "Cascade" engine, and in this guise the performance should be quite out of the ordinary. The machine is particularly robustly constructed, with a three-ply covered fuselage, and has a very wide undercarriage. Although only a single-seater, its performance should be sufficiently high to give it a wide appeal amongst sporting pilots who like to have an open machine solely for the pleasure of flying. Constructionally, a definite family likeness can be traced from this machine via the "Hendy 302" (which, incidentally, was first produced as an open two-seater machine, and only had a cabin top fitted after it was acquired by its present owner, Mr. C. S. Napier, Technical Director of the Cirrus-Hermes Engineering Co.) down to the Hendy "Heck."

Mr. Henderson has consistently got just a little more out of his machines than has generally been expected, so both the "Heck" and the "Hobo" may be counted upon as possible "dark horses" for the race. The "Heck" has been built under the direction of Mr. Henderson in the Westland Aircraft Works at Yeovil.

MILES "HAWK"

In last year's race Wing Com. Probyn started as one of the strongest favourites in a very attractive-looking Miles "Hawk," a machine which had at that time just started in production in the works of Phillips & Powis, Ltd., at Reading, whom Mr. Miles had joined as designer. Unfortunately, Wing Com. Probyn, when doing extremely well, lost a push-rod from his engine and had to retire.

MILES "HAWK."

D.H. "GIPSY III," 120 H.P. ENGINE.

Span	33 ft. (10.1 m)
Aspect ratio	6.6 to 1
Wing area	169 sq. ft. (15.7 m ²)
Gross weight	1,800 lb. (816.5 kg)
Tare weight	1,085 lb. (492.1 kg)
Wing loading	16.6 lb./sq. ft. (8.1 kg/m ²)
Power loading	15.0 lb./h.p. (6.8 kg/hp)

This year there are three versions of the "Hawk" in the race. One flown by Mrs. Patterson is a standard machine with a "Cirrus III" engine; the second is fitted with a "Gipsy III" engine, and has a full cantilever, single-strut undercarriage. For the race it is, of course, a single-seater, but with the front cockpit "opened up" it is the forerunner of the "Hawk Major," a drawing of which appears in this issue, and which is about to be launched on the market by this firm. In the race this "Gipsy III" engine model has been entered by Capt. G. R. D. Shaw, and will be flown by Mr. Tom Rose, the instructor of the Northamptonshire Aero Club, at Sywell. The third machine is a "Hawk," similar in most respects to the "Gipsy III" model, but having instead a "Gipsy Six" engine of 200 h.p. It has been built as a high-speed machine, having a particular appeal for racing. The entrant, Sir Charles Rose, will fly it himself. The loading, with this engine, remains just about as in the standard "Hawk" when carrying a pilot and passenger, so the landing speed should still be very low, but naturally with the increased power a high top-speed performance is expected. It is a tribute to the robustness of the "Hawk" that very few modifications in the way of strengthening have been found necessary for it to get its Certificate of Airworthiness.

MILES "HAWK."

D.H. "GIPSY SIX," 200 H.P. ENGINE.

Span	33 ft. (10.1 m)
Aspect ratio	6.6 to 1
Wing area	169 sq. ft. (15.7 m ²)
Gross weight	1,900 lb. (861.8 kg)
Tare weight	1,355 lb. (614.6 kg)
Wing loading	11.3 lb./sq. ft. (5.5 kg/m ²)
Power loading	9.25 lb./h.p. (4.2 kg/hp)

THE FOUR WINDS

ITEMS OF INTEREST FROM ALL QUARTERS

Lindbergh Flies Big Sikorsky

A report states that when Colonel Lindbergh flew the Sikorsky S.42 flying boat recently he reached a speed of 190 m.p.h.

Banquet to Blériot

A dinner to M. Louis Blériot is to be given by the Royal Aero Club on July 25. M. Blériot will be present. Applications for tickets should be made to the House Secretary of the Royal Aero Club.

New Soviet Air Chief

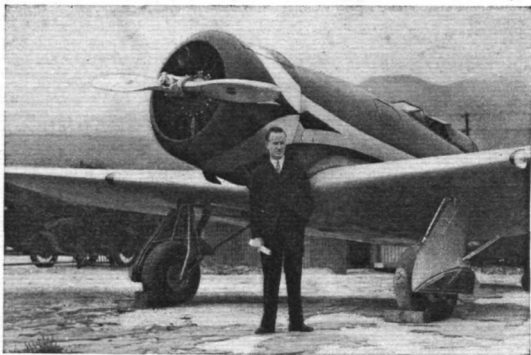
Ex-Tsarist Col. Sergei Sergeievich Kamenieff has been appointed "Chief of the Red Army Air Defences" by the Soviet Commissar for War, M. Voroshiloff. Two deputies, MM. Medvedieff and Blazhevich, have also been appointed.

Fast Fiat Under Construction

At the works of the Società Fiat a fast low-wing monoplane for civic purposes is being built. It is to be fitted with two Fiat A.59 engines giving 675 h.p. at 2,100 r.p.m. at 6,560 feet. The wing area is 947 sq. ft. and the useful load 5,842 lb. Estimated maximum speed and cruising speed are 210 m.p.h. and 186 m.p.h. respectively.

A Teapot Tempest

We quote the following from our contemporary *Western Flying*— "Just a monsoon in an egg cup, or if you prefer it, a tempest in a teapot." This is the opinion of Jim Ray, ambassador plenipotentiary of American speed kings to the "good sportsmen" of the British Isles, to iron out the difficulties of American participation in the MacRobertson England to Australia race next fall. . . . He believes the English never had any intention of excluding the Americans and that all difficulties can and will be ironed out."



FOR THE ENGLAND-AUSTRALIA RACE: Sir Charles Kingsford-Smith with the Lockheed "Altair" low-wing monoplane (supercharged "Wasp") which he will fly in the England-Australia race.

Long-Distance Reception

Mr. D. E. St. Ledger Grimes, of Torquay, reports that he picked a wireless telephone message from a Marconi transmitter on the Olley Air Service "Dragon," which was flying over Campbeltown, 360 miles away.

Fire at Heinkel Factory

According to a report from Berlin a large number of arrests of employees has been made following the recent fire which broke out at the Heinkel aeroplane factory at Warnemünde. The court of enquiry investigating the outbreak decided it was caused by incendiaryism. Another lengthy "Fire Trial"?

Air Mail IS Used

Approximately twelve million letters and more than a million and a half pounds of urgent freight were carried by Imperial Airways during the past twelve months.

Imperial Airways Exhibition

Last Monday an exhibition of photographs was opened by Imperial Airways at Gieves Gallery, 21, Old Bond Street, W.1. The collection includes many special infra-red photographs, and the exhibition will be open until July 21st.

Twenty-five Years Ago

From "Flight" of July 10, 1909.

"That youngest of successful aviators, M. Gobron, has made yet another sensational performance at Chalons. On the 2nd inst., after making a trial flight of about eight minutes, he landed and took on board Madam Colliex and M. d'Almeida. With these two he flew for five minutes at a height of about 5 metres."

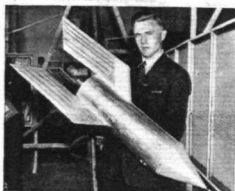
They Know What They Want

Bids for twenty-five inexpensive two-seater machines, with side-by-side seating, metal fuselage, closed or convertible cockpit, maximum power 100 h.p., a speed range of 35 m.p.h.—110 m.p.h. and fuel consumption of twenty-five miles per gallon have been called for by the Director of Aeronautics of the American Department of Commerce. These requirements cannot be met by any machine at present in production. The new machines are intended for the use of Aeronautical Inspectors.



AN AERIAL OUTING: Members of the Production Drawing Office of the Bristol Aeroplane Co., who recently held their annual outing by flying from Bristol to Bournemouth. Three machines were chartered from Norman Edgar (Western Airways), a "Dragon" and two "Puss Moths."

Photo. "Bristol Evening Post."



"SEND YOUR LETTERS BY ROCKET-MAIL": This *may* be a slogan in the future. Here is Mr. Gerhardt Zucker and one of his rockets with which he is experimenting in connection with the carriage of mails. Secret tests were made with a "rocket mail" on the Sussex Downs last month.

"Furies" at Toronto

As expected, the flight of Hawker "Furies" visiting Toronto for the Centenary celebrations, caused quite a sensation by its displays of aerobatics last week.

Swastikas Over the Border

Some French military aeroplanes were recently summoned by the special air police to chase away a German machine flying over fortified areas near Thionville. This is the third time in a few weeks that this has happened.

Fast Scouts for "Lexington"

Scouting Squadron Three, attached to U.S.S. "Lexington," has been equipped with eighteen two-seater Grumman biplanes fitted with retractable undercarriages. These machines are claimed to be the fastest in service with the American Navy, having a top speed of 215 m.p.h. The engines are Wright "Cyclone" F's.

A Himalayan Air Service

A Reuter message from Delhi says that an air service was to be started on June 1st between Hardwar, in the United Provinces, and Gauchwar, in the Himalayas, *en route* to the Hindu shrine at Badrinath. The project evidently is meant to appeal to the great Hindu passion for making pilgrimages to holy places. Hardwar is itself a holy spot visited on occasions by huge numbers of pilgrims. Badrinath is a holy mountain in the Himalayas to which large throngs of pilgrims from the plains make a toilsome and arduous way.

Sir Hubert Wilkins for New Zealand

Sir Hubert Wilkins left Croydon on Saturday for New Zealand to join the Lincoln Ellsworth Antarctic Expedition.

Miss Gower's Record

Miss Pauline Gower has made her 10,000th passenger-carrying flight. A "world's record" for women pilots is thereby claimed.

"R. J." Goes Solo

Mr. R. J. Mitchell, chief designer of the Supermarine Aviation Works (Vickers), Ltd., who is responsible for the design of the Supermarine Schneider racers, the "Scapa," "Seagull," and "Spitfire," recently made his first solo flight.

Polish Fliers in Warsaw

The Polish brothers Adamowicz, who flew from Harbour Grace to Normandy, arrived at Warsaw on July 2nd. They were met at the frontier by a squadron of Polish aeroplanes which escorted them to Warsaw, where they received an enthusiastic welcome.

"Air Attack" on Paris

Some thirty aeroplanes carried out a "raid" on Paris on Wednesday night of last week. The attackers set out from Nancy, and although they surprised the defenders by approaching Le Bourget from the south-west instead of, as expected, from the east, the staff at Le Bourget were kept informed of the position of the raiders throughout the attack.

Reid and Ayling Ready

Mr. L. G. Reid and Mr. M. J. Ayling are ready at Toronto to attempt to create a long distance record with the "Dragon" *Seafarer*.

Air Minister Flies to Belfast

The Marquis of Londonderry, Secretary of State for Air, flew to Belfast from Abridge recently for the summer graduation ceremony at the Queen's University.

Sabotage?

It is thought that sabotage by Communists caused the crashing of two German machines, with the loss of seven lives, over Lake Constance.

Visitors from Bombay

Members of the Bombay Flying Club visiting this country were entertained recently to luncheon at the Royal Aero Club by Lord Gorell, the chairman.

