SAILPLANE & GLIDING

December 1969 — January 1970 4s 6d



A Christmas Message from the Chairman

SO here we go rocketting into the '70s. What will our sport be like in 1980? When I made my first flight in a glider way back in 1956, the hot ships had a glide ratio of 1:25 and I was assured that 1:30 was the best that could ever be achieved. "But one day" I said "don't you think it *might* be 1:50?". And they guffawed.

Nimbus, Sigma, variable geometry, carbon-fibre, long-chain polymer—dare we suggest 1:70 by 1980?

Of course, the hot ships are expensive, but the cooking versions follow in the end and gliders which stay up give more flying time and more fun for everyone.

The phoenicious return of Slingsby Sailplanes to the glider construction scene, with new and solid industrial backing; the resumption of the Sigma Project at full bore, the British carbon-fibre breakthrough—all are pointers to a progressive decade in British gliding. Motor gliders have also burst in upon us and look like catching on, in spite of olde worlde purists like me for whom the convenience somehow doesn't quite adequately offset the noise and the smell and the vibration.

But enough good gliders to fly is not the only problem. There must be enough sky to fly in, and enough ground space to get launched from. On Air Space, the British Gliding Association fights a continuous war on behalf of every glider pilot in this country. Sites remain the biggest current bottle-neck, but we struggle on manfully, and some new ones are beginning to unfold.

Our Five-Year Development Plan seems to hold good prospects of new Government support for gliding, both moral and financial.

Meanwhile we have to find the money to get our team out to Marfa, Texas, for what promises to be a pretty tough and exacting World Championship.

If your pocket is too heavily laden with those monstrous heptagonal jobs, you know what to do about it, and provided we can get the necessary funds for them to go, we can sit back and wish our World Competition pilots all good luck and every success. Being basically a man of goodwill, I wish the same thing to every reader of SAILPLANE & GLIDING, and, come to that, every other man and woman of goodwill anywhere in the world—for is this not the season for it—the very apogee of goodwill.

Merry Christmas & Happy New Year to One and All



SAILPLANE & GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

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CONTENTS

The Kestrel Revisited	E. Byars	451
Firle Reunion	J. Partington	455
Winning	G. B. Moffat	456
The First Channel Crossing	A. E. Slater	460
Thirty Years Ago	A. E. Slater	462
Kronfeld Diary		464
Aviation Art Society		464
New Swiss Sailplanes		466
Future Events		467
Slingsby Sailplanes Ltd.		469
Future Flying on Fur and Feathers?	J. Reder	470
Wycombe Regionals	Angela Smith	473
But Certainly, You're the Customer!	Rhoda Partridge	477
Ardrox "Shield"	R. Stafford Allen	478
Bicester Regionals		479
Gliding Certificates		481
My 917 km. Goal Flight	A. H. Parker	482
Thank You Nick	P. A. Wills	485
The Reading Motor Glider	G. R. Whitfield	486
1970 Soaring Symposia		489
Motor Glider News	Ann Welch	490
New Motor Gliders		491
BGA News		493
Prodigal's Return	"Dunstablighter"	496
GAPAN Award	J. E. G. Harwood	497
Last Nationals on the Wasserkuppe	C. Wills	498
Flying and Instructing	R. A. Neaves	502
Tailpieces		503
National Entry List for 1970		504
Unjustified Medical Restrictions	P. J. C. Chapman, P. Weishaupt	505
Fifth Flight	T. Jenkins	507
Forty Years Back—The Gliding Lunch	T. James	508
Obituary: R. J. L. Wills, CBE, MC	A. E. Slater	512
Correspondence	J. Thurlow, C. Riddell, Vera Wates, A. Abbs, D. Morrell P. Warren	512
Crossword	G. Camp	519
Club News		520
Service News		530
Overseas News		531

Cover Photograph: Glider Valley Dry Lake—home of the Nevada Soaring Association showing Mt. Peavine (approx. 10,000 ft. asl). The day after this photo was taken several flights of over 30,000 ft. were made. *Photo by K. W. Nielsen*

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Vickers Limited are pleased to announce that they have completed negotiations with the Receiver of Slingsby Aircraft for the purchase of the aircraft factory, and the entire factory premises at Kirkbymoorside.

A new Company, Slingsby Sailplanes Limited, has been formed and will be part of the Vickers Group. It will concentrate principally on the design and development of sailplanes, continuing the business previously carried out by Slingsby Aircraft Company.

An Agreement is being negotiated by Slingsby Sailplanes with the Glasflügel Company of Schlattstall, Germany, for the production by Slingsby Sailplanes of the glass-fibre Kestrel, high-performance sailplane, and in addition Slingsby's will act as Agents in the U.K. for other aircraft and products produced by Glasflügel.

Slingsby Sailplanes will continue to maintain a spares and repairs service in support of aircraft produced in the past by Slingsby Aircraft, and are engaged in re-establishing the production of the T.53 two-seater sailplane.

THE KESTREL REVISITED

By ED BYARS

IN August, 1968, I flew the Kestrel prototype in Germany and as a result published an article in November, 1968, *Soaring* about the ship. Recently I have been asked if I had any additional thoughts on the ship, now that I have had and flown a production model for a few months.

First I must say that I suffered an agonizing wait. I lived through the unkept delivery promises and the price increases. I spent hundreds of dollars calling Germany weekly and Ben Greene (my fellow sufferer) daily. We finally had to air-freight the ships over to assure having them for Marfa. This proved to be a delightful way to get the ship quickly with no damage and was almost worth the few hundred extra dollars. Ben and I did, however, almost have heart failure watching them unload the Kestrels from the DC-8 with fork lifts. Glasflügel supervised loading at Stuttgart and we "supervised" unloading at Kennedy—no clumsy long-shore men around to screw up the deal.

After getting the ship instrumented, licensed, etc., I test-flew it only three hours before leaving for Marfa, and after practising three days at Marfa had fifteen hours on the ship when the contest started. I was a little apprehensive since I had never landed the ship off an airport. As it turned out, I flew the whole contest and still never landed off an airport. It just happened that way. I flew 2,454 miles cross-country in the contest and logged 50 odd hours. I felt, of course, as if I knew the ship a lot better after that gruelling contest. I felt extremely lucky to finish 16th with such unbelievably tough competition. I finished all speed tasks and flew my guts out on all distance tasks and did not get shot down prematurely. In one sense I had no real spectacular days (900+ points) but made no bad mistakes (*any* mistake was a bad one at Marfa). In another sense, for me at least, I put together eight of the most spectacular flights of my life, just to more or less hold my position and to keep from dropping off the first page into oblivion. It was that kind of contest.

Of course, like many others, I'll be studying the final scores all winter. Would you believe the Australian Rowe (pleasant chap—curse him) and I were in an absolute dead-heat at 5,556 points after seven days and he beat me by three lousy points on the last day? I finished several hundred feet too high that day and I'll be kicking myself all winter realizing that *one* measly circle too many on that last leg cost me a place. Twenty-three (out of over 6,000) points more would have beaten Bert Meyer and Bomber Jackson and put me up three places. These 23 points were thrown away when I opened air brakes, gave up 1,000 feet and landed at Marfa Municipal on the



The Kestrel (Photo: Anne Ince)

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Cat's Cradle seventh day, instead of landing in the boonies 8½ miles further with George Squillario. We play these silly little "if I had only" games all winter. What I should be saying to myself is "Thank goodness I blundered north on free distance day instead of east." I'm the first to admit I made a hunch decision. A reasonable decision would have turned me east and cost me several hundred points, giving me a bad case of "page-twoitis". Bless the kind scorer who uses legal size paper and single spaces.

* * *

Back to my thoughts on the Kestrel. I would not trade my Kestrel for any sailplane flying today. After such a strong pro statement I'll make a few negative comments. I must quickly add that I am not 100% pleased with it. The production model doesn't handle as well as the prototype. I wish the wings were not quite so heavy. I wish the factory had not stuck me with a price increase. I wish they had delivered when promised. I wish they had made the battery box and oxygen cradle big enough as requested. I wish the instrument panel were big enough to work a Bayside Radio into easily. I wish they had sent the paper work on schedule as promised, etc., etc. Actually, these negative comments are all relative and are typical of the problems all new sailplane owners endure. What's really important is the fact that it is easy to handle on the ground (assembly is a snap) and in the air, it climbs good, and it goes good. It handles as good as any ship (which is really excellent). So what if handling is slightly less than the spectacular-handling prototype!

Some say that it won't climb as well as it should or as well as some others. I honestly feel that it will climb as well as any sailplane, period! Strong statement, yes, but not made without much thought. Of course, there were several pilots who outclimbed me fairly consistently. For example, George Squillario, Graham Thompson and Bud Mears had the edge on me in Libelles. Their techniques seem flawless. George and Graham are experienced Libelle pilots, but Bud had less time on his new ship than I did. He's just that good! I did not honestly feel, however, that their rate of sink in thermalling flight was less.

I climbed with many good Cirrus, Diamant and Phoebus pilots and felt they had absolutely no edge in equipment. It seems I outclimbed as much as I was outclimbed. I never was aware of who was carrying water and who wasn't. I would be real pressed to tell the difference in the Kestrel climb with and without water. The roll rate suffers somewhat, of course, but not really objectionably. The factory says it's very, very important to get and keep a good seal around the large canopy to assure good performance. Boloney! I usually crack the canopy a half inch or more for ventilation when thermalling low in hot weather. I honestly can't tell the difference. In summary, concerning climb I think it's 90% pilot ability and 10% sailplane when you are discussing the top dozen ship types.

How does it go at inter-thermal speeds? Just like all the other top ships up to about 80 knots. Above about this speed I feel the Kestrel has an edge on the Libelle 301, any model Phoebus, and on the Diamant (but slightly less so). It seems to be the same as the Cirrus; the BJ-4 and ASW-12 are somewhat better.

Why then would I not be just as happy with, say, a Cirrus? If I attached more importance to the tremendous cockpit and comfort of the Cirrus and were not so conscious of the wing weight, I might be as happy with the Cirrus. Ease of assembly is superior on the Kestrel. It beats anything except the Libelles, and this is very important to me.

Why not a Libelle then? I like the larger cockpit, ballast provision, and the

performance edge at high speed.

Why would I not swap it for an ASW-12? I think Wally Scott covered that pretty well in the August issue of *Soaring* in discussing the landing problem. Incidentally, the Kestrel landing flaps (40°), air brakes, and landing chute are all very delightful. I don't share the fear of chutes that some pilots have. I agree their reliability should not be treated lightly. I figure with careful practice and technique with flaps and airbrakes there may be one chance in, say, 100 when I may really need the chute to prevent serious damage. And with careful maintenance, packing, etc., the chance of malfunction is maybe no greater than 1 in 1,000. This looks then like about 1 chance in 100,000 or better, and I'm willing to live with those odds (that's several life-times of outlandings!)

Incidentally, I was not overly impressed with the performance of any of the Standard Class ships at Marfa. I realize there is no reason why I should have been, because it means little to compare any Standard Class ship with anything but another Standard Class.

The workmanship, inside detail, surface finish, etc., are beautiful on the Kestrel—much better than most I've seen and none better. Same goes for the factory trailer. Just great—90 mph. all day—no sweat. Light, easy to handle, etc.,—almost as good as Ben Greene's and that's a real compliment.

In summary, let me emphasize that my statements are general non-dogmatic impressions and I agree with George Moffat when he said that all of the top class ships are pretty much in the same bag, performance-wise, in the air. All handle well and are comforable, so that's why I'm so hung-up on how easy it goes together and how much the wing root (that I must pick up) weighs!

The cost of my Kestrel and trailer in New York everything paid but *no* instruments was $11,513.14.

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FIRLE REUNION

By JASPER PARTINGTON

ON September 28th, 1969, at Firle Beacon, the Southdown Gliding Club's site on the Itford-Firle ridge where the first British gliding contest was held in 1922, the club entertained a number of notable figures who were active in the earlier days of British gliding, including some who had competed in 1922. All were given rides in the club's K-13 and, after that, tea in the new clubhouse.

One of the 1922 pilots, John Jeyes, who had entered the contest with a German Aachen monoplane, showed a telegram dated October 9th, 1922: "To Jeyes, 38 The Crescent, Northampton. Machine arrived today British Amsterdam Maritime Agency, 150 Fenchurch Street, EC3. Require document for reparations tax purposes. Suggest imperative you personally attend in London. Handley Page." With a whole week to go before the meeting started, John Jeyes was well prepared by 1922 standards.

Many of the 36 final entrants who got to Itford designed and built their own aircraft in the eight weeks from the *Daily Mail's* announcement of the meeting to its opening on 16th October. Compared with today's complex aviation laws and regulations, the competition's rules make easy reading:—

"The competition is open to any heavier-than-air machine not provided with any motive power except that produced by the personal exertions of the occupants during flight, and which is not supported either wholly or in part by any gas which is lighter than air," says the official programme shown to Southdown members by Mr. Jeyes with his telegram.

No cross-countries allowed? "The alighting must take place within an area which will consist of a circle of a radius of approximately 800 yards measured from the official point of departure," states the rules.

Duration expectations were not excessive. The principal prize offered by the proprietors of the *Daily Mail* was £1,000 for the longest flight over 30 minutes. Lieut-Col. Alec Ogilvie put up £50 for the British competitor in a British machine who made the longest flight on the first day of the competition: minimum duration acceptable was 1 minute. Somewhat more sanguine, the Royal Aero Club demanded that if you wanted to be in with a chance for their fifty quid you had to stay aloft five minutes.

Remembering the brave north-easters of that competition, an afternoon of circuit-bashing seemed poor sport to offer veteran competitors. But W. Herman



(L-R): Charles Burge, John Jeyes, W. Herman Volk, "Steve" Stevens, C. H. Latimer-Needham, E. C. Gordon England, Sid Tidy, Philip Wills, "Squeege" Ashton, Les Allard, d'Arcy Greig, Clarence Winchester and John Furlong.
(Photo: Crain Duplicating)



Herman Volk in front seat.

Volk, who presented the Volk Cup to gliding, felt that a four-minute flight was quite enough for a man of 90. Another satisfied customer was Clarence Winchester, who in 1922 entered what the old official programme curtly describes only as a "biplane".

Though E. C. Gordon England later became chairman of the BGA, his circuit was his first gliding flight since the 1922 meeting when he fractured an ankle flying a monoplane designed by himself and built by his brother's firm.

Other guests at the reunion were better known for more recent contributions to British gliding.

C. H. Latimer-Needham became the first British C pilot at the 1930 meeting on the site. Philip Wills, BGA president, Charles Burge, founder of ATC gliding, Sqn. Ldr. John Furlong, Southdown club's president, and this magazine's editor, Doc Slater, brought the proceedings up to date.

Rounding off the afternoon's flying, tea in Southdown's new clubhouse triggered off many exciting stories. Members felt truly privileged to meet these "magnificent men" who brought a chapter of gliding's history alive in their midst.

WINNING

By GEORGE MOFFAT

ARRIVING in Marfa a week before the Nationals and looking at organizer Fritz Kahl's list of entries was a sobering experience. I had flown in larger contests—Poland had more entries; I had flown against practically all the serious pilots at one time or another—but never against so many top-rank pilots flying such outstanding ships.

A rough look at the entry list showed more than fifty pilots in late-model glass or metal gliders—a far cry from Poland where no more than twenty or thirty pilots out of 100 plus entered had sailplanes with a prayer of a chance of winning.

During the practice week I flew with relatively few other ships, since I was tied up with commitments to the Drew Associates soaring movie (to be released next spring). From what little comparison flying I did I decided that only Wally Scott in the ASW-12 had any real performance edge over my long-winged Cirrus B. Fortunately for my peace of mind I had little idea of how much of an edge Wally was to have. Of the other highly-rated ships, I thought the Kestrels poor in climb, especially in weak weather, and the fabulous BJ-4 too inflexible to be a good contest ship. The ASW-12, with its unreliable tail chute as the only drag device, seemed an airport-only sort of affair—the reason I had cancelled my order for one two years earlier. This turned out to be true and undoubtedly cost Wally the contest on the distance days. He never placed below 2nd on speed tasks.

The first contest day, a 262 mile triangle, proved easy and quick under an almost cloudless sky—until the final leg. I was lucky to get to 14,000 ft. at Fort Stockton and managed to stay high for most of the seemingly endless last leg into a 30 knot wind. About 30 miles out

I started a tentative final glide, needing about 30:1 to make it. Small patches of reduced sink brought the glide ratio needed down to 15:1 at 15 miles out. I pushed over to 110 mph. and more—and lost 4,500 ft. in 5 miles of seemingly endless sink. Finally, at 500 ft. in the mountains with 7 miles to go, I found a low ridge with lift that turned into a 500 fpm. thermal. No longer feeling the least bit brave, I climbed to what seemed a ridiculous height and came in at 11:1 in my 45:1 Cirrus, just comfortably making the finish line at 0 ft. to be first back at 64.8 mph. Wally eased in over the wires a bit later with 63.6 followed by 44 others with quite a bit slower times. Quite a few, notably Ben Greene, were forced down within sight of the finish by the same sink that had so nearly finished me.

The second day, a 240 mile triangle, proved a disaster from start to finish. I took a tentative start at about 13.40 to feel out the weather, not really planning to leave until about 14:15. Thermal strength was good at about 600 fpm. Returning, I started again at 14:10 but found only weak lift. My third start at 14:40 was little better, and it took until 15:05 to get high enough for a final lunge across the line. This time I was determined to take any thermal just in order to get going. Unfortunately, I encountered nothing, and soon found myself on the lower of the twin mountains' isolated ridges facing a 30+ knot SW wind, sinking rapidly. At 500 ft. I found a weak thermal which took 20 minutes to get me to 2,000 ft. and then quit. I started a long glide back to Marfa for a relight but finally hit a 300 fpm thermal about 5 miles from the field. My watch said 15:50. I debated recrossing the line but decided that for me the day had become a distance task and set off.

The first leg went quickly—downwind —but from Pecos to Van Horn we bucked a heavy headwind with mostly 200-300 fpm. thermals. Apart from an 800 ft. low in the middle of the leg there were no special problems, but I arrived at Van Horn at about 1,900 ft. and proceeded to make another bad mistake. The direct route home looked very dead, so I took a wide circuit to the south only to find every cloud decaying as I reached it.

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I finally drifted in late and slow, discovering I had lost 20 minutes on the last leg to Gleb Derujinsky with whom I had rounded the last turn. Still, I felt very lucky to have arrived at all. I finished 13th for the day at 46.6 mph. Wally won with 58.3. My time, minus the 40 minutes wasted at the start, would have been about 54 mph. for second place. If, if, if only . . !

The next day, a speed run to Van Horn and back proved uneventful. Wally won at 62.4 mph. Ross Briegleb in his speedy Diamant and I were 2nd and 3rd.

Nobody was too surprised when Marshall announced free distance for the fourth day. If we had to have this outdated relic of a task at all the weather seemed good for it. The general situation, with a stable area west, and a front hanging 200 miles north and swinging off to the northeast through Oklahoma and still another front straight east gave a sensible choice of direction. Both met. man Dave Owen and the visiting French team meteorologist figured that a narrow corridor ENE offered the only possibility for a flight of over 300 miles. The local talent, Wally, Ben Greene, Dick Johnson and I all followed this advice carefully, despite the necessity of bucking a strong SE wind for the final three hours in very weak lift. The Cirrus was in its element in such weak weather so, when my crew guided me into a field 374 miles out, I felt I had gone about as far as any. Imagine my shock on calling in to learn of five flights of over 500 miles with many more in the 400's. Those who had never heard that crossing fronts is impossible in the southwest, or who had merely taken the line of least resistance and drifted downwind, had found a hole in the supposedly uncrossable front and had poured through. Needless to say the two next days—rest days—offered some of the best weather of the contest. Actually I wasn't too unhappy as I had closed up almost 80 points on Wally at a cost of only $120 for petrol, motels, etc., fairly cheap as free distance goes.

The fifth day seemed almost the start of a new contest after two rest days. The cat's cradle call was welcome to me, despite the fact that I think it a bad task, simply because it offered the best chance to catch Wally. The day was fairly easy and straight forward with almost all the top pilots choosing the same Van Horn, Pecos turn points. By dint of concentrating on speed I was able to get twice around by 20:15, but unfortunately was unable to climb again after rounding Marfa the second time and had to settle for a landing on the outskirts of town and a 482 mile first place, gaining 112 points on Wally and a fair number on John Brittingham and Rudy Alleman.

The sixth day, a 275 triangular race gave me a second place for the day but dropped me 78 points on Wally, who made a brilliant run at about 65.7 mph. to my 61 mph. Gloom!

The next day's cat's cradle was won on the first leg when I found a dry street running into Van Horn, got an 8-10 mile lead on the pack and managed to get round Pecos, Marfa and back to Van Horn by 17:00. My calculator showed 1 hr. 15 to 1hr. 30 was needed to buck the wind to Pecos. I decided that if I could get there by 18:30 I would be OK to get back out of this irrigation-damped sink hole. I arrived at 18:25 and drifted slowly back to Van Horn with the last thermals of the day, arriving with 1,500 useless feet after a 53:1 final glide. I flew around for the Drew Associates photography plane for a while, before landing at the airport for 475 miles and a comfortable overall lead of 70 points.

The final day was a 345 mile speed task to McCamey and Van Horn. It seemed to me a bad call—the only one of the contest—simply because for many pilots it would be the fourth day running of six to nine hours in the cockpit. From a personal point of view I liked the task,



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because Wally would have to beat me by half-an-hour to win and Rudy Alleman looked too exhausted to do well on a long day. I endeavoured to look as rested and casual as possible.

The day turned out to be far better than forecast. I started a minute after Wally so that I could keep an eye on him. I tried following him but proved unable to keep up with the ASW-12, which both outclimbed and outran me. Fortunately, I had a bit of good luck at the first turn and caught up. I saw very few ships on the 150 mile second leg but managed to make good time, especially on the second half when the clouds—finally reached—proved to have 1,000-1,200 fpm. to 13,000 ft. Coming out of the second turn point I saw a T-tail circling and slid in 500 ft: below Wally. It must have been a low moment for him.

The direct route home was cloudless but a line of cu. stretched off about 10 miles north of course. Wally set out straight, knowing, as he told me later, that I would take the clouds realizing that he could only gain the necessary time by doing something different. As it happened, the clouds paid handsomely and I was first home to win the day and contest.

Winning is a combination of ship, skill and luck. I had managed two out of the three several times before; this time, finally, all three fell together. As an examination of the scores will show, I beat Wally on the distance days when I could take my chance field while he was often forced miles back to land at airports. Twice I was able to leave airports at altitudes of 300 and 800 ft. to go on to fields and gain another few miles. A great factor in this was my crew chief since 1963, Ralph Boehm, who always contrived to be under me to check out chancey-looking fields. Often, without him I would have been tempted to give up the last few miles in order to land safely. The superb performance of the Cirrus, combined with its flexibility, comfort and ease of flying, made it the best ship possible for the long, strong days at Marfa.

THE FIRST CHANNEL CROSSING

By A. E. SLATER

APRIL 22nd this year marked the 30th anniversary of the first soaring flight across the English Channel. It was achieved by Geoffrey Stephenson in a Slingsby Gull sailplane, starting from a winch launch into the slope lift over Dunstable Downs at the London Gliding Club, and landing at a point ten miles inland from the French coast near Boulogne.

His original intention had been to fly by glider to a party which Ann Welch — then Miss Ann Edmonds — was throwing at the house she had persuaded her parents to buy, close to the site of the Surrey Gliding Club, on the North Downs near Reigate, which she had founded four months earlier. With this object he took his Gull to Heston, directly upwind of Reigate, but was unable to get an aero-tow, so proceeded to Dunstable, and there found a strong wind of 28 m.p.h., gusting to 40 m.p.h., blowing from 300° (NW by W). Here is his story :—

"I was launched at 2.55 p.m., reaching the hill level with the top, and hardly ceased climbing once all the way to cloud base at 4,000 ft. This shows what sort of a day it was. The clouds were smooth inside and appeared slightly lighter looking upwards than downwards. This probably helped, for I managed to fly blind to Hatfield Aerodrome.

"I now made for Abridge, and just before Epping Forest the lift became scarce. I passed over Abridge and Stapleford and reached the Thames at Stanford-le-Hope. Thinking of Greig with the trailer, I hesitated a long time before crossing, but a thermal over the water decided the issue.

"The Medway was crossed at its widest part at 3,000 ft., and I decided that with luck Canterbury Aerodrome was within range. We proceeded cautiously along the London road and reached the town of Canterbury with 2,000 ft. This was encouraging, and I decided to have a shot for Hawkinge. This meant aiming south-west in order to allow for drift in the weak thermals.

"The aerodrome was reached at 1,000 ft. and then the big surprise came. I flew slap into a newly formed thermal at 5 ft. per second, worked it up to 10 ft. per second, and immediately thought of the Channel. The lift increased to 15 ft. and even 20 ft. per second. I checked up the direction of Cape Gris-Nez and entered a large cloud at 4,500 ft. At 6,000 ft., and probably still climbing. I let the speed fluctuate a bit, so decided that to come out was a bird in the hand. We emerged on the south side of the cloud just off the coast. There were a few ships below, but none ahead.

"South-east of the cloud I had left, and adjoining it, was a rather broken cloud, which I made for. It was very little use, and ahead of it was a 10 ft. per second sink. Ahead again was blue sky and I wondered if it was all sink; but, at 50 m.p.h., we were very quickly

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clear of it, and the sink was normal. I had forgotten to allow for drift, so a slightly curved course was followed.

"Five miles off the French coast the sink was reduced slightly and I set the speed at about 35 m.p.h. The coast was crossed at about a mile east of Cape Gris-Nez. The height was 2,600 ft.

"The sink was still a little below normal, and forgetting about St. Inglevert, I went down-wind looking for somewhere from which I could be towed back home. There was no field large enough, and as height was running out I chose a small field at the village of Le Wast, 10 miles east of Boulogne. The landing was very gusty, but it worked out all right, at 5.35 p.m."

The Retrieve

First news of the flight came by telephone from "Steve" direct to Ann's party, I think between 8 p.m. and 9 p.m. Espin Hardwick, founder of the Midland Gliding Club, was just beginning a broadcast about gliding from the Birmingham BBC, so we got the news through in time for inclusion at the end of his broadcast. Next, I sent it to *The Times* and then the Press Association; the latter pushed it round to all the newspapers, with the result that the *Daily Express* (I think it was) sent an aeroplane over at first light next day and got a photo of Steve still in bed. The various newspaper stories were accepted by Customs at Dover as evidence that the Gull had really flown across and was not a piece of smuggled goods bought in France.

Ann, on hearing the news, immediately left her party to carry on under its own momentum, so that she could start organizing the retrieve. Writing in S & G later, after learning the ropes, she gave advice for future cross-Channel retrievers who had made no previous preparations. It included the following :—

"Now drive on to the quay, where the crane will do its stuff.

"Now prepare to be sick.

"Be sick.

"Look at the seagulls soaring behind the boat; then look at the two dim and distant coastlines, and think that some people must be very brave."

Ann gave the total cost of the retrieve, including hotel bills, at £25 5s.



Geoffrey Stephenson in the Cross-Channel Gull. (Photo: A. E. Slater)

The Meteorology

A year or two before Stephenson, Philip Wills had twice, and Christopher Nicholson once, reached the Kent coast from Dunstable but been unable to get enough height there, though Wills had once got 8,000 ft. on the way over London (no Control Zones then!). Incidentally, Wills was the only one of the subsequent crossers to use thermal lift off the sea.

Stephenson said that the nearest cumulus clouds he saw over France were about 20 miles beyond his landing point. Yet the next two to cross, both on 12th April, 1950, picked up thermals on reaching France: they were L. A. Miller, who just got over the frontier into Belgium, and Lorne Welch, who carried on to Brussels. Not till then did I tackle the reason for the difference by tracing the air backwards in time (assuming gradient winds deduced from the isobars) and looking up land, sea and upper air temperatures.

