Sailplane and Glider

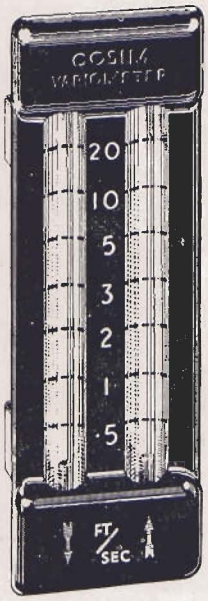
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THE FIRST JOURNAL DEVOTED TO SOARING AND GLIDING

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COVER PHOTO:

Glider line up—Opening Ceremony at International Contests.

By Fred Hoinville.

'THE SPIRIT OF THE RHOEN'



THERE is no doubt that the name of Oskar Ursinus was little known before the days of soaring flight although he was busy with aviation from his early years.

In 1909 he published the first issue of his bi-weekly paper *Flugsport*, publication of which continued until 1944 when the war prevented future issues. In more than thirty yearly volumes of *Flugsport*, which may still be found in some libraries throughout the world, Oskar Ursinus gave an excellent picture of the development of human flight not only in Germany but throughout the world.

Slowly, but steadily, the name of Oskar Ursinus became known for the great enthusiasm he showed for motorless flight in the days when performances of 800 km. distance, 40,000 feet height and 56 hours' duration were undreamed of.

When in 1919-20 increasing numbers of enthusiastic youth pushed forward to break the ban of the allied powers to fly by showing their interest in gliding, it was this little man, full of energy, who collected the ideas and propositions and gradually held all the threads in his hands, started to turn them to a rope, strong enough to pull something forward to success.

In those days he lived in his small Editor's room high above the station's square at Frankfurt/M. It was rather poor with no waiting-room here, but under this roof he acquired a vast knowledge of aviation.

There were quite a number of men who helped to organise the first two or three particularly difficult Rhoen Competitions, but there is no doubt that the task would not have been a success without the help of Ursinus. The fact alone that he opened the pages of his world-known *Flugsport* to the report of motorless flight showed his courage.

In those old days, many experts laughed at this little man who showed such a real interest in gliding which they considered was out of date. They were those looking for the future material value, such as one who is interested only in music because he hopes to earn money from the sale of tickets and records.

But for the Editor of *Flugsport*, soaring flight also represented a certain amount of material value, but this was off-set completely by the time and the work this man sacrificed to his hobby called "Soaring Flight," for hobby is probably the best name for what soaring meant to Oskar Ursinus.

Many glider pilots created great names for themselves in the history and development of gliding such as Arthur Martens, the first man to fly a glider for one hour, or Robert Kronfeld, the first to fly a distance of 100 km., as well as Gottlob Espenlaub the first to succeed in aero-towing or Gunther Groenhoof, Eric Collins, Maneyrol and many others.

They all did great things and left us quite young.

But it is not only important to fly, there is also a high value in remaining alive, in staying in one's place and in holding to one's life line. This great persistence in soaring flight, this taking-part in each Rhoen Competition and this help which he gave in all directions, gave to the private engineer Oskar Ursinus his great fame as a genius of soaring flight and of the Rhoen Mountains.

There are people who tend to exaggerate the deeds of meritorious men, because perhaps they do not know exactly the real causes and fact or because they admire whole-heartedly but one cannot always talk in superlatives.

There is no reason to consider this excellent man as the creator of soaring flight, but he was the Father of the Rhoen. His value to the cause of soaring is unique and great, therefore the old soaring pilots of the Wasserkuppe elevated him rightly to the personification of the spirit of the Rhoen. This is certainly the most perfect title of honour that soaring pilots could give to Oskar Ursinus, for "spirit of the Rhoen" signifies all we understand by good pilot-comradeship, as being willing to fly without material background, as flying for flying's sake, flying without bureaucracy and without hindrance.

Ursinus, the Father of the Rhoen is dead, but the spirit of the Rhoen will continue to live wherever in the world human birds are circling in the sky.

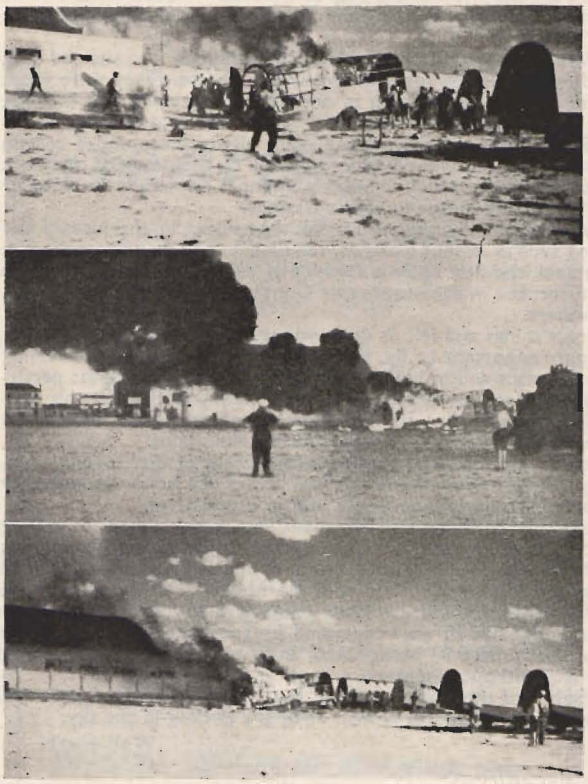
Wolf Hirth.

Oskar Ursinus, Father of the Rhoen and of World Soaring, died in Frankfurt on July 6th, aged 74.

INTERNATIONAL CONTESTS

ANOTHER VIEWPOINT—continued

THERE was a large variety of machines, of which the British, German and French were home designed and built. The Belgians were flying a Czech ' Sohaj,' presented by the Rotary Club of Ghent (Club Secretaries and Rotarians please note). The Argentines brought their two ' Horten XV ' tailless gliders, damaged almost the first time they flew, because their long stork-like nose leg for the landing wheel was not built for the rough Spanish surface. (This also explains why the Spaniards do not go in for cross-countries). The Spanish flew ' Kranich's ' and ' Weihe ' of the German pre-war design, but Spanish built. There was the little Swiss ' Moswey IV ' and the post-war ' Condor,' flown by Kamil, whose dashboard was like an airliner's (and of which he has promised us a picture for *Sailplane*). In addition to the five British ' Sky's ' (four lent by Slingsby's and one by John Furlong), the Argentinians had two and the Dutch one, so that there were eight ' Sky's ' flying.



Photos: Fred Hoinville.

Disaster to French trailer with spares and petrol

There was the Italian ' Canguro,' in which the rear pilot was underneath the parasol wing, the ' Schweizer 1-23's,' three versions, of which Dr. Paul MacCready (son, not father), flew the long wing type with its beautifully streamlined canopy. And there was the ' RJ-5,' a dark mahogany ply fuselage job, with not only clean lines, but when you passed your hand over, an absolute lack of irregularity of any sort. It didn't have a high polish, but it was smooth, and nowhere could you tell from the outside where the inside members lay.

The Italians also brought a ' Pinocchio,' the French two ' Air Songs,' ' Pierre's ' ' Castel Mauboussin ' with the butterfly tail, a ' Breguet 900 ' and an ' Arsenal 4111.' Not a bad idea and one which gave them the chance of measuring up their different performances and also four chances that one of them might suit the conditions in Spain. The Finns brought their home built ' PIK-3,' which flew very well, but the rest of their crew flew ' Weihes ' and a ' Kranich ' lent by the Spaniards.

Of course those who had their own machines had a great advantage as it took so much time to rig the ' Kranich's ' (two hours), that Fred Hoinville's team were two hours late for take-off on one occasion. The ' Sky's ' were rigged in a matter of minutes.

At last the first day of the Contests proper arrived (July 3rd) and by 8.0 a.m. the field was a scene of great activity. Aircraft were rigged and D.I'd and polished in some cases, although Beryl Stephenson explained that she was only removing the dust from the tailplane which was ' Filthy ' (it had a bloom on it such as you sometimes see on a mirror). The briefing was at 9.0 a.m. or said to be, but owing to the difficulty of explaining in so many languages, it took a great deal longer than the usual hour, and was hardly as ruly, due again to the Spanish courtesy which allowed everyone to have his say.

The weather conditions were so complex, or so lacking in definition, that the task for the day was a free distance flight wherever you wished. The map shows that there was a decaying front away to the N.W., probably too weak and too distant to be of any interest to pilots, and as in any case the data was given as at 05.00 hours, by the time the aircraft were launched, conditions were bound to be quite different. There was a wind opposition system also in the N.W. and a little nearer, and this could be expected to cause upper-air instability and the symptoms of a ' front.' At ground level there were winds in opposite directions everywhere, but at 6,000 ft. the general trend was from the south, and this decided most people to go north. The British, except Stephenson who went S.W. to avoid the



Photos : O. Magnusson.

Top : The British Team with Wills and Forbes deciding which direction to take. Bottom : The ' Horten XV '

' bad ' weather went N.E. to Saragossa. The Swedes at first decided to go S. of E. but changed to N.E. Take-off order had been decided by drawing lots the night before, and Wills was first away, shortly after noon, and about an hour later 58 gliders had been towed off.

The aero-tows were an impressively efficient part of the Spanish organisation. The gliders were lined up in lines of eight at a time, and the first eight were towed off by ' Fieseler Storch ' machines, Spanish owned, the next fourteen in lots of seven by low wing monoplanes called ' KM-19 '—the Spanish version of the old ' Klemm.' Release was at 2,000 ft. above the airfield.

It was very hot, although there was a slight ground wind from the North, where, over the Guadarramas, the Mountains which run in a half circle round Madrid there were cumulus clouds to be seen. So the retrieving cars disappeared, those of them who had radio, in the wake of their pilots, the British alone with any surety that they were going in the right direction. Most of the crews resigned themselves to a long wait until telephone messages came in, as they were still to do until next morning. We spectators went in to lunch to the darkened and air conditioned dining room of the club, but with so little sense of time, that it was with a sense of surprise that on emerging at half past three we saw the northern sky black with thunderclouds which had grown from the cumulus castellatus we had seen over the Guadarramas at the start. A few minutes later a squall of almost hurricane strength struck the airfield and it continued until after seven o'clock. The interesting thing was that no one could say from what direction either the squall or the winds came. Were we in the centre of a depression ? Certainly the dust wove into the air like dust devils or the South Easter at Table Mountain in Capetown. It thundered and rained and the temperature dropped twenty degrees in two hours. But by the late evening the streets and the airfield were dry again. Thinking about it later one remembered that at five a.m. there had been marked signs of upper air instability over Madrid, with cu-nim reaching to well over 30,000 ft. It seemed certain that the heat of that sun, which had caused the cloud vapour to disappear, must be sufficient to release it to even higher levels where condensation must take place, and the cloud being super cooled must form rain and with such intense local displacement that thunder was inevitable.

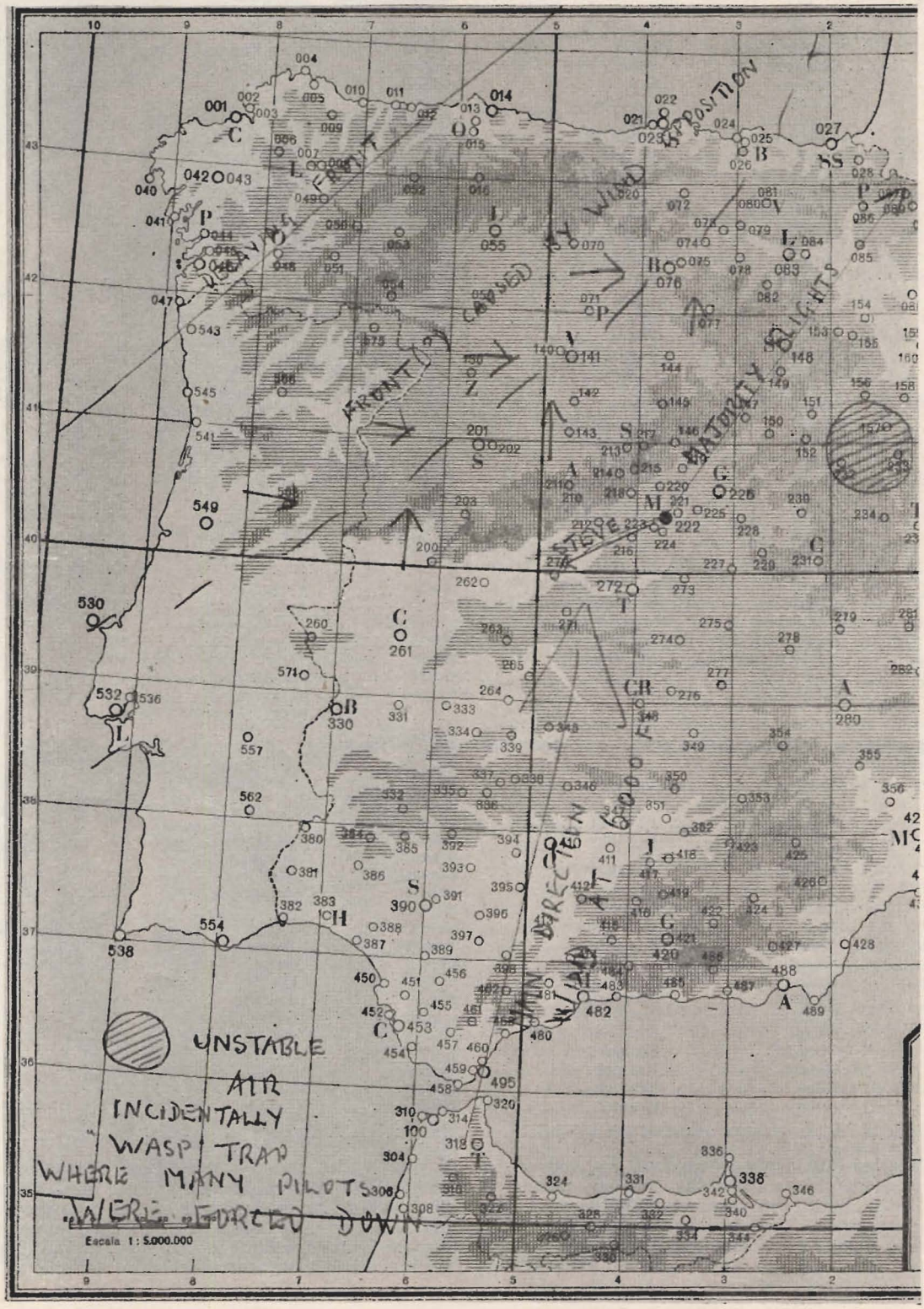
The effect on the pilots was as varied as their courses. Forbes and Pierre, flying E. of N. in a S.S.E. wind had reached the mountainous ridge S. of the River Ebro. Pierre had sufficient height to cross it, and put down in a fairly strong North West wind. Forbes, who had crossed the hills at 8,000 ft., had to put down under an overcast sky, realising that in a wind of that strength (he estimated it at over 40 m.p.h.) he must ground fly his machine until the arrival of his crew, sat there for 30 minutes in a muck sweat, until they relieved his anxiety by holding the machine down until it was dismantled.