More Machines for Egypt

An expenditure of £71,000 for ten new machines for the Egyptian Air Force has been sanctioned by the Egyptian Air Ministry.

Coal-petrol in the R.A.F.

An Air Ministry report on the result of the trials of coal spirit has been received by Col. W. A. Bristow, chairman of Low Temperature Carbonisation, Ltd. It states that "for all practical R.A.F. purposes this coal spirit is now regarded as a normal supply, needing no discrimination in relation to standard fuel."



A JAPANESE TRAINER: The Ishikawajima R-5 ("Hermes" IV), an improved version of the type used on the Tokio—London—Rome flight by Japanese students in 1931. The Japanese Army Air Force has ordered a batch for training purposes. A top speed of 118 m.p.h. is claimed.

Diary of Forthcoming Events

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

July 9-21. Imperial Airways Exhibition of Photographs
Gleaves Gallery, 21, Old Bond Street, W.1.
July 13-14. King's Cup Race. Start and finish at Hatfield.
July 21. Round the Isle of Wight Air Race.
July 21-22. French Grand Prix.
July 22. Southend Flying Club "At Home".
July 25. Royal Aero Club Dinner to M. Louis Bleriot.
July 25. Burnham-on-Crouch Aerodrome: official opening by the Duchess of Bedford.
July 25. Bristol and Wessex Ae.C. Garden Party.
July 29. London-Sherburn Race (York County Aviation Club).
Aug. 11. London-Newcastle Race (Newcastle-on-Tyne Ae.C.).
Aug. 15. Air Tour of Italy.
Aug. 17-Sept. 6. Copenhagen Aero Show.

Aug. 18. Cotswold Aero Club Air Rally and Garden Party.
Aug. 25. Liverpool and District Ae.C. Garden Party, Speke Aerodrome.
Aug. 28-Sept. 16. International Touring Competition, Poland.
Sept. 1-2. Crique Ports Flying Club International Rally, Lympe.
Sept. 8. Official Opening of Walsall Aerodrome.
Oct. 6. London to Cardiff Air Race and Cardiff Ae.C. Garden Party.
Oct. 7. Aviation Golf Meeting, Royal Portcawl Golf Club Portcawl.
Oct. 20. England-Australia Race for MacRobertson Prize.
Nov. 16-Dec. 2. 14th International Aviation Exhibition, Grand Palais des Champs-Élysées Paris.



THE AIRSPEED "ENVOY"

High Speed, Retractable Undercarriage and Long Range are among the Chief Features of the Latest Production of Airspeed, Ltd.

IN the early part of last year *Flight* published the first detailed account of the Airspeed "Courier." This was the first British aeroplane to use a retractable undercarriage with all its attendant advantages. The "Courier," as will be seen from that description (March 23, 1933, page 266), was a successful attempt on the part of Mr. N. S. Norway and Mr. A. Hessel Tiltman to provide an aeroplane having a high cruising speed but which was economical to operate. Since that time a considerable number of "Couriers" have been built, and recently the 277 h.p. Siddeley "Cheetah" engine has been fitted instead of the "Lynx," thus raising the cruising speed to 150 m.p.h.

Now, in response to a demand for a machine of rather better performance, but with the added safety of two engines, the "Envoy" has been produced. The first of these has been built, with Wolsley engines, to the order of Lord Nuffield for the England-Australia race. Others of the type are under construction, and one, designated the A.S.B. which will have supercharged "Cheetah" engines, will be flown in the race by Capt. T. N. Stack.

As is usual with an aeroplane of this size for commercial purposes, the cabin accommodation may be varied to suit the purchaser. This first model will have seats for six passengers and one pilot. Obviously, by varying the number of passengers the amount of fuel carried may be altered and the range increased or decreased accordingly. With six passengers the tanks hold sufficient for a range in still air of 403 miles.

Structurally the "Envoy" differs but little from the "Courier." In fact, the outer wing-sections are interchangeable between the two types. Wings and fuselage are mainly

composed of plywood and spruce. The covering of the latter is three-ply wood, and of the former, doped fabric. The front portion of the fuselage, forming the cabin accommodation for the passengers and pilot, is practically of *monocoque* construction, with a three-ply skin. Particular care has been taken to ensure that the passengers do not suffer from lack of light or ventilation. In the pilot's cockpit all the front windows can be opened so that they can be cleaned easily during flight. The centre-section, upon which the fuselage is mounted and which forms the cabin floor, carries both engines, the fuel tanks and both sides of the retractable undercarriage. This centre-section is built up as a single unit, with very heavy bracing between the box type spars. The outer portions of the wings are attached to these spars by heavy steel bolts passing through vertical hinges, which are secured to the spars by means of laminated steel plates, so that the extension plates can be quickly detached. These planes are heavily tapered both in plan form and profile, the section used being Clark V.H. suitably "stepped" to give the necessary taper. Special precautions have been taken to ensure a high degree of torsional rigidity in the wings, so that the whole structure is extremely stiff. The main-plane spars are of the box type of construction, with spruce flanges and three-ply webs. The webs are particularly interesting as the plywood used has the centre lamination double the thickness of those outside it. Moreover, this plywood is laid on the spar with the grain of the wood at 45 deg. to the spar axis. In this manner a high strength-weight ratio has been achieved. The wing ribs are of spruce, as is the drag-bracing system, which has been designed to provide a high degree of tor-

THE AIRSPEED "ENVOY."

WITH TWO WOLSELEY A.R.9 ENGINES, DEVELOPING 206 H.P.
EACH AT 2,420 R.P.M.

DIMENSIONS

	ft.	in.	m
Wing span...	52	4	(15.94)
Height, overall	9	6	(2.89)
Length, overall	34	6	(10.53)
Wheel track	12	5	(3.79)
Engine centres	12	7.4	(3.86)
Mean chord	6	9	(2.06)
Aspect ratio	8.08	to 1	
Incidence	2°	at root, washed out at tips.	
Mean dihedral	5°		

AREAS

	sq. ft.	m ²
Main plane with allersons	339	(31.5)
Allersons, two	26.2	(2.43)
Tail plane	23.0	(2.14)
Elevators, two	26.0	(2.42)
Fins	7.45	(0.69)
Rudder	15.7	(1.46)

WEIGHTS

	lb.	kg
*Tare weight	3,077	(1,395)
Disposable load	2,223	(1,008)
†Balance (loss crew, fuel and oil)	1,377	(625)
Maximum permissible weight	5,300	(2,404)

LOADINGS AND RATIOS

Wing loading	15.6 lb./sq. ft. (76.17 kg/m ²)
Power loading	12.85 lb./h.p. (5.85 kg/h.p.)
Ratio gross weight to tare weight	1.72

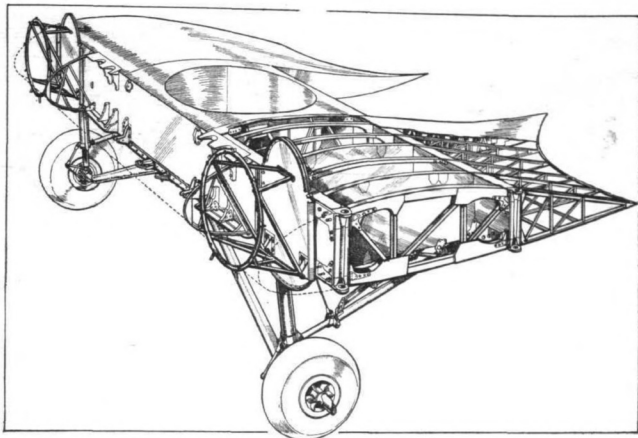
PERFORMANCE

	m.p.h.	km/h
Maximum speed at sea level	170	(273.6)
Stalling speed, full load	63	(101.4)
Cruising speed at 2,200 r.p.m.	150	(241.4)
Best climbing speed	97	(156.3)
Service ceiling	17,000 ft. (5,182 m)	
Ratio of maximum speed to stalling speed	2.7	
Take-off run, no wind, full load	265 yd. (242 m)	
Rate of climb, at sea level	914 ft./min. (4.64 m/sec)	
Everling high speed figure	27.5	
Range at cruising speed	403 miles (649 km)	

* Includes cabin lighting, navigation and landing lights, engine starting equipment, battery, pilot's seat and instruments, etc.

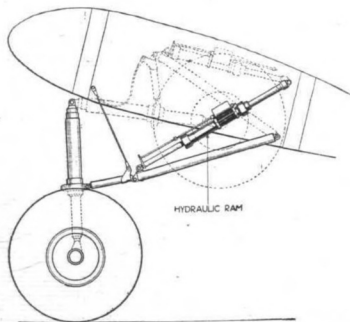
† Available for payload, cabin equipment, furniture and decorations, lavatory, wireless equipment, etc.

These planes are heavily tapered both in plan form and profile, the section used being Clark V.H. suitably "stepped" to give the necessary taper. Special precautions have been taken to ensure a high degree of torsional rigidity in the wings, so that the whole structure is extremely stiff. The main-plane spars are of the box type of construction, with spruce flanges and three-ply webs. The webs are particularly interesting as the plywood used has the centre lamination double the thickness of those outside it. Moreover, this plywood is laid on the spar with the grain of the wood at 45 deg. to the spar axis. In this manner a high strength-weight ratio has been achieved. The wing ribs are of spruce, as is the drag-bracing system, which has been designed to provide a high degree of tor-



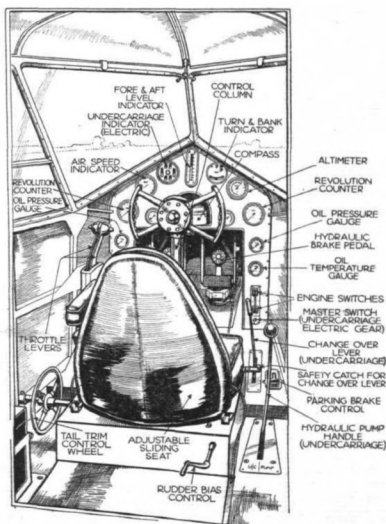
A general view of the centre section unit of the "Envoy" showing the two mountings for the Wolseley engines, and the circular plywood bracing between the spars.

sional stiffness. The wings and Frise type ailerons are fabric-covered. The retractable undercarriage is almost identical with that of the "Courier," and is extremely simple. The Vickers oleo-pneumatic compression strut is hinged to the front spar in the same plane as the bent axle. The radius rod running backwards to the rear spar is divided unequally, the short portion being in front. An oil cylinder is attached to the top of the rear spar, and in it is a piston with the piston rod attached to the front end of the longer portion of the radius rod. When the piston is withdrawn into the cylinder by means of oil pressure, the radius rod is bent and pulled upwards into the wing, carrying with it the undercarriage and about three-quarters of the landing wheel. This is arranged so that in cases of dire emergency on very rough ground the pilot could land a machine with the wheels in the retracted position, knowing that there would be no possibility of turning over on going so. An electrical indicator system is fitted to tell the pilot the position of the wheels.