Stephenson's air had come across England during the day and had got warmed up at the surface to 55°F at Lympne, and this would have increased adiabatically to 57° on its descent to the sea. But the average sea temperature in

the Channel is only 47° in April, so a thickening layer of cold air would have been built up at the bottom of the air mass, and would have needed to be re-heated over France before thermals could get through it and continue rising through the air above.

Could he have got thermals in France by starting earlier? The tephigram showed that his air mass needed a surface temperature of 47°F before convection could start; so it would have had to reach this figure before he could get away from Dunstable and would have been hotter by the time it reached the Channel coast — i.e. it would still have been warmer than the sea.

On the day of the 1950 crossings, 12th April, the air in which the pilots crossed had come up-Channel from westwards on a curved path. Tangmere (near Chichester), near which it must have left the coast in mid-morning, reported temperatures of 38°F at 6 a.m. and 49°F at noon, yet (Larkhill tephigram showed) it only needed a surface temperature of 45°F to start convection going. Even if it had not reached this already before leaving land, it would have travelled over a 47°F sea for long enough to become unstable, ready to produce thermals as soon as it hit France.

Finally, an editorial prophecy from GLIDING for Summer, 1950:

"For prolonging a cross-Channel flight across Europe in a north-west wind, the best time of the year is the end of September. From March to mid-September the surface air is liable to become hotter than the Channel during the afternoon, so it will be cooled during the crossing. And from October to February, although the Channel is warmer than the land, thermals are too weak for long-distance flights." Wills got his marine thermal in mid-September 1957.

The Full List

Here is the full list of flights across:

19.6.31. L. Beardmore in Professor, Lympne-St. Inglevert, aero-tow (plus glide?).

20.6.31. R. Kronfeld in Wien, aero-tows plus glides, St.Inglevert-Dover, then Dover-St.Inglevert.

22.4.39. G. H. Stephenson in Gull 1, Dunstable-Le Wast, 127 miles.

12.4.50. L. A. Miller in Gull 1, Detling-Coxyde, 93 miles.

12.4.50. L. Welch in Weihe. Redhill-Brussels, 210 miles.

14.5.55. L. Welch and F. G. Irving in Eagle, Lasham-Louvain, 250 miles. National and UK Record.

11.6.57. G. A. J. (Tony) Goodhart in Skylark 3, Lasham, Vitry-en-Artois, 188 miles.

21.8.57. Anne Burns in Skylark 3, Lasham-Rely (41 miles beyond Calais), 160 miles.

28.8.57. R. Cockburn in Sky, Farnborough-Wimereux.

15.9.57. P. A. Wills in Skylark 3, Dunstable-St. Omer.

21.5.58. A. W. Gough in Skylark 3, South Cerney-Heerlen (Holland), 348 miles. National and UK record.

7.6.59. J. Croshaw, Skylark 3, Upavon-Gravelines.

5.7.61. A. H. Warminger in Olympia 419, Swanton Morley-Rosières, 225 miles.

Further crossings — alas! — have been rendered almost impossible by airspace restrictions.

* * *

THIRTY YEARS AGO

NINETEEN THIRTY-NINE saw the onset of war on 3rd September; and, as Wolf Hirth said on a postcard he sent to the Editor from Switzerland, while there on a visit from Germany after the war began, this was "bad for soaring".

At the London Gliding Club the instructor-manager, "Tim" Hervey, wrote to the Air Ministry to ask if the ban on "private flying" included gliders. It was late November before he got a reply saying that it did, and meanwhile the club carried on until, on its final flying day, 19th November, 40 pilots put up 29 hours' flying. After that the ground engineer, "Johnny" Walker, built the club a land yacht. By an astonishing wangle, some flying was done the following spring—but this is a story for next year's reminiscences.

In Germany, according to a letter from Wolf Hirth to *Soaring*, gliding was

stopped for two months and then resumed.

The menace of an approaching war is apt to produce government subsidies for encouraging airmindedness; so now, in addition to British Gliding's subsidy of £5,000 a year which started in 1935, a further subsidy was given to 8 clubs for running training camps for Air Defence Cadets, an organization started by the Air League which was later transformed into the Air Training Corps. Altogether 587 Cadets attended camps, obtaining 205 A and 7 B certificates.

Club flying during 1939 included some notable feats. On 22nd April Geoffrey Stephenson made the first soaring flight across the English Channel, starting from the London Club; on 22nd June Noel McClean, of Newcastle Club, set up a British height record of 10,350 ft. in the Helm Wind wave over the Pennines; and on 1st July Philip Wills capped this with 14,170 ft. in a big cumulus at Dunstable on the occasion of the Royal Meteorological Society's summer outing there.

McClean's flight was remarkable. With a strong NE wind blowing down the escarpment by Cross Fell (2,930 ft.), he was launched in a Grunau from the floor of the valley below, cast off at only 600 ft., hit the upgoing side of a rotor, and rose at 10 ft/sec. into frightful turbulence which threw him into a vertical bank, before rising further into the smoothness of the main wave above.

Naomi Allen took the British feminine distance record from Joan Price with 91 miles from Norwich to Desborough.

The National Contests were held at Camphill from 7th to 16th July. The longest flight was by Christopher Nicholson, 162 miles to Southend in the Rhönsperber. Unfortunately the contest was marred by two fatalities. W. E. Godson spun into the ground in his home-built Kestrel; one suspects the cause to be that he invented a differential aileron control in which one aileron went down further than the other one went up, and he would not be persuaded that he had got it the wrong way round. Frank Charles, a well-known dirt-track rider, was taking off in his Petrel when a dog

SAILPLANE & GLIDING

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As from the issue dated APRIL-MAY, 1970 the price of **Sailplane & Gliding** will be:

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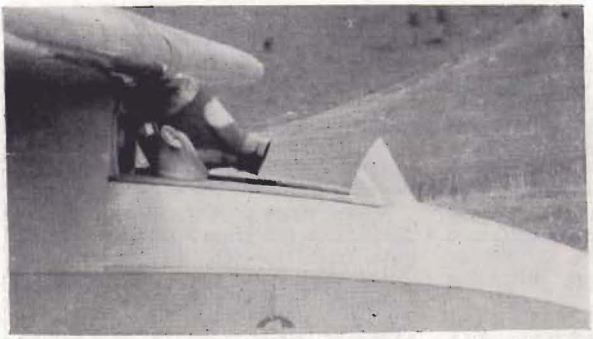
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ADVANCE PAYMENTS – received *before* the 28th February, 1970, will be accepted at the *old rates*, for 1970 and 1971 issues.
(Postal charges may, of course, be subject to variation).

This change in price has been necessitated by increased production costs.



War!
Alexander Ivanoff prepares for the worst.
Photo: A. E. Slater

seized the cable and was lifted off the ground; the winch stopped pulling and Charles flattened out and turned back towards the launching point, but failed to release the cable, and it was not cut at the winch end; the cable suddenly became taut and he dived in.

Entrants at this contest numbered 25 machines with 59 pilots.

In the SOVIET UNION a spate of world records was set up during July, 1939.

Distance, by Olga Klepikova, 749.2 km. (465.5 miles). This remained unbeaten until 1951, when Dick Johnson flew 535 miles in the United States. Goal and Return, Kimmelman, 300 km. Goal flight, Satzov, 600 km.

Two-seater records: Goal flight, Kartachev and Gorokhova, 396 km. Goal and Return, Kartachev and Chechoulkine, 300 km.

Feminine records were, in addition to Klepikova's: Goal flight, 195 km., and altitude, 2,080 m. (6,280 ft.), by Zarachova; and three two-seater records with Velikosselzeva as pilot: Distance, 200 km.; then Goal flight, 223 km., and altitude, 1,500 m.

A. E. S.

KRONFELD DIARY

First Wednesday of each month at 8 p.m.

Nov.	26	Annual Wine and Cheese Party and Annual General Meeting. Tickets 10s.
Dec.	3	History of the Tiger Club by Barry Griffiths.
„	17	ASL Lecture.
„	24	Closed.
„	31	NEW YEAR PARTY. Tickets 10s. including Supper.

* * *

AVIATION ART SOCIETY

The tenth Aviation Art Exhibition was held in the Kronfeld Club from 5th-16th November, and over 80 paintings on varied aspects of aviation were exhibited by 38 artists. The winners were as follows:

The "Flight" Tankard—for the best overall exhibit by a professional artist, to John Young; 2nd, G. D. Coulson; 3rd, A. C. Harold. *Commended*—R. Nockolds, R. G. Flood, A. C. Harold, K. McDonough, Pamela Drew.

The Kronfeld Challenge Trophy—for the best overall exhibit by a non-professional artist, to Edmund Miller; 2nd, Roy Wensley-Smith; 3rd, C. W. E. Waller. *Commended*—Maureen-Anne Gordon.

The Harry Cooper Memorial Trophy—for the best painting by a professional or non-professional artist of a light aircraft in aerobatics or racing, to Roger Steel.

The Gliding Challenge Goblet—for the best painting by a non-professional artist on gliding or soaring, presented for the first time by the BGA, to Margaret Kahn.

The BAC Trophy—for the best painting by a professional or non-professional artist of a current Service aircraft, to John Young.

The Water Colour Prize—for the best water-colour by a professional or non-professional artist, to A. C. Harold.

The Best First Entry Prize—for a painting by a non-professional artist, to Roy Wensley-Smith.

If you did not have a chance to get along to see this exhibition, many of the paintings are still on view at the Kronfeld Club and the Society is, of course, always prepared to arrange special commissions by its members at roughly catalogue prices, which range from ten guineas upwards.

All enquiries should be addressed to the Hon. Secretary, Mrs. Y. Bonham, 11 Great Spilmans, Dulwich, London, S.E.22. Telephone 01-693 3033.

We hope to publish a full report, including a selection of the exhibits, in the forthcoming SAILPLANE & GLIDING.

REMINDER: Annual Award Claims must be in before 5th December. For further details see page 227 of Sailplane & Gliding for June-July, 1969.



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NEW SWISS SAILPLANES

AN-66c — 23 metre span

"BUILD me the best glider in the world." These were the instructions René Comte gave Albert Neukom on ordering his new glider: and that is—putting it in a nutshell—how the AN-66c came about.

This "super-sailplane" will no doubt create great interest on the international scene. Several technical and construction details on this sailplane—of which the fuselage is practically finished—are quite sensational. For example, the aspect ratio is 33.1 which is nearly the highest ever achieved.

[The D-30 Cirrus, 1938, had an aspect ratio of 33.6, also Sigma is believed to have a higher aspect ratio. ED.]

With a wing span of 23 metres it will be the longest of any post-war sailplane, but the variable area wing will no doubt create the greatest interest.

Albert Neukom has designed an ingenious "flap" which increases the wing area about 20% when fully extended, at the same time changing the profile. It has only two positions, in or out, and either position results in a continuous profile designed by Prof. Eppler, which shows neither gaps nor discontinuities. In this way, two configurations are produced which will give optimum performance at high speed as well as in circling climbs.

This is bringing into reality something that has been arousing interest for some time past in Britain and is known in technical literature as "variable geometry", and is to be used on Project Sigma.

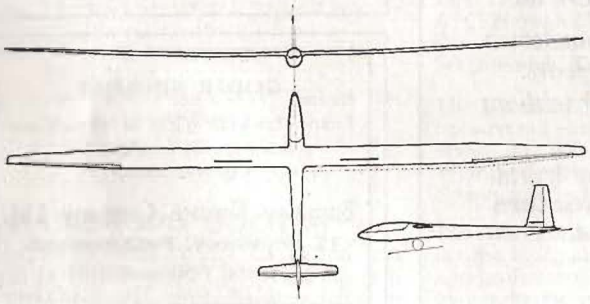
The fuselage is made from the same mould as the AN-66B, the forward portion being made from eight layers of glass-fibre, while the circular section rear part is a sandwich of ply and balsa. In fact, the forward portion is the same for all the AN series, this standardisation resulting in a considerable saving in costs. For the tail, however, the designer has gone back to the conventional instead of the V-tail of the earlier AN-66's. The tailplane has a hinged elevator as distinct from the all-moving tailplane of another two new types also in hand, the Elfe S-4 and AN-17.

The three-piece wing centre-section is 6.5 m. and the outer panels are each 8.25 m. long. Here, too, Neukom continues with metal spar and plywood-balsa sandwich.

The notable point in the wing construction is the variable area already referred to which, because it extends over the whole span, makes it necessary to employ Schempp-Hirth airbrakes instead of the trailing-edge brakes used on the Elfe S-3, S-4 and AN-17.

The stiffness problems were solved by Prof. Eppler's use of a computer.

The empty weight of this machine is calculated as 420 kg. and the cockpit load 110 kg., making a total of 530 kg. This gives a wing loading of 27.6 kg/m^2, with flaps extended and no ballast. Ballast of as much as 120 kg. can be carried, which



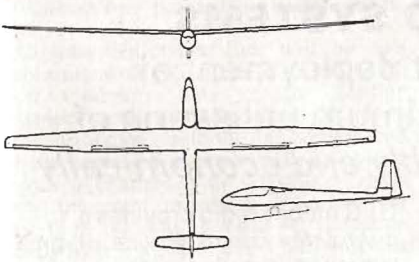
The AN-66c.

gives the very high wing loading of 40.6 kg/m² for high-speed flight with flaps in.

These two extreme values of wing loading bring out clearly the advantages of variable wing area. As for best gliding angle, Albert Neukom thinks "somewhere between 50-55." This should equal, or even surpass, the Nimbus of Klaus Holighaus which has already flown. The flight trials of the AN-66c and Sigma will show which of these three will claim the title of the best-performance glider in the world. The AN-66c should be ready for test flying in the spring of 1970, but whether it will be ready for Marfa is not yet certain.

The Elfe S-4

The S-4 is an improved and further-developed version of the successful Standard Elfe S-3 which won the Standard Class in Poland. The main difference is that the S-4 will have a two-piece wing with one main centre pin for connection. This should make rigging considerably easier and should also result in saving weight. The front portion of the fuselage has also been enlarged and thus the cockpit size has been increased. The wing section is from the well-known



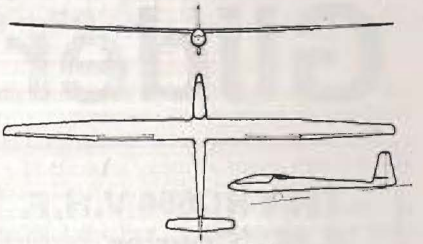
The Elfe S-4

Wortmann series and the same as on the S-3 and the ASW-15. It has an all-moving tail and trailing-edge brakes, as well as a retractable undercarriage.

It is expected to be flying in the next season.

AN-17

Under this preliminary name, Albert Neukom is working on a 17-metre span version of the Elfe S-3 which will have



The AN-17:

the S-4 fuselage. The new, no-flap, two-piece wing with aluminium spar is of the same Wortmann profile as used on the Elfe S-3. The aspect ratio is increased from 19 on the S-3 and S-4 to 22 and there is provision for 60 kg. water ballast. Standard fittings include the retractable undercarriage and brake chute. Neukom hopes to have this machine ready at the beginning of next year's flying season.

(Abridged and translated from *Aero Review.*)

R. H.

Future Events

Dec. 27-Jan. 11. South African Nationals at Bloemfontein.

Jan. 10-24. Argentinian Nationals to be held at Pehuajo.

Jan. 17-18. International Symposium on Soaring Flight, Los Angeles, USA (revised date).

Feb. 21-22. 2nd Symposium on Competitive Soaring, Pittsburgh, Pa. (revised date).

Mar. 14-15. Symposium on Cross-country Soaring, Pittsburgh, Pa.

Mar. 21. BGA Annual General Meeting and Dinner-Dance.

May 30-June 7. Standard-Sport Class Nationals at Dunstable.

June 15-July 4. World Championships, Marfa, Texas.

June 20-21. Air League Rally, Sywell.

July 14-23. Canadian Nationals at Carman. Manitoba.

Aug. 22-31. Open Class Nationals at Doncaster.

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SLINGSBY SAILPLANES LTD.

SINCE our last issue, we have been informed that negotiations have been completed with the Receiver of Slingsby Aircraft Company. Vickers Ltd. have purchased the assets of the aircraft factory and the entire factory premises at Kirbymoorside; it is believed that the price involved approaches £200,000.

Reverting back to the once trusted name of Slingsby Sailplanes Ltd., the company will be part of the Shipbuilding Group of Vickers Ltd. It will concentrate on the design and development of sailplanes, as well as the development of glass and carbon-fibre units in support of the growing requirements in this field, including surface ships and submarines of all sizes.

The business which was started by Fred Slingsby, one of Britain's pioneers, traded successfully for some 26 years under his leadership and its sailplanes won three World Championships. After Fred Slingsby's retirement in 1965 the company was re-organized, and in Nov. 1967 it started trading under the name of Slingsby Aircraft Co. Ltd. and, as we know, was put in the hands of the Receiver in July of this year.

Slingsby Sailplanes Ltd. will be collaborating with Glasflügel of Schlattstall, West Germany, one of the leading designers and manufacturers of glass-fibre sailplanes—notably the Kestrel and Libelle series. Slingsby's will operate a licence agreement with Glasflügel which gives the right to use their patent for glass-fibre structural units—a development which is a major contribution to the success of this firm. Current demands far exceed production facilities and Slingsby's will be able to make its own contribution towards meeting customers' requirements.

Slingsby's will be concentrating on the production of the 17-m. Kestrel, and, as soon as it is in "full stream", Glasflügel will then concentrate on the Libelle and thus minimise duplication of effort between the two companies. The UK company will carry spares and render appropriate maintenance and repair facilities to both Glasflügel models. International marketing will be based on the combined sales organisation of the two companies—these being streamlined where necessary.

These new ventures mean that for the first time the UK will undertake the production of glass-fibre aircraft, a technology that is dominating the sailplane construction techniques of the world. In the recent American Nationals 47 of the 84 aircraft entered were of glass-fibre construction!

* * *

Slingsby Sailplanes will also maintain a spares and repair service in support of the Skylark, T-21, Swallow, Dart and the Olympia sailplanes, all of which are generally of wooden construction. The company will also continue to render similar service to ATC aircraft.

The new all-metal T-53 two-seater, originally developed to meet the new requirements of the ATC, will continue, together with a civilian version of the same aircraft. The development of a portable power pod for the T-53 is also to proceed.

* * *

George Burton—Managing Director

George Burton (38), with an Honours Degree in Physics at Imperial College, London, and past experience in industry, as well as at Farnborough and Harwell, has been appointed Managing Director of Slingsby Sailplanes.

George needs little introduction; he is a well-known international glider pilot and will represent Britain for the third time at Marfa. Being our current Open Class National Champion, his photograph appeared on the front cover of the August S & G.

* * *

The collapse of the Company caused great concern to the people living in Kirbymoorside and district as it was one of the major employers in the area. In its new form, as part of Vickers Shipbuilding Group, it should ultimately grow to be an even bigger unit, with ever-increasing scope for employment for those living in this beautiful part of Yorkshire.

FUTURE FLYING ON FUR AND FEATHERS? — or Making The Fur Fly

This is a translation of an article in the August issue of *Aerokurier*, entitled "Nylon fur wings for sailplanes". By JOSEF REDER of Heidelberg. Translated by Rika Harwood.

Introduction

FOR several months past and in all weather conditions HMS Highburton has been steaming to and fro over a measured distance between the mainland and the Isle of Wight. However dull for the crew of this small mine-sweeper, the trials are of great interest to the Admiralty and will have important consequences for boat builders the world over.

The ship was not specially built and has in no way been reshaped to obtain the best possible hydrodynamic profile of hull; nevertheless, she shows a saving in fuel consumption—averaging 15 per cent better than normal, or could on the same normal consumption steam a good deal faster than the original design speed.

Highburton has a vertical slit in the bows, through which a solution of water and polyethylenoxide is ejected at predetermined intervals, thus acting as a lubricant along the ship's side. It has been calculated that this form of lubrication on the hull reduces the skin friction by about 20 per cent.

Polyethylenoxide is recognised as "long-threaded" chain-molecule. In water, on a ship's hull, for example, these molecule threads act rather like a tuft of hair, streamlining along with the ship's direction, but resisting any cross-wise motion. Thereby the turbulence in the boundary layer which produces drag is reduced to the lowest possible amount.

Of course, the principle is well enough known in some circles, because in Dallas and Cleveland, USA, where the sewers are of inadequate size, chemical mixtures are injected into the water so as to increase the rate of flow of the sewage 2.5 times.

It seems that the US Navy in California have cottoned on to this and are increasing the speeds of torpedoes by the use of "thread-lubrication". British amateur rowing clubs have also been quick in the uptake and have banned the use of boundary layer dopes for competition rowing. There is, therefore, something positive in this "long-threaded" laminarisation of the boundary layer, and it applies not only in water.

Soaring Gulls

We know that it is the down or fluffy feathers of the Owl that gives it its silent swopping flight on to its prey. [This is believed but not certain.—P. M. Scott.] The owl is very well streamlined. but every movement of air round and over the wings and body is laminarised and so made noiseless.

Anyone who takes the trouble to watch the gulls soaring or landing in the process of catching their food in the updraught over a bridge will notice that the upper surface of the smooth feathers gleaming silver-grey in normal flight changes suddenly to a matt surface just before landing or else at a momentary stall in a sudden gust.

The downy barbs of the upper feathers are raised upright in the laminar layer which is obviously about to break-away, thus preventing by the help of this "mini-turbulence" the collapse of wing lift even at angles of attack between 45° and 60°. Gulls can therefore safely land in almost zero wind conditions without flapping their wings and at negligible speed over the ground; while in the air they can catch food on the wing keeping momentarily motionless without falling out of the sky. All this is achieved without any resort to electronics!

This slow-flying characteristic of gulls can be explained on the theory that the boundary layer stream on the upper surface of the wing clings to the contour of the downy feathers in the manner of the lines of air flow round a cylindrical

body in the Reynolds number $Re = 10^2$, or at an airflow speed of 10 km/h. and about 0.15 mm diameter of threads. If these downy feathers were 10 to 50 times thicker they would act as a fence-brake and lead to a sudden break-away of the laminar flow; thus the gull would stall uncontrollably and flop down to a belly-landing which it would certainly dislike!

Scope for Sailplanes?

Our gliders fly in a Reynolds number range which is 10 to 50 times higher than gull flight; if, therefore, we want to achieve the same control of the boundary layer, as above described, the threads or hairs of a furry wing must be correspondingly thinner. Modern nylon fur berets which can be bought fairly cheaply in any supermarket have hairs of about 0.05 to 0.02 mm thickness. Nylon fur could be made of much thinner hairs still without any substantial technological difficulties if the demand were there.

Suppose a strip of nylon fur with hairs 0.01 mm thick were to be laid over the upper surface of the leading edge of a laminar flow wing, then it would not be nearly so important to produce the perfect wing profile at very great expense. The cost of the nylon fur would be offset by the whole wing being built less expensively; the laminar airflow over the wing would not be ruined because of drops of water, spots of oil or grease, or the adherence of insect bodies; at high speeds the profile drag would not be intolerable.

Moreover, the well-tried Schempp-Hirth-type airbrakes could be fitted much nearer to the leading edge of the wing. This would mean the maximum braking effect being obtained for the minimum amount of extension travel. Nylon fur could be stuck over the brake sealing strip or cover; this would be sunk slightly so that the tips of the hair just covered the surface profile. At high speeds the fur would be close to the wing surface without causing harmful drag; at speeds near the stall, or at low speed with large angles of attack, the boundary layer, which usually breaks away at the brake slot, would adhere to the upstanding hair roots and again lie closely to the wing profile behind the brake sealing strip. Thus collapse of the laminar flow over the airbrakes when closed would be prevented without special care having to be taken to get a precise fit of the brake in its slot. The wing might even warp slightly without any particular harm to the flying qualities.

If the brakes could be installed in the most sensitive part of the leading edge profile they would be considerably more effective, and could therefore be made smaller and cheaper than any of the conventional airbrakes which are situated in the rearward portion of the wing profile. Furthermore, at the wing-root gaps, the wheel fairing, the canopy joint and the flaps small strips of nylon fur could be fitted, thus improving the gliding angle of our gliders without having to go to great expense in obtaining the best possible surface finish over the whole glider.

It would seem worthwhile to give serious consideration to the foregoing methods and perhaps to try them out in the first instance on the relatively cheap brake sealing strips.

* * *

DIPL. ING. ERICH UFER WRITES:—

These and similar ideas are indeed serious propositions. Evidently considerable research is being undertaken into the problem in various places, though no resultant break-through has come to my knowledge so far. In his book *Structure, Shape, Movement*, Professor Heinrich Hertel puts forward similar ideas, but they go much deeper. I quote on page 190, "The technique of boundary layer suction was developed as an expedient to maintain laminar flow . . . Such boundary layer suctions or similar expedients have not been established in the case of the animal kingdom. The theory of laminar flow is maintained in the case of the

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animals that can swim fast by means at present unknown in ship and aircraft technology."

Then follows an explanation of how the boundary layer becomes turbulent, namely through wave-like movements and compressive pressure changes. The theory is propounded that the wave-like movement (the instigator of the turbulence) compresses the air into the resilient skin and consequently extends the laminar range. Already in 1938 Kramer had started on such research work but it was interrupted by the second world war.

I quote further: "It looks probable that the skin surface promotes stabilisation of the boundary layer and consequently a prevention of laminar breakaway. Researches in this area would be interesting both for biology and technology. Experiments on skin surfaces are in progress in the author's Institute (Professor Hertel). These include the investigation of the resilience of surface areas such as skin, fur, feathers, scales in the case of fish, and coatings of slime."

Perhaps one day it will be possible for us to cover our gliders and sporting aeroplanes with a laminar fur skin made of light and weatherproof plastics, which could be changed in the case of damage or wear. Such a hide overcoat must fulfil two condition:

(1) Extensive laminar flow adherence at high speed; and
(2) Prevention of the breakaway of the laminar flow at high lift coefficients.

Both seem possible through feathering or furring (with the use of adhesives).

The onset of turbulence is explained in "Aerodynamik des Flugzeuges" Vol. I, Schlichting/Truckenbrodt, published by Springer, on page 340.

When turbulence occurs, just before the so-called point of pressure change and while the boundary layer is still laminar, contrary airstreams (little "mini-eddies") form themselves on the surface. The adjacent airstreams are then compelled to assume a wave form on their way resulting in an ever increasing Up and Down, until it becomes Turbulence. These "mini-eddies" are now rolling towards the trailing edge and getting bigger all the time while new ones form constantly in front.

In the case of an elastic surface with fur or a resilient skin (*see* Hertel) the "mini-eddies" as they start to form would be pressed into the skin; accordingly the principal airstream can maintain its smooth flow laminar-wise to its full extent. The waves in the skin will slowly disappear to the rear just like a cornfield rippled by the wind.

Just before the stall the condition on the wing surface is that these eddies move forward, sliding beneath the principal airstream which thus becomes detached. A fur or a feathering has this effect—the hairs rise up or the feathers are ruffled and the eddies are prevented from further forward movement; the principal airstream can thus re-attach itself. The feathers or the hairs will, of course, in this case be streamed from the rear: the occurrence is completely automatic.

In my opinion, control of the boundary layer in Nature is simple and inspired. When we can attain the level of translating these mechanisms into our own technology we shall achieve better and safer aircraft.

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WYCOMBE REGIONALS, 9—17 August, 1969

By ANGELA SMITH

THE Booker Comps had a very good entry of 28 gliders and 38 pilots, but did not, unfortunately, have the weather to match. Nevertheless, the competitive spirit was keen and an enjoyable week was had by all. The first day began and continued with typical "splasham" weather. After prolonged church notices by Bert Page, Chairman of the competition committee, and Arthur Doughty, task-setter and director—including a suggestion that getting too near 707 slipstreams could cause considerable embarrassment—we were dismissed, allowing us to finish rewiring trailer lights, find out where the showers were hidden, etc.