Further South, Helli Lasch, seeing Hanna Reitsch and one or two other sailplanes down and unable to make headway against the strong wind decided to join them. He landed and got out of his machine, and started to dismantle it. Suddenly the wind blew one wing up in the air and that was the end of his borrowed ' Weihe.' As he had made a normal landing the Spaniards agreed, with the consent of the other teams, to lend him another ' Weihe ' to continue in the contests. But Richard Johnson having to put down in the teeth of the storm landed in a field strewn with boulders and stove in the base panels of his fuselage. It was his first flight or that of the ' RJ ' since the world record flight of 545 miles last year. Frank Foster, coming in to land with plenty of height and speed was caught in the ' curl-over ' of the squall and forced down so quickly that he had little control over the machine whose wing was broken off at the root by a telegraph pole. He was out of the Contests from then on. Fred Hoinville, who had flown on not knowing that his ' Kranich ' wheels had not detached themselves, landed near the others, in the area which was later described as the ' wasp trap ' found himself running on and by ground looping a little saved himself from crashing into a trailer which had already got its glider inside. He damaged a wing, which put him out of the competitions for one day. Tage Lof, having plenty of height in hand, tried to get over the mountains, but found the cold wind coming over them too much for him and having flown round the valley had to retrace his course 15 miles and finally landed before the squall in the same area as so many others near Calatayud. At 10.00 hrs. next morning Billy Nilsson was still looking for him. It may be a coincidence that this area was that over which the forecast had shown an area of upper air instability at 5.00 hours that morning. I intended to ask Professor Georgii what he thought about this, but never found him at leisure once the Contests and OSTIV had begun. Gildemyn, flying the Czech ' Sohaj ' was second with an excellent flight of 184 miles just missing his Gold ' C ' distance by two or three miles. Beuby, flying a Spanish ' Kranich ', won the two-seater event for the U.S.A., but the Germans, out of practise at flying two-seaters still in the development stage, took the 2nd, 3rd, 10th and 12th places out of 17 starters.

Next morning we heard that Johnson, not feeling that the country was suitable for his glider, was to withdraw from the contests, but he was out of the hunt for the next two flying days anyway, which was the time it took to mend his machine. This was done once by the Austrians for him, but even though it seemed a perfect job, R.J. was not satisfied and did it again himself. I took advantage of the repairs to have a good look at the ' RJ 5 '. It had a dull finish but was the smoothest thing I have ever touched. Nearby, the Italian Canguro was having a similar repair, having also come to grief on the rocks.

The early arrangements for marking the results were hardly adequate, and the little flags which were placed on the map, were hardly big enough. It seemed that little national flags would not have been out of place, but this is for next time. In the end the distances were marked on a blackboard, which was better.

The next day was a day of simply beautiful fairy


UNSTABLE
AIR
INCIDENTALLY
WASP TRAP
WHERE MANY PILOTS
WERE FORCED DOWN
Escala 1 : 5.000.000

SINGLE-SEATER FREE DISTANCE. 1st CONTEST DAY JULY 3rd.

Order	*Name*	*Type*	*Nation*	*Landed at*	*Kms.*	*Point*
1.	Pierre	Castell M.	France	Pina de Ebro	300	1,000
2.	Gildemyn	Sohaj	Belgium	Egea de los C.	396	986
3.	Gehriger	Weihe	Switzerland	La Puebla H.	294	979
4.	Forbes	Sky	England	La Muela	259	862
5.	Kuhn	Air 100	Switzerland	Carinena	255	849
6.	Cuadrado	Sky	Argentina	Fuente Jalon	247	823
7.	MacCready	SGS-1-23	U.S.A.	P. Escandon	238	793
8.	Ara	Weihe	Spain	Torre los N.	233	776
9.	Schweizer	SGS-1-23	U.S.A.	Corbaton	229	763
10.	Ortner	Sky	Argentina	Mainar	227	756
11.	Ordelmann	Sky	Holland	Albacete	225	749
12.	Lasch	Weihe	S. Africa	Calatayud	221	736
13.	Tandefelt	Weihe	Finland	Matalebreras	220	733
14.	Salinas	Weihe	Spain	Calatayud	212	706
15.	Saari	Weihe	Finland	Calatayud	212	706
16.	Johnson	RJ-5	U.S.A.	Torralba R.	210	699
17.	Wills	Sky	England	Ferrer	202	673
18.	Pow	Weihe	Canada	Ateca	200	667
19.	Haase	Condor IV	Germany	Abanto	195	649
20.	Hoinville	Kranich	Australia	Almazul	191	636
21.	Waghorn	Weihe	Australia	Alhama Aragon	189	629
22.	Nunez	Weihe	Spain	Alhama Aragon	189	629
23.	Bazet	Horten XV	Argentina	Contamina	188	626
24.	Lof	Weihe	Sweden	Contamina	187	623
25.	Nilsson	Weihe	Sweden	Cetina	186	619
26.	Welch	Sky	England	Cetina	186	619
27.	Munch	Weihe	Brazil	Jaraba	184	613
28.	Gasnier	Arsenal 4111	France	Maranchon	153	509
29.	Feddersen	Weihe	Denmark	Maranchon	150	500
30.	Koskinen	Pik-3	Finland	Beltejar	146	486
31.	Lasageas	Air 100	France	Sauca	128	426
32.	Landi	Breguet 900	France	Tortonda	125	416
33.	Brigliadori	Pinocchio	Italy	Torresavinan	123	410
34.	Fahrlander	Moswey III	Switzerland	Torresavinan	123	410
35.	Boudreault	Weihe	Canada	Torremocha	120	400
36.	Marbleu	Air 100	France	Trillo	108	360
37.	Rodrigues	Kranich	Brazil	Mandayona	108	360
38.	Stephenson	Sky	England	Talavera	96	320

TWO-SEATER. FREE DISTANCE. 1st CONTEST DAY. JULY 3rd.

Order	*Name*	*Type*	*Nation*	*Landed at*	*Kms.*	*Points*
1.	Beuby	Kranich	U.S.A.	Valenzuela	267	1,000
2.	Frowein	Kranich III	Germany	Calatayud	221	828
3.	Ziegler	MU-13	Germany	Malanquilla	208	779
4.	Rassmusen	Kranich	Denmark	Torrelapaja	204	764
5.	Kahva	Kranich	Finland	Munebrega	200	749
6.	Rautio	Kranich	Finland	Gomara	190	712
7.	Juez	Kranich	Spain	Alhama A.	187	700
8.	Jensen	Kranich	Denmark	Alhama A.	187	700
9.	Kamil	Condor IV	Egypt	Cetina	186	697
10.	Reitsch	Kranich III	Germany	Cetina	186	697
11.	Mantelli	Kanguro	Italy	Tardajos	184	689
12.	Kensche	Condor IV	Germany	Maranchon	151	565
13.	Vicent	Kranich	Spain	Alcolea P.	133	498
14.	Guerrini	Kanguro	Italy	Siguenza	121	453
15.	Haydn	Kranich	Norway	Negredo	108	404
16.	Koek	Kranich	Holland	Villatobas	66	247
17.	Jeffery	Kranich	Canada	Arganda	35	131

tale weather with plenty of high cloud and convection, but of course it was a rest day, but only mainly for the British, most other crews being on the way home, and very tired. They had had a bad time in the previous night's rain. Feddersen, the Dane was still lost at noon, and was then found by aerial search, having landed too far away from a telephone, a hundred miles from Madrid. Ziegler had damaged his machine on landing and so had Fahrlander in his 'Moswey.' The results were perhaps disappointing for the British who had expected to do better. Forbes was fourth and Stephenson bottom of the





list, which was most unexpected.

It was clear that almost everybody had underestimated the Spanish weather. The decaying front and the ' wind opposition ' front had been real enough. Where was the permanent inversion the pundits in England told us to expect ?

Saturday, July 5th.

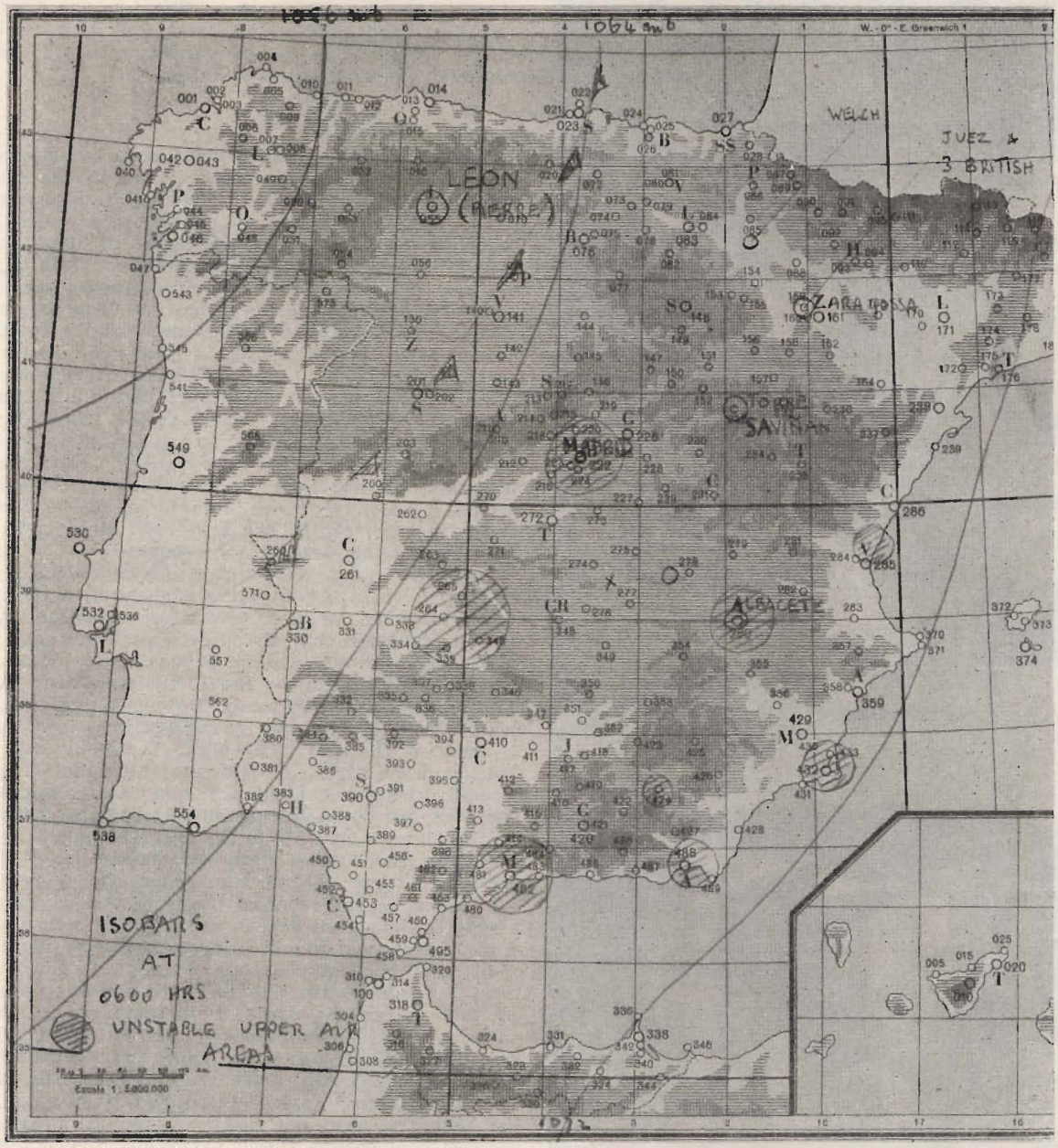
The forecast for this day at 00.01 hours at Barajas was :—' The high pressure area S.W. of the British Isles is slowly dispersing and moving N.E. The rest of the isobaric situation is practically stationary. The O degress C is above the centre of Spain at 3,097 m. above sea level. Cumulus format. 3340 m., and the temperature necessary for thunderstorms is 32 degrees.' The weather chart at 06.00 hours showed instability all over the place, and a front moving down from the N.W. It was not an easy matter to decide what task should be set. There was little likelihood of much cloud over Madrid, and the instability at low levels would be of ' blue sky thermal ' type. A goal flight to a goal of the pilot's own choosing was the only answer. But the limitation was that one of a number of named airfields should be chosen, due no doubt to the landing experiences of the first day. Both under and overshooting were heavily penalised.

Ground wind at take-off time was from the S.S.W. At 10 p.m., in a sky with few clouds and nothing visible to guide the pilots (several of whom landed to try a second launch), the ' Sky's ' got away early, all except Foster who was out of the contest. Welch had chosen Vitoria in the North, 185 miles away, a charming town we had passed through on the way South. Wills, Forbes and Stephenson went towards Saragossa in the N.W., 170 miles. The Dutch pilot Ordelmann went S.E. to Albacete (140 miles) and generally there were flights all round the compass. The American pilots, having completely misread the weather data, went S.W. to Badajos (195 miles) but found the wind against them and undershot.

