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A YORKSHIRE TALE

By J. S. SPROULE

The author of this third article on early British gliding was a young schoolboy when he helped to start the adventurous "York Group".

I BEGAN my flying career, such as it is, towards the end of 1929 when I opened the local evening paper, the *York Herald*, and there on the front page was a picture of a German Zögling type glider. And there was a splendid story about it being built in the drawing-room over the chemist's shop on the corner of Micklegate in York, not very far from where I was living and going to St. Peter's School. The name of the enterprising chemist was J. P. Watson.

I was 13 years old at the time and already an ardent aviation enthusiast, for, ever since I had seen some aeroplanes fly over my father's farm in Northern Ireland at the age of six, I had been fascinated by flying machines. From that day on, every time an aeroplane came within miles of where I happened to be, I was out of the house like a flash to watch it out of sight. And of course I made model gliders and aeroplanes, even hot air balloons and, indeed, anything that would fly.

One day, not long before the eventful article appeared in the York paper, someone had given me a copy of the *National Geographic* Magazine, in which there was a most interesting article, with many excellent photographs, called "On the Wings of the Wind". It was all about gliding in Germany at a place called the Wasserkuppe, and simple and cheap-looking gliders called Zöglings appeared to be capable of being flown by boys not much older than myself.

So, from the moment of sighting the article in the magazine, this was the flying for me. It was all very well thinking about aeroplanes, but they had engines and were obviously very expensive to fly, as one was told they simply guzzled the juice. And they appeared to need wealthy and hairy-chested old chaps of at least twenty years of age to fly them, so the whole business was obviously right out of my class! But gliders, on the other hand, looked within reach. They slid downhill for next to nothing or rode on the wind. Manifestly a much less expensive carry-on than aeroplaning — and if the Germans let youngsters like those in the photographs do it — somehow it must be possible to have a go myself. So, when the article in the York paper announced that a real training glider, which looked just like the genuine German article, was being built right on my own doorstep in York, I was on my bike and in the Micklegate chemist's shop in a matter of minutes!

Percy Watson, the glider-building chemist, was kindness itself, as he must have seen I was so youthfully thrilled and bursting with interest in his home-made aircraft. He took me upstairs to the drawing-room workshop and there it was — the very first aircraft I had ever seen being built at close quarters.

It appeared that the glider, which was very nearly completed, was not a genuine German Zögling, but an American design called a Northrop Primary — almost an exact copy, and Watson said he had obtained the plans from the USA via a relative who lived over there. The span of the machine had been increased by about four feet on the principle that more span would make it go better. But such was Percy Watson's common sense, even though he had had no previous aeronautical experience whatsoever, that he had obtained a book on stress calculations from the Public Library and had done the sums and thickened things up accordingly. And another thing which gives some idea of Watson's enterprise concerned the matter of dope. This was considered very expensive at the time—all of £1 per gallon — so Percy Watson, being a chemist, had again found a book on the subject and made his own. And the stuff he made at under five bob a gallon seemed to work very well, as on my first visit I saw several drum-tight fabric test panels being exposed to the weather in the back yard.

So began a long friendship with Percy Watson and his family. He was small



John Sproule in the Camel which he helped to design.

and active with a great twinkle in his eye, and I remember him to this day with gratitude and affection — a most unusual character indeed, and one of those rare chaps with a scientific but practical outlook to whom nothing is impossible if you "read the book" and have a go! Not a bad philosophy for me to have bumped into at an early age!

As I left the shop after the first visit, I was astonished when Percy Watson said: "When it's finished, you must come along and have a ride!" I could not believe my ears! Here I was, a very young-looking schoolboy and a complete stranger — and it was being taken for granted that I would actually have an opportunity to fly the glider when it was finished.

And fly it I did. When the glider was completed, it was taken to Woodhouse Farm, the property of another relative of the Watson family, at a place called Westow, out near Malton. The machine was rigged and installed in a barn, and from then on, but sometimes at rather irregular intervals spread over quite some time, a motley little collection of helpers, of whom I was one, began teaching ourselves to fly. It was indeed the blind leading the blind, but it was tremendous fun.

I was very sorry not to be present at the first flight of the Northrop, as it must have been quite spectacular. It was the first flight Percy Watson had ever made in a flying machine and, needless to say, the trial flight was from the summit of the highest hill on the farm, into a strong wind.

With ten strong Yorkshire farm-hands on each side of the elastic launching rope, the light-weight Percy had apparently shot up to a great height and disappeared into the next field over a large hedge, where a great twanging noise denoted contact with the ground. All the landing wires had been broken and JP had had the fright of his life!