Sunday's weather looked more encouraging and Arthur set a formidable-looking cat's cradle with turning-points at Moreton-in-the-Marsh, Grove, Nympsfield, Stockbridge and Booker. It was pointed out that the Nympsfield-Stockbridge leg must not be flown, as it went slap-bang through the middle of the Lyneham Control Zone! This led to a series of questions on how to interpret the photographic rules. It was a pilot selected start from 1 p.m. but thermal activity was slow to develop and there were a number of relights. Those who managed to get away early certainly did the best. No-one attempted to go to Stockbridge first, and it was a choice between heading north-west to Moreton-in-the-Marsh or west to Grove and Nympsfield. Most of the successful pilots stuck to the local triangle of Moreton-in-the-Marsh, Grove, Booker. Ralph Jones won the day rounding five turning-points and Chris Wills was second rounding Moreton-in-the-Marsh and Nympsfield.

On landing near Stow-on-the-Wold that day I was greeted by a fierce-looking farmer, who said "You can't get away with this, you know!"—thoughts of exorbitant landing fees went through my mind—then a grin and "Could you sign my autograph book, please?" J. Goudie, flying an Olympia 463, returned with a very sad-looking, cow-chewed aileron which prevented him and his partner, A. Milne, from flying the next day.

A 161 km. triangle was set on Monday, with Olney Church and Potton Mast as the turning-points. We were launched shortly after 2 p.m. and gaggles quickly formed. Conditions were difficult at first and crews were sent out on the roads straightaway, but it developed much more quickly than forecast. A large cu-nim formed on track and gave many pilots good climbs. George Locke, having achieved his Gold C height, left cloud and found himself over Grafham Water—about 15 miles north of track!—but eventually got back on course and landed at RAF Henlow, giving him 5th place. The inevitable problem occurred in identifying Potton Mast in the somewhat murky conditions and the photographic examiners could make neither head nor tail of the pictures! Only one pilot—Ralph Jones in his Cirrus—completed the course much to the surprise and delight of his crew and the organisers. Alf Warminger nearly made it home, landing at RAF Halton. There were two unfortunate incidents that day; one of the Fokas was badly damaged in a short field landing and the undercarriage of T. Docherty's SHK collapsed, which put both of these machines out of the competition.

The next day 'No Task' was declared at the briefing, although the weather did improve tremendously later on in the day, accompanied by a strong wind. After briefing the Met. man, Frank Dalton, gave a very interesting and detailed talk on why and how Monday's weather had developed much more quickly than forecast, and on Meteorology generally. This was the first time that Frank had been involved in gliding forecasting and he entered into the spirit of the competitions with great enthusiasm. The other two met. men, Tony Graeme and Peter 'High' Wickham, also did

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grand jobs over the week—let's hope they all come again! Wednesday was a grey-looking day, and after three briefings 'No Task' was declared much to the disappointment of everyone.

Thursday's task was a choice of two out-and-returns, one to Nympsfield, 204 km., and the other to Tewkesbury Bridge, the one north-west of the town, 205 km. The forecast was that conditions were slow-moving and there was the problem of large areas of clag. We were launched at lunchtime and found quite strong lift early on, but conditions gradually deteriorated, and it became overcast with clag at both turning points. Three pilots who did well that day all landed in the same field on Cleeve Hill. The first pilot enticed the others down, as fields were not particularly large and plentiful in that area. Also, his crew had a large amount of beer won by their pilot on the two previous contest days—another enticement—but some of the booze had already been consumed by other crews met on the road. Stuart Waller discovered that carrying 50 lb. of steel washers, which he found in the workshop, caused astronomical compass errors, and he landed at Yeovil. Phillippa Buckley, landing in a field near Tewkesbury Bridge, had an excellent reception as the farmer was a one-time glider pilot and a relative of Humphry Dimock—small world! The day was won by Dick Feakes in his Phoebus 17, who rounded Tewkesbury and then flew half-way back to base. To achieve this he had flown many miles north of track to better weather, and the next day we had a short talk on 'how-I-dun-it'.

On Friday, Peter Wickham gave a rather gloomy forecast and briefing was deferred until mid-morning. At the second gathering, no task had been decided on, but details were given of the grid, etc., by Tony Deacon, who had two demanding jobs as chief tug pilot and chief scorer. A third briefing was held actually on the grid. A free distance was set with launching commencing immediately, and pilots were frantically folding maps while taking off! The day turned out a No Contest, although Chris Wills flew as far as the Inkpen Ridge, which he desperately tried to soar, and Ralph Jones reached South Marston.

With only three contest days so far, and only two more days to go, everyone was hoping for better weather. Saturday's forecast looked hopeful and a 148 km. triangle was set. The turning points were Blenheim Palace and South Marston, home of the Swindon G.C. The visibility was poor and cloud-base was about 3,000 asl, with a somewhat fresh wind coming from the north-west. Most pilots found it beneficial to fly in cloud, especially on the first leg. Six pilots returned home that day—with speeds between 56 and 30 km/h.

John Glossop landed after 6 p.m.—he allowed himself to get downwind of track on the last leg and approached Booker from Henley. He did a final scrape into the airfield, crossing the line the wrong way, a quick about-turn and landed crossing correctly!

Saturday night was Barbecue night, the celebrity being a large, succulent pig which Richard Wade and his helpers had been roasting since 10 o'clock that morning. The evening was a great success, with food, drink and music in plenty.

The Met. man was not optimistic about the weather on Sunday, but a task was set—a 125 km. triangle with Didcot Cooling Towers and Ramsbury airfield as turning points, but by 2 p.m. it was scrubbed. At prize-giving later in the afternoon, Ralph Jones was presented with the British Knapen Challenge Cup as overall winner and Alf Warminger, in second place, received the David Gaster Cup; the Thames Valley Cup, for best performance in a Standard Class machine, went to Bernie Keogh in 3rd place; the Team Trophy, a model of a BAC 1-11, went to George Locke and Lennie Woods in 5th place; the Good Show Trophy, presented by Harold Fletcher, was won by John Glossop in 7th place for the best performance by a pilot in his first competition; the Ladies Prize went to yours truly in 8th place; and the Best Crew prize to Mrs. Tony Burton.

Final Results *Pilot*	*H'cap %*	*Sailplane*	1 1000	2 837	3 1000	4 1000	*Total Points*
1. Jones, R.	82	Cirrus	1000	837	620	1000	3457
2. Warminger, A. H.	82	Phoebus 17	882	685	643	919	3129
3. Keogh, B.	96	Ka-6E	558	476	665	862	2561
4. Burton, A. J.	90	Dart 17R	400	492	695	863	2450
5. Woods, L.,	100	Ka-6CR	740	—	—	—	
Locke, G. W.			—	605	790	233	2368
6. Waller, R. S.	96	Ka-6E	366	575	292	985	2218
7. Glossop, J. D. J.	100	Ka-6CR	483	0	849	800	2132
8. Smith, Angela	96	Ka-6E	318	610	678	409	2011
9. Wilkinson, K. G.	96	Ka-6E	706	23	615	645	1989
10. Hope, S. G.,	100	Ka-6CR	296	—	633	351	
Eyers, I. L. A.			—	674	—	—	1954
11. Belbin, E. R.	96	Ka-6E	344	495	724	389	1952
12. Wills, C.	96	Ka-6E	925	218	666	51	1860
13. Feakes, R.	82	Phoebus 17	275	363	1000	181	1819
14. Tull, V. F. G.	80	Diamant 18	408	376	589	324	1697
15. Costin, M. C.	98	Skylark 4	500	123	700	371	1694
16. Stoddart, R. C.	100	Dart 15	307	508	399	371	1585
17. Schofield, D. E.	98	Skylark 4	533	165	273	371	1342
18. Buckley, Phillipa,	98	Skylark 4	312	—	680	—	
Burne, A. G.			—	46	—	282	1320
19. Evans, D.,	90	Dart 17	352	—	—	—	
Stenton, J. A.			—	356	272	270	1250
20. Dimock, H. R.	80	Diamant 18	0	282	569	208	1059
21. Goudie, J. F.,	102	Olympia 463	64	—	—	—	
Milne, A. R.			—	—	684	306	1054
22. Stafford Allen, R. C.	114	Capstan	330	525	0	184	1039
23. Kape, J. D.,	100	Skylark 3	277	—	561	132	
Latimer, B. H.			—	0	—	—	970
24. Wathen, A. E.,	100	Skylark 3	347	—	354	—	
Hobday, I. H.			—	67	—	31	799
25. Docherty, T. P.	86	SHK	318	454	—	—	772
26. Fletcher, H. W.,	96	Foka 3	27	—	—	—	
Wates, Vera			—	506	197	51	754
27. Astley, J. S.,	100	Skylark 3	5	—	510	—	
Thurlow, J. F.			—	0	—		515
28. Scarborough, G.,	96	Foka 4	289	—			
Stenhouse, A. E.			—	19	—	—	308

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BUT CERTAINLY, YOU'RE THE CUSTOMER!

By RHODA PARTRIDGE

I'D never gone to fly from another site taking my own glider. I thought perhaps I'd take *Broomstick*—"the most beautiful Ka-6E the Schleicher works ever turned out"—abroad. But then I thought perhaps I wouldn't because of those Europeans driving on the wrong side of the road and because I was broke. There was this advert 'Private owners welcome. We rig you, launch you, retrieve you.' "Huh!" I thought, "Welcome? — not much they're not. Usually regarded as an over-opulent nuisance. Slightly immoral, like cheating at patience, that's Private Ownership. Sounds friendly, though, and I'm longing to take *Broomstick* cross-country. Give it a try."

I arrived at Compton Abbas, home of the Dorset Flying Club, on 23rd June and I stayed ten days. During that time about 3,000 km. where flown cross-country by average club pilots. Not red-hot pundits. People trying for their Silver C 50 km. and for their 300 km. And getting them, too—but not me, oh, curses, curses! Certainly, the weather was good but not exceptional. They had two 300 km. out-and-returns the previous week.

I explained to CFI Johnny Morris that I'd like to try for a 300 km., but that I'd only done my Silver C distance and one typical Mynd fall-down near Ludlow up to the present, and that it wasn't that I was worried about my navigation but that I hadn't got any navigation to be worried about and I'd just installed an electric vario and it had made my compass quite mad. He was undismayed. "See that hill?" — pointing north-east from the field—"It's the start of a ridge that leads to Salisbury. From here"—pointing to the map and drawing a line —"you'll see Salisbury; leave it to your left and keep clear of Boscombe Down. From here you'll see Middle Wallop, grass with Chipmunks and helicopters; from there you'll see Andover with a white sear to the south where they're building a by-pass." And so on, all the way to Dunstable." "But what about my compass?" "The sun will be on your right behind you here, if you're really going to declare Horsham St. Faith, Norwich, instead of out-and-return Dunstable." He made diagrams of the airfields I'd fly over and I studied them and the map and the notes I'd made and the lovely day dawned and I declared Norwich—oh, curses, curses!—because I wanted to get away from airways and clear away to the east because I was so sure I'd get lost and be sliced up by a Trident as I bumbled about in the Heathrow circuit. When I got to Dunstable, not lost for a single moment, the sky ahead was black and the sky behind was beautiful and I pressed sadly on—no camera, fool that I was—and finally fell down at Cambridge, coming to rest outside the bar of a rugger club. I tell you about this undistinguished, failed 300 km. —which I madly enjoyed and which taught me one helluva lot about geography and about *Broomstick* and about myself—to show that, with a briefing like Johnny gave, even a rabbit like me has a chance.

The amount of trouble they take for you is fantastic. I'll never forget John Thorne—who runs the place—saying, in reply to some tiresome request of mine, "But certainly, you're the customer." That's the key to the way it is run. It's a business. You want to fly? They provide the facilities. All launching by aerotow. If it's flyable, they fly. The site is delightful. 800 asl on a ridge. Valleys and ridges and dairy country and woods and little lost villages of white, thatched cottages with roses round the doors and duck ponds and pubs. Rural England at its most charming. Lots of lovely places to visit if it's duff. They book you in locally in pubs and farmhouses and at midday they do tea and coffee and good sandwiches at the airfield. You don't have to take your own glider—you can fly theirs. You can even book one for a week and pretend it's yours.

Now, about prices. I'll give the 1969 prices but, if they're like most prices, they're likely to creep up. So check before you go. Aerotows to 2,000 ft.—£1 10s. Monthly membership—£1 1s. Blanik—£1 10s. per hour. Ka-6CR—£1 16s. per hour. Olympia 463—£1 16s. per hour. 10s. reduction for every com-

plete hour after the first. Over five hours free. Yearly subscription £7—covers power as well as gliding. No entrance fee. I questioned John Thorne closely about retrieving and this is about the score. Day retrieves with your own car. Volunteers can usually be bullied into collecting you. Night retrieves by club staff £1 per hour after 8 p.m. Aerotow retrieves. They make a speciality of twitching gliders out of unlikely fields on the end of a short rope. You can sit in the tug and cover your eyes and Ron Powell will fly the glider and Johnny Morris the tug. If there's no onlooker to hold the wing, you hold it and they come back for you. Tug time £7 10s. per hour. My bill for bed and board, excluding lunchtime sandwiches, £18 approx. For 16 aerotows, monthly subscription, sundry batteries, film, masking tape, £24 9s. I got 27 hours of delightful flying during my ten days.

But I did give myself an expensive present just before I left. I had another bash at Dunstable out-and-return in weak blue thermals and a low inversion and, after an interesting four-and-a-half-hour scrape, landed at Dunstable with a great sigh of relief. I gave myself a 150 km. aerotow retrieve and it cost me £16 10s. and it certainly was a wild extravagance. But I was able to spend a nice sunny afternoon at Dunstable and have tea and a gossip and the trip back I will never forget. The countryside at its most beautiful early July best. Lush velvety crops and fat trees and woods and little secret farmhouses and all those crazy shades of green and long, long shadows . . . and who wants a new winter coat, anyhow?



Rhoda relaxing.

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The liquid is very valuable as an anti-corrosive for unpainted parts of aircraft, such as spar pins, and it has the very useful property of displacing any moisture so that, if sprayed onto wet metal, it undercuts the water and spreads a film of grease under it. It also has the useful property of displacing the water from wet ignition leads, thus assisting starting of engines on wet mornings. The makers say that it is harmless to rubber components.

It does appear to be a good freeing agent for stuck bolts, nuts, etc., and I have also used it extensively on guns and find it good. When sprayed onto metal, it first spreads as a thin liquid, and this then evaporates down to a fine greasy film which does seem to be very tenacious. This is a useful addition to the stock of any inspectors or engineers.

R. C. STAFFORD ALLEN,
Chief Technical Officer, BGA

BICESTER REGIONALS, 23 August — 1 September

STRONG northerly winds were a feature of these competitions but seven out of ten days were contest days for one or both of the Classes.

On Saturday, 23rd August, Open and Club Classes found themselves faced with the same task — an 83 km. Goal race to Upavon. Despite a strong NW wind, soaring conditions were fairly reasonable. A number of pilots found the going easy, but others were hard put to it to find enough lift. T. Thomas was unable to force his way against the wind and drifted SE to land eventually at Booker. In the Open Class, R. Wishart was first at 59.7 km/h., D. Bowley came a close second at 59.4 km/h. and an equally close third was L. Barnes at 59 km/h. In the Club Class, only A. Phipps reached Upavon, his speed being 48 km/h.

On Sunday each Class was given a different objective, the Open an Out-and-Return of 153 km. to Royston and the Club an Out-and-Return of 80 km. to Olney. The day was sunny, with good conditions until cirrus formed later, and in the 15 knot wind most of the pilots completed the tasks. For the second day running, Booker proved a haven, this time for Wishart who got lost after reaching the TP. Bowley averaged 52.3 km/h. for first place in the Open Class, 50.1 km/h. gave J. Benoist second place and B. Dobson was third at 47.0 km/h. In the Club Class the winner was C. Foot at 49.7 km/h., S. Green came in second at 43.8 km/h. and C. Boyle was third at 43.3 km/h.

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Andy Gough and Andy Jr.
(Photo: Peter Lewis)

Both Classes shared the task on Monday, an 88 km. race to Lasham via Greenham Common. Conditions were patchy, with a strong wind and some wave lift. The going was reasonably easy for those lucky enough to keep in phase with the thermals, but others were not so fortunate and conditions prevented either Class from achieving a full contest value. Once again Booker accepted a Bicester visitor — Sarah Wilson. In the Open Class B. Kelly was first at 68.2 km/h., Bowley came second at 59.4 km/h. and 59.3 km/h. gave S. Mead third place. For the second consecutive day, Foot won the Club Class, averaging 66.3 km/h., and A. Farmer was second at 63.2 km/h., the two being the only pilots to finish the task.

Rain on Tuesday brought the comps. to a temporary halt and it was a No Contest Day.

By Wednesday the weather had improved, but strong NW winds made it necessary to set downwind tasks. In fairly good conditions, Wishart was forced to use his airbrakes to photograph the TP as he was in wave during the 102 km. Open Class race to Lasham via

FINAL RESULTS—OPEN CLASS

Pilot(s)	*H'cap %*	*Sailplane*	1 808	2 1000	3 766	4 1000	5 431	*Total Points*
1. Bowley, D. A.	96	Ka-6E	805	1000	636	843	271	3655
2. Spottiswood, J. D.	90	Dart 17R	725	774	593	809	369	3270
3. Barnes, L.	96	Ka-6E	802	661	614	698	428	3203
4. Evans, J. A.	96	Olympia 419	775	577	580	835	347	3114
5. Wild, J. G.	96	Ka-6E	749	650	624	714	249	2986
6. Dobson, B. F.	96	Ka-6E	477	379	586	719	271	2922
7. Mead, S. B.	96	Olympia 419	750	293	633	1000	48	2724
8. Kelly, B. T.	96	Ka-6E	449	611	744	714	83	2601
9. Bridson, D. S.	100	Ka-6CR	774	772	330	256	431	2563
10. Gaunt, T. R. F.	100	Ka-6CR	472	742	21	840	231	2306
11. Wishart, R.	96	Ka-6E	808	257	54	943	233	2295
12. McLuckie, R.	100	Ka-6CR	556	419	108	874	285	2242
13. Hart, S. N.	102	Olympia 463	493	591	89	770	212	2155
14. Benoist, J. D.	100	Ka-6CR	175	939	110	840	80	2144
15. Lyndon, R. J.	96	Ka-6E	547	702	292	450	100	2091
16. Carr, V. C.	90	Dart 17R	562	914	421	160	0	2057
17. Saundby, R. P.	96	Olympia 419	214	672	0	786	313	1985
18. Gough, A. F., Shard, C. W. G.	90	Dart 17R	— 186	342 —	— 530	809 —	— 78	1945
19. Bobbin, T. G.	100	Ka-6CR	451	321	321	691	111	1895
20. Gill, C. J.	100	Ka-6CR	255	827	456	168	58	1766
21. Maltby, H.	100	Ka-6CR	480	419	421	21	285	1626
22. Barrett, R. Q., Hull, E. A.	90	Dart 17R	— 72	— 257	766 —	151 —	155 —	1401
23. North, E. A.	96	Ka-6E	210	304	583	72	228	1397
24. Alty, D. G.	100	Skylark 3	0	416	64	585	316	1381
25. Shepherd, D. G.	100	Skylark 3	175	340	210	338	316	1379
26. Marriott, S. H. C.	86	SHK	0	650	63	399	136	1248
27. Bennett, J. A.	100	Ka-6CR	309	286	128	292	0	1015
28. Cole, P. H. B.	96	Ka-6E	282	273	99	142	215	1011
29. Colvert, T. M.	102	Olympia 463	174	304	127	146	149	900
30. MacLagen, R. J., Adair, A. J.	102	Olympia 463	174 —	— 295	125 —	— 101	0 —	695
31. Thomas, T. J.	100	Skylark 3	0	292	181	138	0	611

Club Class *Pilot*	*H'cap %*	*Sailplane*	1 806	2 1000	3 524	4 1000	5 248	6 670	*Total Points*
1. Foot, C. C.	125	Olympia 2B	646	1000	524	1000	135	670	3975
2. Hardon, R. A.	106	Ka-8	496	649	249	966	69	506	3203
3. Farmer, A. T.	106	Ka-8	496	429	487	957	173	526	3068
4. Green, S. M.	106	Ka-8	513	797	70	781	15	515	2691
5. Boyle, C. A.	125	Olympia 2B	580	780	219	703	13	138	2433
6. Smith, J. L.	108	Skylark 2	664	557	200	848	79	72	2420
7. Phipps, A. M.	106	Ka-8	806	615	12	123	248	DNF	1804
8. Beck, R. P.	125	Olympia 2B	445	251	0	754	62	0	1512
9. Simms, J. A.	106	Ka-8	234	560	38	429	42	175	1478
(HC) Stafford-Allen, R. C.	114	Capstan	0	428	99	812	0	0	1339
10. Cleeve, P. A.	125	Olympia 2B	632	299	49	0	41	60	1081
(HC) Harrington, T. C.	114	Ka-7	0	725	230	67	0	0	1022
11. Wilson, Sarah, C.	125	Olympia 2B	0	248	70	623	55	0	996
12. Fox, J. A.	125	Olympia 2B	472	231	0	122	68	83	976
13. Gale, M. A.	125	Olympia 2B	0	251	74	70	0	0	395

Hungerford. A straight race to Lasham was set also for the Club Class and most of the pilots were able to complete the task. In the Open Mead was first, R. McLuckie second and Bowley third. Foot won once again in the Club Class, R. Hardon was second and Farmer came in third.

Thursday was a part-score Contest Day for the Open Class, the task being a Goal race to Compton Abbas via Marlborough White Horse and Wells. At briefing met. man Ron Cashmore gave details of a front and suggested that there might be some thermals about but, in the strong northerly winds, they were not easy to find. Among the Open pilots, J. Evans spent nearly five hours on the Inkpen ridge. D. Bridson led the scoring with 68.5 km., Barnes was close behind with 68 km. and D. Spottiswood came third with 61 km. A 65 km. race to

Lasham via Malmesbury and Hungerford was set for the Club Class, but it turned out to be a No Contest Day.

Friday's weather was similar to that of the day before but with even fewer thermals. The Open Class had a race to Compton Abbas via Pewsey and Wells; no-one completed but three pilots passed "Y", Bridson managing 125 km. In the Club Class—with a Free Distance task—it was a part-score day, with only a few pilots finding thermals. Out of these, Phipps was first with 68 km., Farmer came second with 53 km. and 46 km. gave Foot third place.

Weekend thermals were absent, but on Monday tasks were set. The Open Class had a race to Lasham but, in a cross-wind, all were down within ten miles of Bicester as the thermals were too weak. The race downwind to Upavon for the Club Class was easy for some but others had difficulty in getting away. The race was another win for Foot, with Farmer second and Green third.

GLIDING CERTIFICATES

DIAMOND HEIGHT

No.	*Name*	*Club.. ...*	*1969*
3/93	M. A. Horan	Midland	19.7

DIAMOND GOAL

No.	*Name*	*Club.. ...*	*1969*
2/300	W. C. Lombard	Eagle	9.8
2/301	B. Connolly	Eagle	8.8
2/302	J. R. Barrows	Surrey & Hants	19.4
2/303	D. F. Hanson	Bicester	19.4

GOLD C COMPLETE

No.	*Name*	*Club.. ...*	*1969*
238	R. C. Stoddart	Newcastle	11.8
239	D. I. Lewis	USA	28.9

GOLD C HEIGHT

No.	*Name*	*Club.. ...*	*1969*
A. R. Levi		Midland	26.8
G. W. Locke		London	11.8
J. T. Mawson		Ouse	21.8

GOLD C DISTANCE

No.	*Name*	*Club*	*1969*
W. C. Lombard		Eagle	9.8
B. Connolly		Eagle	8.8

SILVER C COMPLETE

2480	P. A. Clee	Bicester	13.7
2481	K. Wilson	Surrey & Hants	17.7
2482	J. M. Benson	Yorkshire	26.6
2483	G. O. Avis	Kent	25.6
2484	N. W. Woodward	Oxford	26.7
2485	P. Davie	London	7.6
2486	P. N. Loewenstein	Cambridge	25.7
2487	B. O. O. Moore	Surrey & Hants	25.7
2488	S. Stride	Worcester	13.7
2489	R. W. Harding	London	28.6
2490	R. J. Hitchman	Moonrakers	28.7
2491	G. Stride	Worcester	12.7
2492	M. J. Silver	611 GS	7.7
2493	R. C. Bromwich	Moonrakers	13.7
2494	K. D. Mepham	RAE	26.7
2495	Judith Watson	Surrey & Hants	30.7
2496	A. J. Dodd	Staffordshire	27.6
2497	E. Macdonald	Essex	29.6
2498	R. J. Harris	Thames Valley	30.7
2499	G. C. Cole	Surrey & Hants	27.7
2500	J. H. Dent	Bicester	27.7
2501	M. G. A. Teather	Surrey & Hants	6.8
2502	A. J. Wagenaar	Thames Valley	27.7
2503	D. W. Findon	Coventry	14.6
2504	I. T. Kirby	Airways	7.8
2505	M. S. Neal	Doncaster	30.7
2506	R. C. V. Skinner	Burton & Derby	6.8
2507	T. Moslin	Surrey & Hants	27.7
2508	I. Ozols	Leicestersire	25.7
2509	D. P. Sillett	Crusaders	3.8
2510	N. E. Forcman	Dorset Fl. Cl.	5.8
2511	W. J. Tyler	Worcester	25.7
2512	A. J. Wright	Essex	6.8
2513	W. C. Medcalfe	Essex	7.8
2514	B. W. T. Rood	Coventry	6.8
2515	G. M. Chinn	Four Counties	30.7
2516	K. B. Keeble	Bannerdown	25.7
2517	A. S. Miller	Cranwell	4.8
2518	R. F. Smith	Airways	6.8
2519	J. C. Trenchard	Swindon	17.8
2520	H. A. Haresign	Perkins	27.7
2521	R. A. Cole	Swindon	17.8
2522	P. B. Linfield	Scottish	27.7
2523	M. D. Drury	Essex	24.8
2524	H. C. Jennings	Phoenix	9.8
2525	A. Patterson	Wrekin	19.4
2526	R. M. Ward	Phoenix	9.8
2527	J. D. D. Gray	Doncaster	16.8
2528	C. D. Rowland	Bath & Wilts	23.8
2529	D. J. Osborne	Northumbria	30.7
2530	S. T. Gilmore	Coventry	28.8
2531	P. J. Bell	Worcester	17.8
2532	D. R. Wilkinson	611 GS	24.8
2533	J. W. Smithers	Surrey & Hants	1.5
2534	S. J. Clarke	Eagle	9.8
2535	J. Mitchell	Eagle	4.8
2536	M. D. Slater	Phoenix	10.8
2537	G. B. D'Ayton	Bath & Wilts	3.8
2538	J. A. Daniel	E. Midlands	30.7
2539	M. N. Bishop	Essex	6.8
2540	B. E. Richards	Leicester	24.8
2541	K. A. Stevens	Surrey & Hants	7.6
2542	A. J. Slade	Surrey & Hants	11.6
2543	H. H. T. Wolf	Dorset	24.8
2544	R. A. MacFarlane	Essex	13.7
2545	B. W. Bowhill	Ouse	6.7

Correction: On page 420, last issue, 3/91 J. R. Barrows was wrongly entered under Diamond Height, it should have been shown as Diamond Goal (see 2/302 above). In the Silver C list, entry 2408, should read Catherina Edwards, and under Gold C distance F. J. Sheppard's club should have been Londis/CISAVIA. Apologies to the pilots concerned.

MY 917 KM. GOAL FLIGHT

By ALVIN H. PARKER

This flight is subject to homologation as a world goal record but has since been beaten by Wally Scott on 22nd August with a distance of 976 km.