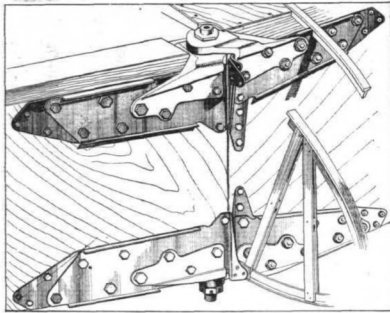
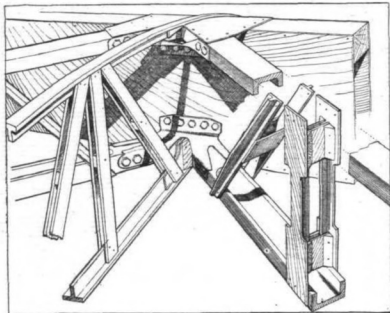


A diagram of the retractable undercarriage of the "Envoy." When retracted the wheel protrudes about one third of its diameter beneath the wing. Both sides of this undercarriage are the same.

The flying controls provided for the pilot consist of a control wheel and parallel-motion pedals for rudder operation, combined with a very neat form of rudder bias gear enabling the



This is what you see when looking into the pilot's cockpit through the bulkhead door in the passengers' cabin.



Two views which show the Drag Bracing (left) and the Wing Joint (right). They are of the Airedale "Courier" and differ only very slightly from the same details in the "Envoy." The Wing Joint is between the centre section and the outer wing extensions, the Drag Bracing comes between the wing spars.

machine to be flown easily in the event of a failure of one engine. Tail plane trimming gear is provided which operates in the normal manner.

The whole of the tail units are extremely clean in design, and while being efficient offer very little drag. Although there

are no external bracing wires or struts, both the fin and tail are exceptionally rigid, and great care has been taken to eliminate any possibility of flutter in the tail plane or rudder by maintaining a high degree of torsional stiffness throughout the whole of the rear part of the fuselage.

and 2 fig.



What the "Envoy" looks like on the ground. Landing lights are fitted in the leading edge of the wing of this machine, which was seen at the S.B.A.C. display at Hendon. The Wolseley engines are cowled with Townsend rings. (Flight Photo.)

CORRESPONDENCE

The Editor does not hold himself responsible for opinions expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters intended for insertion in these columns.

PETROL FROM COAL

[2941] How many of the thousands who witnessed the R.A.F. Air Display at Hendon realised what it may mean to the British coal industry?

I understand that for the first time the public had an opportunity of seeing our machines flying on the new petrol produced by low temperature carbonisation from British coal. What a significance is there here!

Serious statements were made recently in Parliament with regard to our dependence upon petrol requiring transport from distant parts overseas. If the British colliery industry, so hard hit by years of depression, is able to play a part, and an ever-increasing part, in supplying this fuel to the R.A.F., and also for general aviation and land transport, then our stricken coal areas may well take heart of grace again.

JOHN JOSSELYN.

Bush House, Aldwych.
July 5, 1934.

THE WAKEFIELD CUP MEETING

[2942] With reference to your excellent report on the Wakefield Cup Meeting in the issue of *Flight* of June 28, I should like to comment on two little points. It was mentioned that had the American machine's third flight not terminated abruptly the result of the contest might have been different. I should like to point out that the weather conditions at the time absolutely made "soaring" impossible, and all the machines flew only under power. Mr. Allman's winning machine was designed and wound for a flight of a definite duration, and this duration was accomplished within a few seconds on each of his three flights. After touching the ground in 8.5 seconds on the first flight, "Grasshopper" actually flew for another two and a half minutes. I might mention that Mr. Allman had just over 2,600 turns on his propeller for each flight. On a fine day the element of luck enters very largely into model aeroplane competitions, but on this occasion every machine flew absolutely on its merits.

Leamington Spa.

FRANCIS J. COX.

PRIVATE FLYING

A SECTION FOR OWNER-PILOTS
AND CLUB MEMBERS

THOSE who have been fortunate enough to land at Ratcliffe, a few miles to the north of Leicester, as I did recently, will immediately realise that they are visiting the best equipped private aerodrome in this country to-day, developed by an aircraft owner as a necessary adjunct to his residence. There are other private aerodromes, but Ratcliffe stands in a class alone. The landing area is of ample proportions, and hangar accommodation and general convenience all that can be needed. It is unique in this respect, in that it is a "twenty-four-hour" aerodrome with all facilities for night flying. At this ideal aerodrome, Mr. Lindsay Everard, M.P., its designer and owner, houses the single and twin-engined closed machines which he uses for his business and as a normal means of transport.

The last time I was there was June 24, when Mr. Lindsay Everard invited a number of those intimately connected with aviation to meet the Parliamentary Air Committee and private owners of the Houses of Parliament. The aircraft in which the guests flew down represented the latest types of fixed wing aircraft—the Autogiro on this occasion being conspicuous by its absence. Lord and Lady Londonderry, who are indefatigable in the interest they take in flying, and who go everywhere by air, were, of course, there.

To Mr. Lindsay Everard are due the warmest congratulations of those who have the best interests of aviation at heart for the very practical encouragement he is giving to everyday flying. Those who were present on this occasion, and particularly those who had not been to Ratcliffe before, were undoubtedly impressed by the very complete facilities he has organised, which are all that the private owner could wish for. It can be said that those who care to arrange to land at this remarkable aerodrome in passing and see for themselves the admirable way in which everything is arranged will always be made welcome.

The Urgent Need for Ground Organisation

THE existence of really good aerodromes such as Ratcliffe serves to direct attention to the general inadequacy of convenient landing grounds, and there is no doubt that one of the essential requirements which must be met before we can expect a real growth in flying of all kinds, and particularly by the private individual, is a substantial increase in the number of aerodromes. In spite of more recent activity, the present position cannot be considered satisfactory. When flying about one realises that a large proportion of those that do exist to-day in this country belong to the R.A.F., and these are, of course, not normally available for other than military machines except in cases of emergency.

Permanent civil aerodromes are divided into two general categories—those licensed for public use and those for private purposes. The latest information available from official sources shows that there are forty-eight in the first category and forty in the latter. Of the forty-eight licensed for public use, nineteen are fully equipped municipal aerodromes and three are Government owned.

NOTES

by

LORD SEMPILL

A.F.C., F.R.Ae.S.

In effect, therefore, of the eighty-eight permanent Civil Aerodromes in this country—

Nineteen are municipal,

Four are Government owned, and

Sixty-five are privately owned or leased by aircraft manufacturers, flying clubs or operating firms.

If expansion is to be achieved in the near future, we must look to the municipalities in particular, who have the power to borrow money for the purpose of acquiring the necessary land. Although only nineteen municipal aerodromes are actually in being, it is known that at least 200 public bodies are considering the acquisition of suitable landing ground. Such facilities are becoming a daily necessity of the community, and if only those authorities who have the matter in hand could bring their plans to fruition a great benefit would thereby be conferred on the private owner whose flying activities are largely restricted by the scarcity of landing grounds, as well as to the air line operator and the general public.

A Lesson from the Railway Era

MUNICIPAL authorities should remember the case of those towns who were not wise enough to recognise the dawn of the railway era. Towns which might have developed into important cities, by a lack of foresight in refusing to encourage the development of the railroad through their boundaries, thus lost an opportunity of participating in the prosperity it brought. With the development of important internal air line services, similar opportunities await the municipalities, and those who have not already laid their plans well should take a warning from those who in an earlier generation lost so much by not being "railway minded." It need not be thought that the establishment of an aerodrome necessarily entails in the first instance a large expenditure on permanent buildings. The essential requirement is to secure sufficient land, so that future expansion may be assured. A suitable surface for landing and taking off in all directions of the wind, and provision for refuelling are, of course, a necessity, but the rest can follow gradually in the normal course of development.

Since the inspiring address of H.R.H. The Prince of Wales at the recent Air Ports Conference convened by the London Chamber of Commerce and the Royal Aeronautical Society at the Mansion House, there has undoubtedly been a quickening of interest on the part of the municipalities. Much remains to be done, however, and in their own interests private owners and would-be pilots should do all possible in their various localities to stimulate interest. Authorities wishing to establish an aerodrome should get into touch with the newly constituted Aerodrome Advisory Board, on which the Air Ministry, as well as all shades of technical opinion, are represented. The names of qualified aeronautical consultants able to give advice on the selection, layout and constitution of an air port can be obtained on application. Apart from public bodies and commercial concerns a great deal can be done by private endeavour to help in the solving of the

landing ground problem. Every open space within the environment of populated centres, and there are not too many suitable spots, should, by some means, be earmarked for aviation purposes. Whatever form the future design of aircraft may take, adequate space for their operation on a large scale will inevitably be necessary. Landowners who have sufficient vision to reserve well-situated level and open spaces for this purpose will not only be helping posterity but will be acting in their own interests. Land so reserved for aviation will not only serve its primary purpose sooner or later, but will always remain as "lungs" in the thickly populated areas of the years to come.

The S.B.A.C. Exhibition

AS usual there was too much of interest for the one day, and its organisers will have seriously to consider the desirability of extending the S.B.A.C. Display over a longer period in the future. There was quite a lot to appeal to the private owner, particularly in the exhibits of the De Havilland Company,

General Aircraft, Ltd., and the Percival Aircraft Co., in addition to the accessory stands. In the first-named exhibit an attractive model of the new "Leopard Moth" was shown. Those who are familiar with that excellent machine the "Puss Moth" will find that the "Leopard" embodies certain desirable improvements. Besides giving really comfortable accommodation for three people, the performance has been raised by fitting the Gipsy "Major" to a top speed of 140 m.p.h. It is interesting to recall a remarkable flight recently achieved on a standard machine of this type by Mr. Bernard Rubin and Mr. Ken Waller, who flew to Australia and back on a survey flight in preparation for the London-Melbourne Race. Not only was this journey covered without mishap, but the machine was sold, immediately on its return, to a Dutch private owner, who, without any major overhaul to the machine or engine, set off at once on a trip to Johannesburg, which he reached in fourteen days. Such a demonstration of the reliability and efficiency of the modern light aeroplane is surely sufficient to convince the most sceptical of the value of this form of air transport.

FROM THE CLUBS

Events and Activity at the Clubs and Schools

HANWORTH

During the past fortnight 122½ hours have been flown on club machines, and this with the loss of one good day's flying, when the club was closed for the R.A.F. Pageant. Four pupils, Messrs P. Warter, D. M. Mehta, A. G. Cardale and Capt. Crabbe, have recently taken their "A" licences, and two pupils Messrs. E. Gregson and W. J. Shearman, carried out their first solo flights during the week.

On Saturday, July 7, three machines left Hanworth for the Bonn Rally in Germany—Lady Nelson with a party in her Stinson, Mr. Somerset and Com. Dove in a Klemm, and Mr. E. G. Forsyth, also in a Klemm.

READING

The Phillips and Powis School of Flying has been very busy during the last week, some 60 odd hours being flown. The "Martlet" is now back at work after her C. of A., and there are two "Moths" and two "Hawks." During the week-end Mrs. Battye visited Lympne and Portsmouth, Messrs. Ovey and Bishop flew to Heston, and Miss Parsons took the "Martlet" to Broxbourne. The main interest at Woodley at the moment is centred on the two Miles "Hawk" Specials ("Gipsy III" and "Gipsy VI") which are entered for the King's Cup.