Welch got over the mountains just after a front had passed by and reported the fields flooded, and landed in a ploughed field in which he left a furrow in the waterlogged ground. He was at Burgos, short of his goal. Curiously enough, Pierre, who flew to Leon (180 miles) to the West of Welch, seems to have got there before the storm. Both could get no lift under an overcast mammatus sky. But for the second day Pierre had got maximum points and seemed set for the Championship. Tage Lof and Billy Nilsson had also chosen Vitoria, and so had Helli Lasch, but they too were put down by the mammatus overcast not far from Welch. Wills and Stephenson made their goal, but Forbes having got over the ridge La Muela, near where he had landed on the first day, found stable air in the valley of the Ebro beyond and landed a few miles short of his goal. Joe Ortner, in a ' Sky ' also missed his goal of Saragossa by a few miles. Cuadrado, flying the other Argentine ' Sky '

Photos : O. Magnusson

Top : Hanna Reitsch.
Bottom : ' Horten XV '



went with Ordelmann to Albacete, so that there were six ' Sky's ' in the first seven places. A notable flight was that by Juez to Saragossa in a ' Kranich ' used as a two-seater, whilst Fred Hoinville flying a ' Kranich ' solo, shared with ten others the honour of having reached Torres Savinan (77 miles). His goal was declared by Veronica Platt acting on information from a member of the British suite that he had forgotten the name but the first word had something to do with a bull !

Reflecting afterwards, it now seems clear that the main features of the day were the instability in patches all over the map—the storm over the mountains to the north, and the S.W. wind up to 8,000 ft. and above 6,000 ft. Those who had reached that level and who went with the wind did best. For the second day running the French had read the signs aright.

Sunday the 6th was spent resting and repairing. The ' RJ-5 ' was repaired and was to continue the Contest, which was good news, and the Norwegians had succeeded in getting some of the sand and water out of their pitot tube, an accident which had marred their efforts on the previous day, and accounted for

SINGLE-SEATERS. GOAL FLIGHT. 2nd CONTEST DAY. JULY 5th

Order	*Name*	*Nation*	*Goal*	*Landed at*	*Dl*	*d*	*Points*
1.	Pierre	France	Leon	Leon	290	290	1,000
2.	Stephenson	England	Zaragoza	Zaragoza	274	274	943
3.	Wills	England	Zaragoza	Zaragoza	274	274	943
4.	Cuadrado	Argentina	Albacete	Albacete	225	225	776
5.	Ordelmann	Holland	Albacete	Albacete	225	225	776
6.	Forbes	England	Zaragoza	La Muela	274	256	637
7.	Ortner	Argentina	Zaragoza	Castejon	274	252	615
8.	Ara	Spain	Valladolid	Valladolid	174	174	599
9.	Hoinville	Australia	Torresavinan	Torresavinan	123	123	424
10.	Gehriger	Switzerland	Torresavinan	Torresavinan	123	123	424
11.	Gildemyn	Belgium	Torresavinan	Torresavinan	123	123	424
12.	Fahrlander	Switzerland	Torresavinan	Torresavinan	123	123	424
13.	Saari	Finland	Torresavinan	Torresavinan	123	123	424
14.	Feddersen	Denmark	Torresavinan	Torresavinan	123	123	424
15.	Haase	Germany	Torresavinan	Torresavinan	123	123	424
16.	Waghorn	Australia	Torresavinan	Torresavinan	123	123	424
17.	Tandefelt	Finland	Torresavinan	Torresavinan	123	123	424
18.	Koskinen	Finland	Torresavinan	Torresavinan	123	123	424
19.	Brigliadori	Italy	Torresavinan	Torresavinan	123	123	424
20.	Welch	England	Vitoria	Sarracin	293	200	360
21.	Pow	Canada	Torresavinan	Velamazan	123	144	326
22.	Lof	Sweden	Vitoria	S. de los In.	293	188	321
23.	Nilsson	Sweden	Vitoria	Mecereyes	293	188	318
24.	Lasch	S. Africa	Vitoria	Soria	293	184	305
25.	MacCready	U.S.A.	Badajoz	Oropesa	313	186	294
26.	Lasageas	France	Valladolid	Mojados	174	135	276
27.	Salinas	Spain	Valladolid	Pedrajas	174	128	249
28.	Nunez	Spain	Valladolid	Arroyo de C.	174	119	215
29.	Smith	U.S.A.	Albacete	Quintanar	225	117	159
30.	Kuhn	Switzerland	Salamanca	Arevalo	159	98	159
31.	Gasnier	France	Valladolid	Aguila F.	174	98	146
32.	Bazot	Argentina	Albacete	Alcazar S.J.	225	104	130
33.	Marbleu	France	Valladolid	Pascuales	174	90	125
34.	Boudreault	Canada	Valladolid	Pascuales	174	90	125
35.	Landi	France	Valladolid	Pascuales	174	90	125
36.	Rodrigues	Brazil	Valladolid	El Espinar	174	55	46
37.	Schweizer	U.S.A.	Badajoz	Santaolalla	313	67	37

TWO-SEATERS. GOAL FLIGHT. 2nd CONTEST DAY. JULY 5th.

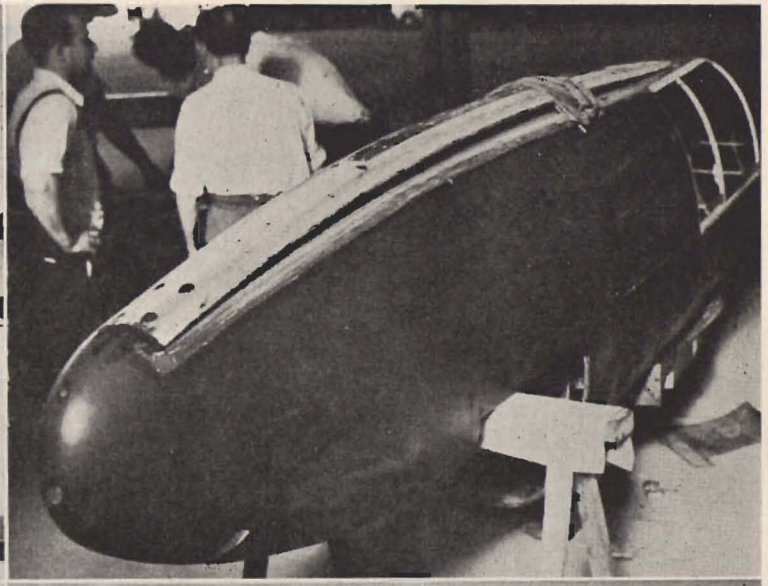
Order	*Name*	*Type*	*Nation*	*Goal*	*Landed at*	*Points*
1.	Jucz	Kranich II	Spain	Zaragoza	Zaragoza	1,000
2.	Mantelli	Canguro	Italy	Torresavinan	Torresavinan	448
3.	Koek	Kranich II	Holland	Torresavinan	Torresavinan	448
4.	Kahva	Kranich II	Finland	Torresavinan	Torresavinan	448
5.	Rautio	Kranich II	Finland	Torresavinan	Torresavinan	448
6.	Rasmussen	Kranich II	Denmark	Torresavinan	Torresavinan	448
7.	Vicent	Kranich II	Spain	Torresavinan	Torresavinan	448
8.	Reitsch	Condor IV	Germany	Torresavinan	Torresavinan	448
9.	Ziegler	Mu-13	Germany	Zaragoza	Alhama	361
10.	Jensen	Kranich	Denmark	Zaragoza	Contamina	357
11.	Kamil	Condor IV	Egypt	Torresavinan	Argecilla	232
12.	Frowein	Kranich III	Germany	Albacete	Mota del Cuervo	185
13.	Beuby	Kranich	U.S.A.	Valladolid	Gutierre-Munoz	149
14.	Kensche	Condor IV	Germany	Torresavinan	Trijueque	146
15.	Jeffery	Kranich	Canada	Torresavinan	Guadalajara	84
16.	Haydn	Kranich	Norway	Torresavinan	Barajas	8

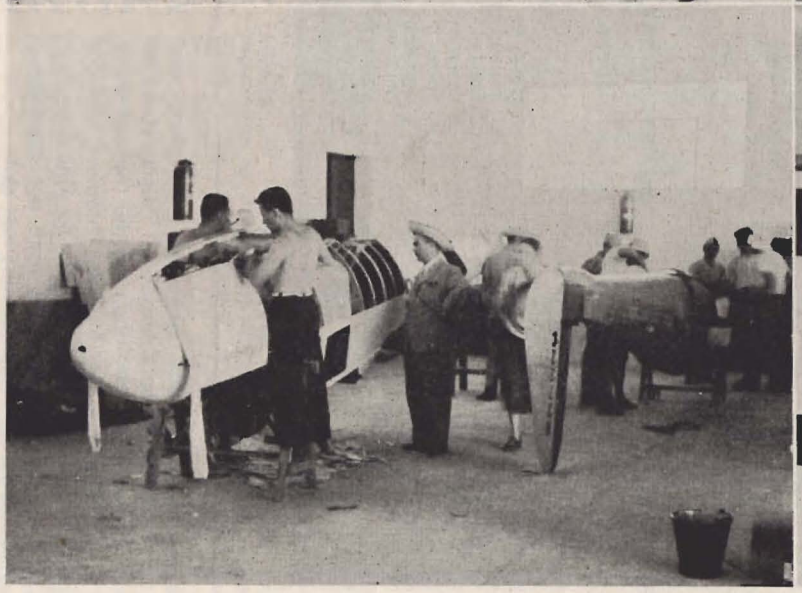
Haydns coming back so soon. *Sailplane* and Australia went to the Escurial—a Palace about 30 miles away, where they observed the thermal tricks of storks whose nests were on the chimneys, and saw tapestries after Goya which were so well done that it was hard to believe they were not paintings—magnificent pieces of Spanish art and skill.

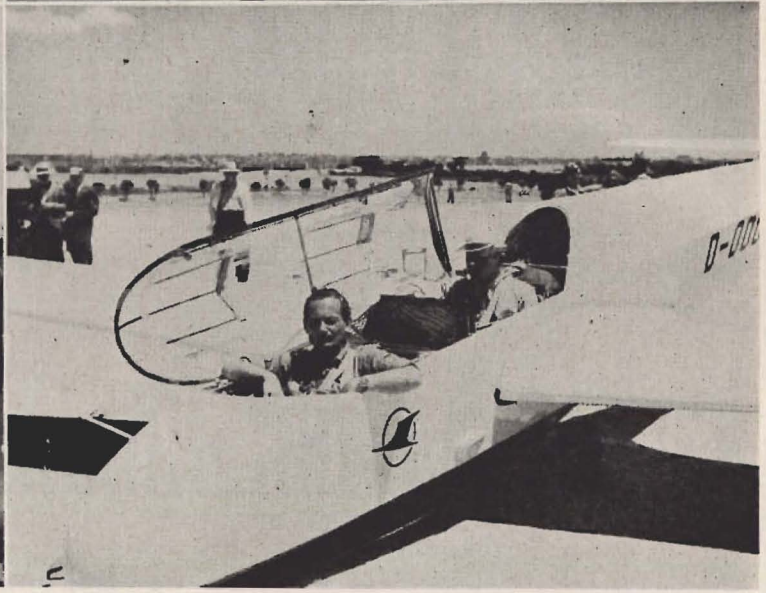
July 7th.

On this day pressure was high along the North and West coasts, but pressure gradients over Spain were very weak. Winds near the ground were variable during the morning but became moderate south westerly in the afternoon. In the higher layers winds were from the S.W. all day, but with no indication as to their strength. Humidity was very









Top left : Swedish group with Snr. Llaca, second from left. Helli Lasch centre.
Bottom left : Italians repair ' Canguro '. ' R.J.-5 ' on right.

Photos : O. Magnusson.