I AWAKENED at about 7.20 a.m., 8th August, 1969, and sleepily debated about whether or not to stay in bed another ten minutes, or to get up now and make my daily trek to the weather bureau. The fear that I would oversleep and miss a chance caused me to go ahead and get up. A shave, breakfast, and a glimpse of the sky proved a bit disappointing. I almost went to sleep again on the way to the weather bureau, and I remember thinking that a person could get killed on this road just trying to find out about the weather.

At the weather bureau I found that the winds down low were about 15 knots out of the south, but they only reached 100 or so miles to the north. This was enough to make an out-and-return highly improbable. The winds changed to light and variable about 150 to 200 miles to the north. A stationary front was shown in the Oklahoma panhandle and southern Kansas. It was running in an easterly direction, but the western end was dying, and it would probably leave a lot of clag in New Mexico. Overdevelopment and thunderstorms were predicted along the east edge of the front. However, light, scattered overdevelopment was forecast in the mountains to the west of the deteriorated end of the front. This was a most discouraging picture! As I was about to leave, I noticed the 9 a.m. map coming off the machines. The map showed the eastern part of the front well north of its night position, so I decided to wait and see what the western end had done. This western end had also moved well north. Feeling the chances were few and far between, and that nothing would happen without giving it a chance, I decided to try a goal flight.

I returned to my planning map at Ector County Airport, reviewed what I had learned at the weather bureau, and selected Blanding, Utah, as a remote and improbable goal. After the decision was made, everything seemed to move as slowly as thick molasses. Time rushed by at a frightening rate and things were accomplished at a snail's pace. At last I managed to get the Sisu to the take-off line! As usual, when I pulled out on the runway to get set, a power plane entered the traffic pattern to land, causing the glider and tow-plane to scurry to the side line. After the ship had landed, I finally managed to get off at 10.45 CSDT.

I had decided to tow to a point about ten miles SSE of the airport. Pat Reich, my tow pilot, was told of my intentions and Bob Bowden, my official observer for the flight, was asked to ride in the tow plane to observe the release and pinpoint its location. Pat was instructed not to climb higher than 6,200 ft. msl., and away we went. We towed across the east edge of town, across Highway 60 and across Interstate 20 towards a plant SE of the large chemical complex on the SE edge of Odessa.

By this time it was obvious that I was 30 minutes late in making the effort. The thermals were so numerous that it was most difficult to stay below the 6,200 ft. As we crossed a paved road between two intersections, I realised that to stay on tow would incur an altitude penalty, so I released at 10.55 a.m. I made a shallow right turn to avoid the thermal we had just towed through, and proceeded back towards Ector County Airport. Just west of Ector County I encountered good lift and climbed to about 6,300 msl. and proceeded on course. I had no difficulty finding good thermals along the route and was able to climb to cloud base west of Andrews. Well past Hobbs, New Mexico, I could see the beginnings of a big blue hole! My first thought was to work west along the clouds, but then I decided to go to the edge of the hole, stay as high as I could, and try for Roswell, New Mexico. I hoped to find lift on the high, dry land west of Roswell. Near Hagerman intersection I contacted Ben Sapyta at the Roswell Flight Station. He gave me a short weather briefing and added that he could see dust



Route of Al Parker's flight. Note compass points on lower right.

devils on the six-mile hill west of Roswell. This was most encouraging.

As I crossed old Walker Air Force Base I was nearly 2,000 ft. agl. I contacted the tower and told them that if I did not encounter lift I would plan to land there. The controller said that that would be fine, just to contact him. However, I climbed out nicely, and proceeded on towards the high ground to the NW. Thirty minutes late getting off proved to be good luck after all!

On encountering another thermal about 18 miles further NW, I told Ben that I thought I would be able to cross the hole. I gradually worked my way across the big hole towards Duran, New Mexico. Conditions deteriorated somewhat, and I was rather low getting into the Duran area, which was the beginning of the next cumulus clouds. I could see individual fence posts and tree trunks, but my luck held and I found lift again just west of Duran. From here I followed the better-looking clouds in a northerly direction across Encino, east of Clines Corners, and on towards Sante Fé. I crossed the main highway about 15 miles north of Clines Corners. Here I found myself in another hole! The few cumulus clouds were west of the Rio Grande River in the mountains west of Santa Fé, south of Redondo Peak. There are no airports shown west of Santa Fé, and the terrain appeared most uninviting. I also realised I was now out of reach of my crew—Bob Bowden and Tim Parker.

I know that if I were to even approach my goal I must try, so I glided into the foothills of the mountains. The trees were large and lush but the slope was such that I could glide to a good landing area. However, I climbed back to about 14,000 msl., which still isn't a long way from the ground. This put me next to a cloud in the process of overdeveloping. I climbed in the rain to about 14,800 ft. Ha, who needs oxygen!—and I worked on across the mountains to near La Ventana at the edge of another big hole. This one was not nearly as forbidding as the other two. In the clear I was able to climb to 12,000 and 13,000 and proceeded on towards Farmington, New Mexico. From the mountains east of La Ventana, which I never did see, to within sight of Farmington, my navigation was uncertain. There seemed to be many land-



Al Parker about to take off in his Sisu 1A N1100Z. (Photo. Alex Aldott)

marks but I could not match them up with the map.

Southeast of Farmington, some wisps developed into reasonable clouds and I was able to get back up to 14,000 ft. msl. Then, even the wisps seemed to fail and there was a hole extending about halfway to Cortez, Colorado. I contacted Farmington tower and asked for the ground winds and was told they were 4 knots from 200°. The sun was well in the west and shining on the west face of the cliffs. This should produce thermals! Asking for the winds aloft, they referred me to flight service, and I called them. The winds in the 9,000-12,000 altitudes were light and variable, and there were dry thermals about in the direction of Ute Peak, where I could see good cu. I climbed a dry thermal to give me about 14,000 ft. with Farmington Flight Service watching me with their field glasses. I then worked my way on towards the cu. which now appeared developing closer to me. Just south of Ute Peak I got a solid 14,000 ft. msl. and headed for the fine-looking cu. just west of Ute Peak. While approaching it, it dissipated! I arrived at its location at about 13,500 ft. msl. This was 8.10 CDST. Here I debated the wisdom of going east about five miles to another fine-looking cu. but decided that it would be gone by the time I got there, so turned towards Blanding, Utah, which was approximately 40 miles away.

I radioed Farmington Flight Service that it would be close but that, in any case, I would be in the immediate area of Blanding and asked that they tell my crew this if they called, and to relay to Roswell Flight Service.

Pushing the speed up to about 130 mph indicated, and sailing across the airport at about 1,000 ft. agl., I made a circle above the field, dropped my gear, pulled up to kill the speed, put out the flaps, and sailed in for what I thought was a rather good landing for a 50-year-old after a 10 hour 3 minute flight.

A bit later Mike Murphy, who works for Western Exploration Company, which is headquartered in Odessa, Texas, came over with his date, to see what sort of aircraft could be so quiet and then make all sorts of odd noises—gear, flaps, and airbrakes. He said that when he first saw the ship, he decided that it was a glider, but, when it pulled up in a sharp climb and began making the odd noises, he decided that he must have a look. I reported my success and found out that my crew were in Pagosa Springs, Colorado, and told my wife that I had a reservation in the City Center Motel, which turned out to be full. I wound up in the Gateway Motel, which caused all sorts of

difficulties for my crew in contacting me in spite of all my efforts to have the calls forwarded.

My crew could not find a room as late as this in the Colorado Resort Area and had to drive all the way into Blanding to find a bed. They arrived at the hotel at about 1.30 a.m. They were two very tired 16-year-olds, who had driven 728 miles without resting or eating.

Upon receipt of my copy of the barograph trace from Miss Bertha Ryan, I found that I had released 9 feet higher than I had intended; and I believe that I could have gone 12 miles past my goal.

Wally Scott's story of his subsequent flight of 976 km. on 22nd August will appear shortly in SOARING.

THANK YOU NICK

NICK Goodhart has contributed to British and World gliding in many fields, but the one in which he has made his indelible mark is that most complex and disputatious of all—Air Traffic Control.

Nick took over the Chairmanship of the BGA Airways Committee in 1962. By then, we were becoming hazily aware that, whilst all of us in gliding and sporting aviation had been fully employed struggling in our spare time to build up our particular bits since the end of the war, the commercial and military aviation interests had planned and put into work a system of Air Traffic Control which, as it developed, must increasingly squeeze us out of the sky altogether.

So far had they gone in turning their ideas into the Conventional Wisdom that it took, in fact, over five years to get into the Official Mind the blindingly obvious fact that the more airspace they restricted to the use of one section of aviation, the less there must be for the rest of us, and hence the higher collision risk they must impose on us. It was only at the extreme point of explosion in 1968 that, at last, the ATC authorities accepted that they must bear the responsibility for collision risk, not only in controlled airspace but throughout the whole of UK airspace.

For some time before 1962 I had been throwing out the wild idea that the hazard of aerial collision might be tackled through a mathematical approach, but everyone had laughed the idea to scorn. But as soon as Nick came on the scene, he applied his brilliant and logical mind to this notion with enthusiasm.

For five years he and I worked in increasingly close collaboration, he mainly on the Ministerial and technical side, I on the political and public aspect. I like to think we made a good team!

In the last days of 1967, a crisis came over the Lyneham Special Rules Zone. We both came to the conclusion that there was nothing to lose by an all-out attack, for, if we did nothing, the plans then in the pipeline for a large number of further restricted Zones must succeed, and gliding as we knew it would come to an end. We lost the battle—the Lyneham Special Rules Zone came into effect—and remains still as the most unnecessarily restricted airspace in the world. But we won the war—or at least deferred its loss for some years yet. Two years later, the entire attitude of the Ministry concerned—now the Board of Trade—has changed immeasurably for the better. It is now fully realised that the air is for the use of all of us.

The validity of Nick's mathematical concepts has been accepted, at least as one of the tools available to tackle the problem, and indeed his ideas have received a good deal of international recognition.

Nick has for some time past indicated that, owing to increasing demands on his leisure time, he would have to give up the Airspace Committee Chairmanship. To find a replacement was not an easy task but we have been more than fortunate in that Tony Deane-Drummond has accepted to take on this demanding job.

Nick has now retired. I am sure all of us who sail the skies of Britain would wish to join me in thanking him for the degree of freedom we still possess.

PHILIP WILLS

THE READING MOTOR GLIDER — ALIAS THE WHITE KNIGHT

By GEORGE WHITFIELD

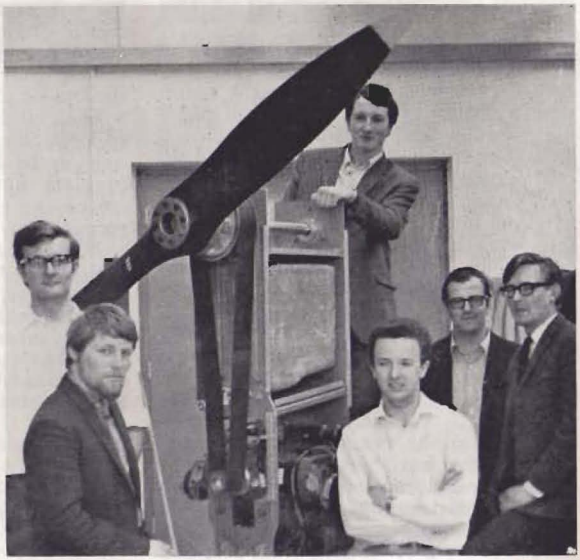
IT all started because three lecturers in Applied Physics at Reading University wanted to build an aircraft. Or — rather — we wanted to supervise a group of students, who would design and build it as part of their third year undergraduate course, but it was clearly too much work.

However, last spring it was becoming obvious that the time was ripe for the development of a two-seat motor glider for training and that fitting an engine to an existing glider would be both interesting and feasible. We started to think about how to raise the money.

Already, we had an airborne data-logging system which recorded both height and speed for computer analysis. It was developed for glider performance measurement, but the meteorologists at Reading were interested in extending it for airborne meteorological research. As a vehicle for this work, a glider had the right flying characteristics, i.e. low speed and good handling at minimum sink and, with added power, would be almost ideal. The meteorologists were enthusiastic about the project . . . and there is money available for meteorological research!

So the plot was hatched. The aircraft would be a relatively small part of a three-year meteorological research programme. The research contract would pay for a glider, engine, propeller and the materials for the conversion; the work would be done by a group of eight students in the Department of Applied Physical Sciences. The Natural Environment Research Council — who support such things — were approached for a grant; they made favourable noises so, in May, we started work on the design.

The specification almost wrote itself. We needed a two-seater — to carry a meteorologist as well as the pilot, good disposable load for, say, 70 lb. of instruments, and a good rate of climb —



WE MADE IT!

better than 500 ft/min. — for safety and convenience. It was necessary also to have an engine which would run reliably at low power, as some of the research would require slow level runs, using small changes of height to indicate vertical air motion; the engine could not be nose-mounted, as the nose was required for an instrument boom. Cloud-flying ability and speed-limiting brakes were essential. Notice that all of these requirements are acceptable in a good trainer.

At about this stage we formulated the two cardinal principles of design. First, the motor glider must be as airworthy as the basic glider, with no compromise on placard limitations or airworthiness category. Second, the design would be optimised for the climb — some existing two-seat motor gliders having relatively low rates of climb.

The glider had to be British, as the conversion would require ARB certification, and we could not face the problems of negotiating with foreign designers and authorities as well as with our own. So we chose the Slingsby T-53B, a modern all-metal aircraft.

The engine had to be a four-stroke for good low-power running, giving about 50 h.p. for the required rate of climb. It would ease certification also if we used an ARB-approved unit. So we chose an Ardem Mk. 10, the Rollason conversion of the 1,600 c.c. VW engine, which gives about 54 hp at 4,300 rpm. Since the nose was occupied, we decided to mount the power plant in a pylon over the CG, and to use a pusher propeller to keep it clear of the rear pilot. The propeller would be driven by a toothed belt at one-third of engine speed, thus combining high propeller efficiency and low noise with maximum engine power.

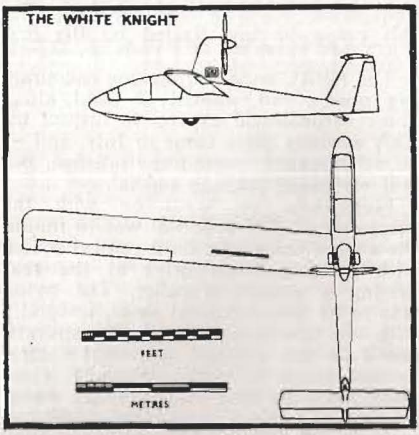
By the end of June the design was settled. Preliminary calculations suggested an all-up weight of 1,500 lb. and a rate of climb of 650 ft/min. at 50 knots. A development schedule was laid out, leading up to a first flight in April, 1969. The plan was to build a prototype pylon in the autumn term and to test it around Christmas, to build and fit to the glider a Mk. 2 pylon in the Lent term, and to test-fly in the summer term. Major items were ordered, with delivery dates to fit this schedule. The only serious technical difficulty which we anticipated was with engine cooling, but this could be investigated on the first pylon.

The NERC were still making encouraging noises, but wanted to send along some aeronautical experts to inspect us. This working party came in July, and — so we thought — went away satisfied. But still we heard nothing official.

Meanwhile, we went on with the design work. The proposal was to mount the engine low down on a central pylon, with a toothed-belt drive at the rear driving a pusher propeller. The pylon was to be built of dural sheet, integrally with the centre-section of the aircraft; the T-53 has a small structural centre-section which is bolted to the fuselage and carries the wing fittings. There would be space between the engine and the propeller shaft for about six gallons of fuel in a fibreglass tank. The whole installation would weigh about 300 lb., and modifications to the glider would be minimal.

Slingsby were very helpful all along, providing drawings, test reports and — as it was written — the type record. When we received the section containing stress calculations, we found that the wing mainspar near the root was too weak to carry our extra weight. This was a headache, as we could not see how to strengthen it without requiring major redesign of the wing structure. The solution was found during a discussion with Jim Tucker, of Slingsby, and was a very simple one — to bond strips of dural to the spar booms, clear of the spar webs. We could then use standard booms and webs, and the completed spars would still fit the wing assembly jig. Having solved that one — and much more work was required than this paragraph suggests — the local strengthening required in a few other places seemed easy.

Obviously, it was important to choose the right propeller. The larger the diameter, the more slowly it must run and the higher its efficiency; but a larger propeller would be heavier, would require a taller pylon, which would be heavier, and this, in turn, would create greater drag. Also, a larger propeller would be likelier to overspeed the engine in a Vne dive. With the assistance of Mr. Richardson, of Hordern Richmond, finally we chose a propeller of 7 ft. diameter, to



rotate at 1,400 rpm with a 3:1 reduction from the engine.

In August we approached the ARB about certification. The situation was complicated because there are no design requirements for motor gliders, and Reading University is not an approved aircraft design organization. But the ARB were very reasonable, and it was obvious that both sides wanted to establish that the aircraft would be safe without excessive delay or paperwork. The final arrangement was that Slingsby would provide a sailplane which met all of the glider requirements at our increased AUW, Reading University would be responsible for the engine installation and, of course, the ARB would require suitable design calculations and test reports, and would inspect whenever necessary.

In mid-September we were up to schedule — the engine was about to be delivered, the propeller design was complete and the order placed, and Slingsby were going to start detailed design of the modifications to our T-53. At this stage NERC said that they could not support an aircraft development; they would support meteorological work using a pure glider . . . but that is another story. The University had to pay for the engine and propeller, and Slingsby very kindly agreed to delay the glider until we could raise some money elsewhere. Meanwhile, we had eight students coming up to work on a project for which the money had vanished. Should we cancel?

After some cogitation we decided not to cancel. It was rather too late to give them a new project, and the design, construction and ground test of the pylon would in itself be a significant engineering exercise; also, we hoped eventually to raise the money elsewhere.

And so the project went ahead. But it has been slowed down, because the urgency and enthusiasm were reduced, and because, having little money, we had to make many items which we had intended to have made for us.

The rest has been detail — detailed design of the pylon, fuel tank, propeller shaft and transmission, detailed performance calculations, design of instruments to measure thrust, torque and engine rpm, and arrangements for calibrating them. Now, however, things are looking up. The pylon is being built, the concrete block is being laid and the instrumentation is being put together.

The foregoing article was written in April, but has been held over because of the trouble at Slingsby Aircraft. We didn't run the engine on the pylon in June. The students took their degrees in July and mostly departed, leaving much to be done. Since then the pylon has been finished and the engine has been run. But there have been teething troubles with the starter and the belt tensioning device; however, the propeller has now been driven.

So far, we have not found a sponsor but we are negotiating with the Ministry of Technology. We still hope, therefore, that the White Knight will take to the air in 1969.

ESTIMATED PERFORMANCE	Motor Glider	Glider
Empty weight	1,100 lb.	780 lb.
Maximum all-up weight	1,550 lb.	1,160 lb.
Stalling speed	74 ft/sec.	60.3 ft/sec.
Climbing speed	90 ft/sec.	
Rate of climb at sea level	550 ft/min.	
Rate of climb at 10,000 ft.	85 ft/min.	
Take-off run to clear 50 ft. from grass, no wind	400 yds.	

1970 SOARING SYMPOSIA

THE outstanding success of the 1969 Soaring Symposia and the demand for the reports published subsequently have encouraged the organizers Ed Byars and Bill Holbrook to hold another series during the early part of 1970. At the first of these—the International Symposium on Soaring Flight at Los Angeles on 17th-18th January—Sailplane Design will play a major part and should draw a lot of interest. Among those participating are Pat Beatty, who will discuss the South African BJ-4 and also present a paper written by his partner Fritz Johl; Klaus Holighaus, designer of the Cirrus and Nimbus is coming over from Germany to discuss design philosophy; from Britain, Nick Goodhart will present his paper on project Sigma; and last, but not least, USA's own Dick Schreder will address the meeting in his role of designer of the HP series. Speaking on the future from the pilot's angle will be World Standard Class Champion A. J. Smith and 1969 USA Champion George Moffat.

The Webster Hall in Pittsburgh, Pa., will be the venue on 21st-22nd February for the second of the series, the Symposium of Competitive Soaring in which Contest Director Marshall Claybourn will deal with task selection and rules interpretation. A. J. Smith, George Moffat and Dick Schreder are expected to be at the same meeting to offer the benefit of their experience and it is hoped that Gene Moore will be there to present some useful data on instruments.

The third and last Symposium—on Soaring Cross-country—is scheduled also at Webster Hall, Pittsburgh, on 14th-15th March, aimed particularly at making soaring safe. A feature will be Angie Schreder's Crewing Can Be Fun lecture, and the programme will be formulated to give basic ground tuition to the embryo cross-country pilot.

Further details regarding accommodation, etc., will be sent on request from Soaring Symposia, 408 Washington Street, Cumberland, Maryland 21502, USA.

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MOTOR GLIDER NEWS

By ANN WELCH

Definition of a Motor Glider

With any luck the definition could be the same—or about the same—all over the World. It is obviously sensible that a common definition should exist, but communication in its various forms is still an imperfect tool.

At the CIVV meeting last March, proposals for an FAI definition were discussed with the intention of taking a final decision in November this year. The proposal put forward by Germany has been embodied in the new British definition recently agreed with the ARB and BoT, except for the addition of points 9 and 10. This is known as the Redhill 1969 Definition, Redhill referring to the headquarters of the ARB.

Self Launching Motor Gliders 1969 Redhill Definition

1. Max. AUW	750 kg.
2. Max. take-off distance	600 m. to clear 15 m. in zero wind
3. Min. rate of climb	300 m. in 4 minutes in zero wind
4. Max. stall speed	75 km/h. at max. AUW with CG forward
5. Min. normal glide ratio	20:1
6. Glide ratio with spoilers	8:1 or less at 1.4 Vs
7. Min. span	14 m.
8. Max. seats	2
9. Max. power loading	1 BHP per 20 lb AUW
10. Max fuel capacity	8 (Imp) gallons two-seaters
	6 (Imp) gallons single-seaters

Two-Seaters

Plans for the Schleicher ASK-16 side-by-side two-seater indicate that it should rapidly become a popular addition to the motor glider range when it goes into production next year. It follows the same pleasing lines as its smaller stablemate, the K-14, and will be powered by the quiet Volkswagen engine.

The Scheibe Falke, based at Lasham, is proving both popular and useful in glider pilot training. Since May it has done 200 engine hours and 350 flying hours. The charge to the student is 2s. per minute engine on and 1s. per minute as a glider, which is about the same cost for airborne time as wire-launching and aero-towing without soaring.

When used for *ab-initio* training, experience to date indicates that a person of fair (normal) aptitude is able to take-off, plan his circuit and land properly in about 4½ hours. He is then transferred to the K-13, and goes solo after about eight wire-launches or six aero-tows. During this time he carries out spin recovery training, and anything else that is necessary to round out his skills. It has been found, however, that a slow-to-learn student has some difficulty in learning to co-ordinate his turns due to the aileron drag and slightly heavy rudder; he also seems to find a little difficulty in avoiding bouncing on landing. For such students, there may be a case for transferring them onto gliders until they have the feel of flying a bit more.

For advanced training the Falke is of special benefit. Concentrated practice can be given on cable-break practice and field landings. Six simulated cable breaks can be carried out in 20 minutes, and six field landings down to the round-out in 30 minutes, including field selection and planning the approach. It is also used for pre-glider cross-country training. The student is taken on a task flight of 1½-2 hours using thermals. The engine is stopped at the aero-tow height of 2,000 ft. and the student tries to carry out the task. If he fails to stay up—the glide ratio of the Falke is just 20:1—the motor is started at about 1,000 ft. but left idling. The student then has to choose the field and make a simulated landing in it. The engine is then opened up—and it is a quiet, socially acceptable engine—and the student climbs up and tries again. Not only does he learn to use thermals

away from his home airfield, but he gets valuable navigational practice.

The main problem that has arisen so far is that on a course of five students, the instructor has very little time on the ground to talk to them; further, they feel a bit left out because they have so little to do on the ground, and almost look at the wire launch line with its pushing and bat waving with envy. The instructor tries to overcome the problem by stopping flying after each group of five flights and giving a short lecture, but ways are being worked out whereby the students left on the ground can, as a group, do some self-teaching.

The Falke uses two gallons an hour of five star petrol, but can do a full day's work as a self-launching glider with the required in-flight re-starts on the 6½ gal. tank.

Pilot's Licence

Arrangements with the BoT to introduce a special motor glider pilot's licence are at an advanced stage. The licence will follow the general pattern, starting with a student licence requiring a medical, but permitting the pilot to fly solo under the supervision of an instructor, and followed by a full licence when the pilot reaches the required standard. The flying training will be based on glider and motor glider experience. This will allow a person to obtain his licence having been brought up in a gliding club—probably to Bronze C standard. It will not be necessary for him to fly aeroplanes or do the PPL course—or any part of it—at a flying club, although any such flying that he may have done would count towards his air experience. He will almost certainly have to do the PPL ground exams, or the equivalent, in Air Law, Met. and Navigation, plus demonstrating his ability to fly a motor glider, and know about the engine installation; these he should be able to do at any gliding club operating motor gliders. The holder of a motor glider pilot's licence will not be permitted to fly aeroplanes without obtaining an aeroplane SPL or PPL, although the acceptance of previous experience for this, which applies now, will also apply to the motor glider pilot.

Airworthiness Certification and Instructors Ratings

Arrangements for the former are almost completed, and under discussion for the latter, and it is hoped to be able to publish details soon.

NEW MOTOR GLIDERS

Hi—26 Mose 2

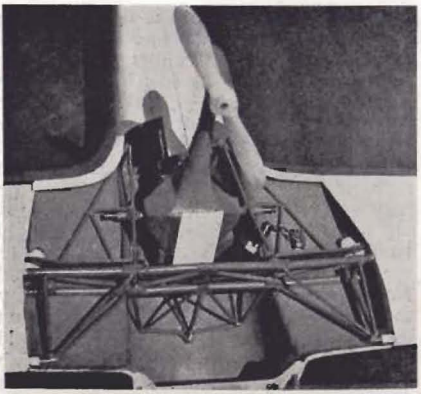
As long ago as 1937 Wolf Hirth, the famous glider designer who died in 1959, produced a motor glider which had some distinctive features. One of these was the possibility of folding the engine down into the fuselage. The glider was No. 20 in the "Hirth" series and was named Mose 1.

The firm has now developed Mose 2, No. 26 in the series, a side-by-side two-seater with the same characteristics, making it in soaring flight indistinguishable from a conventional glider.

Being designed for the middle performance bracket, such a motor glider can hardly be small. It needs a span of 18 metres, and wings easily detachable for hangarage. Many ideas from the early years of gliding have been embodied in the new design, and with modern construction techniques and aerodynamic know-how it should have good gliding performance.

The fuselage has a cross-section of ample width to provide comfortable seating for two pilots, however large and heavy. Maximum visibility all round is obtained by a perspex bubble canopy of adequate size which opens by sliding forwards. It has a tricycle undercarriage, the nose-wheel being retractable.

The centre section is part of the fuselage and includes the wing-roots; the structure is of tubular steel with a bonded metal/wood main spar and has, like the rest of the fuselage, been covered in



Engine installation of Mose 2.

glass-fibre. The width of this centre part is 2.4 metres—which is the maximum permissible width for trailer transport. The all-metal wings are fitted with Schempp-Hirth brakes and are fitted to the centre section in such a way that they can be detached quickly over 90% of the depth and swung back along the fuselage for easy hangarage.

The engine is a fan-cooled, four-cylinder NSU four-stroke of 65 hp. with dry-sump lubrication, 12-volt electric starter/generator and battery ignition. Ventilation to the cabin is through a by-pass duct from the fan, while cabin heating is from the exhaust gases through a large expansion chamber for maximum silencing effect. In fact 5% of the empty weight has gone into the silencing system.