So I began my gliding in the light of the above awe-inspiring experience, when caution had set in and ground-hops with two-a-side on the ropes were the order of the day.

By this time I had introduced a fellow aviation enthusiast called John Noble, who lived not far from me at Clifton. A good move as John had the vital key to my continued aeronautical progress, for he was old enough to be able to borrow his father's car! And John was very good at woodworking and became very useful when repairs to the glider were necessary. So, in company with John Noble and some of Percy Watson's shop assistants and a splendid chap called Noel Rank, we foregathered with enjoyable trepidation at Woodhouse Farm as often as we could.

From the outset I had to sit on a sandbag as ballast as my particularly light build would have given the glider the characteristics of a free balloon. I must have lugged that sandbag for miles, but it had the advantage of cushioning my behind against the inevitable hard landings! And even with my ballast I was still pretty light and tended to go

higher than everyone else. It was marvellous. Here was I, still at school (which inevitably suffered) and getting higher and higher off the ground each weekend and able to shoot a terrific line to my class-mates. And on one memorable day I learned not to pump-handle and allowed the machine to fly by itself—a great revelation.

In due time, as progress was made, ambition began to take hold, and during one winter John Noble and Percy Watson built an improved cockpit-type fuselage for the glider, copied from the American Bowlus Albatross which had been illustrated in *Popular Mechanics*. I only flew the Watson-Northrop Mark II once before someone well and truly crashed it — but I remember the thrill of the much longer and quieter flight, actually sitting in a proper cockpit.

So it became necessary to look for a replacement aircraft for the original home-made machine which had served us so well.

By this time a gliding club at Scarborough, which had been formed during the tremendous boost that a much publicised visit by the German experts Kronfeld and Magersuppe had given, had gone the way of many gliding clubs in those days and gone bust. All the gliders which the Scarborough Club had bought during the first flush of enthusiasm had been broken, and one gathered on the grapevine in York that the wreckage could be had for a song.

So Percy Watson made enquiries and it was learned that if one called upon the custodian, a certain F. N. Slingsby, at his cabinet-making business in Queen Street, Scarborough, the defunct Scarborough Gliding Club debris could be inspected. The upshot was that Percy acquired a damaged Dagnall primary glider (with trailer!) for £7. In a short time the Dagnall was repaired and the York Gliding Group, as we loosely called ourselves by this time, was in business again.

The contact with Slingsby at Scarborough resulted in the widening of our scope in every way. And Fred Slingsby, to us self-taught chaps from York, was a pundit from the start. For had he not flown as a gunner in the Royal Flying Corps and got a medal for doing it, and had he not learned all about gliders from the German expert Magersuppe, etc., etc? From then on, we arranged to meet

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Launching the Camel at Dunstable in 1938.

Fred Slingsby and his wife at some convenient place between York and Scarborough each gliding weekend for mutual help and amusement, and we flew from quite a variety of sites. For in those spacious days nearly 40 years ago, we seemed able to cruise through the Yorkshire countryside until we saw a likely-looking hill with the wind blowing up it — and just stop and set up the show! The farmers always seemed to welcome us and even help with the launching.

Sling introduced us to the Whitby Moors with which he was familiar, as most of us were now ready to have a go — from a higher hill — at the gliding licences we had heard about. And Sling promised to bring along the Falke sailplane he had built in his cabinet-making workshop in Scarborough; so we were really getting among the big stuff at last!

The Falke was the very first German type sailplane I had seen at close quarters. When I saw it for the first time, I was most impressed by the beautiful construction and the elegant lines, after the crudities of the Zögling type. For sailplanes in the early days looked beautiful things. There was no paint to hide untidy workmanship — but pale, clear varnish on golden-coloured birch plywood and nearly transparent white fabric.

To return to the Whitby Moors — the big event in this connection as far as I was concerned, was getting my A licence. One weekend, early in 1932, Percy Watson announced that we were off to find a big enough hill to make the 30 seconds A flight a dead cert, so to speak. So, on the basis of "if you go, I'll go," Percy Watson and I made a pact to have ourselves catapulted off Saltersgate, which has a north-facing ridge about 400 ft. high, not far from Whitby. So, in due course, we rigged the Dagling, as it was now called, at the top of our selected precipice, and off went Percy Watson into the void and whistled down to the bottom in 35 seconds. In what seemed no time at all, the glider was manhandled back to the top of the hill and I was being strapped in on top of my sandbag, with all my chums giving advice and making morbid remarks. I looked over my two small nobbly knees (which I was trying to keep still) towards the abyss, with the realisation that it was too late to cry off. With loud cries the launching crew disappeared over the brow of the hill like the Gadarene swine — the glider stirred a moment — and before I knew what had happened I was sailing along much higher than I had ever flown before. But, believe it or not, I made the ground in 29½ seconds and had to undergo the ordeal again to get the A. The non-volunteers did not seem to mind the labour of humping the glider back up the 400 ft. hill at all — they said afterwards it was worth it just to see my face as I took off!