Top right : Repairing ' R.J.-5 '
Bottom right : Frowein, Germany, piloting ' Kranich III '

SINGLE-SEATER. SPEED CONTEST. 3rd CONTEST DAY. JULY 7th

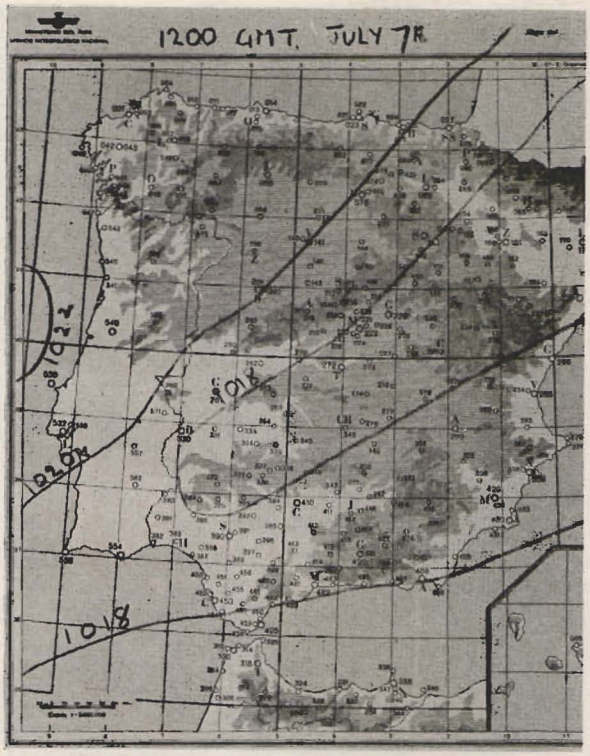
Order	*Name*	*Nation*	*Time Hrs.*	*Speed Km. p.h.*	*Points*
1.	Wills	England	1.407	87.41	1,000
2.	MacCready	U.S.A.	1.428	86.13	974
3.	Forbes	England	1.496	82.2	893
4.	Ordelmann	Holland	1.499	82.05	890
5.	Kuhn	Switzerland	1.523	80.7	860
6.	Welch	England	1.552	79.89	851
7.	Gehriger	Switzerland	1.702	72.26	711
8.	Haase	Germany	1.718	71.59	699
9.	Cuadrado	Argentina	1.767	69.61	666
10.	Nilsson	Sweden	1.773	69.37	660
11.	Feddersen	Denmark	1.782	69.0	654
12.	Smith	U.S.A.	1.785	68.9	653
13.	Schweizer	U.S.A.	1.807	68.06	639
14.	Stephenson	England	1.825	67.4	630
15.	Pierre	France	1.835	67.03	624
16.	Landi	France	1.8	66.95	621
17.	Tandelfelt	Finland	1.88	65.42	597
18.	Ara	Spain	1.899	64.77	588
19.	Brigliadori	Italy	1.921	64.02	576
20.	Waghorn	Australia	1.995	61.65	540
21.	Marbleu	France	1.997	61.58	539
22.	Fahrlander	Switzerland	2.026	60.7	526
23.	Salinas	Spain	2.026	60.71	526
24.	Nunez	Spain	2.039	60.32	520
25.	Koskinen	Finland	2.052	59.94	517
26.	Lasageas	France	2.061	59.68	511
27.	Bazet	Argentina	2.126	57.8	486
28.	Ortner	Argentina	2.130	57.74	484
29.	Gildemyn	Belgium	2.152	57.15	478
30.	Saari	Finland	2.181	56.39	466
31.	Gasnier	France	2.367	51.96	409
32.	Pow	Canada	—	—	73
33.	Boudreault	Canada	—	—	20

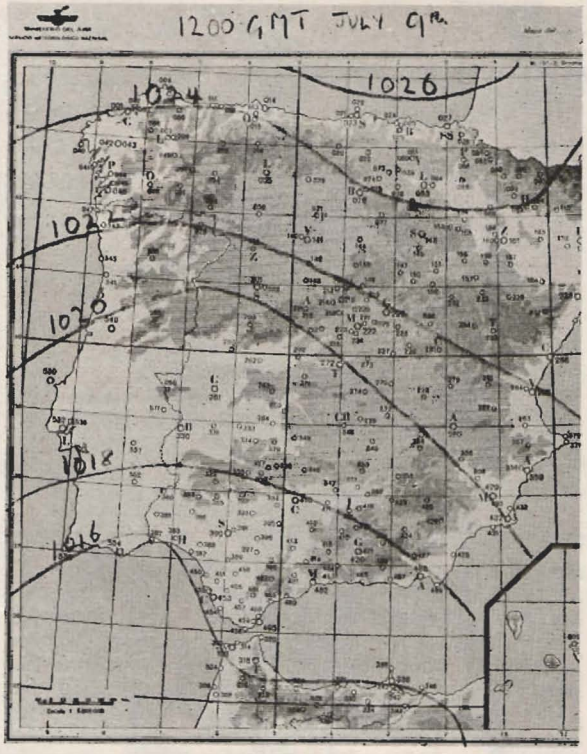
TWO-SEATER. SPEED CONTEST. 3rd CONTEST DAY. JULY 7th.

Order	*Name*	*Nation*	*Time Hrs.*	*Speed k.p.h.*	*Points*
1.	Frowein	Germany	1.78	69.1	1,000
2.	Beuby	U.S.A.	1.797	67.88	975
3.	Juez	Spain	1.897	64.83	917
4.	Rasmussen	Denmark	1.942	63.33	889
5.	Mantelli	Italy	1.954	62.94	882
6.	Reitsch	Germany	1.959	62.78	879
7.	Kahva	Finland	2.078	59.17	816
8.	Koek	Holland	2.315	53.13	718
9.	Kensche	Germany	2.411	51.01	687
10.	Vicent	Spain	2.443	50.34	676
11.	Jeffery	Canada	2.804	43.86	589
12.	Kamil	Egypt	—	—	244
13.	Haydn	Norway	—	—	163
14.	Rautio	Finland	—	—	119
15.	Jensen	Denmark	—	—	58
16.	Ziegler	Germany	—	—	7

low and consequently only a few clouds formed during the afternoon in the mountains. The thermals reached a height of 3,000 m. and the temperature rose to 34 degrees C. Unfortunately we were unable to obtain a weather map for this day or the succeeding days, from Spanish sources.

The task for today was a speed race to Torre Savinan, 123 kms. away. Blue sky or not, there were plenty of thermals and several of the pilots were off from the moment of launching. Wills' luck held and conditions were just right when he took off at 13.45. After release pilots had to cross a given line for timing and could then set off. It was soon seen that Wills was away, and although Forbes started an hour later it did him no harm. The British Team were heard by their crews exchanging views as to which was the right airfield, and Wills and Welch landed within minutes of each other. Wills' time of 1 hour 24 mins. 25 secs. showed nearly 55 m.p.h., closely followed by Paul MacCready





1.26.20, Forbes with 1.29.56, only 2 secs. in front of Ordelmann (three 'Sky's' in the first four) Welch 6th and Stephenson 14th.

All except 2 of the contestants got there, in the single-seater class, and 11 of the two-seaters. Frowein of Germany was the winner of this class, followed by Beuby and Juez. Thus 43 out of 51 starters reached the goal. But what an opportunity was missed for non-existent spectators at Savinan? Forty-one gliders arriving in the space of two hours must have been an amazing and beautiful sight, and one probably which had never been seen before in all history.

The results were very exciting. Wills was now only 8 points behind Pierre on the three days' results with totals of 2,616 and 2,624 respectively.

Tuesday, July 8th.

One effect of the short speed race the day before was that all the competitors were back at the airfield the same night. It was fine and hot, but the weather information showed an inversion at 6,000 ft. with high stratus. The day was a disappointment, however, for after all the trouble of briefing and rigging, and after several competitors were away, the competition was called off ; those who could were recalled by radio and the rest by sending power aircraft after them. The result was that the swimming pool was crowded until evening and a pleasant rest was had by all. The other event of note was the arrival of Fred Slingsby, who came in time to see what turned out to be the triumph of his life, as the next three days showed.

Wednesday, July 9th.

The weather map showed that a ridge of high pressure extended from the Azores anti-cyclone to the Bay of Biscay and South Western France, whilst there was a small disturbance on the west coast of N. Africa. At ground level winds were N.E. in the morning but owing to heating and resultant turbulence became variable in the afternoon. Above 1,300 m. winds were from S.W. and W. at 15 knots at 1,300 m., to 30 knots at 1,100 m. During the morning there was a good deal of higher cloud over the Southern part of the sky, which had some connection with the disturbance near the W. coast of N. Africa. These disappeared about noon. The atmosphere was not completely stable, but being very dry, only a few clouds developed during the day over the mountains. The temperature rose to 34 degrees C.

The task therefore was again a free distance flight, and in view of the upper air winds most competitors elected to go in a N. to N.E. direction, towards Saragossa. Denmark had the honour of winning this event, whose pilot Feddersen flew further than at any time before. He reached Tarazona, 255 kms. (160 miles), but as the results show there were seven others within 20 kms. of him so that no one gained a great advantage from that day. Wills, Forbes and Stephenson were in the first six, and Pierre was 22nd with about two-thirds the distance of the leaders. Consequently Wills was now in the lead with 3,579 points to Pierre's 3,337, and the situation was exciting. It became known that owing to the fact that the petrol coupons allocated by the Government

SINGLE-SEATER. FREE DISTANCE. 4th CONTEST DAY JULY 9th.

Order	*Name*	*Nation*	*Landed at*	*Kms.*	*Points*
1.	Feddersen	Denmark	Tarazona	244	1,000
2.	Gehriger	Switzerland	El Rillo	238	975
3.	Wills	England	La Almunia de Dna. Dodinn	235	963
4.	Lof	Sweden	Cosa	229	938
5.	Forbes	England	El Frasno	226	926
6.	Stephenson	England	El Frasno	226	926
7.	Cuadrado	Argentina	El Frasno	226	926
8.	Haase	Germany	Navarrete del Rio	220	902
9.	De Lasageas	France	Calatayud	216	885
10.	Waghorn	Australia	Calatayud	215	870
11.	McCready	U.S.A.	Calatayud	211	865
12.	Tandefelt	Finland	Nimebrega	200	820
13.	Kuhn	Switzerland	Ateca	198	811
14.	Ordelmann	Holland	Alhama de Aragon	190	779
15.	Bazet	Argentina	Alhama de Aragon	190	779
16.	Johnson	U.S.A.	Jaraicejo	189	775
17.	Gasnier	France	Alhama de Aragon	188	770
18.	Fahrlander	Switzerland	Alhama de Aragon	188	770
19.	Hoinville	Australia	Contamina	187	766
20.	Welch	England	Contamina	187	766
21.	Nilsson	Sweden	Contamina	187	766
22.	Pierre	France	Villaciervos	174	713
23.	Landi	France	Almagan	173	709
24.	Lasch	S. Africa	Selas	160	656
25.	Marbleu	France	Alcolea del Pinar	135	553
26.	Smith	U.S.A.	El Pedernoso	133	545
27.	Salinas	Spain	El Pedernoso	132	541
28.	Saari	Finland	El Pedernoso	132	541
29.	Schweizer	U.S.A.	Albalate de las M.	127	520
30.	Brigliadori	Italy	Torresavinan	123	504
31.	Ortner	Argentina	Renales	121	496
32.	Ara	Spain	La Pedrera	116	475
33.	Nunez	Spain	Saelicea	96	393
34.	Pow	Canada	Santa Olalla	71	291
35.	Koskinen	Finland	Guadalajara	56	229 (1)
36.	Rodrigues	Brazil	Aranjuez	40	164
37.	Gildemyn	Belgium	Alcala de Henares	40	164
38.	Boudreault	Canada	Valdemore	22	90

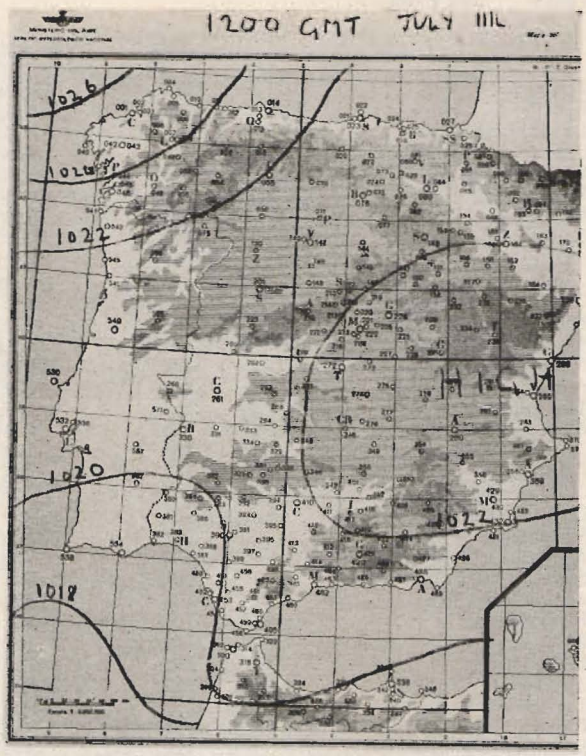
TWO-SEATER. FREE DISTANCE. 4th CONTEST DAY. JULY 9th.

Order	*Name*	*Nation*	*Landed at*	*Kms.*	*Points*
1.	Kahva	Finland	Vivel del Rio	245	1,000
2.	Reistch	Germany	Torrecilla del R.	235	942
3.	Beuby	U.S.A.	Calamocha	217	870
4.	Koek	Holland	Terrer	201	806
5.	Mantelli	Italy	Alhama de Aragon	188	753
6.	Frowein	Germany	Contamina	187	749
7.	Kensche	Germany	Aragoncillo	159	637
8.	Juez	Spain	Colloguilla	141	565
9.	Kamil	Egypt	Las Pedroneras	134	537
10.	Guerrini	Italy	Torresavinan	123	407
11.	Ziegler	Germany	Talavera de la Reina	119	477
12.	Jense	Denmark	Algora	114	457
13.	Rasmussen	Denmark	Talaverade la Reina	105	421
14.	Jeffery	Canada	Casamosquera	95	381
15.	Haydn	Norway	Guadalajara	64	257
16.	Rautio	Finland	Olias del Rey	50	200
17.	Vicent	Spain	Villaconejos	38	152

having a visible end, there could be only one more day's flying and that would have to be a short one. Consequently, the next day, Thursday was a rest day, and the crews and pilots alike were thankful for the rest and recreation. The heat had been tremendous—in the nineties in the shade most of the time—and the long retrieves, sometimes all night with slow vehicles, had sapped the energies of all concerned.

Friday, July 11th.

The pressure gradient at ground level was rather weak over Spain, being highest in the north and



lowest over Portugal. Winds at ground level therefore blew from the east. There was a wind shear however at about 1,800 m., 6,000 ft. Above this region the winds were westerly, though rather weak (10-15 kts.) up to 13,000 ft. (3,500 m.). The upper air sounding showed that the atmosphere was conditionally unstable, and as soon as the temperature would rise to 35 degrees C. thunderstorms might develop. As higher temperatures than this were expected, thunderstorms were therefore forecast, at first over the mountains, but later over the plains. Thunderstorms actually developed at about noon over the mountains and extended to Carabanchel Airfield at about 15.00 hours. Strong winds and dust storms accompanied the storms. The temperature before the storms reached 38 degrees C. (100 F.). The briefing was prolonged as usual, with the casting vote by Lt. Col. Ordovas in favour of a speed flight to Torre Savinan rather than another goal flight deciding the task for the day.