The propeller is shaft-driven with bevel gearing at the hub. Great emphasis was placed on securing a low level of noise; accordingly, a large slow-rotating propeller was designed to turn at only 2,200 rpm. and with a diameter of two metres. This minimises the nuisance, not only to those in the aircraft but also to those on the ground.

Technical Data: Mose 2

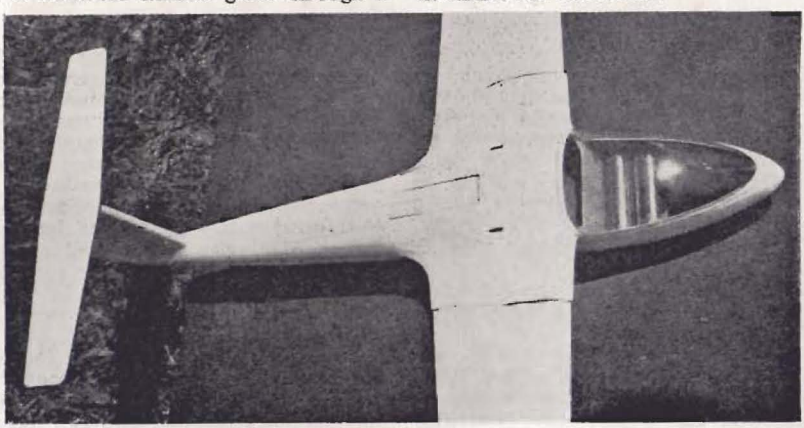
Span, metres	18
Aspect Ratio	14.75
Empty weight, kg.	452
Disposable load, kg.	225
All-up-weight, kg.	650
Engine, NSU, hp.	65
Rate of climb, m/sec.	3.5
Cruising speed, km/h.	130
Fuel capacity, litres	40
Glide angle at 85 km/h.	28
Min. sink at 75 km/h., m/sec.	0.80
Landing speed, km/h.	62

* * *

Technical Data: SFS 31

Span, metres	15
Aspect Ratio	18.8
Empty weight, kg.	305
Disposable load, kg.	115
All-up weight, kg.	420
Engine, Rectimo, hp.	40
Rate of climb, m/sec	3
Cruising speed, km/h.	160
Fuel capacity, hours	4-5
Glide angle at 80 km/h., m/sec.	28
Min. sink at 80 km/h., m/sec.	0.80

The performance figures for both machines are calculated.



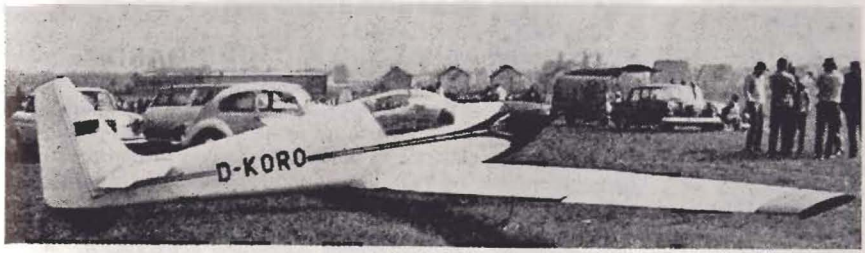
The Mose 2 with engine retracted

SFS 31 "Milan"

This machine has been built by Sportavia and Scheibe and got its number by adding the RF-4D and SF-27 together which, in fact, sums up this motor glider at once.

With this joint effort these firms hope this machine will find many friends. It can be ordered through either firm, and service and repairs are also carried out by both.

The 15-metre SFS 31, with the good aerodynamic properties of the RF-4 fuselage, a propeller which can be set for soaring flight, retractable undercarriage and the Wortmann profile wing of the SF-27, is claimed to be a first-class single-seat motor glider with good gliding performance.



The SFS 31.

BGA NEWS

Airspace Committee

As can be seen from the tribute to Nick Goodhart (see page 485), we welcome Tony Deane-Drummond who has taken on the arduous task of chairing the above committee.

Sites

There is some concern that so many gliding clubs lack security of tenure on their sites. This could present serious problems in the next five to ten years. A study of the implications is at present taking place as a basis for a plan for the future, which ensures that an adequate number of clubs can establish themselves on permanent sites, be they airstrips or tradition airfield-type sites. Any helpful information will be welcomed.

Nationals 1970 (See page 467 for dates)

The Standard-Sport Class will again be held at Dunstable; while the Doncaster G.C. has been selected for the first time to run the Open Class. Entry forms available shortly from the London or Doncaster G.C. Closing date, 31 January, 1970.

New Record Claimed

Ted Pearson, resident in South Africa, flew his Cirrus around a 102.5 km. triangle at 119.2 km/h. during the Rhodesian Nationals on the 11th October, 1969.

Subject to homologation this will beat Alf Warminger's existing British National record of 115.1 km/h. which he has held since 1965.

Extraordinary General Meeting

Club representation at the above meeting, which was held on 18th October at Imperial College, S.W.7, was disappointing.

Verbal reports on the activities over the last six months were given by the chairmen of the various sub-committees and the opportunity was given to those present to raise questions and air their views.

British Team

Aircraft arrangements have now been finalised and George Burton, taking advantage of the good weather, has been practising on the ASW-12. John Delafield hopes to collect his Phoebus 17 (with provision for water ballast) at the

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end of November. Con Greaves will be flying a Std. Libelle which should be ready by mid-November, while Andy Gough will be flying a Std. Cirrus, of which Don Austin is expecting to take delivery in January.

Three of the pilots will be going to South Africa this winter to practise for Marfa.

As readers will have noticed, the BGA opened its World Champs Appeal fund by asking for donations. We are pleased to say that up to the 22nd October a total of £315 8s. has been donated by those listed below to whom we are most grateful.

Acknowledgments

Adam, J. H. M.
Anonymous (four individuals)
Bevan, T. W.
Bowles, T. H. B.
Christy, Naomi
Collins, J. N.
Conant, Sir Roger
Deen, Inge
Dimock, H. R.
Ellis, J. J.
Fitzroy, K. C.
Giles, E.
Graham, Judy
Harper, R. D. M.
Harrington, T. C.
James, D. B.
Kronfeld Club Collection
Lathbury, J. F. F.
Lewis, D. J.
Manthorpe, H. G.
McLane, J. L. G.
Oates, T. J.
Orde, Alex.
Paget, Enid
Paul, Air Cdre. G. J. C.
Peel, N.
Perkin-Elmer Sports Club
Portsmouth Naval G C
RAFGSA
Robertson, D. J.
Rubery Owen Ltd.
Souter, A. J. M.
Stachowirac, W.
Sywell Collection
Taggart, J. G.
Wade, J. S.
Warminger, A. H.
Whateley, W. R. J. E.

Annual General Meeting

The Association's AGM and Dinner-Dance has been scheduled for Saturday, 21st March, 1970, and will be held at Imperial College, London, S.W.7.

Dinner-Dance

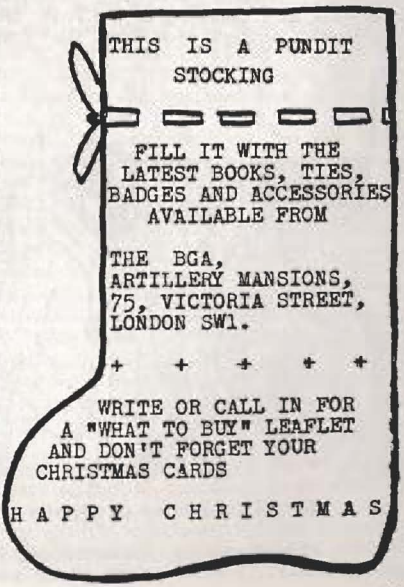
Imperial College is the place, and we hope that *You* will be there to wine, dine and dance—by candlelight.

Tickets will be 50s. per head and—wait for it!—this includes table wine during dinner, ridiculously cheap for what promises to be an evening to remember.

In order that our visiting members from further afield are not deterred by the expense of long-distance travel and hotel accommodation, our Home County members are asked to make an all-out effort to offer hospitality.

Anne Ince has kindly agreed to put members in touch with each other, so those who can help by offering "B & B" please contact Anne at 45 Eastwick Drive, Great Bookham, Surrey. Tel. Great Bookham 2784.

To avoid disappointment please do this NOW.





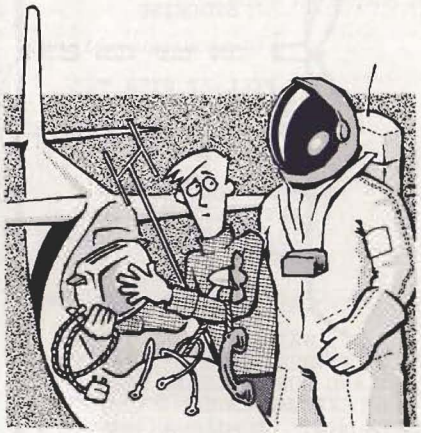
Prodigal's Return

By 'Dunstablighter'

MY partner is turning me to drink. If he carries on the way he did last winter, I fear he'll make me submit to that ultimate enemy of all glider pilots—women.

If one is a sensitive soul and enjoys gliding for its aesthetic values, as demonstrated in "The Thomas Crown Affair" and advertisements for Cadbury's chocolate, one does not tend to fly too much during the winter. Too masochistic. Unless one has been turfed out of the flat by the landlord, one does not tend to take full advantage of the club's winter amenities. If one is cunning, one can even arrange to have a dose of 'flu during the weekend which one's syndicate has decreed shall be devoted to the C of A.

I shouldn't have been too shocked, therefore, when I found the Ka-6 changed somewhat as I returned to the fold, the syndicate's prodigal son, on the first

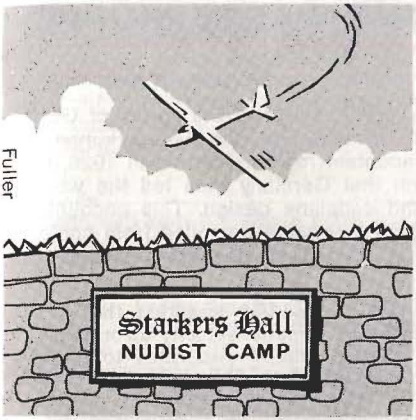


. . . like the innards of an Apollo

thermic day of spring. Nevertheless, I was—literally. Twelve volts and an unguessable number of amperes earthed themselves through my body as I switched the electrics on after rigging. It was when I got to my feet, emitting blue phrases and some residual blue sparks, that I realized the enormity of the changes. The cockpit looked like the innards of an Apollo command module. Wire everywhere. Red wire, black wire, blue wire, green wire and purple wire with orange spots. I deduced with some accuracy that my electronically-minded partner had been busy on the systems during the winter.

I never traced the source of my electric shock. I suspect the culprit was a length of steel-grey wire, completely uninsulated, which had been sitting, coiled like a snake, on the cockpit seat. Although neither end was connected visibly to the battery, it was obviously destined to assist in the intercourse between the positive and negative terminals at some time or other. It even had one of those weird little devices which emasculate, boost or otherwise interfere with the battery's pure current. I guess the wire was about 50 yards long, and rolled up with it were half-a-dozen slender stakes about three feet long. I learned later that the wire was a fence designed to be erected around the machine after an away landing. With a current flowing through it, it would keep cows at bay while the pilot seeks a telephone. I'll admit that I approved of the concept of the device, not being too fond of cattle—but that's another story.

My partner's electronic ingenuity didn't stop at electric fences, though. It descended to quite bizarre depths at times. Most of the circuitry had either to do with the variometers—awesome things; oh for the days of an unadulterated Cosim!—or the radio. I couldn't rid myself of the conviction that, one day, the circuits would get crossed. Imagine it. All the radio chatter is blanked out in sink and becomes audible only as it comes through the audio unit as you soar in lift. Admittedly, it would increase to a scream at over 10 knots, but 10 knots is likely to make you forget little things like excessive noise. And, instead of receiving the audio's usual raspberry as you fall out of the thermal, you would be encouraged by the fading voice of somebody announcing that he'd just picked his landing field.



Fuller

. . . picked his landing field

Eventually, I'd identified everything save a small unit near the bottom of the cockpit. I just couldn't figure this one out. It was connected to the rest of the circuitry, but led nowhere. It had terminals, however, on to which wires could be fixed. I assumed that it was an electronic marvel under development, blamed on it a delicate odour permeating the cockpit, and got myself airborne before the last thermal disappeared for the day.

The delicacy of the odour became less so under the canopy. I assumed that some less - than - public - spirited creature had crept into the bowels of the machine



. . . The delicacy of the odour

during the winter and had died. I flew at max. permitted speed in a vain attempt to clear the air, and landed as soon as my pride would decently let me. The villain turned out to be a pair of elderly socks—odd ones to boot and with holes in them. My partner's. I'll admit, though, that he'd tried to mend them. He's pretty bright at electrics, I thought, but not so hot on domestic work, since he hadn't used wool at all. Instead, he'd used very thin wire coated with blue plastic insulation. The result was admittedly very pretty, consisting of a loose, even lacework of blue wire woven into the foot of each sock. It didn't seem very efficient, however, since the holes hadn't received any special attention, as one might have expected. He'd also left long ends of the wires loose.

I learned later that the intention was to wear the monstrosities and fix the mending wire to the small unit at the bottom of the cockpit which had puzzled me. The wire would be heated by the batteries and would, in turn, warm my partner's feet. They were electrically-heated socks destined for Portmoak!

GAPAN AWARD

THE name of J. A. Karran is familiar to those members of the Surrey Gliding Club who have flown at Redhill, and to those who have flown at Lasham in the early years after the Club's arrival there. Jack Karran's ability as a soaring pilot was well above average, but his inclinations did not lead him to participate in competition flying, for he preferred the relaxation to be got from flying high and lonely above the diminutive earth and the problems of daily life which he was required to tackle. For many years he held office as Deputy Director in the Aviation Safety Directorate of the Ministry of Aviation, and he was internationally recognised as an authority on this subject. He was forced to retire prematurely for reasons of ill-health originating largely during his RAF career. All his friends and acquaintainces will surely be glad to know that the Guild of Air Pilots and Air Navigators has awarded him the Cumberbatch Trophy in recognition of the "immense contribution" he has made in the field of airworthiness and aircraft performance, thus greatly enhancing United Kingdom and international aviation safety.

G. H.

LAST NATIONALS ON THE WASSERKUPPE

By CHRISTOPHER WILLS

1939 — thirty years ago — saw the last of the series of German national competitions held annually on the Wasserkuppe, the highest point in the Rhön mountain region. Starting in 1920, these meetings were a visible sign that Germany then led the world in the technique of soaring and sailplane design. This account, the first to be published in English, has been compiled from copies of "Flugsport" and Wolf Hirth's "Handbuch des Segelfliegens".

OSKAR URSINUS, editor of *Flugsport*, in a flashback to 1920, wrote: "On the way to South America I had spoken to a ship's captain, who asked about the pilots on the Wasserkuppe. After some months, to my great excitement, I received a letter in which he enclosed 89 dollars. At that time a young glider pilot lay in hospital in Fulda with complex leg and pelvis injuries, with no money to pay for his care. At one blow we were helped. This helper was none other than Kapitän Christiansen, our present Corps leader" (referring to the NSFK — National Socialist Flying Corps). "In 1920, 20 young men were flying; today there are 20,000. In 1920 we flew 1 km.; now we fly 500 times as far. In 1920 we flew 50 metres high; now it is over 8,000 m. The figures speak for themselves; gliding is a power in the world to be reckoned with . . ."

The Machines

These were : 2 Rheinlands, 9 Mü-13D's (from Akaflieg Munich), 6 Reihers, 6 Weihes, 3 Condor 3's, 4 Minimoa-38's, 1 Minimoa-39 (latest machine from Munich Akaflieg), 2 Mü-17's, 1 B-6, 1 B-8 (from Berlin Akaflieg), 1 Gö-2 (from the Göttingen Akaflieg), 1 C-11, 1 FVA-13, 4 Horten 3B's. 18 Kranichs were in a two-seater Class. 7 Mü-13D's, 2 Rhönadlers, 1 Gö-3 and 3 Minimoa-38's were in a Class for young pilots.

The Reiher 3 was regarded as the best machine of the day. It was of wood and fabric construction and had a span of 19 m. It weighed 220 kg. empty and had a calculated best L/D of 1 : 33 at a speed of 67 km/h. Min. sink was 0.53 m. at 55 km/h. Only a few Reihers were ever made. The difference between the Minimoas-38 and -39 was that the -39 had the first terminal-velocity airbrakes.

These brakes, also fitted to the H-28 (ancestor of the Libelle), were designed by the Hütter brothers, made by Schempp-Hirth, and developed by the DFS, finally being called "DFS brakes". The Mü-17, basically similar to the Mü-13, was Munich's entry for the Olympic Sailplane Competition, with a longer fabric-covered, steel-tube fuselage, and swept-back leading edges of the wooden wings. The Gö-2 (from the Akaflieg Göttingen) was a beautiful sailplane, with Minimoa gull-like wings mounted high on a perfectly streamlined fuselage. The four Horten-3 tailless machines were entered as part of the Luftwaffe team. This was surprising, as two of this type had broken up at 8,000 m. in thunderstorms during the previous year's competition. The pilot sat amid the wing, his head in a transparent canopy. Around him were the top and bottom surfaces of the wing, which were transparent also, to improve visibility downwards. That they were easy to handle and that they went up well was evident from the previous contest. However, their distance capabilities were still in doubt. The wing could now be carried on one trailer — previously the centre section had to be brought on a second trailer; the max. chord was 3.250 m. and so a very high trailer was necessary. It had a span of 20 m. and an empty weight of 215 kg.; wing loading was 8.7 kg/sq. m.; calculated L/D 1 : 32.

The Reiher and Weihe were designed by Jacobs. The Reiher was a scaled-up Sperber Junior (1936) and the Weihe was designed for cheap mass production! There were also low-performance machines in the contest, such as the 15 m.

FVA-13 from Aachen, which had a calculated max. L/D of only 1 : 20. Bräutigam had a hand-driven pump to drive his artificial horizon (only slight effort was needed to keep it going). There had been icing trouble with the external venturi-driven ones. Flinsch had a short-wave radio, using 49 m. wavelength.

The Pilots

All the well-known German pilots had entered, with the exception of the Dittmar brothers, Hanna Reitsch and Wolf Hirth. Contest Director was Josef Kunz. The contest was being run by the NSFK, which had entered by far the greatest number of pilots. The greater part of these entrants had "-führer" added on to the end of their ranks. The civilian DVL entries seem to have been quite a problem, but this was got round by simply calling them Segelflugzeugführers (literally "sailplane drivers"). It is gratifying to notice that nearly all the better pilots left this political organization for other jobs shortly afterwards.

There was one entry from DFS, Späte (the previous year's champion) in the Reiher V2 (2nd prototype). Six Luftwaffe entries in the single-seater class flew Horten 3's, a Mü-17 and a Minimoa-38. Four Luftwaffe entries were in the two-seater Class. Kurt Schmidt had changed his Mü-13, which he had originally designed and built in 1936, for a Condor 3. Flakowski, of the Luftwaffe, had changed his respectable Rhönadler of the year before for a Horten tailless, and Bernhard Flinsch, the Darmstadt student, was now flying a Mü-17 from Munich.

"No-one present dreamt that this would be the last Rhön Competition for a long time — the end of an unforgettable epoch of development! It was a terrific Jubilee Competition."

The Contest

Any number of launches per day were allowed. Catapult launches were to be from point A on the west slope, aerotows from either point B on the Wasserkuppe or point C below in the valley from Marchenwiese or Trankhoff.

JULY 23RD was the first contest day. Scheidhauer (Horten 3) had three relights and went 82 km. after the last one. He never got above 980 m. However, Baumann managed 297 km. in his Mü-13; max. height 1,080 m. Huth, 320 km. in Reiher 3, max. height 2,030 m. Hofmann, 284 km. in Weihe, got highest on this day, 2,560 m. Bräutigam, 321 km. in Condor 3; Treuter, 332 km. in Weihe; von Treuberg, 360 km. in Weihe; Beck, 320 km. in Mü-13D; Schmidt, 331 km. in Condor 3; Späte, 263 km. in Reiher V2.

Flinsch only managed 94 km. There were very many flights over 200 km., but some pilots after three starts never got away at all. Romeis, who had to parachute from his Kranich during the previous year's contest, went only 67 km. On this day, there were 51 cross-country flights.

JULY 24TH. — There were 56 cross-country flights on this day. Despite good heights of up to 3,220 m., the longest distance flown was 180 km., by E. Kraft in a Reiher 3. Schuchardt, who reached 3,220 m., flew his Berlin B-6 148 km. Direction of flights was Erfurt and Halle.

JULY 25TH. — 50 cross-countries. Treuter, in a Weihe, flew 112 km., the longest distance.

JULY 27TH. — 56 cross-countries. The longest distance was by Schmidt, in a Condor 3, 140 km.

JULY 28TH. — 69 cross-countries. At least 9 pilots landed at their goal at Regensburg, 225 km. away. The best distances were by Bräutigam, Condor 3, 282 km.; v. Treuberg, Weihe, 297 km.; and Bauer, Mü-13D, 276 km.



Flinsch in Mü 17.

JULY 29TH. — 69 cross-countries. Kraft, Reiher 3, v. Treuberg, Weihe, and Beck, Mü-13D, landed at Dresden, 278 km. away. Huth, 245 km.; Sauerbier and Müller, 231 km.; Flinsch, 250 km.; Späte, 244 km.; Vergens/Melchow, Kranich, 253 km.; Kuhnold/Schröder, Kranich, 236 km.

JULY 30TH. — Best distance 241 km. by Heinz Huth, Reiher 3. Flinsch, Schmidt, Bräutigam and v. Treuberg all flew 230 km. 57 cross-countries.

JULY 31ST. — 57 cross-countries. The longest distances were flown by Fick, 219 km., Reiher; Huth, 207 km., Reiher; and Ludwig, 201 km., Mü-13D.

AUG. 1ST. — 62 cross-countries. Flights of over 300 km. were achieved by Treuter, 344 km., Weihe; Kraft, 324 km., Reiher; Schmidt, 353 km., Condor 3; Späte, 324 km., Reiher; Schuchardt, 361 km., B-6; Kuhnold/Schröder, Kranich, 340 km. There were many other flights of over 200 km.

AUG. 2ND. — This was the great distance day. The longest distance of the entire contest was flown by v. Treuberg, the youngest competitor. He landed his Weihe at Greiffenberg, 392 km. out. Other long distances were flown by Späte, Reiher V2, 365 km.: Kraft, Reiher 3, Opitz, Weihe, Haase, Condor 3 and Flick, Reiher, landed at Görlitz, 361 km. Flinsch, Mü-17, managed 320 km., and Scheidhauer flew his Horten 3 tailless sailplane 332 km.

AUG. 3RD. — 38 cross-countries. Hofmann, in a Weihe, reached Magdeburg, 213 km. His was the longest distance.

AUG. 4TH. — 61 cross-countries. Schmidt, desperately struggling for the lead, flew 220 km., the best distance.

AUG. 5TH.—No cross-countries.

Final Order

Pilot	*Sailplane*	*Pts.*
1. Kraft	Reiher 3	2550
2. Schmidt	Condor 3	2533
3. Treuter	Weihe	2331
4. Haase	Condor 3	2295
5. Bräutigam	Condor 3	2256
6. Hofmann	Weihe	2185
7. Schuchardt	B-6	2175
8. v. Treuberg	Weihe	2168
9. Späte	Reiher V2	2094
10. Flinsch	Mü-17	2057
11. Opitz	Weihe	2037
12. Huth	Reiher 3	1983

TWO-SEATER CLASS: won by Kühnold and Schröder, Kranich, 150 pts., 260 km.

JUNIOR CLASS: won by Pasold, Mü-13D, 527 pts., 893 km.

A tremendous battle developed among the leaders of the contest and Kurt Schmidt was beaten only at the last minute. The expensive Reihers and Condors seemed to be the best gliders, although the cheap Mü-13's and 17's often gave them a run for their money. The Horten-3's of the Luftwaffe did not cover distances as well as the other machines.

The keenness of the contest is amply demonstrated by the following extract, referring to Kurt Schmidt, who had just returned from Cottbus at 11 a.m. — "Quickly the machine was brought to the west slope. Seizing a bit of bread, he got back into the cockpit, orientated himself on the situation on the Wasserkuppe and what was going on above it, and, at 11.50 a.m. (walk — run — let go!), he had disappeared again. He who wishes to remain at the top must hurry." And: "One was amazed at what was achieved each day — in spite of bad weather. Nearly always, early, the Wasserkuppe was covered in mist . . . and there stood the teams with their aircraft — ready. Shortly after the opening of the start, the place became empty. The loudspeaker would start to report early landings. The trailers would depart, to rumble through the night into the next day. Sleep must be achieved quickly . . . It was a constant battle . . ."

During the final ceremony, the NSFK gave the crews the same prizes as were given to the pilots. They had driven 312,000 km.

Statistics

74,532 km. flown. Longest flight, 392 km. to Greiffenberg (Silesia). 99 goal flights: 6 to Görlitz, 361 km., 1 to Baulitz, 324 km., 1 to Welzow, 320 km., and many others. 11 flights of over 350 km. 12 flights of over 300 km. Heights: 2 to over 5,500 m., 3 to over 4,500 m., 10 to over 3,500 m., 31 to over 3,000 m.

MILITARY INTEREST. On the last day, at the final ceremony, in the thickest fog and rain, Gruppenführer Kruger, of the NSFK, gave a solemn speech, pointing out the value of gliding as training for the Luftwaffe. Guests from the party and from the armed forces and still more

The elegant Reiher.



generals were there. Generals, including Feldmarschall Kesselring, could be seen clambering in and out of aircraft, and talking to the pilots.

"During the contest, one could notice how well our pilots had got used to blind flying, using radio communication between pilots and crews, and high altitude oxygen. A better preparation for power flying one can hardly imagine."

What became of the pilots

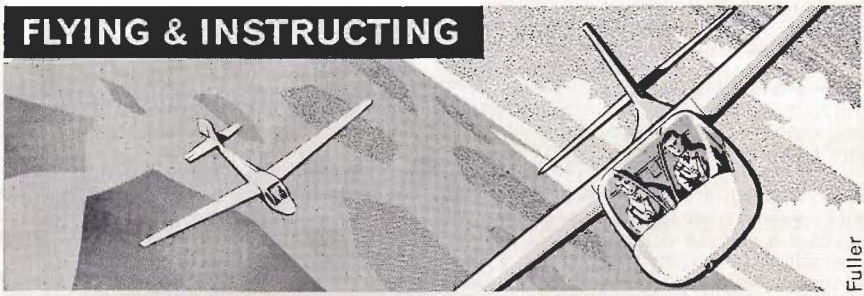
Bernhard Flinsch and Otto Bräutigam were killed during May, 1941, testing the Messerschmitt Gigant, the largest glider that has ever been built. Kurt Schmidt was killed testing a new type of aircraft and Erwin Kraft was killed over East Prussia in 1944 as a fighter pilot. During the war, only Erich Vergens and Ernst Jachtmann had the opportunity to go on gliding. In September, 1943, Jachtmann set up a duration record of over 55 hours over the sand dunes on the Baltic coast, but this record was not recognized by the FAI. Jachtmann is now a flying instructor near Munich, Vergens a flying instructor at Hamburg. In October, 1940, Erich Klockner reached a height of 11,460 m. over the Grossglöckner in a modified Kranich; after a long aero-tow into wind under a large wave cloud, he had released at 6,520 m. Ludwig Hofmann, after a long stay in Russia, is now one of Germany's leading helicopter experts.

What became of the machines

I was amazed, last September, during a visit to Unterwössen, to find two Mü-17's in good condition and much modified. One of them belonged to the Alpine Gliding School and was one of the first ever made, and the other had been built by the Akaflieg Munich six years ago. They said that it was a good machine, with a performance comparable to that of a Ka-8. Also belonging to the Akaflieg Munich was a Mü-13D in good condition. The Weihes won World Championships until 1950 and there are still many about. Some were made as late as 1952 in Germany.