But I was proud indeed to achieve the minimal hurdle of the A, and when I was safely on the ground again I really felt the ace of the base. And I was thrilled to be second after Percy Watson in the achievement, with John Noble and Noel Rank just behind.

In due course Fred Slingsby's Falke appeared and the big day came when

we all met up on another slope at Saltersgate to see it fly. There was a strong breeze and off Sling went to sail up and down for about half an hour. To see the lovely bird flying so easily and elegantly was a wonderful sight to me, as up to this time I had never seen any real soaring before, and it was splendid to be part of the act and not merely a spectator.

A little while after the A licence epic, we were at Saltersgate once again, and this time our little York-Scarborough band of glidists was joined by a legendary and rather unorthodox character from Harrogate called Addyman, who had built a primary glider of English design called a Dickson. Now, we chaps — by this time thoroughly indoctrinated with the German way of building and operating gliders — rather looked down on the Dickson as pretty poor stuff. The Dickson was a more awkward-looking job than the Zögling, if such a thing can be believed, and the design called for the use of myriads of small wood-screws, as Dickson obviously did not trust glue! (According to German constructional practice, puncturing wood with screws was considered a very good way of weakening it!) And, what's more, old Addyman had doped his wings with isinglass egg-preserver which smelt of fish when it rained.

It appeared that Eric Addyman had been running a group rather similar to ours at York, with his Dickson glider, which in spite of everything appeared to fly quite well. But being an unconventional chap, he had taken to rigging the stick almost fully back with the elevator at neutral in order to stop his pupils pulling up too steeply on take-off and stalling. The particular day at Saltersgate when he turned up with his followers was very rainy and blustery, and I think we had cried off as conditions were so thoroughly unpleasant. [Here the author refers to Addyman's crash described by John Neilan in our June issue, p. 191 — Ed.]

The next memorable event in my early gliding career was the joint expedition with Fred Slingsby and his Falke to the 1932 BGA Gliding Competitions at Barrow-in-Furness. This was the first time our little York group of enthusiasts had gone so far afield, and I was most excited at the prospect of a full week with my gliding friends. And at Barrow-in-Furness we met all the other gliding folk, mainly from the London Gliding Club at Dunstable, whom we had begun to hear about in one way or another.

After the Barrow meeting, at which I met so many gliding people, many of whom I am still happy to know today, I had to fade out of the activities of the York Gliding Group as I was preoccupied with leaving school and having to do something about earning a living.

So, as I simply had to get among flying machines, I departed to Vickers Aviation at Weybridge, where I had got myself engaged as an apprentice through a meeting at Barrow with one Freddy Pilling of Vickers. For me, of course, this was a pretty strategic move, as Dunstable was within reasonably easy reach and I could continue flying gliders



J. S. Sproule and W. B. Murray during their international two-seater duration record of 22 hr. 13 min. 35 sec. on 9-10 July, 1938. (Photos: A. E. Slater)

there. And it so happened that Sebert Humphries, whom I had also met at Barrow, lived nearby at Weybridge and drove to Dunstable nearly every weekend. So all very convenient, and thus began a long association with the London Gliding Club and many happy hours of flying with advancement in due course onto better gliders and sailplanes.

But I had one more episode to play out with my York friends. Percy Watson had again made another foray to Scarborough to delve into the ex-Scarborough Gliding Club remains, and he had returned with a slightly damaged Prüfling, again complete with trailer, for £14! So the York party drove down from York and arranged to meet me at the London Club to get our C licences on the Dunstable slope. The weekend was perfect with a good strong south-west wind, and after Percy Watson had got his C with no trouble at all, I was launched from the top in the Prüfling to have a go at the five minutes.

The Prüfling, the standard German secondary glider of the time, was quite a neat little aircraft — but that was the trouble. You sat under the 33 ft. wing span between four upright struts, and while the controls were fairly responsive, the soaring performance, due to the small span, was not very good. So the machine had to be flown quite expertly and accurately in order to stay up, which is not the best state of affairs for beginners.

So, off I went along the hill in the Yorkshire Prüfling in fine style and I was just congratulating myself on how easy it all was, when I reached the Bowl — i.e., the famous sharp curve in the edge of the Dunstable ridge at the north end. Due to my inexperience and the euphoria of at long last staying up rather than coming down, I had left the turn too late, and in a wink, at about 60 ft. high, I was suddenly flipped upside down by the sharp updraught/downdraught over the lip of the Bowl.