The Reading Aero Club is organising a bathing party next Sunday; all private owners interested are invited to come along to lunch, and afterwards they will be conveyed in cars to the river at Sonning, where there will be sundry aquatic sports organised for their benefit. There will be free lunches for those arriving by air in a bathing dress and nothing more!

HATFIELD

The flying time of the London Aeroplane Club for the month of June was 369 hr. 35 min., and for the past week 116 hr. 40 min., over 30 hours of which were flown last Sunday. This was a record for any one day, and as the wonderful weather seems to bring out all our flying members, it is probable that this will be exceeded. Mr. Robinson completed all his tests for his "A" licence. The club will be closed to members for flying on July 13 and 14 for the King's Cup Air Race. Serious practice, incidentally, has now commenced for this race.

The club had great pleasure in welcoming H.R.H. the Prince of Wales on Tuesday last, when he landed in his "Dragon" piloted by Flt. Lt. Fielden. His Royal Highness visited the swimming pool, squash and tennis courts, and the club buildings, and then had tea on the terrace. The Swedish Civil Aviation Commission also visited the aerodrome on the same day.

Visiting aircraft have been arriving in large numbers every day, representing most types of light aeroplanes.

WALSALL

The club house at Walsall is now completed, and a "house-warming" party will be held on July 21, to which visitors are invited. The official opening of the Walsall Municipal Aerodrome will take place on Sept. 8.

BRISTOL AND WESSEX

Both the first soloists during the week—Messrs. C. A. Davis and R. D. Young—received flying scholarships from a local newspaper. On Sunday morning four machines of the Bristol Club visited Portsmouth aerodrome for breakfast.

Entries for the race for the S.B.A.C. Challenge Trophy, which will be flown at the Club Garden Party on July 28, close on July 18.

ELY

The Garden Party and Pageant, which signalled the opening of the new Ely Aero Club, was a great success. All the usual shows were given, including a parachute drop by Mr. S. Edwards, balloon and crockery shooting demonstrations, and surprise events. Mr. MacDonald, who was unable to bring his "Martlet," won both the arrival and the bombing competitions, flying a Klemm.

Canon T. J. Kirkland, B.Sc., F.C.S., F.I.C., President of the Club, formally opened the aerodrome.

NORFOLK AND NORWICH

There was an increase in flying time last week, with several important flights by members, including two to the Royal Show at Ipswich and one to Bircham Newton.

On Saturday, July 28, the club will be holding a Guests' Day, which will be followed by a dance in the evening.

At the annual meeting of the club, the chairman said that it had had one of the most successful years in its existence, but reference was also made to the lack of landing fields in Norfolk.

SOUTHERN

Members of the Southern Aero Club, both private owners and pupils, have been taking advantage of the fine weather and long evenings, with the result that the club machines have flown a total of 63 hours during the fortnight ending June 7. The Miles "Hawk" was especially in demand, and the "Fox-Moth" has done several cross-country taxi flights, and visited a number of racetracks. Mr. Norwood, who obtained his "A" licence at Shoreham a few weeks ago, is now expecting delivery of a D.H. "Moth Major."

There have been a very large number of visiting aircraft. The cool sea air seems to attract pilots from the inland aerodromes.

EGYPT

During the week ending June 25, a total of 52 hr. 45 min. was flown at the Mir Airwork Schools at Cairo and Alexandria, including a number of useful cross-country flights.

HAMPSHIRE

Two pupils, Messrs. W. F. Downey and R. J. Mitchell—the Supermarine designer—made their first solos last week, during which 63 hr. 30 min. were flown by the Hampshire Aeroplane Club.

MIDLAND

Three new members have joined the Midland Aero Club, and a total of 67 hr. 30 min. was flown last week, including trips to Christchurch, Filton, Heston, Southampton, and Wales.

YORKSHIRE

Two members, Messrs. R. F. Stevenson and A. Mann, passed their licence tests at Yeaton last week, and visitors included Count Stahrenberg and Prince Kinsky, in a "Puss Moth" from Austria—concerning whom a paragraph appears elsewhere—and Capt. Lord Stanley, M.P.

HERTS AND ESSEX

The hours flown during June constituted a club record—403; they were flown on five machines. The hours for the week ended July 6th, 1934, totalled 125, and first solos were made by Messrs. B. F. Tonge and T. P. Mitchell. "A" licence tests were completed by Messrs. E. G. Dineen, F. B. Radford, and B. F. Tonge. Among the new members are ones from Russia, South Africa, and the U.S.A.

CINQUE PORTS

One of the club members found late on Saturday that it was necessary to proceed immediately to Switzerland, and chartered the "Leopard Moth." They started at 6.15 a.m. on Sunday with the idea of returning the same night. The distance covered was about 1,200 miles.

The ground staff have been very busy cleaning up Mrs. Patterson's Miles "Hawk," which is the club entry for the King's Cup. Fit. Lt. Tommy Rose will also be flying a Miles "Hawk," but with a "Gipsy III" engine, and during his absence from Sywell Aerodrome Messrs. W. E. Davis and J. G. Brown will take up temporary residence at Northampton. Mr. Leslie Cliff, who is on holiday at Hythe, is, incidentally, acting as third instructor to help with the rush of work.

Mr. K. Walton made a first solo last week, during which the flying hours totalled just fifty.

BURNHAM-ON-CROUCH

On July 28 an aerodrome will be opened at Burnham-on-Crouch by the Duchess of Bedford. This aerodrome will be for the use of the members of the B.-on-C. Yacht Club and of other recognised clubs.

LIVERPOOL

The exceptionally good weather conditions during the past week have allowed the Liverpool Club's hours to soar up to 113. During June, incidentally, the total was 301 hours, and during the half-year a little over a thousand—a very good figure.

CAMBRIDGE

Flying times for the week maintained a good average at Marshall's Flying School, and several machines arrived at the aerodrome bringing passengers for the Newmarket Races. Messrs. P. C. Lancaster and F. Oppenheimer passed all tests for their "A" licences.

Mr. F. W. Denew left for a week's tour of England in his "Moth," and other private owners are making use of the excellent weather to put in some cross-country flying.

BROOKLANDS

There was an increase in flying time at Brooklands last week, although this was hardly up to average on account of the R.A.F. Display. Messrs. Van Overbeke, Bailie and Dansie made their first solos, and Mr. Balfour has completed his "A" licence tests.

In the Sales Department, Capt. Findlay has disposed of six machines in three days.

LONDONDERRY

At the Yorkshire Air Services School, Newton House Aerodrome, more than a hundred hours were put in during June, and the Miles "Hawk" has proved extremely popular. V.A.S. hope shortly to take delivery of a second "Moth." Among the various soloists are many officers from Catterick Aerodrome, who evidently enjoy the opportunity of flying "something new and strange." Charter trips have been undertaken to London, Brooklands, Heston, and Windermere.

HULL

From the Hull Aero Club appears a most delightful magazine, which, besides making pleasant reading, should help the waking interest to leap, so to speak, right out of bed. In this first issue—"Fairminded for the Airminded" is its motto—there is, among other features, a persuasive editorial, a trip round Croydon airport, the first part of a short history of the K.L.M.—now inextricably mingled with Hedon's future—an amusing letter to the editor, some excellent local notes, and a useful semi-technical section.

A "HAWK MAJOR"

High Top Speed, Low Landing Speed and Small Cost Are the Chief Points of This New Machine for Private Owners

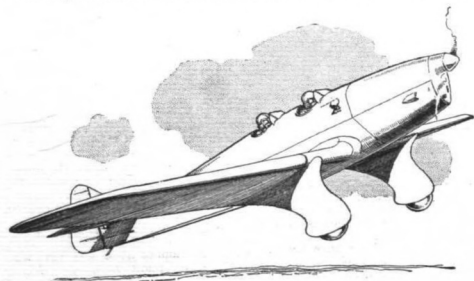
THE Miles "Hawk" has become very widely known during the last year as one of the most economical aeroplanes for the private owner, and certainly as one which involves the purchaser in only a small capital outlay.

Scenting a demand for a machine with an even better per-

formance, Mr. Miles has now produced the "Hawk Major." This will have the "Gipsy Major" engine and, although the use of this engine and a cantilever undercarriage has raised the top speed to 150 m.p.h., the landing speed will still remain at 42 m.p.h.

The standard "Hawk" has an excellent take-off and short landing run, so this new model should be even more ideal for getting out of small fields of the kind many private owners wish to use when visiting people.

This new "Hawk" will have a range in still air of over 700 miles. As can be seen from our artist's impression, the undercarriage has been faired in very cleanly and the drag should be very low. The Palmer wheels will be braked with Bendix brakes operated by differential rudder bar control and by a hand lever. A very high finish, comparable to that found on motor cars, in any single colour, is offered without extra charge.



AN IMPRESSION: Thirteen hundred feet per minute is the initial rate of climb of the new "Hawk Major."

COMMERCIAL AVIATION

— AIRLINES — AIRPORTS —

CROYDON

Nigerian Potentates Are Not Impressed : A K.L.M. Freighter : Swedish Committee Entertained : Air Cruising

MONDAY morning is always the better for a bit of cheerful and colourful pageantry. Coming on to the tarmac recently, one was confronted by a group of figures in flowing robes and gay turbans who might have come straight from the court of King Solomon. They were the Sultan of Sokoto, the Emir of Gwandu, and the Emir of Kano. These Nigerian potentates were gravely watching the departure of *Scylla*. One doubts if they were greatly impressed with that modern mechanical marvel. If you make a gun for the specific purpose of going off, you are only surprised if it does not.

Probably they thought much the same about *Scylla* as she rose majestically into the sky en route for Paris. On Monday, also, there appeared *Jumbo*, the K.L.M. freight carrier, and seldom seen here. It is the only biplane in that company's fleet, I believe. The name is not inapt, for *Jumbo* has the same comfortable but unfashionable figure as the old Vickers *Vulcan*. The cargo consisted of just under 600 kg of antique pictures valued at 300,000 guilders (£248,000 at par). These pictures were scarcely packed at all; packing costs are heavy, and damage to air freight in transit is almost unheard of.

On July 4 the Royal Swedish Civil Aviation Committee visited Croydon and were shown round the Airport. One can always tell when anything like that happens, because fog-piercing rockets are loosed off into a cloudless sky—at ten shillings a bang! An excellent lunch was given at the Airport Hotel by Capt. Carl Florman, Director of the Swedish A.B. Aero Transport. Amongst those present, in addition to the members of the committee, were Maj. F. L. Richard and Capt. Chattaway, of the Air Ministry, Messrs Woolley-Dod and Quin-Harkin, of Imperial Airways, Mr. Orstelius, A.B.A., and Capt. Leverton, of K.L.M. The party, headed by Capt. Florman, left for Sweden by the 13.15 Scandinavian Air Express.

It is said that Swedish machines will run through to London regularly next May.