No Reihers survived. Although one was brought to England after the war, it was allowed to fall to pieces. The odd Condor 3 was used by the French and the RAF after the war. Kranichs are still flying, one of which won the two-seater class in the 1952 World Championships in Spain. Probably the best flight ever done by a Kranich was in Poland on 20th July, 1953; Popiel and Siemaszkiewicz flew 541 km.

FLYING & INSTRUCTING



Fuller

THE conference, whose theme was "Preparing Club Instructors for Ratings," was held at RAF Bicester by kind permission of the Station Commander. In view of the increasing demand for knowledge by the majority of CFIs, it was decided to try out a three-day meeting from Friday 26th until Sunday 28th September. As it turned out, the three days were fully utilised and there was an exceedingly good attendance on the Friday.

At the initial briefing, Andy Gough explained the domestic and operational arrangements and it soon became clear that the facilities offered might well enable this to be the best organised conference yet. The efforts of the RAFGSA people involved cannot be praised too highly. A deluge of around 100 CFIs and Senior Instructors is not something that the average gliding club would take on lightly. At Bicester, no hairs seemed to be turned, and the flying and ground programmes went ahead without interfering with local flying. Andy had laid on sufficient tugs to cope and also made several two-seaters available. In addition, the BGA Capstan and a K-4 brought by Eric Boyle of the Derby & Lancs. Club were fully utilised.

Flying was possible every day and the task of getting each Instructor two aerotows was almost achieved. The main problem was that there were not enough hours in the day. The exercises covered in the air were:—

Aero-towing.
Stalling and spinning.
Approach planning and basic effects of controls.
Further effects and trimming.

These exercises were selected by the Instructors' Committee, having due regard to the deficiencies shown up on rating tests and the national accidents statistics.

On the ground, a programme of briefing covering the above exercises was run concurrently with the flying. The ground lectures proper commenced on Friday evening with a "brains trust" of examiners. As might be imagined, discussion was full and frank and led to proposals for changing the Instructors Rating Schemes, which will be looked at by the Instructors Committee. Other subjects included signalling on wire launches, stalling and spinning accidents and instructor training.

The Saturday evening lecture programme was General Meteorology by Tom Bradbury from Bracknell and Hypoxia by Dr. Hawkins from Boscombe Down. Both of these lectures were well illustrated with slides in the case of Meteorology and with a film on Hypoxia. They showed the sort of clear interesting lecture it is possible to give by knowing and preparing the subject.

The final lecture on the Sunday afternoon was a splendid presentation on spinning by Sqn Ldr Ron Dunn from the Central Flying School. This was also illustrated by the Royal Air Force film "Spinning Modern Aircraft" and explained the hidden complication of the phenomenon with which gliding instructors must be fully conversant. It also showed the futility of trying to teach full spins on self-recovering gliders.

It is not possible here to thank all the people involved. The RAFGSA were magnificent as was the BGA office.

R. A. NEAVES

TAILPIECES

NATURAL GAS

Researchers at one major oil company used to talk about the "helicopter effect" among the top management men. This referred to the ability to "hover above their present jobs and so take a broader view." Nowadays, they talk of the "glider effect—rising higher and higher by going round in circles on a steady stream of hot air." ("Observer" — *Financial Times*, 9.10.69)

FROM GLIDERS TO GIRLS

Chosen to be one of about a dozen chaperons to the finalists in the Miss World contest, Carol Foster is an assistant instructor and flies from Bicester. Twenty-two years old, living at Chalfont St. Peter and speaking French and German, Carol is looking forward to seeing a lot more of London than she manages normally, meeting many interesting people, and using her claimed ability in keeping the wolves at bay!

TWINS' GLIDING DOUBLE

Sons of J. Mierzejewski—a member of Portsmouth Aero Club and a wartime Spitfire pilot with No.308 (Polish) Squadron, RAF—17-year-old identical twins Jacek and Koral have qualified as glider pilots after training for two months at Lasham with the Polish Air Force Association Gliding Club. Their instructor was Flt Lt Lew Kurylowicz and the twins hope next year to go to university when they leave their present school, St. John's College, Southsea.

A 'PHONE FOR THE GENTS

Where to put the telephone? That was the problem facing the Northumbria Gliding Club. To combat possible vandalism, it had to be protected by a door and only two rooms in the nearly-completed—but still doorless—hangar possessed such an amenity. With 100 members, out of whom three were women flyers, the choice lay between the Gentlemen's and the Ladies'. By sheer weight of numbers, the men won and calls are now made from the Gentlemen's toilets, until the 'phone can be given a more accessible home.

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NATIONAL ENTRY LIST FOR 1970

THERE will be a total of 80 places in National Competitions in 1970, 40 places in the Open and 40 places in the Standard-Sport. If either of these competitions is over-subscribed, entry will be controlled by the 1970 Nationals Entry List, rules for the compilation of which were published in SAILPLANE & GLIDING, August-September, 1968. The first 160 names on this list are given below: pilots who believe their rating scores to be incorrect should write to the Flying Committee, British Gliding Association, Artillery Mansions, 75 Victoria Street, London, S.W.1, giving details of competitions in which they flew in 1968 and 1969.

In the following list, column 1 gives pilots' order of ranking for entry into 1970 Nationals, column 3 gives pilots' end-of-1969 rating points and column 4 gives details of the 1969 competitions which have been used to arrive at these points. The key to the symbols in column 4 is as follows (1969 competitions throughout):

O — Open
S — Sport
A — Bicester, Heat Size 44
B — Booker, Heat Size 26
C — Western, Heat Size 20
D — Northern, Heat Size 16
E — Lasham, Heat Size 14
F — Compton Abbas, Heat Size 13
X indicates that the pilot flew in a competition in 1968 but did not compete in Nationals in 1969 nor improve his position by competing in a Heat in 1969 (hence points remain the same as at the end of 1968).

An asterisk against a pilot's name indicates that he flew in both Nationals in 1969, but only his higher placing in the two Nationals is noted in column 4, although both results were taken into account for rating purposes.

Numbers after the above letters in column 4 indicate pilots' final placings in the relevant competition after the operation of Rule 2 (a)(v) of the Entry Selection System, if applicable.

"Heat Sizes" have been adjusted in accordance with Rules 3 (a)(v) and 3 (b)(ii) of the Entry Selection System.

Position No.	Name	Points	1969 Comp.
1.	Burton, G. E.	883.9	0.1
2.	Goodhart, H. C. N.	842.2	0.2
3.	*Greaves, C. M.	785.5	S.1
4.	Strachan, I. W.	725.8	S.5
5.	*Gough, A. W.	713.6	S.2
6.	Delafield, J.	709.6	0.8
7.	Goldsbrough, J. B.	706.1	S.4
8.	Wheeler, J. H.	692.4	S.9
9.	*Fitchett, B.	687.3	S.3
10.	*Tanner, L. E. N.	681.4	S.7
11.	Withall, C. L.	678.5	S.6
12.	*Cardiff, J. D.	675.8	0.6
13.	Zotov, D. V.	664.7	S.8
14.	Shephard, E. G.	658.4	S.10
15.	Deane-Drummond, A. J.	653.9	S.12
16.	Zealley, T. S.	618.8	S.11
17.	Slater, T. W.	618.7	X
18.	Carrow, D. D.	615.9	0.16
19.	Watson, C. W. D.	615.2	X
20.	Wilkinson, K. G.	612.0	X
21.	Bowley, D. A.	611.0	A.1
22.	*Williamson, J. S.	610.0	S.15
23.	Warminger, A. H.	609.5	B.1
24.	Ince, D. H. G.	609.0	0.7
25.	Spottiswood, J. D.	608.3	A.2
26.	Scott, P. M.	607.6	0.11
27.	Morison, S. M.	606.7	C.1
28.	Livesay, M. H.	605.8	S.13
29.	Seymour, J. C.	602.2	D.1
30.	Jones, R.	598.6	0.9
31.	Barnes, L.	597.6	A.3
32.	Blake, K. W.	596.6	X
33.	Watson, A. J.	595.8	E.1
34.	James, P. W.	595.0	X
35.	Keogh, B.	594.9	B.2
36.	Smith, M. J.	594.8	X
37.	Simpson, C. R.	592.5	F.1
38.	Plumb, F. A.	590.2	0.12
39.	Evans, J. A.	588.6	A.4
40.	Harrison, K. A.	587.0	S.20
41.	Howitt, H. V.	586.5	C.2
42.	St. Pierre, A. H. G.	586.0	S.17
43.	Wild, J. G.	585.5	A.5
44.	Donald, C. C.	585.0	X
45.	Burton, A. J.	584.5	B.3
46.	Newall, R. W. B.	584.0	S.14
47.	Sandford, R. A.	581.4	D.2
48.	Morrison, S. A. J.	578.8	S.16
49.	Dobson, B. A.	578.0	A.6
50.	Stanley, J. H.	577.2	S.22
51.	Paul, I.	576.0	E.2
52.	Paddick, G. R.	574.8	0.5
53.	Smoker, J. L.	574.4	C.3
54.	Lilburn, D. W.	574.0	S.19
55.	Woods, L.	573.9	B.4
56.	Williams, P. W.	573.8	S.24
57.	Wills, C.	569.0	F.2
58.	Foot, R. A.	564.2	O–
59.	Mead, S. B.	562.8	A.7
60.	Innes, D. S.	561.4	0.19
61.	Kelly, B. T.	559.0	A.8
62.	Hale, R. J.	556.6	S.21
63.	Knipe, F. H.	555.1	D.3
64.	Atkinson, G. B.	553.6	S.23
65.	Waller, R. S.	550.8	B.5
66.	Pennycuick, C.	546.0	X
67.	Vennard, D. A.	545.2	C.4
68.	Fielden, J. S.	544.4	X
69.	Bridson, D. S.	543.8	A.9

70.	Ellis, J. J.	543.2	0.20	116. Brisbourne, R. P.	481.4	S.34
71.	Cousins, R.	542.2	E.3	117. Aldridge, K. R.	477.6	C.8
72.	Kahn, W. A. H.	541.2	0.20	118. Beer, L. E.	473.8	S.37
73.	Grant, T. R. F.	539.5	A.10	119. Gough, A. F.	473.7	A.18
74.	Hood, L. S.	537.8	S.25	120. Johnson, M. W.	473.6	X
75.	Glossop, J. D. J.	535.1	B.6	121. Przewlocki, J.	473.4	E.6
76.	Burns, Anne	532.4	0.38	122. Feakes, R.	473.2	X
77.	Thorne, J. S.	531.5	F.3	123. Bobbin, T. G.	472.7	A.19
78.	Wilkinson, N. A.	530.6	0.10	124. Grenet, P.	472.2	S.27
79.	Wishart, R.	530.5	A.11	125. Winning, E. J.	462.4	D.7
80.	Jerzycki, E.	530.4	X	126. Buckley, Philippa	452.6	X
81.	Fay, F. W.	530.3	C.5	127. Elliott, E. G.	450.6	C.9
82.	Garrod, M. P.	530.2	S.32	128. Day, C. G.	448.6	0.35
83.	Seth-Smith, M. P.	529.5	D.4	129. Gill, C. J.	448.5	A.20
84.	Redman, S. J.	528.8	0.15	130. Somerville, A.	448.4	S.36
85.	Smith, Angela	527.4	B.7	131. Tull, V. F. G.	447.4	E.12
86.	Robinson, E. J.	526.0	X	132. Stark, E.	446.4	X
87.	McLuckie, R.	525.2	A.12	133. Chard, K.	445.0	F.6
88.	Dunn, R. A. E.	524.4	X	134. Shepard, F. W. L.	443.6	X
89.	Watson, Patricia	520.0	E.4	135. Maltby, H.	442.9	A.21
90.	Lovell, C. D.	516.4	0.23	136. Smith, R. J.	442.2	X
91.	Hart, S. N.	515.6	A.13	137. Barrett, R. Q.	441.8	A.22
92.	Wills, S. B.	514.8	X	138. Burgess, P. G.	441.4	0.37
93.	Meddings, E. J.	511.6	C.6	139. Costin, M. C.	440.7	B.13
94.	Orme, H.	508.4	S.30	140. Medland, M. R.	440.0	X
95.	Eyers, I. L. A.	508.2	B.8	141. Kenworthy, A. T.	439.9	D.8
96.	Carr, V. C.	508.0	X	142. Watson, B. B. C.	439.8	0.30
97.	White, S. A.	503.6	F.4	143. North, E. A.	438.6	A.23
98.	Waller, F. F. C.	499.2	0.22	144. Hanson, D. F.	437.4	0.36
99.	Riddell, J. C.	498.6	D.5	145. Willbie, R. T.	437.2	F.7
100.	Goldney, P.	498.0	S.33	146. Brownlow, B.	437.0	0.27
101.	Benoist, J. D.	497.2	A.14	147. Alty, D. G.	424.3	A.24
102.	Stevenson, J. N.	496.4	S.28	148. Austin, D. C.	411.6	0.26
103.	Lyndon, R. J.	493.7	A.15	149. Mawson, J. J.	408.0	D.9
104.	Welsh, J. H.	491.0	X	150. Ellis, C. A. P.	404.4	0.33
105.	Belbin, E. R.	490.6	E.9	151. Shepherd, D. G.	403.1	A.25
106.	Lane, P. D.	490.2	S.29	152. Hogg, H. J.	401.8	0.32
107.	Stoddart, R. C.	489.2	C.7	153. Barrows, J. R.	401.4	E.8
108.	Dimock, H. R.	488.2	0.31	154. Jeffries, J. R.	401.0	S.38
109.	Gee, M. I.	487.9	E.5	155. Schofield, D. E.	393.4	B.15
110.	Findon, J. A.	487.6	X	156. Smith, N. W.	385.8	S.41
111.	Gaunt, N.	486.1	D.6	157. Marriott, S. H. C.	374.8	A.26
112.	Bird, M.	484.6	0.29	158. Brook, G. F.	363.8	0.41
113.	Pozerskis, P.	484.0	F.5	159. Webster, J. W. A.	360.9	C.12
114.	Staines, R.	483.4	S.31	160. Purdie, P. G.	358.0	0.39
115.	Saundby, R. P.	482.4	A.17			

UNJUSTIFIED MEDICAL RESTRICTIONS

Dr. Chapman, who is the UK member on the FAI Medical Physiological Committee, has given his permission to publish his notes addressed to the FAI on the above subject.

Medical Standards — Glider Pilots

I have studied Mr. Wills's paper with very great interest. It is clearly a most important and authoritative contribution to the subject of air safety in general, and medical standards in particular. Further, its breadth represents a quite unique statistical survey in this field which must be of great value to all of us concerned with aviation medicine and the framing of medical standards.

Briefly, we have here a situation which lends itself ideally to statistical research and conclusions. The fact is that medical standards are imposed not for their own sake but for the very real purpose of improving, or trying to improve, air safety. If they do not achieve this they are clearly useless. There are two views as to the type of medical standard that is necessary for air safety, and thus two divergent approaches to this matter. The one is to impose a full medical examination on all pilots, the other is to require no such examinations. The former has

been the practice of most European countries in respect of glider pilots, the latter the practice in the United Kingdom.

Mr. Wills has now produced definitive statistics both of the amount of glider flying which has been carried out in the UK over some 18 years and, as he rightly says, a staggering total number of flights. To these figures he has attached the accident/incident rate which has actually occurred. This rate, as can be seen, is very low indeed and would seem certainly to support the UK view that full medical examination of glider pilots is unnecessary and that air safety can be maintained very satisfactorily in its absence, but this is not all.

What are even more important than absolute figures and absolute rates are the relative figures and rates. However good the absolute UK accident rate under this system may be, if that for other countries (adopting a more rigid system of medical criteria) were better, then the case for their more rigid system would be very much strengthened.

What we have here in Mr. Wills's paper are detailed and statistically significant rates for a large gliding community which has adopted the principle that medical examination of its glider pilots is not necessary and which believes that safety will not be materially improved by its imposition. It is now possible, if comparable rates are available, to compare the results achieved by the two different approaches and be able to assess which gives the better result.

My own view is that the UK approach is correct but personal views and impressions are of less value than the comparison of actual results. If the UK accident rates compare unfavourably with other countries, who adopt more rigid criteria, we in UK must think again. If, on the other hand, they are the same or better than such other countries it is clear that these other criteria are not conferring the benefit that is claimed for them. Were this to be the case they should logically be abandoned and a system, such as is in use in the UK, be substituted.

I am convinced that we have here a great opportunity to get at the facts of this important matter on a proper statistical basis, and that each member country should look to its figures so that a proper comparison can be made.

Backing up the campaign against the imposition of unnecessary medical restrictions on glider and other private pilots (see article by Philip Wills, S & G, June-July issue, page 184), Per Weishaupt, Secretary-General of the Royal Danish Aero Club, has forwarded his Club's views on the subject to Dr. D. Weibel, President of the Medico-Physiological Committee of the FAI; of which the following is a condensed version of these views.

"WE consider it most important that the FAI through this Committee, will work seriously to reduce the medical restrictions on sporting aviation, following the start made by Mr. Wills.

"You may remember that we submitted to your Committee a proposal for more realistic medical specifications which we had sent to our own authorities for consideration, but without receiving any reply. This proposal was regarded by Philip Wills with horror as being much too strict and not what we wanted. We now much prefer the policy forwarded, which we are now trying to discuss with our authorities.

"Some years ago we set up a medical committee of four or five doctors with PPL or glider pilots' licences because of a long and growing list of complaints from our members about the current rules and especially their administration, which was done by doctors and juridical administrators without practical flying experience—to quote Mr. Wills: "... and dream up possible medical causes of future accidents and then try to impose medical checks and restrictions ..."

"We first tried a cautious approach, selecting a few obvious cases which we thought we could get through with by the use of commonsense; but the Directorate of Civil Aviation said 'No'. We then appealed to the Ministry, but they, after referring to the Directorate, also said 'No'. We then exposed this very

queer situation in a series of articles in our magazine *Flyv;* many were quoted in the daily Press who agreed that it was nonsense the way the matter was handled. Responsible people are shortly beginning to understand that something must be wrong, but always say: "We have to follow ICAO", although the ICAO recommendations are interpreted very differently in different countries.

"I really hope you and your Committee will take up these most important questions. We must get the FAI to help us and ICAO to get its recommendations in line with modern thinking. Flying a private aircraft or glider does not need gods or supermen, but just ordinary sensible and sound pilots.

"Accidents are very seldom due to medical causes, and we waste too much time, money and energy in lowering a diminutive accident rate yet further, instead of attacking the more important causes of accidents which really count".

FIFTH FLIGHT

By T. JENKINS

UP at 6 a.m., some cornflakes, and then strap on my little Reliant three-wheeler and off to Lasham. Lorry after crawling lorry—it'll take three hours at this rate. In at the gate and up to the launch point. Who's got the flying list? That's better—now I can do some retrieving and bat-waving and that. I'm good at this ground-handling bit. One of the Course members speaks deferentially to me; it must be my age and my thirty-bob Government surplus flying suit. Little does he know that I only bought it to boost my morale; he's probably done more flying than *I* have.

Look at that lad going solo. I could be his father! I've left it too late to start this game. Still, remember Peter Scott. Jenkins? Yes, that's me. Am I next? Whackho, now I become an intrepid birdman. Yes! All out!

Oh God, I'd forgotten how my stomach cringes on the take-off. Oh, I wish I hadn't done it. Why do I do it? I wish I'd stayed on the ground. Suppose the wire breaks? Will the chap behind me get me down all in one piece? He looked fit enough, but men keel over with coronaries and things without warning. I'd never get this aircraft back on the deck again.

What did he say? Oh yes, pull the release. GET THE NOSE DOWN. Oh Lord, I nearly stalled it. Straight and level. I can do this. Get that farmhouse just there and keep the wings level. Relax a bit now that I'm getting the hang of it.

Look around? How can I fly straight and level if I look around? I'll just have a quick look around. The airfield's disappeared—I hope he knows where we are. Now the farmhouse has gone and I'm diving.

I'm *pulling* the nose up. Now the whole shooting match is shaking like a leaf. Over to you, mate.

"You've got her."

"No, I haven't. You've got her. Turn to the right."

Stick over a bit. No—*too much.* Oh, my stomach again—there's nothing between me and a thousand-foot drop but a bit of painted bed-sheet. Perhaps, if I just hold on a bit with my left hand, he won't see.

Rudder? How can I put rudder on and take it off and put bank on and take it off and keep the nose up and not stall it and look around and hold on and not be sick, all at once? I'll never learn this—never! Just get me down and I'll go back to boats.

They say you have to do spins before they'll let you go solo—must be terrifying. Must be like going on one of those fairground rides that I've always funked. What's he saying? I *can't* turn left—we're almost in those trees now. Don't say anything—my blood on his head. How can he bear flying around all day with clods like me? I expect all his other pupils are cool and capable and a credit to him.

The airfield's come back and we're landing. It's quiet here on the ground, except for the larks singing.

That was a lovely flight—I'm really getting into the way of it now. I wonder if there's time to put my name at the bottom of the list again . . .?

FORTY YEARS BACK – The Gliding Lunch

By THURSTAN JAMES, Hon. C.R.Ae.S. *Founder-Editor,* THE SAILPLANE & GLIDER

WHEN I look back at the history of gliding in this country, the events which I think of as having special significance are the glide of Cayley's coachman (1853), the experiments of Pilcher (1895-99), the flights of Gordon England in the Weiss glider at Amberley Mount (1909), the gliding competition at Itford in 1922, and the Gliding Lunch. The last mentioned, as I suppose there are still people around to remember, took place in London at the Comedy Restaurant, Panton St., on 4th December, 1929. Douglas Culver (now living near Bournemouth), whose brainchild the lunch was, writing about it in THE SAILPLANE for the tenth anniversary, was kind enough, though mistakenly so, to give me credit for the gliding number of *The Aeroplane* which led directly to the occasion. It was in fact the pungent pen of the great C. G. Grey, founder-editor of that paper, which brought the growing British interest in gliding to the boil.

Since at the time I was working on *The Aeroplane,* I can tell the story as it developed around me in those faraway days. I got involved with the pragmatical characters who wanted to fly, and we fought bitterly with those who wanted a central organisation, which ironically is what came out of the lunch. With the wisdom of forty years on, I see now how much was owed to the central organisers, but what we wanted, and what in the end we got, was not the British Gliding Association but the London Gliding Club. So maybe some folk will find my story one-sided.

Let us go back to the exciting days of 1929; they were exciting to a 26-year-old enthusiast for aviation, however hard jobs may have been to get, and however badly paid jobs were when got. I thought myself lucky to exchange a £3 a week job with Short Brothers at Rochester for a job at £5 a week at *The Aeroplane* and, indeed, got married on the strength of it. I got back from my honeymoon in time for the great Aero Show at Olympia. There were new aeroplanes to describe nearly every week. In addition, I had long been interested in gliding and while working at Beardmore's had joined with others in Glasgow in an effort to get a glider built.

It was from Germany in the autumn of 1929 that C.G.G. received a fat budget of splendid photographs from Alex Stöcker, a well-known aeronautical photographer of the period. These pictures showed the latest German sailplanes, which looked marvellous then, and even today not all that antediluvian, especially if one is able to recall the sort of contraptions then being put together in England. Charles, as we always called C.G.G. in the office, could not forbear from making good photographs into "blocks" for use in *The Aeroplane.* He never stopped to think how many there would be room for in the heavily packed pages of his magazine. Anyway a couple of dozen of Stöcker's photographs were made into blocks. Then C.G.G. set about writing an editorial to go with them, for as he said a good many people had been writing to *The Aeroplane* for information on the subject and he knew there would be interest in what he proposed to write.



Douglas Culver.

He never lacked an appreciative audience.

On the opening page of *The Aeroplane* for November 6th, 1929, there is a fine picture by Stöcker of the sailplane Schloss Mainberg piloted by Dittmar over typical Rhoen mountain scenery. Above the block was an apposite line from Byron's "Childe Harold": "This quiet sail is as a noiseless wing to waft me from distraction". Eight other pictures accompanied the text; that left 15 more without homes which, months later, they were to find in the first issue of THE SAILPLANE & GLIDER.

C.G.G.'s editorial was not one of his best, and he had remarkably little information to offer or ideas to put forward for discussion. However, circumstances proved him right that the time had come for something to be done about gliding in Britain. He thought that gliding could be divided into two categories of activity: gliding for sport which, though good fun, was as futile in the end as any sport; and gliding for scientific research. This latter he favoured and, in developing the ideas, was able to launch yet another attack on the testing of aircraft models in wind-tunnels, a favourite target. He quoted Victor Lougheed (*sic*) of the Lockheed Aircraft brothers as suggesting birds had gliding ratios as high as 1/250 and the figure might go as high as 1/500 in certain cases. But it was none of these aspects which drew the mail the following week.

The letters which arrived—and their numbers mounted as the days passed—were from those who wanted their names and addresses published so they could get in touch with other enthusiasts. As soon as the letters began to come in, I was detailed to deal with them and to collect or write pieces about gliding. Naturally I did this with enthusiasm, but when we came to put the paper to press each week there was a bitter battle for space, and as the most junior member of the staff I did not come off well, but I did get enough space to deal with the readers who wrote in. The first batch of names, published in the next issue after G.G.'s gliding editorial, included that of Douglas Culver. He suggested the organising of a lunch for enthusiasts in the London area. He came to see us and we discovered that he had learnt to fly at the Grahame-White School at Hendon in 1916 and become an instructor there. In August 1918 he had been shot down behind the German lines and taken prisoner, losing an arm in the process. This did not stop him driving a sporty kind of car. He was in the family business. His idea was that though with a single arm he could not manage control-stick and throttle, there was no need for a throttle in a glider!

Culver got busy on the lunch and I was soon able in my gliding section in *The Aeroplane* to put up the idea of a lunch in London to cost between 2s. 6d. and 3s. 6d. a head, so that people could get together and discuss ideas. I also published an offer from R. F. Dagnall, founder of the R.F.D. company of Guildford which built kite-balloons and suchlike gear, to build a glider for a club at his own expense. We had a name which from then on has been associated with the movement. By the time another week had gone by, we had the names of 30 people for lunch.

When 4th December arrived, nearly sixty turned up for the lunch, so there was quite a squash. Douglas Culver in

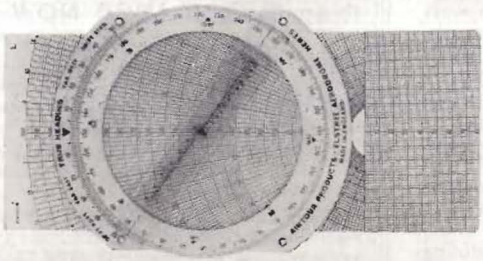
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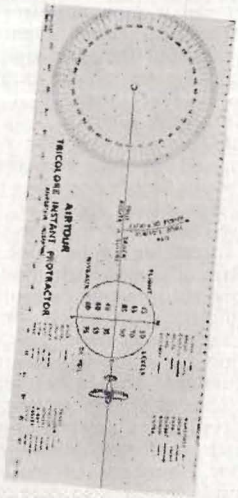
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his account of the occasion gave the precise figure of 56 and *Flight* (no representative of which had been asked to the lunch!) gave the same figure. The Comedy Restaurant did us famously for 4s. a head—exclusive of drinks. There was lively discussion during lunch. Culver was voted into the chair. He proposed the formation of a Home Counties Gliding Group for London and surrounding parts. Other groups should be formed elsewhere and, after two or three months' experimental working, should send delegates to confer with the Home Counties Gliding Group. R. F. Dagnall then repeated his generous offer to place part of his works at Guildford at the disposal of a club and to build one or two gliders free of charge for such a club if he could be provided with a design, since he did not have facilities for preparing one. The Master of Sempill, besides being president of the Royal Aeronautical Society, was a private owner and keen aviator; he startled the organisers by developing an unexpected line. He told the gathering that funds were going to be made available for gliding, that scientific support would be forthcoming from the Air Ministry, that the Royal Aeronautical Society had made arrangements for Professor Georgii and Herr Stamer to come over from the Wasserkuppe for a lecture to be given in the forthcoming February, and that an informal dinner was to be organised so that gliding enthusiasts could meet them. He stressed the need for a central organisation, since technical supervision would be necessary if accidents were to be avoided. The RAeS was anxious to be of assistance, but sporting matters were the responsibility of the Royal Aero Club. Absence of any official representation from that august body at the Lunch resulted in caustic comments from C.G.G. in *The Aeroplane* the following week. We must, however, not overlook the presence at the lunch of the enterprising chairman of the Northamptonshire Aero Club, Charles Newton.