All I can remember is seeing the chalky-looking ground gyrating above me as I was suddenly inverted. Fortunately I had the instinctive wit to cover my head with my arms and pull in my legs, as there was nothing else I could do! I then found myself on all fours on the wing of the upside-down Prüfling, about 50 ft. behind the edge of the Bowl; I had neither felt nor heard a thing and was completely unscathed except that I had lost my specs. But my York friends did not do anything other than try to console me.

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So there was nothing for it but to go back to square one and join the ground-hopping gang at Dunstable. In due course I advanced to the Dunstable Prüfling, which I can truthfully say I well and truly tamed before I flew the London Club's Falke. It was a great milestone as I began to put in very enjoyable hours of real flying and eventually joined the ranks of the aces who could Land on Top, i.e. back at the launching point. No mean trick in the days before spoilers and airbrakes.

So my active connection with the rather whimsical little York Gliding Group came to an end, for eventually the thing more or less fizzled out when Percy Watson gave the Dagling to the London Club, sold the repaired Prüfling, and began to fly aeroplanes at the Yorkshire Aeroplane Club at Sherburn in Elmet. Learning to fly the chemist's shop glider nearly forty years ago, when the whole thing was new, was a great experience which I would not have missed for anything. We had all started from scratch knowing nothing—and I certainly know how the Wright Brothers must have felt at Kitty Hawk!

I will always remember the kindly and humorous Percy Watson, though he died a long time ago. For I was "nobbut a lad" as they say in Yorkshire, when I turned up unannounced and breathless in his shop in York with nothing but the slender resources of a schoolboy, and the enthusiasm to fly. And for Percy Watson that was the only qualification I needed.

THE NATIONALS AT MARFA

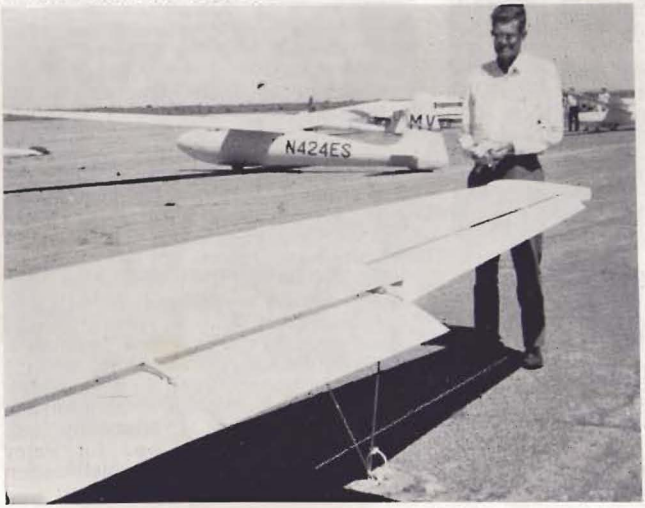
By ANN WELCH

THE cinema has been saying for a long time that Texas is a big country, and when you discover that the whole of Britain could fit into a quarter of Texas you believe it. But it is not just a matter of space; the Marfa plateau is visually beautiful, although largely unlandable; the people are big-hearted; and the thermals, like the rangers, are rich, strong and tough.

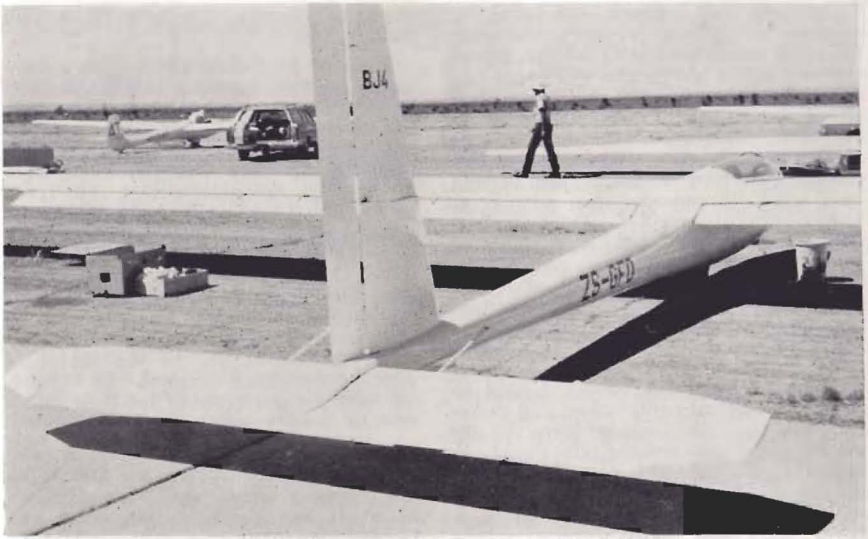
Presidio County Airport, the ex-bomber training base, showing some signs of age, as Dick Johnson indicated in his excellent article in the June-July issue of S & G, did not this year show any signs of the metamorphosis necessary to become the World Championships Centre overnight. However, seeing the Americans at work clearly indicated that the 1970 World Contest will be well organised and provide first-rate flying. The basic ingredients are available—good weather, space, freedom from control zones and airways, few flies, top quality tugs, great local enthusiasm and a National Aero Club stocked with competent people. But Marfa is not exactly in the temperate zone—it is difficult to cover the tops of your feet with your shadow in the middle of the day.