On the same day, Lady Louis Mountbatten left Croydon for Amsterdam by German Air Lines at 16.00. She left Amsterdam by the K.L.M. Amsterdam-Batavia line on the

following day, arriving at Bagdad early on Saturday. Lady Louis often travels to Paris by Air France and may probably return from the East by Imperial Airways. Her views on air travel should be interesting. Mr. Gwyn Lewis, who writes "Travellers Tales" in the *Sunday Express*, has made two air trips recently, one by Imperial to Paris and another from Amsterdam by K.L.M. The fact deserves mention because this sort of thing helps to show ordinary people that flying is an accepted form of travel.

The Oberammergau Passion Play caused Imperial Airways and Sabena to be full up on the Cologne line. Sabena duplicated their services on Friday, and triplicated a service on Saturday. Unrest in Germany has not affected air bookings to that country—rather surprisingly. All companies running to Germany report flourishing traffic. One might expect inward figures to go up; air travel is the quickest way of leaving a country in a hurry!

A coming event of considerable interest is the first escorted air cruise of Europe's capitals, arranged by the enterprise of Polytechnic Touring Association, Ltd., with Imperial Airways, Ltd. I am told that "through unforeseen circumstances" an h.p.42 is available for this 14 days' cruise, which includes visits to Amsterdam, Berlin, Vienna, Budapest, Venice, Rome, Marseilles and Paris. "Unforeseen circumstances" in this case are synonymous with good maintenance and organisation by Imperial Airways' technical staff, as otherwise a machine of that capacity could not be spared in July when bookings are very heavy. The cost of the tour is 75 guineas, and the enterprise deserves success.

On Friday evening, when the Air France and K.L.M. evening machines were leaving and the evening *Imperial* was preparing to depart, I noticed three spartan "Cruisers," all fully loaded with passengers, taking off for the Isle of Wight.

During the week-end exceptionally clear visibility has prevailed and pilots coming in to Croydon have reported that they could see as far as 70 miles on either side of their machine from 6,000 ft. A. VIATOR.

HESTON

Newtownards Aerodrome : More School Machines : The Month's Traffic

THE date of the opening of Newtownards aerodrome, to be operated by Airwork, Ltd., will probably be in the neighbourhood of August 25. Ft. Lt. R. W. E. Bryant, who has been instructing at Heston prior to his appointment as Chief Instructor to Newtownards, will be flying over there in a "Cadet" on July 13 to complete various arrangements. He will also interview prospective pupils and give a number of trial lessons.

Another "Club Cadet" and a C.30 Autogiro have been ordered to cope with the rush of pupils at the Airwork School. Pending the delivery of these aircraft, a second "Cadet," intended for Airwork at Manchester, is now doing duty at Heston. A third has been ordered for Newtownards. The Autogiro will, it is hoped, satisfy the needs of many who have not hitherto flown because of the relatively high landing speeds of even the safest fixed-wing aircraft.

Lady Helen Stewart, who made a successful first solo this week, is the third of Lord Londonderry's family to achieve solo standing, although nothing but parental and Parliamentary restrictions on very young pilots would have prevented her sister, Lady Mairi, from doing so some months ago.

Thirteen aircraft have passed through the Airwork Service Department for renewal of Certificates of Airworthiness since the beginning of June. One of them was a "Dragon," which

was lately the property of Bata's of Zlin, and commenced its registration with the reassuring Czech prefix "OK."

Capt. Tony Spooner, Chief Pilot to our associated Egyptian company, and who recently married Miss Glenda Graham, left Heston on July 3 for Egypt in charge of a new "Spartan" Cruiser which has been ordered to augment Misr-Airwork's airline fleet.

It is nice to think that the Airwork School of Flying has indirectly provided the veteran, tortoise, or forlorn hope of the MacRobertson. It is whispered that our little "CY" Gipsy I Moth of unblemished reputation, 2,000-hour old mother-confessor to a generation of Heston pupils, somehow or other *did get sold*. Not, however, to the butchers—and the burden of the betrayal gave way to a positive inflation of pride when her name appeared half way down the super-speed entry lists of the MacRobertson. We shall watch her progress with emotion.

The following traffic figures are recorded for the month of June:—

General Traffic during Controlled Period: Private, 2,550; commercial, 1,382; total, 3,932.

Passengers handled by airline companies: B.A.N.C.O., 208; Portsmouth, Southsea and I.O.W., 475; and Jersey Airways, Ltd., 922.

MIDLAND AND SCOTTISH CLOSING DOWN

Machine to be Kept for Western Islands Ambulance Service

AFTER rumours had been rife for several days, Mr. John C. Sword definitely stated last week that Midland and Scottish Air Ferries, Ltd., was shortly to cease operations. His reason is given simply that he has no time to attend to the business owing to his increasing responsibilities as general manager of Western Scottish Motor Traction, S.M.T., incidentally, has no connection with M. and S.A.F., Ltd., and their aviation department continues an air taxi and charter business from their aerodrome at Macmerry, near Edinburgh.

The London, Liverpool and Belfast line will probably cease operation within a week or so, though the Campbelltown and Islay services may continue for some little time. All but

two of the fleet will be sold, these two being retained by Mr. Sword for his personal use.

Inhabitants of the Western Islands will be glad to learn that a machine will be kept at Renfrew to act as aerial ambulance as before. During the last few months this has done yeoman service.

No definite statement can be obtained from Railway Air Services, who, it has been said, are to extend their present line to Belfast and Glasgow in July or August, using D.H.86 machines. It is just possible, too, that Mr. Edward Hillman will take over the London, Liverpool and Belfast section as soon as the M. and S. service is discontinued, but here, again, Mr. Hillman prefers not to make any statement.

COMMERCIAL AVIATION NEWS

Highland Airways Extension

On or before July 14, Highland Airways hope to have an extension of their Orkney service running daily to Glasgow, and later on a Glasgow to Stornoway line will be opened.

Day Trips to Paris

Last Monday, Air France inaugurated the first "day trip" to Paris, giving passengers 7½ clear hours in the French capital. Machines leave Croydon at 8.30 a.m. and return from Le Bourget at 6.25.

Manchester's Airport

A site at Ringway, near Altrincham, ten miles from Manchester's centre, has been selected by the Airport Committee as the most suitable for a new airport to replace Barton. This week a definite decision will be made on the question. There seems to be little doubt that the new site will be recommended, as the estimated cost of the conversion is £180,000, against the half a million or so necessary to bring Barton right up to date.

B.A.N. Co. News

During the month of June the British Air Navigation Co., Ltd., carried 236 passengers over 15,848 miles in their own machines, and handled a total of more than 700 passengers.

The Le Touquet service has now settled down into its summer stride, advance bookings indicating capacity or near capacity for the next few weeks. During the past weeks, in addition to the regular services, a "Dragon" and a "Gull" were flown to Le Touquet as specials to cope with the demand. The Pourville-Dieppe service started off well, the B.A.N. Co. Ford "Tri-Motor" doing the initial run.

In addition to the regular services, two Ford "Tri-Motors" were requisitioned to take parties to Orly (Paris) over the week-end, in connection with the Grand Prix. Other special charters included sending a machine to Cheltenham, and another joy-riding over London.

New Registrations

Most interesting of a large batch of machines registered recently is a newcomer—the Avro 660. This machine is not yet completed, but will be a six-seater low wing cantilever monoplane with two geared seven-cylinder "Genet Majors." Avros of various types seem to be selling well. Airwork, Ltd., alone has ordered three more "Cadets," a "Commodore," and an Autogiro C.30a. The "Cadets" and Autogiro will be used for instruction, and the "Commodore" for charter work. Air Service Training, Ltd., has bought another "Cadet," and an Autogiro C.30a is registered in the name of the Hon. A. E. Guinness.

New Miles "Hawks" number nine, and D. H. "Leopard Moths" are seven. Owners of "Hawks" include Harlow Mill, Ltd., Capt. G. R. D. Shaw, Sir C. H. Rose (who is having a "Gipsy Six" engine version), H. L. Brooke, North Stafford Aero Club, and Hertis and Essex Aero Club. Among the companies who have ordered "Leopards" are the Dunlop Rubber Co., Ltd., and Morris Motors, Ltd.

One D.H.80 is registered under Hillman Saloon Coaches and Airways. Others, we understand, are coming along.

Air Mail to Madagascar

The Postmaster General announces that air mail services are now available to Libya, Portuguese East Africa, and Madagascar.

Atlantic Air Lines

It was reported recently that Pan-American Airways intended to spend £94,000 on the development of an airport at Horta, Azores, to be used for the transatlantic air service between America and Europe.

The Isle of Wight Service

Judging from the traffic returns of P.S. and I.O.W. Aviation, Ltd., the service to the Isle of Wight is proving most popular this summer. Last week more than a thousand passengers flew between Portsmouth and the island, and more than a hundred between London and the Island. This week the figures have gone up again—1,269 for the first and 130 for the second. Furthermore, special charter trips were run from Portsmouth to Paris, Newbury, Bournemouth, and London. Two evening papers are carried over daily from London to the Isle of Wight.

Private Venture in South Africa

From Gordon Store, who has lately joined the staff of Imperial Airways, Ltd., we hear that Aero Services (Pty) Ltd., of which he was until recently a director, is still going strong under the capable management of Mr. Fred Duk.

This company operates a school, repair shop and air taxi concern at Wynberg Aerodrome, Cape Town, and has been very successful in all three departments. Special charter trips have been made to every part of South-West Africa, and Mr. Store himself flew a "Puss Moth" some four hundred hours in flood relief work. A Junkers of S.W.A.A. proved incapable of handling the extraordinary situation, and Store was followed by several other pilots in due course.

Certainly the work put in by Aero Services has been a revelation to the inhabitants of S.W. Africa.

Swedish Commission in England

As our Croydon correspondent remarks, a Royal Swedish Commission has been investigating civil aviation in England. This visit is more than interesting because the subsidiary agreement between the Swedish Government and the A.B. Aero-transport, Ltd., will expire in 1936. The commission has been entertained by Imperial Airways, and received by Col. Sheldermine at the Air Ministry, from which they were taken by Major Villiers to the aerodrome at Hatfield.

It happened that the Prince of Wales landed there on the same afternoon, and Capt. Florman and Mr. Nothin, the Governor-General of Stockholm, had a short chat on the subject that is of such interest to them. Afterwards the Commission returned to London and were entertained at the Royal Aero Club by Imperial Airways. After studying the organisation of Croydon airport they left for Holland and Paris.

They were, apparently, very satisfied with the results of their visit to England.

GA-43 Seaplane for South America

Interesting as the first low-wing "high-efficiency" commercial machine with trailing edge flaps to be put on floats, a GA-43 seaplane is to be flown in Colombia, South America. Scadta Airlines will use it on regular schedule over the Magdalena River. This machine carries ten passengers and has a maximum speed of 165 m.p.h.

At Karachi

An automatic electrically illuminated landing "Tee" has been installed at the south-west corner of Karachi aerodrome, which, incidentally, is becoming very busy. Actually, there were well over forty arrivals and departures of mail machines during May.