The distance to Torre Savinan is 77 miles, and so the British and their friends were able to listen in on the Pye Radio to their pilots and crews talking as they made their way to the goal. Over the Guadarramas to the north a terrific anvil could be seen developing, which quickly spread over the plain to the airfield. Wills went into the cu-nim and was soon over 20,000 ft. and he reported 24,000 ft.—which was a British height record—before diving for the goal. Contact with him was lost, however, in the exciting events which were befalling Forbes, who, in the mistaken belief that he would have a low flight, had not taken oxygen or barograph. He found himself in the cloud, and reported over 18,000 ft. before his speech showed signs of oxygen shortage. He realised what was happening, and tried to get out of the lift. He put on his dive brakes but they froze up. He reported going into a spin and then apparently lost consciousness until he came out of the cloud within gliding distance of the field, which listeners in the control car reckoned he had reached in 1 hour 28 mins. It had been reported that Pierre's time was 1 hour 32 minutes and if Forbes time was the lowest, and he was the winner of the day's event he was also the winner of the International Championship. To have a chance Wills must do the distance in less than 1 hour 40 minutes. It was not until 4 hours later, at 7.30 p.m., that Wills's time was telephoned in as 1 hour 28 minutes 31 secs., thus being several points better than Forbes. But Richard Johnson spoiled all these dreams by getting there in the record time of 1 hour 8 minutes 39 secs., at an average speed of 66.80 m.p.h. This considerably altered the basic figure, and resulted in Forbes being 5th because MacCready had reached an average of 55.55 m.p.h. in 1 hour 22 minutes 36 secs. and the Americans had taken the first two places on the day followed by Wills and Landi (France) with the two Americans, Smith and Schweizer in 7th and 8th places.

In the two-seater class the two Spaniards, Vicent and Juez were first and second, the former in 1 hour 33 minutes 7 secs., followed by Ziegler and Kensche (Germany) in third and fourth place. In landing however, Ziegler was the victim of a curious phenomenon resulting in a sudden landing in which he received injuries from which he died a week later. In the very last seconds of the competition, he was coming in to land at 80 k.m.p.h., and about 100 ft., when his machine was suddenly caught in the ' curl over ' of the advancing storm and put down on the ground like a descending lift. He received back injuries and a brain injury from which he never recovered. His co-pilot in the back seat of the ' MU-13 ' was only bruised. This was the second fatality of the meeting, the first having occurred to a tow pilot in the practise period, whose brother Sr. Laca continued to act as starter for the competition. The pilot had apparently not been feeling well but insisted on carrying on the duty for which he had been detailed. Coming in to land after towing off a glider he apparently lost consciousness, turned over, recovered and then stalled into the ground. As a mark of sympathy the teams had attended a Requiem Mass on the Sunday before the contests began.

That night, when it became apparent that the British had won, and only failed to get the second place also by 5 marks in 4,000, the British held a modest but proud celebratory party. Wills's triumph was secure, but so also was that of Fred Slingsby who had fought against official indifference for years, and aided by the Shaw family, had at last provided Britain with a machine to beat the world's best, and in no uncertain fashion. The lists speak for themselves, and they will repay study. It was not a fluke that 7 of the first 14 machines were ' Skys ' nor that four of the first eleven places were occupied by the British who won because of superior preparation, equipment, organisation and consistency of skill.

SINGLE-SEATER. SPEED CONTESTS. 5th CONTEST DAY. JULY 11th.

Order	*Name*	*Nation*	*d*	*Take-off*	*Landing*	*Speed k.p.h.*	*Points*
1.	Johnson	U.S.A.	123	14-01-35	15-10-14	107.51	1,000
2.	MacCready	U.S.A.	123	13-54-58	15-17-34	89.39	802
3.	Wills	England	123	14-13-03	15-41-34	84.38	754
4.	Landi	France	123	14-28-51	15-58-00	82.77	739
5.	Forbes	England	123	14-22-43	15-53-45	81.08	725
6.	Pierre	France	123	13-41-59	15-14-45	79.55	711
7.	Smith	U.S.A.	123	14-05-23	15-38-43	79.09	707
8.	Schweitzer	U.S.A.	123	13-28-53	15-02-46	78.94	704
9.	Salines	Spain	123	13-59-35	15-35-13	77.16	689
10.	Ara	Spain	123	13-46-26	15-23-15	76.25	682
11.	Lof	Sweden	123	14-18-27	15-56-39	75.04	672
12.	Kuhn	Switzerland	123	14-04-18	15-43-16	74.59	668
13.	Saari	Finland	123	13-55-20	15-34-18	74.58	668
14.	Cuadrado	Argentina	123	13-27-57	15-07-58	73.78	662
15.	Boudreault	Canada	123	13-43-03	15-24-50	72.60	652
16.	Gehriger	Switzerland	123	13-44-07	15-28-24	70.77	637
17.	Nunez	Spain	123	14-04-35	15-54-36	66.94	608
18.	Ortner	Argentina	123	13-27-46	15-18-56	66.37	604
19.	Gildemyn	Belgium	123	13-39-36	15-31-28	65.98	601
20.	Hoinville	Australia	123	14-05-58	16-07-22	60.80	565
21.	Welch	England	123	13-41-00	15-49-48	56.31	542
22.	Gasnier	France	123	13-28-20	15-38-53	56.55	537
23.	Waghorn	Australia	123	14-15-57	16-28-34	55.75	532
24.	Pow	Canada	109	13-43-43	—	—	443
25.	Lassageas	France	123	13-45-42	—	—	361
26.	Brigliadori	Italy	123	14-07-42	—	—	361
27.	Marbleu	France	119	13-51-45	—	—	338
28.	Haase	Germany	119	14-27-40	—	—	332
29.	Stephenson	England	112	13-50-55	—	—	296
30.	Nilsson	Sweden	105	13-44-44	—	—	260
31.	Ordelmann	Holland	100	14-07-04	—	—	238
32.	Tandefelt	Finland	93	14-26-24	—	—	206
33.	Koskinen	Finland	90	14-17-40	—	—	193
34.	Lasch	S. Africa	85	14-07-32	—	—	172
35.	Fahrlander	Switzerland	77	14-16-53	—	—	141
36.	Rodrigues	Brazil	72.5	14-28-42	—	—	126

TWO-SEATER. SPEED CONTEST. 5th CONTEST DAY. JULY 11th.

Order	*Name*	*Nation*	*d*	*Start*	*Landing*	*Speed k.p.h.*	*Points*
1.	Vicent	Spain	123	14-15-05	15-48-12	79.25	1,000
2.	Juez	Spain	123	14-14-30	15-49-38	77.60	982
3.	Ziegler	Germany	123	13-40-21	15-27-58	68.71	893
4.	Kensche	Germany	123	14-00-19	15-52-40	65.68	862
5.	Frowein	Germany	123	13-46-24	15-41-13	64.27	850
6.	Kamil	Egypt	123	13-28-53	15-28-47	61.56	827
7.	Jensen	Denmark	123	13-50-20	15-55-05	61.13	822
8.	Reistch	Germany	112	14-25-51	—	—	466
9.	Mantelli	Italy	109	14-30-21	—	—	443
10.	Rautio	Finland	107	13-29-17	—	—	425
11.	Rasmussen	Denmark	88	14-51-59	—	—	288
12.	Jeffery	Canada	79	14-27-29	—	—	233
13.	Guerrini	Italy	75.5	14-03-24	—	—	210
14.	Kahva	Finland	60	14-23-43	—	—	133
15.	Beuby	U.S.A.	56	14-15-23	—	—	114
16.	Haydn	Norway	46	15-27-24	—	—	78

But perhaps it was their turn to win. After Persson's victory in Switzerland and Billy Nilsson's in Sweden in 1950, the Swedes were hopeful, and confident that they possessed the know-how. But the results did not show that. The Americans expected to do a great deal better. It is a pity that Richard Johnson could only compete in three events. If averages count he would have been up among the leaders and with another performance as good as his last, with one more average flight, must have won the competi-

tion, other things remaining the same. If the competitions had been transferred to Texas, he would be a brave prophet who would prophesy a British victory. But perhaps they won because they did not expect to win, but only determined to leave no step untaken which would ensure victory. After all the policy of the B.G.A. seems to have been aimed at winning this Championship, ever since the war, and other things appear to have been sacrificed to gain it.

The Spaniards, who have quite a different idea of gliding have in Professors Ara and Juez two of the most experienced two-seater pilots in the world, if not the most experienced. In 1948, at Bramcote, Juez had over 2,000 hours in 'Kranichs'. Goodness knows what he has now. The Germans, with incomplete equipment, no single-seaters, and pre-war pilots with little post-war experience, are going to be a different proposition next time. If the competitions are held in Texas, as is the aim of the Americans, or in the Argentine, as is the aim of General Peron, we shall be up against local competition and knowledge which will nullify many of our present advantages, and if the Germans or the Americans improve on the 'Sky' by development, we are not going to have an easy passage. Let us not therefore, rest on our laurels. If we are going in for International Competitions, let us do it wholeheartedly and start now.

The meeting was remarkable for the amount of crashery. Eight machines were written off and about 12 will need major repairs. The cost of the meeting was borne by the Spanish people through their Government and was estimated at £20,000.

Whoever holds the competitions next time must be prepared to lend machines on the scale and with the generosity of the Spaniards. To the Spanish people, to the Royal Aero Club of Madrid and its hard working personnel we tender therefore the grateful thanks of all who took part in the meeting, and especially the English speaking world-wide gliding community who were not there.

CASTILLIAN SKIES

THROUGH FRIENDLY AUSTRALIAN EYES

WELL, the Spanish World Gliding Championships are over, the tumult and the shouting dies.

All hail to the Victor! With conquering consistency, Philip Wills flew to a very popular victory. With skill, foresight, intelligent preparation and training, he defeated the Gods of Chance who had such fun with the rest of us, and set the crown firmly on his long and illustrious career. It is a matter for deep regret that a faulty barograph robbed him of a well-earned height diamond and Empire height record as well.

And so to the lessons that we learned, to the charms of Old Castile, the alluring air of Aragon.

The lessons? Oh dear! There were so many. When is a map not a map? Answer: Until you have used it once and found the mistakes. In Spain, these were slightly colossal and beautifully baffling. The maps were quite helpful, AFTER you had covered the route at least once earlier.

When is the Science of Meteorology even more difficult and inexact than in your home town and mine? No—you're wrong. The answer is—in a country which consists of broad valleys with independent weather streams and sea all around. The results have to be seen to be disbelieved. Never have I seen so many (yeah, me too) pilots be-fogged in the bright sunshine. The more you knew about Meteorology, the less good it did you. Ask Paul MacCready. Life for a meteorologist in Spain must be one long string of ulcers.

When is a Flying Wing a non-flying wing? Practically all the time in a country where the fields are tiny and full of rocks, and a poor little Ala Volante has a short tummy and long legs and keeps tripping over. Which leads to: What is the lowest Outside Loop ever performed? Ask Dick Bazet. He can prove it by the bruises on his shins.

When should a super-performance sailplane stay at home? When it has a high landing speed and a flush skid, for a tiny landing field full of rocks. Ask Dick Johnson. Unquestionably the world's finest high performance sailplane, the RJ5 was a lamb led to the slaughter on Spanish terrain. It took great courage and first-rate sportsmanship for Dick to risk it again after the first grim warning. Thanks, Dick, and congratulations on your magnificent speed performance.

When is a ploughed field good to land in? See above. At least, you can see the rocks, and the soft earth stops you quickly.

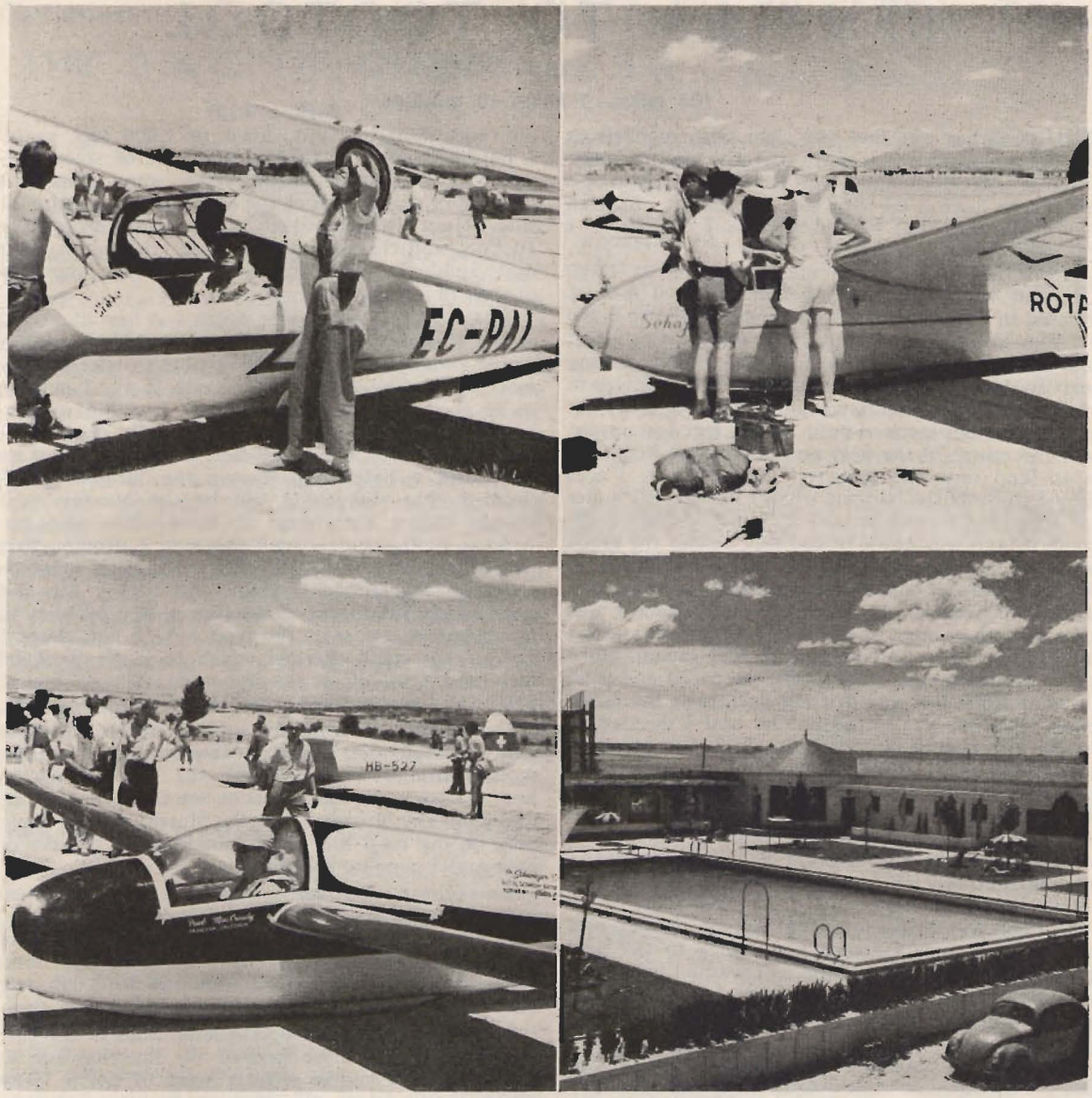
When is a Pilots' Meeting a sillier farce than usual? When it is held in four languages just before the start of the event. It would have been far better to let the Spanish authorities carry out their well-laid plans without the constant stream of modifications which caused so many late starts and confusions.