The 1969 Nationals were used as a practice for next year, and twenty places were kept open for foreign visitors. In the event twelve flew, and the American standbys who came to Marfa on spec. were able to compete. There were 8 contest days, following immediately on the heels of two practice tasks, without any concern for an opening ceremony. The policy was to divide the tasks more or less equally between speed and distance, but the weather was more suitable for speed flying and so 5 out of the 8 days consisted of four triangles and one out-and-return, all successful. The distance flights included one free distance and two cat's cradles and were less effective as contests tasks. The quality of the soaring, and the performances achieved were remarkable, the top fifty or so American pilots all being good enough to grace a World Championships.

The weather was hot and strong, but not as good as people have come to expect from Marfa. The glider operating height band averaged 3,000-8,000 ft. above ground. A few thermals went higher than this, particularly over the mountains; but at the other end of the scale, less than 2,000 ft. above ground,



Pat Beatty and the BJ-4's flaps extended.



Tail of the BJ-4. (Photos: Ann Welch)

thermals were weak and disorganised, the only gliders able to survive there being the Ka-6's, of which there were three flying. At the best time of the day —about 17:00 hrs.—thermals could be 10 knots and the going very fast, but the lift was far from smooth; thermals frequently had narrow, fierce cores, and were subject to wind shear and terrain turbulence. At inter-thermal speeds of up to 130 m.p.h., flying was physically tough, and pilots needed to be almost as strong as their gliders.

Average speeds for the triangles were high, frequently above 60 m.p.h. On the last day George Moffat won at 69.7 m.p.h., but it could have been well over the 70 mark had he started a bit later. He could not have known this at the time—and neither did anyone else—for the weather turned out better than forecast. Task setter Marshall Claybourn had startled everyone by declarng the final task as a 350-mile triangle, and on flights of this size no one delays his going unduly. As it turned out, George Moffat and Wally Scott arrived back at the *peak* of the day, having taken only five hours for the flight—which was completed by 65 pilots.

On the free distance day the weather was not expected to be good. A cold front lay north of Marfa and stretched to the north-east across America. This was expected to give lift along its leading (south-east) edge, and then provide more general rain after about 200 miles. An alternative was to try to get round the western tail of the cold front and use the clearer air behind it, even though lift there was not expected to be particularly strong. The met. situation was further confused by a dew-point trough which had been hanging about for some days and was over Marfa to the north.

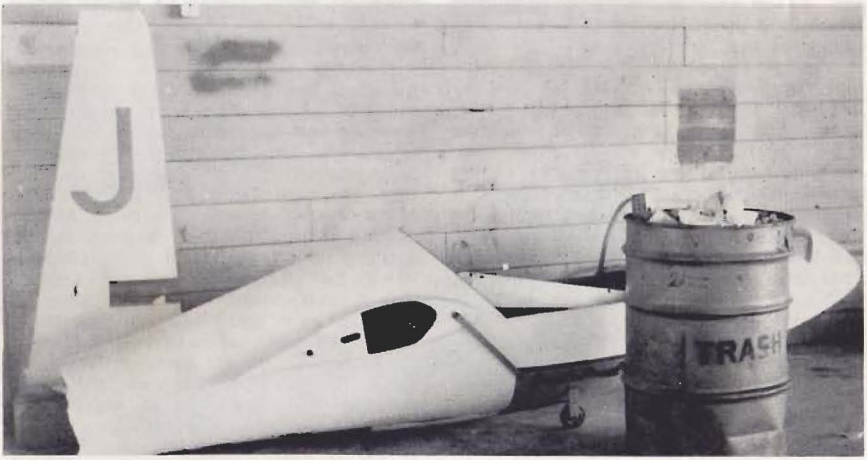
In the event pilots who went ahead of the front ran into rain rather earlier than anticipated, without any of the expected benefits, but the pilots who went north found the weather both different and better. What had, in fact, happened was that the cold front had slipped away north during the night through the net of the infrequent met. stations in the extreme south-west, and the dew-point trough had become the dominant feature. On its east, moist, side there were cu-nims and rain, and pilots who penetrated this found cumulus with only weak lift. On the west, dry side, however, there was good cu, and further west still, blue thermals. The pilots who went north either kept out in the blue, or worked along under the cumulus until, late in