Indian National Airways

Bengal and Assam will soon be linked when the Dacca air mail is extended to Sylhet, and it is possible, too, that there will be a daily service between Karachi and Lahore. Provided that I.N.A. can be assured of a minimum daily load of 25 lb. and an average of one passenger per day in each direction, the second service will be started next October. They are also considering the arrangement of aerial cruises during the next winter season.

Indian National Airways have augmented their fleet by the addition of a D.H. "Dragon" and a D.H. "Fox Moth."

Misir Airwork

During the week ending June 25, 180 passengers were carried on the four regular air lines in Egypt—144 to Alexandria, 25 to Palestine, and 10 to Port Said. On June 21 Cook's chartered a "Fox Moth" to carry two passengers from Cairo to Suez.

Night Landing Arrangements at Jodhpur

One of the most difficult sections of the route from Europe to the Far East is that lying between Karachi and Jodhpur—nearly four hundred miles of featureless country. Hitherto, the State, under the guidance of His Highness the Maharaja Sahib Bahadur—one of the most generous patrons of civil aviation—has provided a first-class aerodrome and hotel at Jodhpur itself, as well as landing grounds and checking stations along the route and a private flying club.

A comprehensive scheme for the installation of permanent night landing amenities has recently received the sanction of the Maharaja. The installation will comprise a revolving beacon with a range of from 60 to 100 miles, more prominent obstruction lights on the buildings in the vicinity, illuminated wind indicators, boundary lights, and floodlights. A control tower with suitable equipment and accommodation for an electrical sub-station has been designed. It is possible, too, that the Indian Government will provide an intermediate beacon between Karachi and Jodhpur.

PRIVATE FLYING

(Continued from p. 717)

The London-Newcastle Race

This year the London-Newcastle race will be run on Saturday, August 11, starting from Brooklands and finishing at Cramlington, the home aerodrome of the organisers—the Newcastle Aero Club. There will be prizes of £75, £20 and £10, with a trophy, of course, and a special prize of £10 for fastest time.

The race is open to all makes and types of aircraft, handicapped according to estimated performance, and competitors must descend to about 300 ft. when passing the turning point at Sherburn aerodrome. A dinner-dance will be held in the evening at Cramlington, and all competitors will be the guests of the club.

Last year, it will be remembered, the race was won by the Hon. R. Westena (Gipsy III "Moth") at an average of 125.27 m.p.h.

Austrian Visitors to Yorkshire

On Wednesday, July 4, Prince Kinsky, President of the Austrian Aero Club, flew up to Yorkshire in his Puss Moth with Count Stahrenberg, who is also an experienced pilot, as passenger.

Members of the Flying Clubs from Yeadon, Sherburn and Scarborough were present at a dinner given in their honour at Harrogate, and on the following day many of them flew round Yorkshire with the visitors on a sight-seeing tour. It is believed that the Austrian Aero Club will be organising a tour again next year, and Yorkshire pilots who have pre-

viously experienced Austrian hospitality hope to participate.

Austria is a country that deserves to be better known by air tourists. The pilot of many hours standing, as well as he who ventures abroad for the first time, can each find flying according to his experience. Magnificent lake and mountain scenery can be enjoyed, with ample forced-landing grounds between excellent and well-served aerodromes. The more venturesome can gain valuable experience in mountain flying by crossing some of the difficult passes instead of by making the easy detours. Accommodation in Austria is inexpensive.

A Week-end at Bonn

A party of nearly forty flew over to Bonn-on-the-Rhine, the home of Germany's oldest university, last week-end at the invitation of the Lord Mayor and Corporation. They flew by way of Brussels and arrived in time for lunch with the Mayor at the *Königshof*, at which Mr. Neville Stack replied to the toast of the visitors.

They were given a typical Rhenish evening, and on the following day were motored out to Germany's largest wine cellar, returning for a university pageant.

During their whole stay the party were entertained by the Mayor, who, incidentally, is a personal friend of Herr Hitler, and who, with his wife, returned to England for a month's visit in Lady Cathleen Nelson's "Stinson Junior." The arrangements were made in England by Mr. E. Leverenz, of the German Railways Information Bureau, assisted by Mr. Schumacher, who went over with the party.

AT BUCKINGHAM PALACE

H.M. THE KING held an investiture at Buckingham Palace on Tuesday, June 26, and amongst those in personal attendance was Air Marshal Sir Robert Brooke-Popham. The following were amongst those introduced into the presence of the King and invested with the insignia of the respective Divisions of the Orders into which they have been admitted:—

Order of the British Empire (Military Division)

Received the Honour of Knighthood, Knight Commander:—

Air Marshal Robert Clark-Hall, R.A.F.

Commanders:—

Air Commodore John Babington, R.A.F.

Group Capt. Edward Clements, R.A.F.

Officers:—

Wing Com. Alexander Shekleton, R.A.F.

Sqd. Ldr. William Dickson, R.A.F.

Sqd. Ldr. Robert Whitham, R.A.F.

Members:—

Flt. Lt. Francis Dixon, R.A.F.

Flt. Lt. Alexander Montgomery, R.A.F.

W/O. Charles Baker, R.A.F.

W/O. Herbert Crane, R.A.F.

(Civil Division)

Commander:—

Capt. Geoffrey de Havilland.

The Distinguished Flying Cross

Flt. Lt. George Harvey, R.A.F.

Flt. Lt. Frank Robinson, R.A.F.

The Air Force Cross

Sqd. Ldr. Francis Fogarty, R.A.F.

Flt. Lt. Charles Cahill, R.A.F.

Flt. Lt. Guy Carter, R.A.F.

A MODEL GALA DAY

The Northern Heights Model Flying Club's Rally at the Fairey Aerodrome on Sunday Last

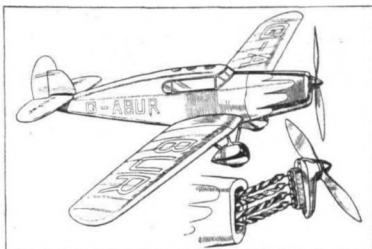
WE have yet to discover such enthusiasm as that displayed by aeromodellists. They conceive, construct, fly, crash and rebuild their models with what seems to be the greatest joy excited by any known hobby. They make, in fact, as happy and intelligent a community as one could hope to find. Periodically they meet in large numbers and indulge in what amounts, almost, to an orgy of communal model flying. Such a gathering was held at the aerodrome of the Fairey Aviation Co., Ltd., on Sunday last, by permission of Mr. C. R. Fairey, who is himself a pioneer aeromodelist. The greatest credit is due to Mr. C. A. Rippon and Mr. H. C. Chatterley, who were responsible for the organisation. Members of 25 clubs were present with between 400 and 500 models, ranging from the large petrol-driven variety to small balsa "endurance" types. Mr. Allman exhibited his model which recently won the Wakefield Cup.

A Nomination Contest open to all models was held, and the prize of a clock, offered by Model Aircraft Supplies, was won by Mr. Miller, of the Park Model Air League. Mr. Simmonds, of the Blackheath Club, won a cup, which was the second prize. Models in this contest were required to fly for exactly 45 sec., or as near to that figure as possible. Mr. Miller's model actually flew for exactly this period, and Mr. Simmonds' entry remained aloft for 44 sec.

Ten teams entered for the Inter-Club Team Contest, each team consisting of three models—one lightweight model, one heavyweight model, and one scale flying model. The Fairey Challenge Cup, the first prize for this event, and £3, was won by Blackheath with 320 points. Second was The Model Aircraft Club, whose Third and Fourth Group Teams scored 305 points. The Leytonstone and District Model Aero Club was third with 285 points.

An unusually interesting event was the Steering Contest, in which models were required to make a "figure of eight" in flight. There was only one entrant—Mr. Finch, of the Brighton and District Model Aero Club. His machine did not succeed in making a complete "figure of eight," but he was awarded £1 in recognition of his effort, and the Committee was convinced of the practicability of his method.

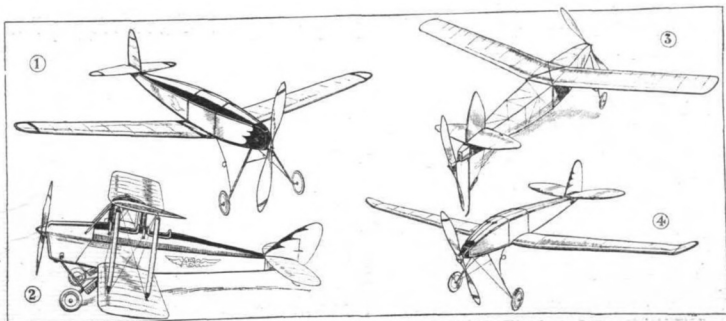
A "Concours d'Élégance" attracted thirty-six entries. It has already been decided to amplify this event at future meetings. Any type of model aeroplane, whether flying or non-flying, was eligible. Prizes were awarded for excellence of workmanship and finish, and a special prize for juniors under fifteen years of age. The event was won by Mr. Banks with a very beautiful lightweight model called the "Snipe." Mr.



ACCURATE AND EFFICIENT: Mr. H. Halko's Percival "Gull" model and a detail of the four motors. (Flight Sketches.)

Banks is a member of the Hayes and District Club, and he received, as his prize, a handsome picnic outfit. The second was Mr. Ross, whose entry was a "Giant High-Wing Nomad." Mr. Fialko, of the T.M.A.C., won third place with a "Gull" scale flying model. Great interest was attracted by the model which won the junior prize. This was constructed by Mr. L. S. Wigdor, and was a model of an American Gee Bee "Super-Sportster" low-wing racing monoplane. This model would have done credit to a constructor twice the age of Mr. Wigdor. Mr. Finch and Mr. Allman received special commendation.

An "Open Duration" contest was organised, although this event was not on the programme. Three classes of machines were eligible—light, medium- and heavyweight. The "Lightweight" event was won by Mr. Judge (T.M.A.C.) with an average of 95.65 seconds. His best flight was 121.3 seconds. Mr. Bullock, of the S.M.A.E., triumphed in the mediumweight class, averaging 86 seconds and making a "best" flight of 89 seconds. A model with a span of 6ft. 6in., weighing 1lb. 12oz., owned by Mr. Calloway (T.M.A.C.), won the "heavy" event. The best flight of his model was 131.75 secs., and his average for two flights was 69.37 sec.



SOME OF THE BEST: A few of the more notable models at Sunday's meeting: (1) Mr. S. F. Bank's "Snipe," (2) "Moth," built by Messrs. Andrews, Bennett and Collings, (3) "The Tailwagger," "relay action" machine of Mr. C. A. Rippon, and (4) Mr. C. A. Batchelor's "Silver Cloud." (Flight Sketches.)

THE ROYAL AIR FORCE



London Gazette, June 19, 1934.