When is a Goal Flight not a goal flight? When you have to choose between arbitrary points which are either too near or too far. While I will always be happy to accept any approved rule, I think that in future, pilots should be allowed to select any identifiable point as a goal. No doubt the nature of the terrain provided full justification for the restriction this time.

When is a Speed Test not a speed test? When those with speed zero get almost as many points as those with speed 50 k.p.h. for example.

None of these questions are intended as criticisms, for the rules were discussed and accepted, but the answers are intended to indicate possible future improvements. On the whole, the Contests went off very well despite many last-minute changes which hampered the organization.

The importance of careful preparation and the influence of chance were so great that I consider it impossible to come to any conclusion about the



Top left: *Tandefelt (Finland) in* ' Weihe '
Bottom left: *Paul MacCready.*

Top right: *Belgian* ' *Sohaj* ' *flown by Gildemyn.*
Bottom right: *Swimming pool.*

relative merits of the sailplanes, as all types secured very erratic results. Good landing qualities seemed most important in Spain. The weak lift on most days forced everybody to fly at best minimum sink, and negatived speed advantages.

Three hearty cheers for Teniente-Coronel Senor Ordovas, who carried out the greatest task in the history of gliding with great ability and charm, and made many friends for Spain.

High praise for all the men of Spain who slaved that we might fly, for all the good friends from Castile and Aragon, Andaluzia and Barcelona, Sevilla and the rest of Spain.

Our deep gratitude for the generosity of the nation which made us her guests and gave so freely of her wonderful hospitality, showed us the beauty of her countryside, and her cities, and offered us the greatest gift of all, the warm friendship of her people.

Yo amo Espana. Yo amo los pueblos de Espana.

My Spanish may be a little ragged, but my feeling for Spain is warm and strong. Hasta la Vista, Amigos !

FRED HOINVILLE.
Australia.
' Kranich ' EC-OBR.

BENALLA TO TOOTOOL

By D. DARBYSHIRE

105 miles—4 hours 10 minutes

THE weather was fine and clear with high cirrus coming over and a south-easterly wind of about Force 3. After refuelling four R.V.A.C. ' Tigers ' we decided to have a go with the ' Grunau's.' As Ken Davies decided that he did not want the flight, I was next in line and took it.

Morrie McMullen towed me, taking off at 11.30 a.m. and we climbed to a height of 1,500 feet. I released in lift of about 3 f.p.s. and climbed to 2,200 ft. The lift seemed to cut right out at this point and it wasn't long before I found myself cursing heartily down at 1,000 feet, getting little nibbles in which I didn't even have time to do a complete turn before they petered out. At 700 feet I was right over the centre of the field and beating off height so as to land near the hangars. At 600 feet, I was aiming towards the hangars when I noticed lift under one wing and turned toward it, but could not quite locate it, and was down to 450 feet, before the green began to show steadily. I was worried at being so low and still circling, but considered that the rate of climb warranted the effort especially since I was right over the centre of the field and could have got in from any direction even if it had meant down wind. However, the lift steadily improved and soon I was at 1,000 feet and drifting back over the north fence. The lift was rather patchy and I decided to change direction of circuit at this height in an effort to improve it. I rolled smartly into a right hand turn and the lift leapt up to 20 f.p.s. I continued in this thermal to 4,500 feet, where it faded right out as I had expected it would, thinking there would be a rather low inversion. I heard later that a genuine southerly change came over shortly after I got my lift off the field.

At 4,500 feet I was near the Makoan Swamp and decided that since I couldn't get back to the field anyway from that height, and as I wanted five hours for my Silver ' C ' I might as well push off. North was the obvious direction, so I set sail on a N.N. Easterly course.

The ' down ' outside of the lift was pretty big, about 8-10 f.p.s., and it wasn't long before I was down to 2,000 feet, just on the Benalla side of the swamp. I messed about the area trying to find another thousand feet to get me over, but the best I could get was ' no-sink.' I decided that it would have to do and set sail over the narrowest part of the swamp. I arrived on the other side about 8 miles south-east of Goorambat still at 2,000 feet, and headed off again towards the north allowing just a little for drift to the west. I steadily lost height and was working very hard, looking for fields all the way from which I could get an aero-tow.

I had given away map reading, not having enough hands and eyes to smooth out a much battered map and fly at the same time towards the best of the fields. I arrived over one field and was circling it getting ready for an approach, when I got lift at 900 feet. This took me to 1,500 feet, but soon cut out and shortly I was down to 1,000 feet again. I headed toward a field at the foot of some hills which I considered might have some slope lift because of the nature of the slope on the south-east side. I got lift here which materialised into steady 10 f.p.s. and climbed to 2,200 feet, where it cut out quite suddenly as the downdraught on the other side of the hill affected it.

Ahead I could see a river which I at first identified as the Murray ; I was working so hard that I didn't worry about it as I didn't have time to take out my map. I continued on in the same thermal making quite good ground speed and still heading slightly east of north. When I could see the river right ahead I was down to 1,700 feet. This was about an hour and a half after leaving the 'drome and I decided that this could not be the Murray as I simply didn't have time to have come this far. After a swift struggle with the map I decided that this must be the Ovens and that the drift must be stronger than I had thought. Anyway I was not particularly interested at the time as the problem in hand was to get over the river. As I got closer I got a very small thermal which took me to 2,500 feet, and I set off across the river with no loss of height as I encountered ' no-sink ' all the way across.

I noticed a town on the south bank of the river which I could not identify and spent some minutes fooling around wrestling with the map, trying to find the town on the Ovens or see if there was one like it on the Murray. But the Murray in the likely area on my map was partly obscured by a piece of tape and I gave up the struggle.

I was down again and set sail for a field about two miles ahead where I could see sundry bods harvesting and I figured that there would be a fair amount of lift. I arrived over the field at 1,000 feet and immediately got lift which took me to 3,000 feet enabling me to set off on course once more.

Noticing some rather decent mountains to the east I decided to put more west in my direction and so started a new course slightly west of north. The flight continued in the same pattern and I continued to make good progress. In the distance I could see the line of trees which usually denotes a river and the same old worry started again as to whether or not I had crossed the Murray. As I had by now given the map away, I decided to press on and go for my five hours.

After about three hours I had no worries about time and was quite happily stooging along at about 3,000 feet when all of a sudden the whole machine did a terrific shudder and tried to do a slow roll to the left. I forced the right wing down and flew into 20 f.p.s. lift and as I steepened the turn, the green ball bubbled around the top of the tube while the altimeter shot round like the sweep second hand on my watch. At 5,000 feet the lift suddenly began to fizzle out and at 5,500 feet, it was non-existent.

Review—

THE A.B.C. OF GLIDING

By Fox Geen

12/6. Allen and Unwin. 103 pp. Octavo, with line blocks.

The writer of this book who appears to have learned to glide in post-war Germany, sets out to explain simply, for the benefit of the beginner, how to learn to glide on a ' Dagling ' or ' SG-38.' Where gliding is well established, the usual method to-day is by two-seater. But in the Public Schools a plan, launched by the A.T.C., which aims at giving boys flying experience on their school playing fields, ' SG-38's ' are still used, and this is the book for these beginner pilots. In the main the ideas are clearly expressed, but one wonders how the complete beginner, with no knowledge of technical terms, would grasp some of the information in spite of the writer's informal approach and, sometimes almost slang language.

The subject is treated as far as the change to a soaring machine, with notes and explanations on soaring, kiting, winching and maintenance.

It is a good book, but we could wish that it had been read once more and made even simpler by changing the latin words for English, e.g. turn for rotate, speed and weight for momentum, etc. By far the larger number of glider pilots are to be found amongst people who have to learn the gliding terms, of which, if they must be used, there ought to be a glossary.

BENALLA TO TOOTOOL—*continued from page 18*

This was most annoying as I had reckoned on getting to 10,000 feet. Shortly afterwards I encountered similar lift which took me to 6,000 feet, the maximum height I was to reach on the flight.

An interesting feature was a fair sized eagle which met me at 5,000 feet, and stuck with me to 5,500 feet. He was very interested in me and although I was flying at 45 m.p.h. he cruised quite comfortably with me and at one stage he gave two or three lazy flaps and shot round to my other wing tip. I was very confident of doing my five hours and struggled on quite happily, getting that bit of lift each time I needed it.

About three and three quarter hours out, I suddenly realised that I hadn't had any lift for some time and was in fact sinking at up to 20 f.p.s. No matter how hard I scuttled about I could not improve affairs and in no time was down to 2,000 feet. At 1,000 feet continuing my mad search I was circling over a field which showed signs of good possibilities, but to my horror I was soon down to 800 feet. Then suddenly I was landing, and that was that.

After I had landed I sat in the machine and cursed my bad luck in missing five hours by 50 minutes. After a minute or so I raised enough energy to get out of the machine and tie it down.

(*Continued on page 22*)

A Turning Wing Glider Trainer from Russia

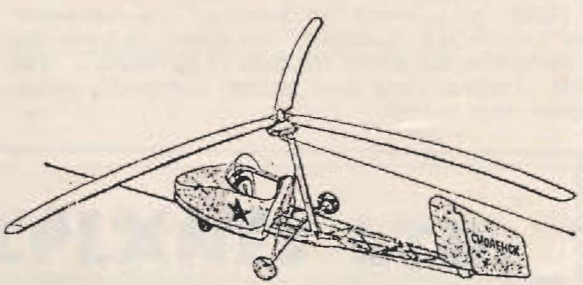
THE Russians have in recent years displayed marked interest in the heliocopter for military and general aviation purposes.

They have therefore investigated an economic procedure for quickly training large numbers of pilots for gyrating wings. They have produced a gyro wing ' Zogling ' without motor. The ' Smolensk ' is an example, but they have others.

It is composed of a plywood cockpit mounted on a triangular trellis framework with tricycle undercarriage, rubber shock absorbers, the rotor arm, and a tail with a vertical fin and rudder. The length of the fuselage is 4.41 m. The three bladed rotor has a diameter of 5.73 m., turning in a clockwise direction.

Control is by control column and pedals, as is normal, and the angle of incidence of the blades is controlled by a gear operated in the cockpit by cable control.

The manner of flight is simple. Around the collar



of the rotor a short cable is rolled. The free end is fixed to a point on the ground. As with a towed glider, another cable about 180 m. long is attached between a jeep and the usual cable connection under the cockpit. At the signal the jeep moves drawing the apparatus after it. This causes the cable round the rotor to draw out and the rotor to turn. Whilst the jeep increases speed, the ' Smolensk ' ascends to about 140 or 150 m. The pilot releases the tow cable and begins to descend in gliding flight. In favourable conditions the descent can be made vertically.

The initial idea of these machines came from the ' flying stag ' the ' E.19,' used during the war by the German submarines. More than 200 of these units were designed by Focke-Achgelis and were built by the Weser Flugzeugwerke a Delmenhorst.

Their official type number was ' FA-330.' The ' flying stag ' was collapsible and could be easily erected on a submarine. It weighed only 80 kg. empty.

The ' FA-330 ' was single seater, with a parachute for safety. The diameter of the rotor was 7.32 m. at first, later extended to 8.54 m.

CLUB NEWS

Dublin Gliding Club

ALTHOUGH gliding and soaring got off to a good start in Dublin during the thirties with the formation of the semi-military Baldonnel Club and the Volunteer Force Club, the movement was, so to speak, strangled at birth by the outbreak of World War II. As in Great Britain, 1946 saw a revival here, but after some three years of sporadic activity the Baldonnel Club wound up. Protracted negotiations with the Department of Defence finally resulted in the transfer of the Club's aircraft into civilian hands and thence into the possession of the present Dublin Gliding Club.