the evening, they dropped back under the cu-nims. Wroblewski (Poland), who went 527 miles and landed at 21:40 hrs., found that almost the last cu-nim was producing a dust storm, so he used its lift and then glided on into the dusk, landing at Freedom, Oklahoma. Because of the great distances flown, there were two rest days, the first one being spent driving back some 400 miles or so.

The two cat's cradles (Bikle's Basket) used the flying area perimeter points of Van Horn, Pecos, McCamey and Marfa. This task was less successful at Marfa because of the uniformity of the weather, the limited directions possible, and the fact that the whole task area is substantially downwind of base. As a result it was the forecast wind which tended to control the actual route taken, and therefore the possible distance flown. If the wind did not conform, the pilot could not substantially change his route because of the small choice available to him. In such circumstances a better—that is, a fairer and more effective—result would have been obtained by the Organizers calling for distance along a given line, using the same points. Alternatively a cat's cradle with greater choice of turning points would have worked. This task, of distance within a prescribed area, is very important to the future of championship flying if the pilot is to be given planning and decision as part of the task; but it needs to be so arranged that the choices open to him are sufficient to require real judgment to obtain winning results.

Most of the other information collected at Marfa I have put in the attendant article "Marfa A—Zee" (see page 396), but I would not like to end this one without saying how much I enjoyed my visit. First of all there was the stimulating progress of American gliding. No fewer than 26 gliders were home-builts, or extensively modified production aircraft, with the work done by the pilots themselves. The impression of integration of pilot and glider is strong, and there is the necessary technical know-how to go with it. Then there are the pilots and crews themselves. In the top ten there were grandfathers crewed by grandmothers; fathers crewing for their children, as well as the other way round.

I would like to thank everyone who looked after me so well in the States, Bill and Becky, Fritz and Georgie Lee, Marshall and Betty, Bertha, Paul and Ginny, John Ryan who gallantly lent me his Phoebus to get my Gold altitude just before the start of the championships. Also the Ray Young family who looked after me at both ends of the trip, and Stephen DuPont, with crew chief Chick and George Jordan, who put up with me as supernumerary crew for 3 weeks, including driving right across the States and back. With such people around, it is easy to see why American gliding is going places.



FIRST CROSS-COUNTRY

By P. K. GOOZEE

HAVING got my five-hour duration flight at Bicester one Saturday, I was hoping for a crack at my first cross-country flight on the following day if the weather remained good. Well, it wasn't at all bad, although not as good as the day before, and Andy Gough said that—if conditions stayed fair—I could go downwind to Duxford later in the day in company with Pete Klee. The idea was that we would help each other by advancing two-up, so that whoever found the best lift could offer it to the other, and Pete, being a RAF navigator, would take care of the route-finding bit. However, it didn't work out like that!

We went around getting briefed and reassured by various pundits, including Paddy Hogg, Pete Kelly and Pam Shipton. All said that in that wind—15-20 knots at 2,000 feet—it was a piece of cake. Pete suggested that we should sit on top of our first thermals and let the wind carry us to Duxford! Andy was more practical, drawing course lines on our borrowed maps and describing the kind of thermal-starting surfaces to look for as, owing to an inversion, there were no nice cumulus clouds by which to locate them. We had a Ka-8 and a Ka-6CR. Pete chose the Ka-8, with which he is more familiar—he said! As it doesn't penetrate as well as the CR, although, of course, it goes up better, we agreed that he would push off as soon as he had enough height. We got our launch more or less together at 3.30, and Ron Newall dropped me near Upper Heyford in a corking 6 up. It was a bit broken, however, and at about 3,500 it either petered out or I lost it. Pete called on the radio that he'd got up to 4,500 over Bicester town, and was starting off towards the chimneys about five miles downwind. I searched the sky and spotted him miles above me heading east, and that was the one and only time that I did see him.