General Duties Branch

G. T. Gilbert is granted a short service commission as Acting Pilot Officer on probation with effect from and with, seny. of June 8; Lt. M. E. C. Smart (The Welch Regiment) is granted a temporary commission as Flying Officer on being seconded for duty with the R.A.F. (June 4); Pilot Officer on probation D. P. Lee is confirmed in rank and promoted to the rank of Flying Officer (Oct. 15, 1933); Pilot Officer T. G. L. Gale is promoted to the rank of Flying Officer (Jan. 23); Flt. Lt. C. S. Cadell is seconded for service as Aide-de-Camp to the High Commissioner for Egypt (June 1); Flt. Lt. R. L. L. Atcherley takes rank and precedence as if his appointment as Flt. Lt. bore date May 14, 1930, immediately following Flt. Lt. J. E. W. Bowles on the graduation list. Reduction takes effect from May 7; Wing Comdr. F. Fowler, D.S.O., A.F.C., is placed on the retired list on account of ill-health (June 20).

Accountant Branch

The follg. are granted permanent commissions as Pilot Officers on probation with effect from and with seny. of June 9:—W. N. Hibbert, R. C. Symons Allin, A. Gollan.

Medical Branch

E. Donovan, M.B., Ch.B., is granted a short service commission as Flt. Lt. for three years on the active list with effect from and with seny. of May 14, 1934. M.R.C.S., L.R.C.P., L.D.S., relinquishes his temporary commission on completion of service (June 1).

Chaplain's Branch

The Rev. W. T. Rees, L.D., B.D., is promoted to the relative rank of Group Capt. (June 4).

ROYAL AIR FORCE RESERVE

Reserve of Air Force Officers

General Duties Branch

Flying Officer J. A. Greenhields is transferred from class C to class A (March 19); Pilot Officer C. F. Almond is transferred from class C to class AA (6) (May 26).

The follg. Flying Officers are transferred from class A to class C:—G. B. Musson (April 28); K. Onyett (May 1); C. H. Graham (May 15); H. W. B. Hansford (June 19).

Flying Officer R. D. Harrook relinquishes his commission on completion of service (May 18).

The follg. Flying Officers relinquish their commission on completion of service and are permitted to retain their rank:—C. H. H. Downing (May 8); A. H. Padley (June 7).

Flying Officer H. M. Yeatman relinquishes his commission on completion of service and is granted the rank of Flt. Lt. (April 20); Flying Officer P. A. Moritz resigns as Headquarter (June 4).

The follg. are granted commissions as Pilot Officers on probation in class AA (6) (July 9):—J. W. S. Forbes, P. C. Pitt, J. J. G. Simper, B. Walker.

Flt. Lt. O. W. Clapp is promoted to the rank of Squadron Ldr. (May 8); Flying Officer F. L. Garstang resigns his commission (May 21); Flying Officer F. M. Walker relinquishes his commission on completion of service (April 20).

Medical Branch

Flt. Lt. E. Donovan, M.B., Ch.B., relinquishes his commission

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Squadron Leader B. McInnes, to Dept. of Air Member for Supply and Research, Air Ministry, 25.6.34.

Flight Lieutenants.—C. H. Cahill, A.F.C., to No. 15 (B) Squadron, Abingdon, 21.6.34. F. W. Murison, to No. 500 (County of Kent) (B) Squadron, Manston, 24.6.34. J. S. Phillips, to No. 3 Flying Training School, Grantham, 25.6.34. N. V. Whillips. The appointment notified in R.A.F. Intelligence dated June 25, 1934, is hereby cancelled. R. J. Montgomery-Moore, to Headquarters Palestine and Transjordan, Jerusalem, 23.6.34. W. N. Plenderleith, to Marine Aircraft Experimental Establishment, Felixstowe, 28.6.34.

Flying Officers.—V. G. Govett, to No. 503 (County of Lincoln) (B) Squadron, Waddington, 25.6.34. N. Hill, to Anti-Aircraft Co-operation Flight, Bign Hill, 22.6.34. C. G. Skinner, to No. 2 Aircraft Storage Unit, Cardington, 25.6.34. P. B. Coote, to Central Flying School, Wittering, 25.6.34. D. Gilman, to No. 15 (B) Squadron, Abingdon, 25.6.34. G. F. Humphries, to R.A.F. Base, Calshot, 26.6.34. R. B. Harrison, to No. 142 (B) Squadron, Netheravon, 28.6.34. L. W. V. Jennens, to No. 101 (B) Squadron, Andover,

HALF-YEARLY

The Air Ministry announces.—The undermentioned promotions are made with effect from July 1, 1934:—

General Duties Branch

Air Vice-Marshal to be Air Marshal.—Sir Edgar Rainey Ludlow-Hewitt, K.C.B., C.M.G., D.S.O., M.C.

on appointment to a short service commission in the Royal Air Force (May 31).

Special Reserve

Medical Branch

Flying Officer R. H. Vartan, M.B., Ch.B., is promoted to the rank of Flt. Lt. (April 19).

AUXILIARY AIR FORCE

General Duties Branch

No. 601 (COUNTY OF LONDON) (BOMBER) SQUADRON.—Pilot Officer A. P. Gray is promoted to the rank of Flying Officer (June 1).

No. 602 (CITY OF GLASGOW) (BOMBER) SQUADRON.—Flt. Lt. A. D. McNab relinquishes his commission on completion of service (April 12).

No. 607 (COUNTY OF DURHAM) (BOMBER) SQUADRON.—The Most Honourable the MARQUESS OF LONDONDERRY, K.G., M.V.O., is appointed Honorary Air Commodore (June 2).

No. 607 (COUNTY OF DURHAM) (BOMBER) SQUADRON.—T. R. T. Carr-Ellison is granted a commission as Pilot Officer (June 11).

London Gazette, July 3, 1934

General Duties Branch

Flying Officer G. Bearne is granted a permanent commission in this rank (June 28).

The follg. Pilot Officers are promoted to the rank of Flying Officer (June 17):—R. G. Stone, I. G. MacKay, L. Coulson, P. J. Pearson Rogers.

Wing Comdr. (new Group Capt.) F. P. Don, O.B.E., is placed on the half-pay list, scale A, from June 20 to July 6, inclusive; Squadron Ldr. B. J. Silly, M.C., D.F.C., is placed on the half-pay list, scale A, from April 13 to June 8, inclusive; Lt. G. K. Martyn, R.M., Flying Officer, R.A.F., ceases to be attached to the R.A.F. on return to duty with the Royal Marines (June 13); Squadron Ldr. C. H. Awcock, O.B.E., is placed on the retired list (June 30).

The follg. Flt. Lts. are transferred to the Reserve (June 30):—Class A.—J. H. Sender. CLASS C.—H. C. V. Jolleff.

The follg. Flying Officers are transferred to the Reserve (June 28):

CLASS A.—G. E. Agard-Butler, N. Alexander, F. C. Allen, C. A. Ball, N. J. Capper, C. H. Glover, D. C. Harrison, D. W. Lydall, I. L. S. Niccol, H. G. J. Purcell, J. M. Waddell. CLASS C.—S. N. Wiltshire.

Accountant Branch

Pilot Officer on probation J. S. B. Anderson is confirmed in rank and promoted to the rank of Flying Officer (June 7).

Chaplain's Branch

The Rev. R. D. Grange-Bennett, L.Th., relinquishes his short service commission on completion of service (July 2).

Memorandum

175120 Cadet G. G. A. Walters is granted an honorary commission as Sec. Lt. with effect from the date of demobilisation.

PRINCESS MARY'S ROYAL AIR FORCE NURSING SERVICE

The follg. Staff Nurses are appointed to the permanent service (July 1):—Miss P. Garrard, Miss A. Lowrey, Miss H. N. B. Grierson, Miss E. M. Broadley, Miss M. B. Weir, Miss M. Laverack, Miss N. R. Lake, Miss D. E. Harvey, Miss W. M. E. Marshall.

28.6.34. G. P. Marvin, to No. 58 (B) Squadron, Worthy Down, 27.34.

Pilot Officers.—L. Coulson, to No. 812 (F.T.B.) Squadron, 26.34. K. D. Salmon, to No. 502 (Uster) (B) Squadron, Aldergrove, 27.34.

Stores Branch

Flying Officer H. W. Penney, to No. 16 (A.C.) Squadron, Old Sarum, 3.7.34.

Accountant Branch

Flight Lieutenant J. Charles, to Station Headquarters, Kenley, 21.6.34.

Flying Officers.—C. F. G. Rogers, to Administrative Wing, Cranwell, 25.6.34. H. R. Withers, to Station Headquarters, Abingdon, 1.7.34.

Medical Branch

Squadron Leaders.—E. A. Lumley, M.C., to No. 3 Flying Training School, Grantham, 27.6.34. For duty as Medical Officer. T. R. S. Thompson, to Royal Air Force Depot, Uxbridge, 26.6.34. For duty as Medical Officer.

Flight Lieutenants.—O. M. Fraser, to R.A.F. Depot, Uxbridge, 27.6.34. G. W. Paton, to R.A.F. Depot, Uxbridge, 28.6.34. R. Thorpe, to No. 45 (B) Squadron, Helwan, Egypt, 17.5.34.

PROMOTIONS

Group Captains to be Air Commodores.—Owen Tudor Boyd, O.B.E., M.C., A.F.C., Arthur William Tedder, Bertine Entwistle Sutton, D.S.O., O.B.E., M.C.

Wing Commanders to be Group Captains.—James McCrae, M.B.E., Gilbert Ware Murli-Green, D.S.O., M.C., William Victor Strugnell,

M.C., Kenneth Caron Buss, O.B.E., Frederick Sowrey, D.S.O., M.C., A.F.C., Frederick George Darby Hards, D.S.C., D.F.C., Wilfred Ashton McClaughry, D.S.O., M.C., D.F.C., Arthur Ashford Benjamin Thomson, M.C., A.F.C., Norman Channing Spratt, O.B.E., Francis Percival Don, O.B.E.

Squadron Leaders to be Wing Commanders.—Reginald Baynes Mansell, O.B.E., George Raymond Albert Deacon, M.C., Frank Fernihough, M.C., Malcolm Lincoln Taylor, A.F.C., John Hugh Oscar Jones, Harold Alfred Whistler, D.S.O., D.F.C., Matthew Brown Frew, D.S.O., M.C., A.F.C., Hugh Mitchell Kirkwood Brown, Arthur Stanley Gould Lee, M.C., Robert Little Stevenson, M.B.E., Thomas Frederick Wailes Thompson, D.F.C., John Patrick Coleman, A.F.C., Grahame George Dawson, Edward Garden Hopcraft, D.S.C.

Flight Lieutenants to be Squadron Leaders.—Matthew Sausse Slattery (Lt.-Comdr. R.N.), Miles Cursliam (Lt.-Comdr. R.N.).

Flying Officers to be Flight Lieutenants.—Norman Scott Luard (Lt. R.N.), John William Hale (Lt. R.N.), Stacey Walter Drury Colls (Lt. R.N.), Gerald King Martyn (Lt. R.N.).

Supplementary List

Flying Officer to be Flight Lieutenant.—Robert MacFarlan.