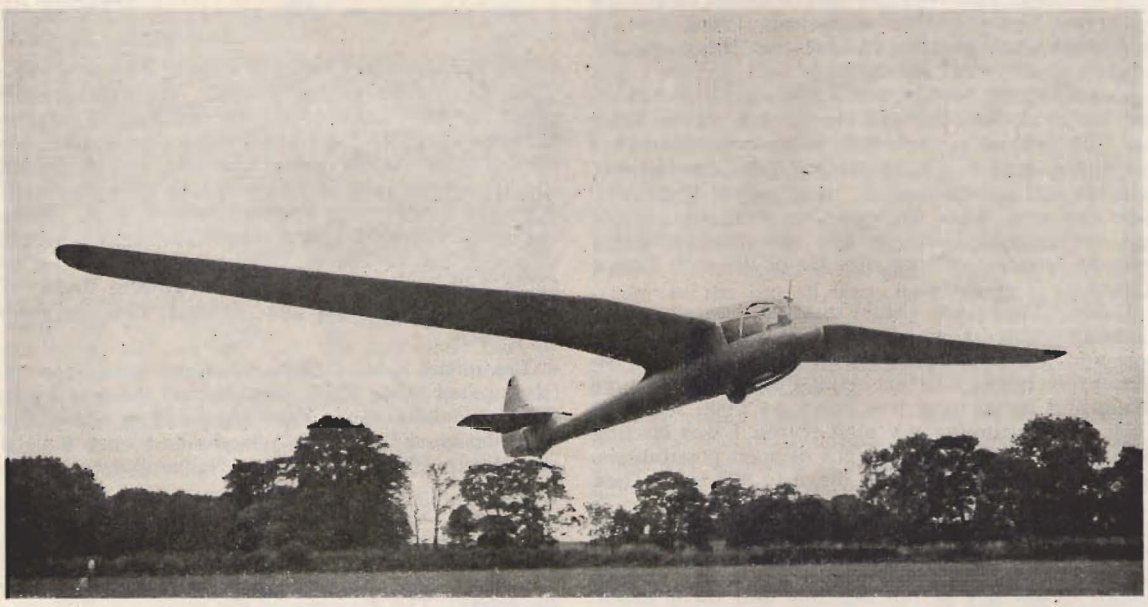
Elementary training commenced early this summer at Weston Aerodrome (by arrangement with Captain Kennedy), the trainer being an open ' Dickson Primary '—kept on a short tow-line in view of the wing section (Gottingen) with its uncomfortably high lift. Its last slide ended with a compound fracture of the port wing and, fortunately, an uninjured pupil. Repairs were delayed, so we cast about for a more modern trainer, and found a suitable ' Cadet ' with one of the Services Clubs convenient to London (i.e. Northolt). We expect to have this machine in the air by the time of publication. The old ' Dickson ' will then go into honourable retirement on a tripod.

The precious ' G.B. II ' has not been flown by us as yet, nor will it be until our ' C ' men have had refresher courses with a craft somewhat lower on the performance scale. A pair of ' Tutor ' wings is here indicated as the next step !

A member's rebuilt ' Scud ' will shortly take its place in the hangar, while we are on the trail of a crated ' Dagling Primary ' with wings in kit form which, we hope, will provide some indoor work during the winter. Indoor activity, so far has consisted of a series of lectures on Meteorology and Theory of Flight, with a selection of films on both subjects.

Members holding British ' C ' Certificates are, K. Mellor (Instructor), J. Simmonds (Met. man) and J. Quinn. There are also five holders of British ' A ' licences. The position with regard to the issue of certificates in this country has not yet been formalised. We are at the disadvantage of having to break new ground with gliding here, and feel somewhat of an Orphan Club, lacking a parent body like the B.G.A. The B.G.A., it should be mentioned, has been most helpful in many ways, as has also been the Bristol Club. We take this opportunity of thanking them both.

SLINGSBY 'GULL II'



Slingsby ' Gull II ' High Performance Two Seater, Airborne on Test Flight at Kirbymoorside, July 1952

Letter to the Editor

GENTLEMEN,

Many thanks for replacing the July issue of *Sailplane* which I had lost. As usual I found it to be filled with articles and items of interest of not only local but of International interest. I find it the one regular and authoritative source of world soaring activities.

Am looking forward to reading your first-hand reports on the contests in Spain. It may interest you to know that during the entire contest and after it, I was unable to find anything about them in any of the New York newspapers. It's a rotten shame that the U.S. public is so disinterested or uninformed on soaring, that newspaper Editors do not see their way clear to allot even a small amount of space to an event in U.S. aviation history which I sincerely hope and believe, will do a great deal of good toward promoting inter-continental relations.

Hearty congratulations to Phillip Wills and Jock Forbes for their splendid effort at Madrid. Since it wasn't in the cards for the U.S. Champion to make his bid, I am extremely pleased that the British gentlemen so distinguished themselves. A pat on the back too goes to Sling for the great success shown by the ' Sky,' a truly remarkable performer against the finest the world could offer.

I await the August *Sailplane* to find out how the contest went. As yet the only reports to hand at this date are the placings of the first 6 contestants in single and two-place.

I trust your excellent magazine will continue to carry graphic details of contests, with your usual flair for including personalised accounts by the pilots of particularly interesting or outstanding flights.—**James A. Carr, 51 White Street, New York 13, New York.**

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1st PLACE and 7 PLACES IN FIRST 14

IN WORLD CHAMPIONSHIPS

MADRID 1952

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'TUTOR.'—Blue and Cream finish. Current C. of A. Efficient windscreen. Wheel. A.S.I. and Sensitive altimeter. Excellent machine.—£160.

'CADET.'—Yellow and Silver finish. Current C. of A. Wheel. A really good machine—£90.

Hereford Gliding Club, 20/21, Newmarket St., Hereford.

Sailplane Instruments. A.S.I. (Smiths). Altimeter (Kolsman). T.B.I. (Pullin Type R.S. 12). Variometer (Cobb-Slater). All as new. £12. Would separate. Also Electric A.H. with converter. £8.—Box 282, Sailplane.

WANTED

Fuess barograph required. Please state condition and price. Priestley, 24, Branksome Close, Norwich, Norfolk.

'H.17' Starboard Wing—Alternatively prepared to sell 'H.17' Longmoor, Room 51, Croydon Airport. CRO: 7744.

BENALLA TO TOOTOOL

—*continued from page* 19

I studied the map, but could not decide how far I had come.

I set off for a farm about half a mile away. A car came up loaded with a party of men who had been shooting and looked for all the world like the Martins and the Coys come down from the hills. I was given a very hearty reception by the people at the farm-house. That night Jim Barton and Owen Lewis came up in my own car with the trailer to retrieve me and we were back in Benalla by noon the next day.

I do not mind admitting that I was quite surprised to hear where I was after landing, really not having a clue. But I think that I may be excused, as you can see from the text of this account that I did not get a chance to do any real map reading and my speed averaged very much better than I had expected. The actual ground speed of 26 m.p.h. was far greater than the figure of 16 m.p.h. computed by the experts.

I believe that I was unfortunate to have to land when I did and had I not been let down, could easily have made Narrandera. At no time during the last portion of the flight did I have any doubt that I would complete my five hours and I could hardly believe it when I suddenly found myself running out of air.—*Australian Gliding.*

ROYAL AERO CLUB CERTIFICATES

(Issued under delegation, by the B.G.A.) **JULY, 1952**

CERTIFICATES—"A" .. 212 (14946-15157)
"B" .. 205
"C" .. 54
Silver "C" 6
Gold "C" —
"B" CERTIFICATES

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken.*
3183	S. D. Rosenbaum	Imperial Coll.	26. 6.52
3456	D. R. Carr	No. 44 G.S.	29. 6.52
5387	P. J. Salmon	No. 102 G.S.	29. 6.52
6057	G. Walsh	Thornhill G.C.S.R.	25. 5.52
6401	P. D. Mountain	Thornhill G.C.S.R.	25. 5.52
6999	J. G. Yarwood	Thornhill G.C.S.R.	25. 5.52
7521	F. F. Clarkson	No. 87 G.S.	18. 5.52
9067	P. R. Hancock	London G.C.	21. 6.52
9982	A. E. Bush	Thornhill G.C.S.R.	25. 5.52
10953	Eileen F. Tylee	Surrey G.C.	12. 7.52
11369	P. M. Warren	No. 104 G.S.	28. 6.52
11817	J. A. Gubbins	No. -89 G.S.	14. 6.52
12740	C. Drever	No. 2. G.S.	17. 7.52
13348.	T. W. Chaney	Bristol G.C.	25. 6.52
13409	I. Grant	No. 2 G.S.	17. 7.52
13500	J. A. Douglas	Bristol G.C.	17. 7.52
13590	J. Crosbie	No. 87 G.S.	24. 2.52
13838	A. J. Boyes	No. 104 G.S.	16. 2.52
13989	H. D. Scarborough	No. 22 G.S.	29. 6.52
14022	G. Raynor	No. 183 G.S.	20. 7.52
14032	J. R. Fawcett	No. 106 G.S.	22. 6.52
14034	J. Airey	No. 183 G.S.	29. 6.52
14117	D. R. Matthews	No. 87 G.S.	18. 5.52
14118	K. E. Davy	No. 87 G.S.	27. 4.52
14212	N. Ballantyne	No. 2 G.S.	17. 5.52
14403	C. P. Moore	H.C.G.I.S.	20. 6.52
14480	G. A. E. Feun	No. 83 G.S.	20. 7.52
14533	D. G. T. Hyde	Handley Page G.C.	15. 6.52
14560	M. J. Oates	No. 84 G.S.	20. 7.52
14637	P. A. Roberts	No. 161 G.S.	28. 6.52
14638	F. J. Boden	No. 84 G.S.	20. 7.52
14789	J. E. Lowe	No. 143 G.S.	27. 7.52
14806	D. B. Green	No. 143 G.S.	26. 7.52
14856	L. B. Davis	No. 82 G.S.	22. 6.52
14934	B. J. Tonkinson	No. 44 G.S.	22. 6.52
14936	F. A. Powell	No. 44 G.S.	22. 6.52
14937	C. P. Davies	No. 44 G.S.	22. 6.52
14946	W. D. Guild	No. 2 G.S.	15. 6.52
14947	M. Hackney	No. 2 G.S.	15. 6.52
14948	J. Morton	No. 1 G.S.	4. 5.52
14949	M. A. Ayres	Oxford G.C.	22. 6.52
14950	D. G. Barnes	No. 183 G.S.	29. 6.52
14951	P. G. Gilbert	No. 105 G.S.	28. 6.52
14959	A. Wilson	No. 1 G.S.	8. 6.52
14961	J. M. Franks	No. 123 G.S.	22. 6.52
14962	A. W. Glen	No. 2 G.S.	25. 5.52
14963	D. C. Hazelwood	No. 105 G.S.	29. 6.52
14964	C. F. Knollys	Bristol G.C.	26. 6.52
14965	R. P. Mander	London G.C.	19. 6.52
14966	G. D. Scott	Bristol G.C.	27. 6.52
14967	R. N. Smith	No. 105 G.S.	22. 6.52
14968	D. G. Rawe	No. 146 G.S.	22. 6.52
14969	K. Routledge	No. 188 G.S.	23. 3.52
14970	A. Hardman	No. 188 G.S.	23' 3.52
14971	A. T. Bell	No. 188 G.S.	23. 3.52
14972	C. Hubbold	No. 188 G.S.	23. 3.52
14973	J. McNichol	No. 188 G.S.	23. 3.52
14974	R. Knight	No. 188 G.S.	23. 3.52
14975	R. C. Jordan	No. 49 G.S.	8. 6.52
14976	J. P. Williams	No. 89 G.S.	24. 4.52
14977	F. J. Valerio	No. 89 G.S.	23. 4.52
14978	R. E. West	No. 89 G.S.	25. 4.52
14979	M. Shaw	No. 89 G.S.	26. 4.52
14980	J. E. Treagus	No. 89 G.S.	22. 4.52
14981	R. E. Tate	No. 125 G.S.	24. 5.52
14982	J. G. Greenslade	No. 125 G.S.	31. 5.52
14983	E. D. Perschky	No. 125 G.S.	31. 5.52
14984	M. Lazarus	No. 22 G.S.	29. 6.52
14985	G. A. Woods	No. 4 G.S.	11. 3.51
14989	G. Januiuk	Oxford G.C.	11. 5.52
14990	E. F. Thornicroft	Moonrakers G.C.	11. 6.52
14991	L. B. Binnie	No. 123 G.S.	14. 6.52
14992	R. P. Baylie	Bristol G.C.	24. 6.52
14993	D. Cook	No. 49 G.S.	8. 6.52
14994	G. H. G. Stancliffe	No. 23 G.S.	29. 6.52
14995	J. L. Tudman	No. 141 G.S.	25. 5.52
14996	A. W. Wicking	No. 146 G.S.	22. 6.52