Meanwhile, I'd drifted back over the airfield so, to see if I could get a bit higher, I headed over to the town, losing precious height in the process. I found a bit and flogged it up to 3,700, but couldn't do any better. Pete then reported that he was over the chimneys in 4 to 6 up, having encountered heavy sink *en route*. I answered that I had 4,000, which wasn't strictly true but I knew that Glider Control was listening and I didn't want a radio blast from God, and that I was setting out. I reached the chimneys with about 2,700 and my boats well burnt, and a bit further on ran into a patch of 2-3 up. Either it was broken or my skill wasn't good enough, for I couldn't get a decent climb out of it and staggered for maybe 15 minutes to get up to 3,300 before pushing on again, hoping for something better. With so little height margin I had to use any bit of lift I could find, of course, and I must have spent 90% of the entire flight going around in irregular circles, so perhaps Pete Kelly wasn't exaggerating all that much. Whenever I did find anything I tried most of Derek Piggott's tips—tight turns, slower wide ones, straightening on the surge and best heading—but the resulting improvement was either nil or marginal. As often as not it made things worse. Still, I managed to stay between 2-3,000 ft., and the wind was blowing me in the right direction. I didn't get much time for map-reading, of course, as I was too damned busy watching the wretched vario. Occasionally, I called Pete Klee, describing landmarks and getting his confirmation; he called up from time to time in the laconic style of professional fliers, saying that he was over this place or that place at enviable altitudes and pressing on. I never saw most of the places which he reported passing but I did pick out the M1 and, relating an adjacent large dew-pond to a small blue patch on my map, decided that by sheer fluke I was bang on course.

As I crossed the motorway, Pete reported that he was on his final glide to Duxford, and I reported this tantalising intelligence to Control. Some well-meaning chap there kept asking me "119 from Glider Control, what is your height and

position?" Struggling to stay up, snatching a glimpse of the map through my bifocals and peering at the revolving ground without them, I replied that I had 2,500 ft. and thought that I was somewhere west of Royston. Naturally, this waffly reply didn't inspire much confidence back at Bicester, whence further requests for more specific information kept coming, with a tinge of concern which was but a shadow of my own tightly controlled panic. The M1 lift then sighed down to zero sink, and in some desperation I turned east again, still hoping to find some of Pete's elusive 4 up. Sink soon brought me down to 2,000, and I collected my scattered wits and looked ahead for a likely field to land in but could see nothing but rippling green corn and mean-looking electricity pylons. On a bit more and there was a promising one—large and flat, freshly-harrowed for a winter sowing and a lovely light biscuit colour in the late afternoon sun. I recce'd it sideways and, turning over the approach boundary to get into position for the downwind leg, with 1,000 left on the altimeter, I got a bubble off it. A quick circle showed 2 up to 2 down. A nudge on the up gave me a little less down, and then I really stuck it in, working that bit of lift as though my life depended on it. Around and around, sometimes gaining a bit, sometimes not, cursing and praying, I staggered back to 1,100 ft. By this time I was slipping downwind from the field and, of course, I know now that I was playing it all wrong. But hell, I was actually going up — and I just *had* to get to Duxford, which I vaguely knew must be fairly close by now. Sweating blood, I screwed it around and around, banging the altimeter and begging it to give me some reassurance. Once in a while, like a flirting coquette, it would concede a few and ages later — it must have been all of ten minutes but it seemed like ten hours — I had 1,600 ft. on the clock and could snatch a glimpse at the ground. A little to one side and behind me was a small town with a gaggle of silver oil tanks on the far side. I called Pete and asked him to identify it. "That's Royston" he said, "you're nearly here. What's your height?" "Sixteen thousand" I called back, which he interpreted correctly as sixteen hundred. "You should be able to see Duxford — there are a couple of gliders on it." "I can't see the b... place" I answered, "can you see me?" "Not yet — but keep up and you'll make it." Then, distantly, I saw downwind a large open green area with an oddly regular narrow white patch on it — and realized with a moment of delirous joy that it was a runway. Excitedly I described it "Yes, running east-west. Yes, with a mustard field on the south side." Did it have a large white grid mark at the west end? Yes, it did. *Must* be Duxford, I decided. "You can glide in from there" said Pete, rather condescendingly I thought. Maybe, but I clung to my wispy lift like a young monkey to its mother until, with 1,800 ft. in hand, I turned downwind to run immediately into 2 to 3 up for more than a mile! Pete gave me his ground level millibar reading, and I adjusted my altimeter to find that I had an extra 250 ft. in hand. I arrived over the airfield with 2,400, and had to brake down to 1,000 ft. out of all of the bits of lift jumping off the runway like a bunch of giggling fat cherubs. I landed quite nicely, to be greeted by members of the local club who had briefly stopped operating their two Swallows and a T-21 with piano wire and a battered Jag. We must try that auto-tow trick sometime!