Change in the Higher Commands

The Air Ministry announces the following appointment:—Air Commodore C. T. Maclean, C.B., D.S.O., M.C., now Director of Postings at the Air Ministry, to be Air Officer Commanding, Royal Air Force, Middle East, about October, 1934, vice Air Vice-Marshal C. L. N. Newall, C.B., C.M.G., C.B.E., A.M. Air Commodore C. T. Maclean entered the Army in 1914 as Second Lieutenant, Royal Fusiliers, and joined the Royal Flying Corps in December, 1915. During the Great War he served in France with the Royal Flying Corps and the Royal Air Force, and in addition to receiving the awards of D.S.O. and M.C. was mentioned in despatches on three occasions. He was appointed to a permanent commission in the Royal Air Force in 1919, and later commanded a Flying Training School at home and units in Iraq and Egypt. He became Officer Commanding, British Forces in Aden, in September, 1929, and was promoted to the rank of Air Commodore in July, 1931. In the following December he was appointed Director of Postings at the Air Ministry and received the C.B. in the New Year Honours List of 1933.

Nomenclature of Aircraft—"Rota"

The official name of the Cierva autogiro, type C.30P, is "Rota." This name is to be used in all reports and correspondence relating to this type of aircraft.

Stores Branch

Squadron Leader to be Wing Commander.—Frank Edwin John Coates.

Accountant Branch

Squadron Leader to be Wing Commander.—Warneford Gerrard Wilkinson Prall.

Flight Lieutenant to be Squadron Leader.—Arthur Egbert Vautier, M.C.

Medical Branch

Wing Commanders to be Group Captains.—Frank Cunningham Cowtan, M.R.C.S., L.R.C.P., William Agar Scholefield Duck, O.B.E., M.R.C.S., L.R.C.P., D.P.H., Arthur Edward Panter, M.R.C.S., L.R.C.P.

Squadron Leaders to be Wing Commanders.—John Turnbull Thomson Forbes, M.R.C.S., L.R.C.P., James Kyle, M.R.C.S., L.R.C.P., Alan Filmer Cook, M.R.C.P., M.R.C.S., D.P.H., Eric Alfred Lumley, M.C., M.B., B.Ch., D.P.H., William Godfried Lorenz Wambeck, M.R.C.P., L.R.C.P., Terence Charles St. Clessie Morton, M.D., Ch.B., M.R.C.P., D.T.M. & H., D.P.H., D.P.M.

Flight Lieutenant (Honorary Squadron Leader) to be Honorary Wing Commander.—John Valerie, O.B.E., M.R.C.S., L.R.C.P.

New Aircraft for the R.A.F.

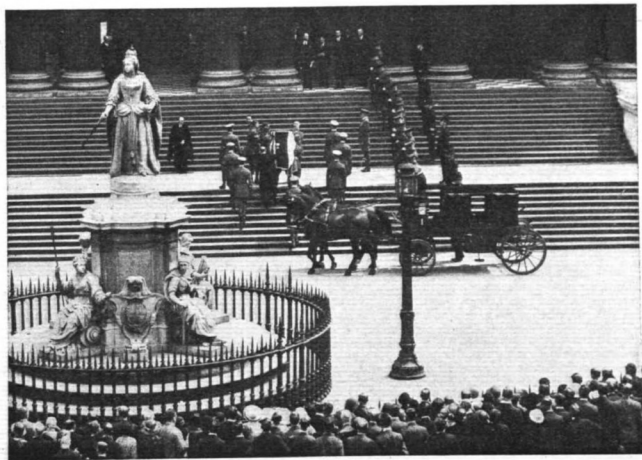
The Air Ministry have placed an order with the Fairey Aviation Co., Ltd., for fourteen long-range night bombers, each with two Rolls-Royce "Kestrel" engines. The Blackburn firm has also received a substantial order for torpedo spotter reconnaissance machines for the Fleet Air Arm.

Air Force List

The July issue of the Air Force List has now been published. It can be purchased (price 2s. 6d.) from H.M. Stationery Office at the following addresses:—Adastral House, Kingsway, London, W.C.2; 120, George Street, Edinburgh; 2, York Street, Manchester; 1, St. Andrew's Crescent, Cardiff; 15, Donegall Square, Belfast; or through any bookseller.

Funeral of Sqn. Ldr. Collett

The funeral service for Sqn. Ldr. S. B. Collett was held in St. Paul's Cathedral on Wednesday, July 4. The coffin was carried on a R.A.F. trailer. The Prince of Wales and the Secretary of State for Air were represented. The pallbearers were the commanding officers of the seven other squadrons of the Auxiliary Air Force.



FUNERAL OF SQD. LDR. S. B. COLLETT: The cortege arriving at St. Paul's Cathedral. (Flight Photo.)

AIR POST STAMPS

By DOUGLAS ARMSTRONG

(Editor of "Stamp Collecting," etc.)

First Scottish Air "Stamp"

Although debarred by the British post office regulations from issuing a distinctive air mail stamp, Highland Airways Ltd. were able to provide a special label, or "sticker," to distinguish letters carried on the first flight of the air mail service operated by them between Inverness and the Orkneys on May 29th last. Printed in red and green with the device of an aeroplane flying between the mainland and the islands and duly inscribed "First Air Mail—Highland Airways Ltd., Inverness-Orkney Isles—at Ordinary Letter Rate—May 29, 1934," fifteen hundred copies only are said to have been printed and attached to first flight covers at a charge of 2s. per letter, over and above the normal 1d. postage fee.

British Rocket Post Experiment

In connection with a trial flight by Rocket mail carried out under conditions of secrecy on the Sussex Downs on June 6, 1934, some souvenir stamps originally issued as propaganda for the International Air Post Exhibition last month received the imprint "Rocket Post—First British Flight," together with a cursive inscription indicating that a special fee of 2s. 6d. per letter had been paid and were duly affixed to between 1,000 and 2,000 letters which, after being fired by mail rocket for a distance of about half a mile, were subsequently handed in at the Brighton post office and forwarded to their destinations by ordinary route. These labels are, of course, quite unofficial in character and did not prepay postage except so far as the promoters of the rocket post experiment were concerned. Their interest is therefore merely that of souvenirs of what may prove to be a pioneer flight in the rocket post service, if and when it ever becomes an accomplished fact.

New Danish Air Stamps

A mail plane in flight over the roofs and spires of Copenhagen provides the effective design of a new series of official Danish air post stamps that has just been taken into use. They are finely engraved and printed in large, upright rectangular format in the following denominations and colours, viz.: 10 ore, orange; 15 ore, red-brown; 20 ore, blue-green; 50 ore, grey-green; and 1 krone, brown. This is only the second set of air mail stamps officially issued by the Danish post office in ten years, although air post collectors are familiar with a number of semi-official issues associated with experimental flights, some of which are of considerable rarity.

Air Stamps from Jugo-Slavia

From time to time there have been rumours of an impending issue of air post stamps by the Government of Jugo-Slavia, and one has finally materialised on June 10, 1934, comprising five values, rather crudely printed in pictorial designs illustrating local views in which aeroplanes are inset. Reserved exclusively for use upon air-borne correspondence these stamps comprise 50 paras, purple-brown, with a view of the old town of Ragusa; 1 dinar, emerald, the historic Lake of Bled; 2 dinars, scarlet, the picturesque Falls of Jajce; 3 dinars, ultramarine, the Church of Opoca; and 10 dinars, red-orange, the famous Bridge of Mostar.

Trans-Andean Air Stamps

From far-off Peru come two striking new air mail stamps engraved and recess printed in London with a vignette of a seaplane passing over the snowcapped peaks of the Andes with the air mail for Africa and Europe, in denominations, 2 sol, dark blue, and 5 sol, light brown, each having the words "Correo Aereo" inscribed upon a winged insignia in the upper left and the Peruvian national arms flanked by flags in the upper right-hand corner of the vignette. For use in the same service Chile has produced a new 10 pesos air stamp, printed in red-brown with an impressionist design of a monoplane flying over the sea, against a rainbow background.

Pond-Sabelli Flight Stamp?

A limited private mail was brought over by the transatlantic flyers Pond and Sabelli, on their non-stop flight from New York to Ireland on May 13-15, for which high prices are already being asked. Now it is reported from Rome that



RECENT ISSUES: Top (right), Souvenir vignette of first Highland Airways Air Mail; (left) one of the new Danish air stamps. Bottom, two new air stamps from Jugo-Slavia.

the Italian government proposes to create special stamps for use on letters to be despatched to America by the return flight. No details are available, however, as we write.

Blériot Commemorative Stamp

In honour of the 25th anniversary of M. Louis Blériot's successful cross-Channel flight a commemorative stamp is being prepared by the French post office showing the coasts of England and France with his monoplane flying between. It will be reserved for use upon air mail matter exclusively.

PUBLICATIONS RECEIVED

Foretold, 12 Stories of Modern Second-Sight by "Streamline." Price 8s. 6d. net Eneas Mackay, Stirling.
Aeronautical Research Committee Reports and Memoranda. No. 1576. *Spinning of Pterodactyl Mark IV.* Part I by A. V. Stephens and J. Cohen. Part II by A. V. Stephens. February, 1933. Price 9d. net. London: H.M. Stationery Office, W.C.2



NEW COMPANIES REGISTERED

WILFRED P. FILL, LTD., 2, Park Row, Leeds, 1. Capital, £2,000 in £1 shares. To carry on the business of motor aeronautical, electrical, radio and consulting engineers, etc. The directors are: Wilfred P. Fill, 30, Holderness Place, Leeds, Arthur L. Hodges, 59, Victoria Road, Headingley, Leeds. Solicitors: Morrish Nelson & Co., North British Buildings, East Parade, Leeds.

BRITISH ROCKET SYNDICATE, LTD., 55/6, Chancery Lane, W.C.2. Capital, £1,000 in 1s. shares. To carry on all kinds of business connected with rockets or rocket-like projectiles capable of long range or travel, and adaptable to hold articles, to acquire inventions appertaining to rockets or rocket-like projectiles, aeroplanes, gyroscopes, gliding planes, vehicles and boats, and to carry on the business of general electrical and automobile engineers, etc. The subscribers (each with one ordinary share) are: John H. N. Gorvin, 262, Mitcham Road, Tooting, S.W.17 (accountant). Nellie Baynes, 55, Alderney Street, S.W.1 (stenographer). Secretary: John H. N. Gorvin.

INCREASE OF CAPITAL

BRITISH AIR TRANSPORT, LTD., (Room 4, Central Hall, Air Port of London, Croydon). The nominal capital has been increased by the addition of £10,000 in £1 ordinary shares beyond the registered capital of £5,000.



AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = 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 July 12, 1934

- 35,348. J. H. WALKER. Instrument for the observation of the speed of aircraft. (411,859).
35,580. BRISTOL AEROPLANE CO., LTD., and L. G. FRISE. Aircraft undercarriages. (411,875).
35,583. BENDIX AVIATION CORPORATION. Navigating-instruments for aircraft. (411,921).

APPLIED FOR IN 1933

Published July 12, 1934

- 22,150. ZAF DEVELOPMENT CORPORATION. Aeroplane construction. (412,057).
28,790. E. B. BOYD. Method of construction of aeroplanes. (412,064).

APPLIED FOR IN 1934

Published July 12, 1934.

- 1,138. S. A. REED. Aeronautical metal propellers. (412,188).