'B' CERTIFICATES—*cont.*

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken*
14998	S. S. Dixon	Bristol G.C.	25. 6.52
15001	B. T. Houssart	No. 146 G.S.	22. 6.52
15002	R. H. Gales	Oxford G.C.	6. 7.52
15003	F. J. B. Mitchell	No. 82 G.S.	22. 6.52
15004	A. G. Robertson	No. 2 G.S.	6. 7.52
15005	G. C. Stewart	No. 2 G.S.	5. 7.52
15008	A. A. Wickham	No. 2 G.S.	3. 7.52
15011	R. C. Baldock	No. 168 G.S.	29. 5.52
15012	L. R. O. Storey	Cambridge U.G.C.	27. 5.51
15013	P. C. S. Baston	No. 92 G.S.	28. 6.52
15014	M. O. Pearse	No. 126 G.S.	6. 7.52
15015	B. C. Robinson	No. 130 G.S.	24. 5.52
15017	J. W. Reilly	H.C.G.I.S.	21. 5.52
15018	L. G. Rodwell	No. 166 G.S.	28. 5.52
15019	E. J. Paul	No. 89 G.S.	18. 5.52
15020	B. Fanning	No. 2 G.S.	6. 7.52
15021	A. R. Jary	No. 166 G.S.	18. 5.52
15022	G. G. Rouse	No. 130 G.S.	25. 5.52
15024	H. A. Haarhoff	H.C.G.I.	17. 5.52
15025	B. G. Randall	No. 89 G.S.	14. 6.52
15026	A. R. Watson	Portsmouth N.G.S.	26. 6.52
15027	D. L. Parsons	Cranwell G.C.	18. 5.52
15028	D. Thom	No. 2 G.S.	6. 7.52
15029	W. Green	No. 2 G.S.	6. 7.52
15030	J. Mulholland	No. 2 G.S.	9. 9.51
15031	A. W. J. Baker	Bristol G.C.	31. 8.51
15032	J. N. Clacy	No. 130 G.S.	18. 5.52
15033	C. H. Ford	No. 188 G.S.	23. 3.52
15034	M. E. Griffin	No. 92 G.S.	6. 7.52
15035	T. V. Jennings	No. 89 G.S.	18. 4.52
15036	P. E. Keys	No. 141 G.S.	25. 5.52
15037	J. R. McMillan	No. 2. G.S.	5. 7.52
15038	A. R. Mills	No. 87 G.S.	25. 5.52
15039	K. Shearin	No. 2. G.S.	25. 5.52
15044	H. M. Dingwall	Fassberg G.C.	30. 4.50
15045	M. E. Timmis	Fassberg G.C.	9. 2.52
15046	G. A. Nowell	No. 92 G.S.	29. 6.52
15047	I. T. N. Stamp	No. 168 G.S.	22. 6.52
15048	B. P. Brindle	No. 130 G.S.	25. 5.52
15049	J. P. Corrigan	No. 89 G.S.	15. 6.52
15053	A. D. Robertson	H.C.G.I.S.	16. 4.52
15054	P. R. Geissler	H.C.G.I.S.	16. 4.52
15055	S. F. McLaren	H.C.G.I.S.	16. 4.52
15056	D. L. Peden	H.C.G.I.S.	16. 4.52
15057	A. C. S. Jempson	No. 168 G.S.	6. 6.52
15058	J. N. King	Bristol G.C.	11. 7.52
15059	P. G. Robinson	No. 168 G.S.	29. 5.52
15060	A. G. P. Vaughan	Bristol G.C.	8. 7.52
15061	D. E. Nicholls	No. 168 G.C.	25. 5.52
15062	L. Bellamy	No. 24 G.S.	22. 6.52
15063	A. J. Eassom	No. 166 G.S.	25. 6.52
15064	H. B. Edginton	No. 130 G.S.	14. 6.52
15065	J. W. Stafford	Bristol G.C.	10. 7.52
15066	G. H. Worsley	Old Sarum G. & S.C.	29. 6.52
15067	K. W. Siddall	No. 24 G.S.	8. 6.52
15068	T. L. Lecky-Thompson	No. 130 G.S.	20. 4.52
15069	M. Wright	No. 168 G.S.	29. 5.52
15070	E. W. Harvey	No. 48 G.S.	4. 6.52
15071	W. Banach	Lahore G.C.	20. 5.52
15072	M. Akbar	Lahore G.C.	24. 5.52
15073	A. Himayat	Lahore G.C.	25. 5.52
15074	D. Frazer	Lahore G.C.	25. 5.52
15075	M. Saleem	Lahore G.C.	20. 5.52
15076	M. Amin	Lahore G.C.	16. 5.52
15077	R. Irani	Lahore G.C.	25. 5.52
15078	M. Hussain	Lahore G.C.	23. 5.52
15079	R. Jebb	Lahore G.C.	20. 5.52
15080	J. D. McElwain	No. 123 G.S.	21. 5.52
15081	G. C. M. Byrd	No. 44 G.S.	22. 6.52
15082	R. Grant	No. 2 G.S.	18. 5.52
15083	G. N. Hawkes	Bristol G.C.	18. 7.52
15084	R. Hunter	Bristol G.C.	18. 7.52
15085	M. Thurner	No. 44 G.S.	22. 6.52
15086	M. L. Townsend	Thornhill G.C.S.R.	25. 5.52
15087	C. Ellam	R.A.E. Tech. Coll.	14. 7.52
15089	E. F. Edwards	Thornhill G.C.S.R.	24. 5.52
15090	D. W. Hills	Thornhill G.C.S.R.	13. 7.52
15092	F. P. Jukes	Thornhill G.C.S.R.	25. 5.52
15093	E. Walker	Thornhill G.C.S.R.	25. 5.52
15094	Valerie K. Redhouse	Surrey G.C.	22. 4.51
15095	A. W. Rich	Wahn G.C.	27. 4.52
15096	J. E. Burrin	No. 168 G.S.	6. 7.52
15097	B. E. Barham	No. 166 G.S.	6. 7.52
15098	R. Felstead	No. 168 G.S.	29. 5.52
15099	A. Swire	Army G.C.	11. 7.52
15106	B. Plummer	Hameln G.C.	2. 2.52
15107	D. E. Beeswing	R.A.E. Tech. Coll.	15. 7.52
15108	J. E. Curtis	Bristoo G.C.	8. 7.52
15109	A. E. A. Dudman	Coll. of Aeronautics	28. 6.52
15110	R. H. Leaf	R. Engineers G.C.	17. 6.52
15111	F. G. E. Ray	No. 104 G.S.	20. 7.52
15112	P. J. Sullivan	Oxford G.C.	31. 5.52
15113	R. C. Anderson	No. 123 G.S.	14. 6.52
15114	M. P. Challis	No. 44 G.S.	8. 6.52
15115	S. M. Hobbs	No. 92 G.S.	29. 6.52
15116	R. R. Powers	No. 166 G.S.	20. 7.52

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'B' CERTIFICATES—*cont.*

No.	*Name.*	*A.T.C. School or Gliding Club.*	*Date taken*
15118	E. J. Gilden	No. 166 G.S.	9. 7.52
15119	D. J. S. Burn	No. 161 G.S.	20. 7.52
15121	M. Coxon	R.A.E Tech. Coll.	19. 7.52
15122	J. W. Addington	R.A.E. Tech. Coll.	17. 7.52
15123	T. V. Burt	Gutersloh G.C.	18. 6.50
15124	J. T. Johns	No. 105 G.S.	20. 7.52
15125	W. D. Monteith	R.A.E Tech. Coll.	19. 7.52
15126	D. F. G. Nichols	Midland G.C.	25. 7.52
15127	L. Pritchard	No. 166 G.S.	27. 4.52
15128	M. J. Steer	No. 166 G.S.	25. 6.52
15129	J. I. Dodds	Scottish G.U.	11. 7.52
15130	J. Goddard	R.A.E. Tech. Coll.	12. 7.52
15132	A. D. Harvey	R.A.E. Tech. Coll.	12. 7.52
15135	J. K. Hughes	R.A.E. Tech. Coll.	9. 7.52
15139	P. R. W. Bush	Midland G.C.	25. 7.52
15140	J. E. Farbridge	R.A.E. Tech. Coll.	23. 7.52
15141	R. E. C Forbes	No. 2. G.S.	23. 7.52
15142	D. J. Nosworthy	R.A.E Tech. Coll.	14. 7.22
15144	A. B. Noyle	No. 68 G.S.	27. 7.52
15145	J. J. Parker	No. 126 G.S.	6. 7.52
15146	D. J. White	Midland G.C.	26. 7.52
15147	T. Coldwell	R.A.E. Tech. Coll.	12. 7.52
15148	J. Robertson	Moonrakers G.S.A.	27. 7.52
15149	P. W. Corner	Moonrakers G.S.A.	27. 7.52
15150	G. A. Arger	Moonrakers G.S.A.	25. 7.52
15151	G. W. S. Smith	Luneberg G.C.	2.12.51
15152	J. Knowles	No. 2 G.S.	23. 7.52
15153	G. Rivard	No. 2 G.S.	24. 7.52
15154	G. E. Royle	Gannet G.C.	27. 7.52
15155	R. Young	No. 2. G.S.	24. 7.52
15156	J. G. M. Fox	No. 125 G.S.	22. 4.51
15157	M. E. Gardiner	Celle G.C.	14. 5.52

"C" CERTIFICATES

2546	R. R. Page	No. 104 G.S.	29. 6.52
3725	P. J. R. Reading	No. 126 G.S.	29. 6.52
3846	J. E. Talbot	Coll. of Aeronautics	10. 7.52
7757	P. J. Woosnam	Surrey G.C.	29. 6.52
9067	P. R. Hancock	London G.C.	12. 7.52
9852	L. G. Leech	Fassberg G.C.	25. 5.52
10431	L. Goodwin	Bristol G.C.	27. 5.52
10471	D. Collinson	Newcastle G.C.	29. 4.51
10613	J. E. Macdonald	Midland G.C.	10. 7.52
11297	C. Campbell	H.C.G.I.S.	24. 7.52
11632	Gladys Delme-Radcliffe	Perak F.C.	30. 7.50
11633	P. A. Delme-Radcliffe	Perak F.C.	11. 5.52
11678	L. W. Dowdall	No. 126 G.S.	29. 6.52
12109	J. Findlater	Scampton G. C.	27. 7.52
12327	D. A. Sharp	Coll. of Aeronautics	10. 7.52
12441	R. L. Stephen	Scottish G.U.	29. 6.52
12555	J. D. Kape	No. 126 G.S.	6. 7.52
12855	M. J. Silver	No. 102 G.S.	29. 6.52
12972	M. Scott	No. 31 G.S.	13. 5.52
13166	Joy F. D. Mills	Bristol G.C.	3. 6.52
13189	R. Munns	No. 105 G.S.	8. 6.52
13191	Gwendolen Fountain	Coll. of Aeronautics	14. 7.52
13479	J. W. Cockburn	No. 2. G.S.	25. 5.52
13559	J. E. Talbot	No 126 G S	29 6 52
13560	R. S. Colenso	Bristol G C	15 4.52
14068	L. A. Alder	No. 104 G.S.	29. 6.52
14097	R. S. Howell	R.A.E. Tech. Coll.	7. 7.52
14263	S. J. R. Herbert	Oxford G.C.	26. 6.52
14274	L. C. Mills	No. 168 G.S.	8. 6.52
14359	R. W. W. Smith	R.E.F.C.	29. 6.52
14488	Jean R. Wright	Coll. of Aeronautics	12. 7.52
14499	C. G. Burden	Wahnerheide G.C.	26. 4.52
14503	J. Adair	Army G.C.	4. 6.52
14531	D. Johns	No. 125 G.S.	28. 6.52
14575	G. C. Price	Cambridge U.G.C.	25. 7.52
14601	R. W. Robertson	No. 1 G.S.	30. 6.52
14625	C. T. Jones	Cambridge U.G.C.	25. 7.52
14777	L. H. Plummer	Army G.C.	27. 6.52
14985	G. A. Woods	H.C.G.I.S.	24. 7.52
14990	E. F. Thornicroft	Moonrakers G.S.A.	11. 6.52
15012	L. R. O. Storey	Cambridge U.G.C.	16. 9.51
15017	J. W. Reilly	H.C.G.I.S.	22. 5.52
15044	H. M. Dingwall	Fassberg G.C.	3. 6.50
15045	M. E. Timmis	Fassberg G.C.	6. 4.52
15071	W. Banach	Lahore G.C.	27. 5.52
15078	M. Hussain	Lahore G.C.	25. 5.52
15079	R. Jebb	Lahore G.C.	26. 5.52
15095	A. W. Rich	Wahn G.C.	29. 6.52
15106	B. Plummer	Hameln G.C.	14. 6.52
15109	A. E. A. Dudman	Coll. of Aeronautics	11. 7.52
15123	T. V. Burt	Gutersloh G.C.	13. 1.51
15151	G. W. S. Smith	Luneberg G.C.	28. 6.52
15156	J. G. M. Fox	No. 125 G.S.	20. 4.52
15157	M. E. Gardiner	Celle G.C.	13. 7.52

SILVER "C"

385	R. E. Travell	London G.C.	26. 4.52
386	A. A. McDougall	Cambridge U.G.C.	22. 6.52
387	A. G. Oram	Imperial Coll.	5. 7.52
388	P. C. Austin	Fassberg G.C.	28. 6.52
389	H. M. Dingwall	Fassberg G.C.	5. 6.52
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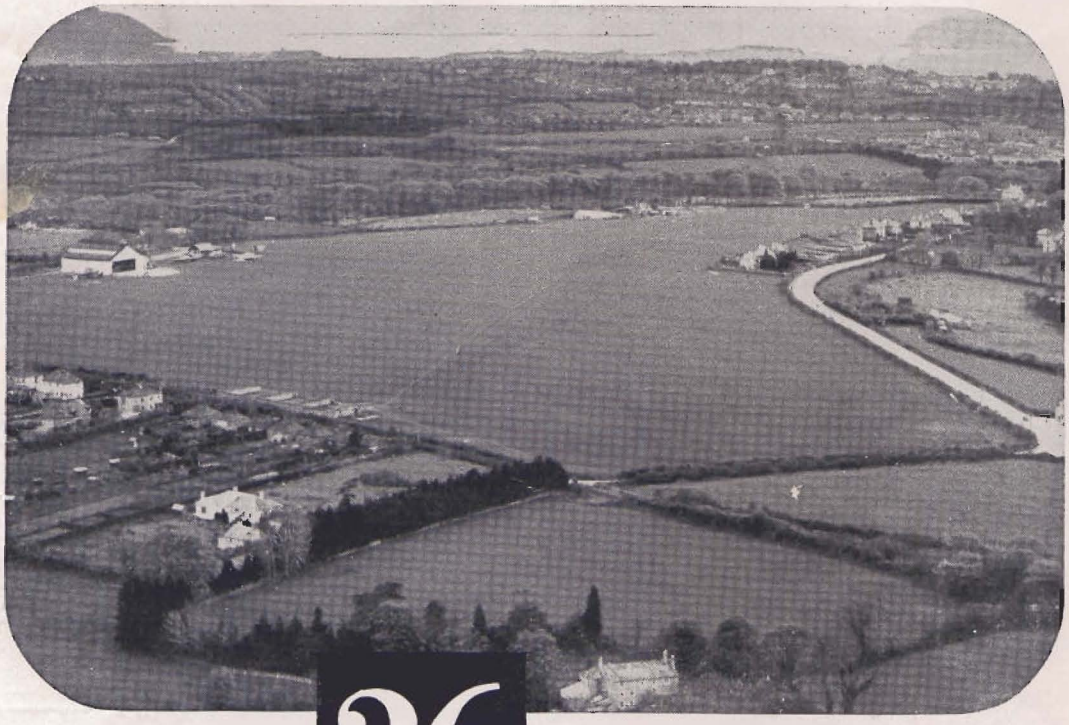
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