The Master of Sempill's speech had a marked effect on the proceedings, but it did not deter that great enthusiast and indefatigable constructor, Lowe-Wylde, from getting up to tell the lunchers with considerable vehemence that enough was known in Britain for the country to build its own gliders. I must interpose here that, since what he had in mind was a lighter version of the German Zögling, this was true, but a number of us knew that what was wanted were German sailplanes of advanced design. It was years before British designers could be educated up to the high degree of refinement involved—among them Nevil Shute Norway!

Organised discussion broke down and talk became general, but eventually round about tea-time a provisional committee had got itself elected with an honorary secretary. The great division between the enthusiasts who had come to the lunch was between the ideas formulated by Culver and the arguments advanced by the Master of Sempill for a central organisation. He was a polished speaker and able debater, so it was not surprising that the gathering ended up by electing people to set up the British Gliding Association. Sharing my chagrin at this result was not only Douglas Culver but, even more strongly, Toby Ashwell-Cooke, that most pragmatical of planners, whom I met for the first time on this occasion and who has been a close friend ever since. It was not many weeks before there was a good deal of splinter activity which resulted in the formation of the London Gliding Club.

Let us here salute those pioneers, the committeemen elected at the Lunch to bring the British Gliding Association into being. Douglas Culver (chairman); Latimer-Needham (Halton); Lowe-Wylde (Kent); Lander (Northumberland)—killed in a launching accident a year or two later; Viscount Carlow (London); Whidborne (London); Wroughton (Croydon); Ashwell-Cooke (Cinque Ports); R. L. Howard Flanders (Hon. Sec.)—pioneer designer-constructor of aircraft. God knows I fought the BGA hard enough during my year as editor of THE SAILPLANE, but what would have happened to gliding in this country without it? I never did get around to discussing this with Lord Sempill before he died in 1965, but his was the foresight. On the other hand, it was very necessary at the time to have some folk who would cut the cackle and come to the horses. And our first horse was the Dagling—but that is something for another day.

OBITUARY

R. L. J. WILLS, CBE., MC.

RICHARD WILLS, whose death at the age of 55 we regret to report, accompanied his elder brother Philip to the first International Gliding Contest on the Wasserkuppe in 1937 as a member of the ground crew, being particularly useful because he spoke fluent German. He joined in the social life and I believe it was he who suggested that, in order not to embarrass our hosts, we should always refer to Hitler in our conversation as "James".

Few people who were present at that meeting may be aware that Richard's brief appearance in the gliding world was followed by a distinguished career in the world of Overseas trade. He joined the Industrial Intelligence Centre of the Board of Trade which, on the outbreak of war, became the Intelligence Department of the Ministry of Economic Warfare. He then volunteered for No. 3 Commando and was seriously wounded and captured in the Dieppe raid of 1942. After the war he joined George Wills and Sons, becoming managing director in 1961, and also became a director of other export and shipping companies. In 1964 he was elected president of the Association of British Chambers of Commerce; later he became chairman of the Docks Board and of its Overseas Committee, chairman of the British Export Houses Association, and finally, seven weeks before his death, chairman of the British Transport Docks Board.



Richard Wills (right) with his brother Philip at the first internationals.

A. E. S.

CORRESPONDENCE

CLOUD FLYING

Dear Sir,

Regarding the correspondence on Cloud Flying in SAILPLANE & GLIDING for August-September, 1969, I should like to quote more fully from page 53 of the *Instrument Flight Manual* by W. K. KERSHNER:—

"There are several ideas concerning instrument flying which often are brought up to the pilot when he starts his training for the rating. One is that somehow, as soon as the pilot is unable to fly by outside references, the airplane is subjected to a new set of "laws". For instance, in using the needle and ball, it is sometimes stressed that the pilot doesn't use the instruments to make turns as done in VFR flying. The airplane is "turned" with the rudder, and the ailerons are used to keep the ball centred (which finally results in the same effect but goes at it in a backwards fashion). The flight instruments of today have practically the same presentation as they had twenty years ago, requiring the establishment of a "scan" between the several instruments. The problem is that the arrangement of the flight instruments often varies between airplanes.

"It is the job of the instruments to provide a picture so that you can see and control the actions of the airplane, and he theory and manner of control are exactly the same as those used with visual references."

Colchester, Essex. J. F. THURLOW

POWERED SAILPLANES AGAIN!

Dear Sir,

I must agree with Mr. Warren in the October-November S & G—frustration is not limited to ambitious beginners. I, too, find a degree of frustration in his interpretation of my letter in the April-May issue. Having re-read my letter, if he sees red after reading it, then he sees nothing else but red all the time.

If, as Mr. Warren states, the small club allows its gliders to sit idle on the ground, then that sounds like a maintenance problem on the launching equipment, which has nothing to do with powered trainers as such.

Mr. Warren also says "Super-saturation . . . is not solved by forming another club." My understanding of the words "super-saturation" is that both facilities of the club and the space available for their use are such that, due to the pressure of demand from the membership, the individual member can get so little use of them that great dissatisfaction occurs and the membership declines, until an equilibrium point is reached. If these members are not to be lost to the sport, more facilities are required elsewhere—that is, another club. I have had first-hand experience of this some years ago in Yorkshire, which resulted in the formation of the Doncaster Club and, later, the Ouse Club.

I feel that motor-gliders will make better use of the space available and give more reliable time in the air as will any aeroplane, but this will only raise the point of super-saturation and gain time before the need for more facilities is again pressing.

Roger Neaves took me to task on this point in the June-July issue of S & G, when he commented "There are . . . too many . . . splinter groups operating . . . on unsatisfactory sites." He is in a better position to know this than most, but I think it is he who is hiding behind a wall if he will not accept that a growing sport does mean more sites. As Demond Morris tells us, when the tribe gets too big a break-away group sets one up elsewhere.

It is interesting to note that Mr. Warren uses the word "flying" very often in his letter—eight times in a magazine devoted to gliding and soaring. It would appear that he may be confusing gliding and power flying and looking to gliding, on the basis of lower cost, to satisfy his desire for power flying. No-one would grumble at that, but he must get his ideas clear on what he wants. The motor-glider is at present a very efficient form of light aircraft, but the problem of using it in a gliding club is that of developing simulation techniques, so that it can be effective in teaching people to fly gliders, and not present us with a large number of people who have a real conversion problem when they don't have an auxiliary unit in front. The BGA are doing a lot of work on this one.

The introduction of powered gliders into this movement of ours requires careful assessment and balanced judgment of all its implications. The worst thing that can happen is that it is looked upon as a panacea to cure all evils.

Wetherby, Yorks. J. C. RIDDELL

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PROFESSIONAL GLIDING INSTRUCTORS

Dear Sir,

It has always struck me that professional gliding instructors can be—and often are—hired and fired by the whims of committees for no obvious reasons. On occasions, their whole future depends on their popularity with individual committee members, whose own careers are never subject to this kind of autocracy, and who are in many cases amateurs playing at running a business.

Surely it is time that we professionals had some protection—and here the BGA could assist by exercising some form of control.

1. All instructors professionally employed to be registered.
2. Conditions and terms of reference to be laid down in a properly drawn up contract.
3. Valid reasons to be given before dismissing or making redundant an employee.

Professionals are often exploited because of their 'love of the game' and I think it is time that they received a better deal.

Hurley, Berks. VERA WATES

WAVE AT MARFA

Dear Sir,

I read with interest your articles in the October-November issue of S & G concerning Marfa, Texas. I found them especially interesting as I was able to visit Marfa this summer during a three-month vacation in the USA.

However, I would like to add one piece of information that could prove interesting to some people, and that is that there is very good wave at Marfa, even in the summer.

When I was there, the sky was full of wave clouds and, when I asked Fritz Kahl about it, he said "Yeah, we do get a little wave sometimes, but nobody has ever flown the darned thing!" Incidentally, he estimated the lenticulars to be at 18,000 ft. above the ground!

Norwich, Norfolk. ANTHONY F. ABBS

THE PLIGHT OF THE TALL PILOT

Dear Sir,

Having searched the whole market in the last 12 months, I have been unable to locate a machine — either single- or two-seat — into which I can fit comfortably wearing a parachute.

I am 6 ft. 4½ in., 16 stone, and with size 13 feet. Currently, I am flying a Blanik but have to accept the limitation of flying without a parachute, because I cannot fit in wearing one.

I am sure that there must be many other glider pilots — and potential pilots — with similar problems, and I should like very much to hear what solutions some of them have found.

Surely one manufacturer somewhere in the world would find it worth laying down a production run of large-size conversions? I would pay willingly another £100-£200 for extra dimensions and comfort.

I was encouraged to read in your April-May, 1969, issue that the basic investigation into the Sigma project showed that best overall performance would be reached with an aircraft in the 1,200-1,600 lb. AUW range. Could it be that a machine designed for heavier pilots might actually have an advantage?

London, S.W.3. DAVID MORRELL

FRANK IRVING comments :— Given two geometrically-similar gliders of different sizes and with the same wing loading, the larger one would — theoretically — have a slight performance advantage, owing to the higher Reynolds Numbers.

In practice, gliders of increasing span are not geometrically similar, nor do they have the same wing loadings. One has to carry out detailed calculations, as was done for Sigma, to find the optimum weight and aspect ratio for each span,

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Sigma was designed for pilots of average weight, and the high all-up weight is a consequence of having a very high aspect ratio and a wing full of flap machinery.

CHECKMATE

Dear Sir,

Norfolk glider pilot Ernest Cunningham was all set for take-off by aero-tow for his display during the Battle of Britain air show at RAF Coltishall, Norfolk. The programme was a split-second timing affair, and he and the tug pilot were counting down the seconds as they waited for a green from the tower.

As the last seconds before take-off ticked away, a Navy helicopter finished its display and gently landed in the only clear spot the pilot could find amongst the many parked aircraft . . . *Right between the tug and the glider!*

The nautical language from the glider fell on deaf ears until the slot in the programme had been lost. The helicopter pilot had switched off his radio on touch-down.

Ipswich, Suffolk. PETER M. WARREN

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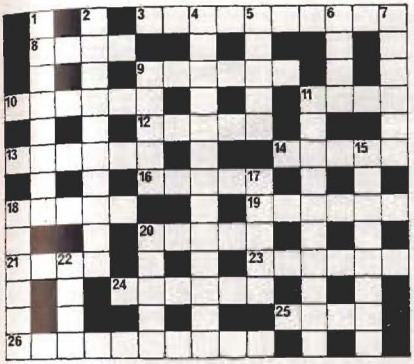
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CROSSWORD

By GORDON CAMP



ACROSS

3. A sadist at the Comps? (4, 6)
8. Move an aircraft not exactly hailed (4)
9. 'Bends' (6)
10. Competition official, good at scratching? (6)
11. Hydraulic undercarriage (4)
12. I speak phonetically (5)
13. Sailplane (6)
14. Things can sit on this! (5)
16. Important venue in 1970 (5)
18. Novertheless it can cause the wind to back! (5)
19. North American gliding site (6)
20. Used in the workshop (5)
21. Dull hole (4)
23. Spanish town (6)
24. Sailplane with good 'finish'? (6)
25. Down it comes! (4)
26. Machine to blow up (10)

DOWN

1. Glueing this control column is getting difficult (8)
2. Bonus for polishing your glider (5, 5)
4. Specialised by FAI (8, 5)
5. New British sailplane (5)
6. For pitch and yaw control (4)
7. Nothing but the best (6)
9. Optical instrument (5)
11. Instrument colloquially unserviceable (2, 3, 5)
15. Effect of control (4, 4)
17. Gliding site in Europe (5)
18. On the wing, you dope! (6)
20. Record of howidunnit (5)
22. Obtain a smooth 21 Across, in a wing fitting perhaps (4)

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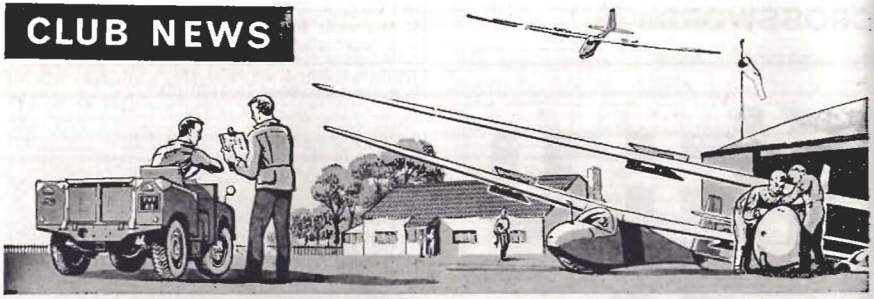
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CLUB NEWS



AFTER one of the best all-round soaring seasons for many years, most of the clubs are now settling into their winter programmes. May 1970 bring weather conditions as fine as those of this year, and with this hope go my best wishes for a Very Merry Christmas to all of our contributors. As plenty of good photographs are taken around the club sites, how about sending some of them in for Club News, please?

Copy and photographs for inclusion in the February-March issue should reach me typed, double-spaced and on foolscap paper, not later than 3rd December, and for the April-May issue not later than 11th February. Please send news to me at 11 Great Spilmans, Dulwich, London, S.E.22. Telephone 01-693-3033.

22nd October, 1969.

YVONNE BONHAM (MRS.),
Club News Editor.

BLACKPOOL AND FYLDE

WE are sad to report the death of Stuart Murdoch, who was our treasurer for twenty years, and had recently been elevated to auditor. Stuart was a keen airman since his days as a fighter pilot, and died in the air while returing from an air display in a Stampe flown by his daughter Jane. We extend our deep sympathy to Jane, her mother and her brother.

Our inaugural meeting as a Limited Company voted Ivor Stretch as chairman, and John Gibson as his deputy. Our indefatigable CFI, Jack Aked, was returned unopposed as secretary, and Bill Barcroft was elected treasurer.

We have found a mill which will accept small quantities of waste paper, and are finding this to be a good method of raising about £1 per head per year.

We didn't achieve quite as many launches as last year, owing to airfield frustrations beyond our control, but our soaring hours were up to standard and we achieved a fair crop of Bronzes and Silver heights in thermal contacts from winch launches. K. E.

CAMBRIDGE UNIVERSITY

THE activities of the club throughout August continued to prove very successful. Paul Loewenstein, after completing his Silver C with the flight described in the last club report, was not to remain content for long. On 6th August he rounded the Slazenger Triangle successfully in the Skylark 4, and on the next day completed a 200 km. triangle in the same aircraft with turning points at Harrington and Dunstable. As a result of this the chairman, Anthony Edwards, found himself ousted from first place on the President's Ladder, and it was some time before he restored the *status quo* with a goal flight to Wattisham.

The weather in September proved less favourable, and at the camp at Long Mynd no soaring took place until the last day. A number of persons stayed on longer to take advantage of the improved conditions, and Dave Braham made up for his previous lack of flying by remaining airborne for eight hours on the Saturday.

A number of pilots have now reached

solo standard since the club acquired the use of Duxford Airfield for training purposes earlier this year. More recently, however, the petrol-driven tow cars have begun to prove expensive and unreliable, and we are attempting to find a cheaper and more efficient method of launching. Despite these difficulties, a large amount of flying has been done at Duxford.

A. W. F. E.

COTSWOLD

THINGS are happening in the Cotswolds. Four new instructors have joined the "fleet", full of energy and enthusiasm straight from National Coach courses. These welcome additions leave all instructors more time for personal flying, most important, although hitherto somewhat neglected because of *ab-initio* pressure.

A programme of winter mid-week lectures and films is planned, which we hope will be well supported. Instructional rather than social, they are aimed at producing Gold and Diamond pilots for 1970!

Our bus is producing *Cordon Bleu*-style hot pies and soup, much needed as the days—and circuits!—get shorter and colder. Drop in and try them. Our Christmas Dinner will be a swinging, informal buffet; tickets are 30s. each, obtainable from the Secretary. Date: 22nd December 7.30 p.m. We'd love to see you and local accommodation can be arranged. Meanwhile . . . back to the circuit.

G. H.

COVENTRY

SEPTEMBER began on a sad note with the tragic death in hospital of member Frank Wright, who had long associations with both our Club and the Mynd. Frank was a kindly chap, probably better known among the older members, and our deepest sympathies are extended to his family.

On 27th September we held a riotiously successful party to raise funds for our new clubhouse extension and bunkhouse, which succeeded beyond our wildest dreams. We are delighted to see some of our power-flying friends from Baginton, no doubt over for the evening



CAIRNGORM
Aerial view taken on a visit to the Cairngorm mountains of Scotland by Godfrey and Rika Harwood. The Nissen hut type of hangar can be seen at the right-hand lower side. The gliding club owns a T-21B and a Prefect and there is a privately-owned Kite.
(Photo: Godfrey Harwood)

to see how people live on the other side of the fence. By midnight we had succeeded in getting promises of ten new members from them for next year, so Baginton beware! The honours here go to Jackie, Val, and Barbara who gave up a great chunk of their weekend to make this a success.

By the time this issue appears, our ex-CFI Shelley Curtiss will be married to Pam, who has already won the hearts of all who have met her. In view of Shelley's future pre-occupation with other things we have very regretfully accepted his resignation as CFI and the very least we can do is to thank him for the efforts he has put into what can only be a most onerous task in any gliding club.

On 6th October, we were hosts to BBC Radio Leicester, with a Forum Panel—*The Way I See It*. The questions ranged from gliding to the latest thing in see-through bikinis, and the answers remain unprintable! It came as a revelation to find that among our 200 members there existed such a hard core of intelligentsia!

F. W. F.

CUMBERNAULD

THIS last flying period has definitely been Bronze C's for Committee month! After nine years in gliding, and having eaten his way through innumerable launches—and about 300 pork-pies—our illustrious chairman, Russell Brown, finally completed the second leg of his Bronze C at Portmoak. In addition he succeeded in making it his five hour flight and Gold C height with a 14,000 ft. climb. Roy Surtees, Neil Meiklejohn and Douglas McNicol also completed their Bronze Cs; Douglas also got his five hours while at the Mynd. Yours truly plods hopefully on, hoping to be the first to do both Bronze C flights at Cumbernauld. David Walker and Jim Aiken achieved their A and Bs.

We were particularly pleased to see Naomi Christy a short time ago, who listened to our problems with a very sympathetic ear. She helped us considerably and made us feel that the small clubs are not forgotten.

Our only lady solo pilot, Carol Meiklejohn, was unfortunately stricken with a slipped disk a few weeks ago; however, she is well on the mend now. We miss her shapely body sunbathing at mid-point! Rumour has it that Neil rigged up the bed in a mock-up of a Cirrus while she was bed-bound!

In the 10 years of our existence we have had a very poor influx of new members until just recently. Temporary members are almost outnumbering full members, and we are also seeing a few faces from Portmoak. We understand that there is a saying going round Portmoak "If you want launches go to Cumbernauld". We certainly live up to this reputation by doing on average 60-70 launches a day.

E. N. D.

DERBYSHIRE AND LANCS

IT is a long, long time—even before gliders soared the hills of Derbyshire—since Robert Bruce, King of Scotland (1274-1329 and King from 1306) watched the spider and came to the conclusion that, if you don't succeed, try, try and try again. In this highly technical, computer-controlled age, it still applies. Ken Gregory has proved it! He has eventually managed his five hours—well done.

Our newly-acquired Rhönlerchen are proving very useful for *ab-initio* training. They are very robust for our very uneven hill site and can take some rough handling without apparent complaint—even the odd heavy landing. I proved that! I don't pull the cable release instead of the spoiler control anymore, although one or two instructors have performed the same feat. However, first solos are coming thick and fast and the Swallow list is growing longer than the training list.

We have our club K-13 on site for advanced training. This now gives us a step-by-step training fleet from *ab-initio* to single-seat high-performance.

We have had more courses this year including Scout courses, and have had the services of a resident instructor for all the courses. Thank you, Tony. Before leaving us he sold his impressive-looking Super-Javalot to one of our new syndicates and its airbrakes can be heard for miles around. On most of the courses the weather has been kind to us.

Our club chairman, Les Haynes, was

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Wish all our friends in the gliding world

A Very Merry Christmas

and

A Happy and Highly Soarable New Year

one of two people who recently achieved his Gold C height: we also had half-a-dozen Silver C complete certificates, including Mike Barker who won us a Swallow in 1967. Gerry Brooks kept our flag flying in the competition field by entering the Nationals. Several of our members have again spent holidays at Portmoak and we have ourselves welcomed members from other clubs.

The bonfire is ready to be ignited to inaugurate our usual firework party, followed by numerous social events throughout the party season. Our new building programme is well under way, and we should soon be enjoying hot baths and showers after our hard day's toil on the field. We wish all our friends a truly merry Christmas and Happy New Year.

P. H.

DEVON AND SOMERSET

AS the tints of autumn replace the greens of the season, the urge behind our feverish summer activity also mellows into a more leisurely appraisal of soaring, a sort of reduction from 'eight up' to 'zero sink', so to speak.

The CFI has been fairly busy checking out our junior instructors of whom we now have some half-a-dozen or so. With the same number of senior instructors we count ourselves fortunate.

Certificates gained since last reporting include Steve Taylor's Bronze C and John Lord's Silver height. The latter was attained on the Wednesday of the late August task week when, after Monday and Tuesday had clamped. John Fielden in his capacity of tug pilot discovered a wave which appeared to lie from the west of the site to Glastonbury. Three pilots used this to reach Compton Abbas and gained 7,000 ft. in places.

Last but not least, the 'achievement diary' kept in the clubhouse, records the birth of a son to Mike and Barbara Fairclough on the 21st September and we are delighted to congratulate them on this noteworthy event. The Club would like to take this opportunity to wish all colleagues a Happy Christmas.

A. E. R. H.

ESSEX

THE fine soaring weather over the past two months has been somewhat marred by the loss of our Ka-13. The pilot, Alistair Hobbs on his first solo flight, is recovering in Epping hospital and, we're glad to hear, can't wait to fly again.

On the flying side, Mike Throssell has brought the club its first "home-grown" Diamond goal with a flight from Nympsfield to Great Yarmouth—not bad for a second cross-country, especially as this involved a considerable amount of cloud-flying.

Our Ka-7 has been given a face-lift with a new bubble-type canopy, thanks to the efforts of several of our "midnight-oil-burning" members. The reduction in wind and improvement in visibility has proved to be well worth the work involved.

Ray Stafford Allen paid us a visit at the end of September, to inspect the Ka-7's new canopy, and brought his Capstan along. Strangely enough, our cables were more or less in one piece when he left, thus proving that Bill Scull and his trainee instructors were, after all, a bunch of pole-benders!

By this time Portmoak should have recovered from the strain of a visit from a dozen of our members, although by now they should be used to invasion by mad "Sassenachs". It appears that, this time, Bishop came out from behind her usual 8/8th cloud cover to provide two of our members with their five-hour durations and another two with a Bronze leg apiece. The wave also worked to give the others their first taste of this type of lift but, alas, not quite enough for those who were looking for Gold and Diamond heights.

The end of the soaring season is rapidly approaching as indicated by the number of pilots seen to be working on their aircraft and trailers. This winter, we can all look back on what has been a remarkably successful year, and hope that we can apply all that we have learned when the thermals start to pop next year.

We take this opportunity to wish all gliding types a very merry Christmas, and a happy and soarable New Year.

G. F. M.

IMPERIAL COLLEGE

THE summer vacation seems to have produced several minor disasters. Our President, Frank Irving, disappeared to Brazil for six months. Reports are that he is alive and well, and still fighting for a permit to fly. We had a similar battle with the Spanish Air Ministry and, unfortunately, lost. This meant a stay-at-home summer for the Club Skylark 4, a situation which is to be remedied next year. By the time this is published we hope to have made our usual visits to Challock and Dunstable for hill-soaring.

Our new Captain, Doug Walker, spent many happy hours walking the streets of Cambridge in search of the elusive Brunt Trophy. He now has a good working knowledge of the city from the ground.

Latest news of our K-8 is that it is expected in the New Year, and this should provide welcome relief for our solo pilots in the soaring season. But not so our training pilots! We started the new session with a very successful Fresher's Day—and 100 people all professing interest in the club.

Our thoughts for the future are divided between the Portmoak expedition at Christmas, and our Annual Dinner. As IC Gliding Club will be 40 years old this March, we are hoping to make it a memorable occasion.

C. H.

LONDON

ALTHOUGH it must have been the driest autumn for many, many years, and the Dunstable chalk is rock hard in the middle of October, we have not had a very inspiring end to the season. There were a few cross-country flights and wave has made an appearance recently.

Recent years have seen developments in our winch-launching equipment, the extent of our landing field, rationalisation of the club fleet, and this summer the laying of a car park on the north side of the main building. The general committee are now planning, albeit in the discussion stage, a private owners hangar and the complete replacement of our aged fleet of Tiger Moths. The operational cost of the latter has been rising steadily, and now stands very

close to £10 per flying hour. Although no decisions have been reached, a 130 h.p. version of the Condor offers the most promising solution. Motor gliders are also on the agenda, and it seems pretty clear that we shall possess one within a couple of years.

There is no further news of note on the Luton airport front, but we are sorry to lose Nick Goodhart from the battlefield, but Maj. Gen. Deane-Drummond has filled the post and we feel confident that he will help our cause. Even if we come to a satisfactory arrangement over airspace problems in the area, the third London airport threat looms larger and larger all the time.

By the time this gets into print Christmas will be almost upon us, so we wish all gliding types, and in particular all ex-LGC members aboard, a Happy Christmas and a super thermic New Year.

M. P. G.

MIDLAND

Salutation

Be it known to all men by these presents and Bob Rowe's pasts that the premier award for the 1969 Hangar Flight is awarded to Johann Sebastian Stringer, erstwhile bachelor of this parish,



clockwork orange purveyor and rigging frigger extraordinary.

For, whereas, having propelled to a Dizzy Height 'h' with infinite velocity 'V' by one Peter Salisbury, wire puller to the "hoi polloi" and accompanied by one Anthony Manning, pole bender and wreckage repairer by appointment; Johann Sebastian Stringer did make an approach at a height not exceeding 10 cubits and a span at a speed approaching that which should never be exceeded, yea, even in smooth air. And whereas he did approach not knowing whether he was on his arms or his elbows, nor yet whether to land on the waters below or the aircraft beyond and further did come to earth and roll within five paces of the edge of damnation, as measured by one Jack Minshall, chief Rudder Pusher and Course Rollicker, Johann Sebastian Stringer is hereby awarded the Cliff Hanger Trophy for 1969.

Course No 13. Midland G. C.,

* * *

COMPARED with 1968, the current season has yielded increased activity in most aspects of the club's operations. Although membership has shown only a very small increase, greater use has been made of the club's facilities, both on and off the field. Presumably greater enthusiasm and/or better weather are responsible for this. Attendances on courses have also been at a higher level.

During September we welcomed the members of the Cambridge University Club for their second fortnight's visit this year to the Mynd. Among our own members, Peter Mellor completed his Silver C, Paul Stevenson and Bob Scarborough successfully completed instructors courses and Mike Horan was married. Congratulations to all and especially to Mike to whom, with his wife, we wish all happiness for the future.

We have now operated for a whole season with our new winch and it has proved very satisfactory. There have been a few minor troubles but these should be eliminated during the winter overhaul.

It is very sad to record that Frank Wright, one of our founder members, died on 11th September. He had done much for the club over the long period

of his membership and his friendly approach to one and all will be greatly missed. Our every sympathy goes to Madge.

K. R. M.

NEWCASTLE AND TEESSIDE

IT seems that whatever we do at Carlton is certainly governed by the weather. This year it has been kind to us and this has been reflected in our various activities. Our aim at the beginning of the year was to top 2,000 launches and this has been achieved easily, despite having several high winds and days with low cloud during the last few weekends in September.

On the whole the members courses have been a great success, not one of them being spoilt by rain. On the few bad-weather days we have been able to push ahead with clubhouse improvements, overhaul the tractors and manage a general exterior clean-up. Thanks to John Pearson the club lounge is immaculate with Marley tiles. The only thing we need now is the right sort of mother-in-law to use the Flash.

We were lucky enough to acquire a Land Rover during the summer; this gives our backsides a rest from the vibro-massage that our tractors give us. As well as this, negotiations are well under way with the Army to come to Carlton and help improve the road and the surface of some of our runways.

The new diesel winch is progressing favourably; the hangar now is resonating to the exhaust note when our hard-working engineers try out the different parts as they are fixed to the chassis. It is a two-drum winch which will be most suitable for use; apart from increasing the launching rate, it will help the situation when our proposed association with the North Riding Scouts comes to fruition.

It seems that elsewhere there is a great deal more frustration than there is at Carlton, so the Scouts wish to come to Carlton and do their gliding in association with ourselves. Although this may put a slight strain on our resources, we are hoping that the advantages will outweigh the disadvantages.

Regarding aircraft, we are altering our fleet, owing to various circumstances, and in a few years we shall be operating with a much higher performance fleet than we have at the moment.

N. M. J.

NORTHUMBRIA

OVER the Bank Holiday our Eagle and Olympia 2 ventured forth on an expedition to Millfield, a disused airfield in Northumberland, where a group of farmers were thinking of forming a gliding group. Launching was by auto-tow to 800 ft.—well, they took only 900 ft. of wire—and every farmer had at least one flight in Eagle "Odin". With enthusiasm well fired, the group are looking around for a two-seater, probably a T-21B, to seat instructors borrowed from Northumbria.



Northumbrian members with Eagle "Odin" and Olympia 2 at Millfield.



Keith Massey of the Ouse Gliding Club, at Rufforth with his wife Sylvia.

Lt-Col Naomi Christy chose the same weekend to visit our site and fitted in a visit to Millfield. She seemed suitably impressed by our rate of progress in our seven-year history. Our hanger is now almost completed. It's surprising how many useful things members find which other people don't want, a notable case being our CFI who obtained strip lights from a local firm which was changing its lighting from 5 ft. to 8 ft. battens. The airstrip has been seeded and now looks a very fresh green. We have applied for a grant towards the cost of a tug but await a decision from the authorities.

As winter approaches our social events swing into top gear with film shows, pie-and-peas suppers, and a dinner-dance. Also vying for the Wednesday evening spot will be a series of lectures. The pre-Christmas series will be orientated towards the *ab-initio*. In the New Year, topics of general interest and more advanced subjects will be covered.

J. R. G.

OUSE

IT has been a glorious summer, followed by a lovely autumn, yet it has been remarkable how frequently the weather turned awkward on Saturdays and Sundays, our flying days! Low cloud and mist spoiled many a promising Sunday yet, during the week, when the RAF were using Rufforth, there were some perfect days for gliding.

Even so, we have had a busy, happy and successful year. Bob Bowhill completed his Silver C; Kevin Atkinson got his bronze C; John Mawson got his Gold C height in the Northern Regionals; Richard Boddy, treasurer and an instructor, unwittingly joined a pony club gymkhana; and Brett Atkinson had probably one of the shortest aero-tows on record, landing quickly in a school playing-field and subsequently featuring on Yorkshire Television!

Eric Rogers, secretary, received a letter addressed to the "York Flying Club", asking if a stray pigeon in the writer's loft belonged to him!

Our quarterly magazine *In the Wind* is now, through the generosity of one of our new members, Bob Mersey of Hull, being printed, complete with photographs and advertisements and is a very professional job.

Our chairman, after 30 years with the Ministry of Defence, retired, and was given an enjoyable party in the club-house. Our then landlords, the RAF at Linton-on-Ouse—we now are "fathered" by RAF Church Fenton—invited him to spend a morning in a Jet Provost. He had a whale of a time, zooming to Scarborough and back at 400 knots, and doing loops and barrel rolls above the clouds. He still prefers gliding.

Major-General Tony Deane-Drummond and Air Vice-Marshal Harry Burton were guests at our big event of

the year, the annual dinner-dance, at York in November, and we are now all set for a busy winter social programme, and as much flying as we can cram in twixt dawn and dusk.

A. H. S.

SOUTH WALES

IN company with most clubs, we have had a good soaring season. The Ka-6E has chalked up over 100 hrs. to date this year, while the club records for launches and hours for the year have been broken. Silver Cs have been completed by Hugh Evans, Earl Duffin and Lyn Ballard. No Gold C legs yet but our wave season is about to start.

Possibly the best day so far was while the CFI was away at the CFI's conference. Only three launches, no instructor on the site, but 13 hrs. 30 min. in flying time. Earl Duffin in the Ka-6E completed his five hours, Ken Gardiner his in the Swallow, while Eric Fitzgerald managed four hours in the 3F. At one time all three aircraft were over 4,500 ft. all in wave, Earl having the bad luck of being without a barograph. This made him take a difficult decision; he was 5,500 ft. up but in the trough between wave crests with total cloud cover — and 3 knots on the clock! You should have heard him describe the view. Fearing a landing out from a forced dash downwind to low ground and clear air — the waves were seen to stretch beyond Bristol — he manoeuvred back through the slot and continued a "visual" five hours.

Lyn Ballard flew to Pontypool from the Mynd and almost became the first "visitor" to arrive at our site: the champagne still awaits the first. Ivor Shattock, again in the Ka-6E, managed two legs of a 300 km. triangle and landed at the Mynd via Bickmarsh in time for tea as the trailer was seen to wend its way up the face!

The last notable flight was that of Philip Gould who, for his C, stayed up 1 hr. 40 min. This was again in wave — our ridge doesn't normally work up to 1,600 ft. We look forward to winter and a possible new site and are hoping for an announcement on this soon.

I. H. S.

SOUTHDOWN

SEVERAL members of the club travelled up to Sutton Bank in July, taking with them the syndicate Pirat—airborne at last—and the club and syndicate EoN 460s; John Lovell gained his Silver duration in the 460, Paul Souter his Silver height in a Swallow, and Gordon Newberry combined Silver height and duration in one 460 flight. We also made another two trips to the Tiger Club at Redhill, giving a few more of our Swallow pilots aero-towing experience. Syndicate members also took advantage of the good thermal conditions at this site but were frustrated by the tight Air Traffic Control regulations in this area.

Both the July and August courses, helped by good weather, were successful, the August course in particular producing a fine crop of first solos in the T-21 and conversions to Swallow and 460.

Unfortunately, in September our T-21, which recently came of age, while being flown solo was badly damaged in our first major accident for many years. Luckily, the pilot was unhurt but the T-21 is being replaced.

On 28th September several distinguished members of the early flying world visited us at Firle. A full report of the occasion appears elsewhere in this issue.

Shona Poole, Jasper Partington and Richard Langley visited Fayence this summer but had frustrating weather.

Robin Traves from West Malling has joined us as an instructor and Frank Howerd has completed an instructors course at Lasham.

K. M.

STAFFORDSHIRE

THE future of our club is the main factor with which we are concerned at present. We still do not have a new site to move to when our present tenancy of Meir airfield is terminated and, unless one can be found, the club faces extinction. A number of possible new sites have been discovered and of late the Leek area has shown promise—not least because of the most welcome support we have received from the Leek RDC, who actually seem to want us to base our-

selves in their area. If we are successful in obtaining a new site in that locality we may well find ourselves in hill-soaring country, which would provide our members with a novel way of staying aloft.

The syndicate rivalry referred to in an earlier issue has now become a race to earn a Gold C. Quite coincidentally, both syndicates concerned are planning visits to the Mynd in the near future.

Congratulations to Arthur Lowens who managed to finish off his Silver C before the end of the cross-country season with a distance flight to Hickley. He has also recently qualified as an assistant instructor.

A. J. D.

SURREY AND HANTS

THE summer suddenly switched off in mid-August and very little flying of note has been done since. One or two days have produced wave to about 6,000 ft., but the most notable event was six consecutive days with no flying in September. This was the longest duff spell since the 1963 winter.

The Portmoak safari was a great success from the point of view of hours flown and general enjoyment, with about 460 hours clocked up by Lasham-based sailplanes. Jack Wardle gained his five hours, Keith Challenor and Julian Temple climbed to Gold C height, and one day produced three out-landings before breakfast! Several pilots exceeded 10,000 ft.: Bill Dean reached 13,000 ft. plus and Chris Wills and Alan Purnell got above 16,000 ft. Alan is still there, taking an extra week. The sight of his Cirrus as a tiny bright silver speck in a deep blue sky far above the highest cloud was truly magnificent, especially as seen from a Skylark 4 at a mere 12,000 ft. just as your scribe fell out of the wave while taking photos. Norman Smith provided most of the 600 ft. tows to the hill, coping superbly with 30 knot SW winds to get a really fast turn-round. Our thanks go to Charlie and Betty Barr for their splendid service to us mere Sassenachs, particularly as they had to cope with an administrative fumble in the second week.

Our last Skylark 2 — No. 35 — has been sold to the Army Club at Odiham. Many members have fond memories of flights in 35 and we think a going away party for it would be appropriate, anyway; anything can be used as an excuse for a party. By the time that this is read, fireworks will have been let off and old caravans, trailers and gliders will have gone up in their last thermal to celebrate the plot to blow up Artillery Mans... er ... Parliament, and the first gliding plans of the 1970s will be germinating under the snows.

C. L.

THAMES VALLEY

THE latest hot ships flying from Wycombe include an SHK, an ASW-12 and a Diamont 17, to be joined soon by a Libelle and an ASW-15; they make the club Skylarks look positively old hat.

Harold Fletcher's period as temporary summer manager has come to an end and we should like to record our thanks for the way in which he got cracking. He has been responsible for many improvements in the day-to-day running of the school. Our thanks also to Kevin the "Tug"; he put in many hours at the front end of the rope. We've had a very good season but there has been a murmur that there weren't so many good soarable Sundays. There is to be a club party on 19th December and Peter Whiteman and his Trad Jazz Men have agreed to make the music, so it should be a good evening.

To those overseas ex-members who have sent us tapes, we have enjoyed listening to them and hope to be sending recorded replies soon.

J. W.

TRENT VALLEY

WITH our T-21 now in service the *ab-initio* programme is making rapid headway; also, a second Grunau has arrived to serve our growing list of solo pilots.

Peter Gascoyne has returned from Sutton Bank having successfully completed his assistant instructor course and Georgina (Fluffy) Sewart has recently converted to the Olympia.

Our hangar now only requires doors;

the building team — Ray Snowden, Peter Gascoyne and Dib Clewes — have seen the job through from start to finish. A really great effort and our thanks to all three; long may they stay with us, for on such foundations gliding clubs are built.

G. F. B.

WESTCOTT

CONGRATULATIONS to Jean Godfrey, who obtained her Silver duration with a flight of 5 hr. 47 min. and her Silver height with a gain of 6,000 ft. in wave, and to Dave Letley for his Silver duration with a flight of 5 hr 31 min. All of these were achieved on a recent visit to the Portmoak Club where Jean and Dave experienced some good wave soaring. We would like to thank everyone at Portmoak for their wonderful hospitality, especially Ansgar Sambale; some of our members are looking forward to another visit next year.

Three more A and B certificates have been gained over the past month by Dennis Spencer, Alan Vernon and Elizabeth Clarke. This year's soaring season has been fairly successful, with only a few weekends missed because of bad weather. We are hoping to get our second two-seater very shortly, and the syndicate are eagerly awaiting the arrival of their own solo glider. Our weekly Bingo sessions are at last showing some profit and we trust that this trend will continue.

Our CFI, Derek Godfrey, has recently returned from the CFIs conference at Bicester with tales of the superb machinery flying over Bicester, and has immediately called a meeting of instructors to thrash out things discussed at the Conference.

E. A. C.

YORKSHIRE

WITH the wonderful flying weather continuing well into the autumn, success after success has been piled up by our members; Among them are gains of height by F. Knipe — 8,500 ft., M. Benson — 9,600 ft., and Nick Gaunt — 10,000 ft. L. Mountford got in his five hours in great style and M. Melia made 4,100 ft. for his Silver height.

The Northern Competitions had much better conditions than last year and proved a great success, but we could have done with many more entries. I'm sure that the Leicester Club enjoyed their two weeks with us using thermals, wave and ridge soaring to the full.

Quite a few of our Swallow pilots have now graduated to the Club Ka-6E, thus helping the flying list, and a good number of new members are making rapid progress on the T-21 and the Eagle.

The clubhouse looks very swish after being painted by several enthusiastic lady members. They've made a wonderful job of it, and it's now all ready for the party season which will soon be in full swing; should you be around about Christmas time, come and join us. All our old and new friends are welcome and any club member will give you details of any celebrations that may be coming up.

P. M.

SERVICE NEWS

WREKIN

QUITE a lot has happened since our last report to this column. Early in August we welcomed a new CFI, Jim Martin, who had previously been at Locking; Simon Morrison is now deputy CFI.

Club members had a fair share of glory in the Comps. This year, Simon came 16th in the National Sports Class Championship — Simon's first Nationals — while Mark Boyle and Tony Phipps came 5th and 7th respectively in the Inter-Service Club Class Comps.

John Allerton became the first member to gain his Diamond goal from this site; he did a dog-leg and, incidentally, completed his Gold C. Harry Oxer has completed his Silver C but was posted to Germany, and left us during October. We shall all miss him and wish him and his wife Hazel all the very best for the future.

We are temporarily without our Olympia 2A — No. 126 — which suffered a heavy landing but, as we still have a T-21, two Grunaus, a Bocian,

Ka-8, Skylark and Ka-6E, we are not short of aircraft. John Hunt is also rebuilding an Olympia with a Skylark canopy, which may be ready at the end of the winter.

C. B. B.

CRUSADERS

FEW members managed to take leave over the October soaring period. Those who did tried a dry lakebed site at Prastic, eight miles North East of Kingsfield, only to find that, unlike Kingsfield, it wasn't soarable in the winter easterlies which sprang up. The Prastic site proved soarable during the summer and it allowed into-wind operation in any direction. At Kingsfield this summer the daily sea-breeze front has been surprisingly early and consequently weak, resulting in little soaring and many days of operation in quite a strong crosswind. It seems we may have to wait until the spring of 1970 before someone has a chance of completing the 300 km. triangle we have managed to squeeze into this island.

The RAF Akrotiri fête went off very well. The Club's Olympia 401 was on display and attracted quite a crowd. We were extremely disappointed that we could not put on the aerobatic display in the Swallow, as the tug's engine change was not completed in time. Our thanks to Chris Walker for all the trailer towing.

Late 1969 sees the departure of a host of our valuable hard-worker members—many thanks and best wishes to Colonel Twiss, Tim, Len, Max, Dave, Danny and Chris.

To end on a cheerful note the K-13, we have been discussing for two years or more, should be delivered in May 1970.

M. I. O.



We should be pleased to receive news for this section from every country in the world where soaring is done.—A. E. SLATER, *Overseas News Editor.*

AUSTRALIA

QUEENSLAND STATE CONTESTS.—Held at the Southern Downs Soaring Club's field in Warwick, this four-day event was won in the League 1 Standard Class by Ian Aspland, a visitor from Kingaroy, flying a Ka-6 and winning on three of the days. Only one machine was entered in the Open Class, and three in League 2. The 18 aircraft competing were: Libelle, two Boomerangs, two Ka-6's, two M-100's, Arrow, Skylark, Ka-7, M-200, Bergfalke, Bocian, ASK-13, Kookaburra, Nymph and Kingfisher.

WOODEN AIRCRAFT REPRIEVED.—The Department of Civil Aviation has made a dramatic about-face on this question. In the late 1950's and early 1960's, they say "considerable troubles were experienced with stressed ply shell glued wooden aeroplanes", and eventually their import was prohibited. But now "there have been considerable improvements in glue technology in recent years as shown by the extensive use of glued or bonded construction of metal aircraft. In the wooden aircraft field there have been a number of parallel developments such as the epoxy resins, resorcinal glues, the use

of reconstructed woods and plastic impregnation treatments which can give woods a durability unmatched by aluminium alloys."

Australian Gliding

BELGIUM

NATIONAL RECORD.—A two-seater record for speed round a 100-km. Triangle, Keiheuvel — Weelde — Zandhoven and back, was set up on 11th August by Marcel Fyen and Rudy Dommelen, flying a Ka-7. They got round this 101-km. triangle in 111 minutes, averaging 54.545 km/h., compared with the previous record of 51.393 km/h.

Conquête de l'air

EAST GERMANY

BADGES.—Manfred Iltsche of Dresden and Fritz Fliegauf of Potsdam have acquired 3 Diamonds, with numbers 750 and 751 in the International list. The latest batch of Silver C pilots have numbers 1366 to 1384 in the national list.

FEMININE RECORDS.—Competing at Orel in the Soviet Union, Monika Warstatt set up a national feminine goal-and-return record of 336 km. Then Gudrun Drössler of Magdeburg, aged 18, also beat the earlier goal-and-return record with 323 km.

In the East German women's contest, Irmgard Morgner won and Gudrun Drössler came second.

Aerosport

FRANCE

NATIONAL CHAMPIONSHIPS.—These were held, immediately following the Angers meeting, from 26th July to 8th August at Moulins-Avermes aerodrome, with 52 participants, plus three Germans *hors concours* (by reciprocal arrangement): Walter Schneider, designer of LS-1, with the prototype Gazelle derived from it; Keim with BS-1; and Schumacher with Libelle Standard.

Three Classes were recognised: Open, Standard 1st category (gliding ratio exceeding 31), and 2nd category, with the first two flying similar tasks. The last category consisted of 10 Messanges and 11 Fauconnets; the Open Class, on the contrary, comprised only four machines —Labar with a Libelle, and Weiss and Geskis, each with a Cirrus, and Keim's BS-1.

Tasks for the first two categories were: Triangles of 252 km., 201 km., 311 km., 294 km., 311 km., 207 km., 183 km., 224 km. Fastest speed during the contest was 84.3 km/h. by Labar in the Open and 83.15 km/h. by Mattern in the Standard Class on the 201-km. triangle.

Final results in the Open Class and leading results in the Standard (Category 1) were:

Open Class		
Labar	Libelle	7265
Weiss	Cirrus	6504
Keim (*hc*)	BS-1	4784
Geskis	Cirrus	4696
Standard, Cat. 1		
Mattern	LS-1	7013
Ragot	Libelle-St.	6785
Schneider (*hc*)	Gazelle	6699
Girard	Edelweiss	6466

COUPE ATLANTIQUE.—In this four-day contest, held annually at Nantes, with 15 pilots and 13 sailplanes in two categories,

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Geskis won in the 1st category with his Cirrus, winning with 3732 points against four of the Edelweiss type.

Aviasport

NEW ZEALAND

THE NATIONAL CONTESTS have been postponed from October 1969 to January 1970. Organizer is the Matamata Soaring Centre, which has built a new clubhouse.

The Annual Report of the Safety Committee lists 11 accidents, none involving any injury to a pilot, all occurring on landing, during the year ending 31st March 1969. Damage was minor in 6 cases, major in 4, and write-off in one.

Gliding Kiwi

POLAND

Kobras for Marfa?

Two new sailplanes have been designed for the championships, Kobra-15 and Kobra-17, but the latter has fallen far behind in its development programme. Makula's experiences at Marfa this year have convinced him that a home-designed sailplane would be unsuitable for the Open Class, and even in the Standard Class the Kobra-15 would be outclassed by, e.g., the Standard Cirrus. The technical director of the Bielsko Institute has mentioned a plan to develop new sailplane types for 1972, using new artificial materials obtained from abroad, as they are not expected to be manufactured in Poland till 1974.

FEMININE CHAMPION.—Lucyna Krzywonos of Warsaw won a women's gliding contest held at Lizie Katy with 6712 points to Pelagia Majewska's 6155. There were 17 competitors, including guests from East Germany etc.

A possible World Championship contest for women, to be held in Poland in 1971, is being considered.

Ostflugkurier.

SOUTH AFRICA

PIETERMARITZBURG Aero Club is to resuscitate gliding at Oribi Airport. Forty-five people attended a meeting on July 6, including a contingent from the inactive Pietermaritzburg and Durban Gliding Club, under the chairmanship of A. Wills. The club's gliding section hopes to purchase a two-seater glider and has asked Ted Pearson to control the gliding section under the overall direction of the club's CFI.

The Pietermaritzburg and Durban Gliding Club committee have advised their members to throw in their lot with the new club.

Midlands Gliding Club is at present doing all training with a 1944 model two-seater Kranich. This is a wonderful old ship and can soar when everything else is falling out of the sky. We also have a Tutor, Swallow and Skylark 3B. Privately owned are a Skylark 2 and a Grunau 1. In the year ending 31st March 431 hours were flown from 1,390 launches.

Wings over Africa

SOVIET UNION

DURING the period 3rd to 15th July, an International Competition for pilots from the socialist countries took place at Orel. Bulgaria, Hungary, East Germany, Poland and the Soviet Union were represented. Each team consisted of two men and one woman. Two teams were entered by the Soviet Union. In each team, one man flew in the Open and one in the Standard Class; the women were all in one Class.

There were five tasks: races around triangles of 209 km., 321 km., 518 km., and 260 km., and an Out-and-Return race of 336 km. Results:—

Open Class.—Yevgeny Rudyensky (USSR) came first with 4964 pts.; 2nd, Andrei Kmyetek (Poland), 4336 pts.; 3rd, Kornel Turi (Hungary), 4066 pts.

Standard Class.—Illar Link (USSR-2) 1st, 4079 pts.; 2nd, Y. Kuznyetsov (USSR-1), 4057 pts.; 3rd, K. Goshkiewiecz (Poland), 3852 pts.

Women.—1st, O. Manafova (USSR-1), 3827 pts.; 2nd, M. Africanova (USSR-2), 3707 pts.; 3rd, I. Gorokhova (Moscow), 3464 pts.

Team Competition.—1st, USSR-1, 12578 pts.; 2nd, USSR-2, 11425 pts.; 3rd, Hungary, 10763 pts.

Translated and condensed from *Krilya Rodiny* by C. WILLS.

SWEDEN

THE 1969 Swedish Nationals were held 14th-21st June at Orebro, where the 1950 World Championships were held. The weather was very favourable and eight competition days could be flown. Out of the 27 competitors, 15 flew new fibreglass gliders. The competition was very tough and a new scoring formula with "cubed" speed points kept the pilots extremely alert on speed tasks.

June 14th.—A 240.8 km. triangle was completed by 17 pilots. Fastest were Irve Silesmo in ASW 15, 74.27 km/h.; Göran Ax, Phoebus C, 71.84 km/h.; Sture Rodling, St. Libelle, 70.31 km/h.

June 15th.—Triangle, 314.4 km. Conditions were not as good as predicted and nobody completed the task. Two pilots rounded the second turn-point. Best flights: Ake Pettersson on Diamant, 207.8 km.; Jan Hallbäck, Libelle, 207.7 km.; Bengt Göök, St. Libelle, 194.2 km.

June 16th.—Dog-leg race, 387.0 km. Conditions were worse than predicted, but in spite of that 11 pilots completed the task, much to their own surprise. Best speeds: Göran Ax, 61.88 km/h.; Irve Silesmo, 60.18 km/h.; Sture Rodling, 60.00 km/h.

June 17th.—Triangle, 131.0 km. All pilots but one completed the task and three exceeded the Swedish record for a 100-km. triangle.

June 18th.—Out-and-return, 184 km. This was a day with really "super" conditions! All pilots completed the task with speeds between 105.29 and 51.28 km/h. Fastest were: Göran Andersson, 105.29 km/h.; Ake Pettersson, 103.32 km/h.; Göran Ax, 100.55 km/h.

June 19th.—Free distance via a turn-point at Alleberg, 155.6 km. to the south. Conditions looked great and indeed they were! All pilots flew to the north after the turn-point and, in spite of a fairly strong easterly wind component, no less than 19 pilots exceeded 500 km. Longest flights: Silesmo, 645.1 km.; Göök, 608.5 km.; Walter Hansson, Libelle, 594.9 km.

June 20th.—As many pilots did not arrive back until late in the morning, a short speed task, 163.2 km. out-and-return, was set. Lift was generally good but the sea breeze from the big lakes along the course made the task a little bit hazardous. 23 pilots completed and the best were: Göran Ax, 87.14 km/h.; Walter Hansson, 76.66 km/h.; Bengt Göök, 76.42 km/h.

June 21st.—Triangle, 248.2 km., completed by 24 pilots. Best speeds: Sture Rodling, 82.39 km/h.; Göran Andersson, 78.84 km/h.; Göte Olsson, Phoebus C, 73.26 km/h.

Final leading results:

1.	G. Andersson	Phoebus C	7268
2.	G. Ax	Phoebus C	7168
3.	S. Rodling	St. Libelle	6960
4.	A. Pettersson	Diamant 18	6899
5.	W. Hansson	Libelle	6353
6.	I. Silesmo	ASW 15	6200

SWEDISH TEAM FOR MARFA.—In the Open Class Göran Ax and Ake Pettersson will represent Sweden and in the Standard Class Sture Rodling and Walter Hannsson, the Nordic Champion.

AKE PETTERSSON

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Zero sink, quoted in *Australian Gliding*

TEAM FOR MARFA.—The pilots most likely to fly for the host country are: George Moffat, Wally Scott, A. J. Smith and Rudy Allemann. Pilot's choice of participation and Class will be exercised in order of ranking.

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Southdown Aero Services Ltd.	457
Southern Sailplanes	459
Speedwell Sailplanes	523
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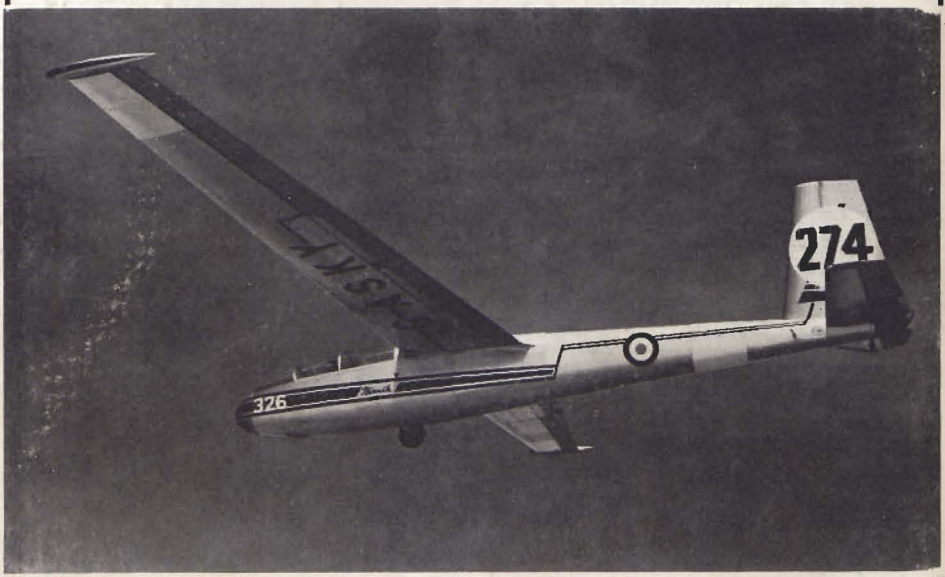
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