Andy soon arrived in the civvy Chipmunk and I gabbled out my confession. "Never mind" he said, " you made it and that's the great thing." He hauled both of us back on a double-tow and my drink bill in the bar that evening was an all-time record. But what a marvellous feeling. Gliding is the distillation of life. That flight was like a Monte Carlo rally telescoped into two hours. I really *lived*!

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A VISIT TO SUOMI

By PHILIP WILLS

DURING a visit to Helsinki, as a member of the UK delegation to the FAI General Conference, on one day we were all taken by bus to the main Finnish gliding centre at Räyskälä, about 100 km. north-west of Helsinki.

In July the woods and lakes which make up the entire scenery of Southern Finland are beautiful to drive through, and the crystal clear sunny air abounds with streets of cumulus based at around 4,000 ft. or higher. It is like a good English summer's day without the haze.

Arriving at Räyskälä, we found all the flags of the participating nations flying proudly in the breeze, and everyone according to his need was offered rides in gliders or aeroplanes or (the popular Finnish pastime) Sauna baths.

I opted for the first, Kitty for the last. (That evening she said how odd it was suddenly being in an international group of naked ladies of various shapes and sizes padding through the trees in Indian file along the path from the Sauna and plunging steaming into a cold lake.)

I was aero-towed to 2,000 ft. in a Ka-6CR under a sky which had temporarily over-convected, so after about half-an-hour in gentle lift, landed again. As I was walking back to the clubhouse, someone offered me another flight in a Ka-6E. I said I would love it—as the sky had now cleared—but there wasn't time, as the bus taking us all back to Helsinki was to leave shortly. "That's all right," they said, "it's been put off till 6 o'clock." (It hadn't, but that worked out in the end.) So off I went, and had a glorious hour in the easiest conceivable sky. The navigation, if I had lost the site, looked tricky, as there were literally hundreds of lakes around, and on a small-scale map it was hard to identify one from the rest.

Round the villages were a few fields of various sizes, but the hay-fields were occupied by serried rows of 9-ft. stakes with the cut hay wrapped round each, and many wires of different sorts around.

But the Finns assured me that outlandings were not too difficult; in their Nationals this year 20 gliders had flown 42,000 kms., including two finishers of a 500-km. triangle, and the longest free distance flight was 750 km. to near the Lapland/Russian border.

There were one or two interesting stories of landing in a Lapland bog. One



The gliding site at Räyskälä. (Photo: Rauni Heinänen)

pilot landed safely, but when he got out promptly sank in the mud to his waist. He had to scramble in again, and wait 19 hours in the cockpit to be found. Then the bits of the glider had each to be slid along the ground to the nearest road some miles away, since anyone trying to carry any weight immediately got stuck in the bog. However, this was not during the Nationals and it happens in high summer.

The Finns are thinking of offering to hold the World Championships at Räyskälä. It will have to be enlarged first, to operate 80 gliders, but if this is done I can think of nowhere better—and a complete change of context. The nearest we have had to Räyskälä was Oerebro in Sweden in 1950, but I rather think Räyskälä would be better from the weather and outlanding point of view. But ATC and cloud-flying restrictions might be tiresome.

The head man at Räyskälä is Mr. Horma, who will be remembered from South Cerney days. He is a fireman (no mean job in a country almost entirely composed of timber) but I think arranges for all his fires to take place in winter, and runs the gliding centre absolutely impeccably in the summer.

Finland is really bi-racial, the Finns speaking a language allied to Hungarian (Genghis Khan or someone split them up 3,000 years ago), the rest being Swedes. This is confusing, because every place has two entirely different names. Even Finland itself is called Suomi by the Finns. So at first Kitty and I got lost regularly in our hired car, trying to go to Lauttasaari when it was also signposted Dhumso, or trying to go to an address in Keskuskatu when the top name on the street nameplate (in very small letters) said it was Centralgatan.

The Swedes have a second club, nearer to Helsinki, at Numera, and we were taken there a few days later. Unfortunately it was raining, but it is a lovely site, with nice little clubhouses among the trees, and of course its own Sauna.

There was a round, smiling, friendly Finn there with his wife and three children, being photographed under a parachute draped over the rafters and a pile of shattered woodwork behind him. The day before, in his Ka-6, he had suffered a collision with another glider in the same thermal, and the entire tail of his aircraft was cut off. He fortunately had a reasonable amount of height in hand, since he daren't open his 'chute for a while because the bits of glider would chase him down.

The other pilot landed his aircraft unhurt, but when we looked at it in its trailer, he would probably have been wiser to jump. The entire port side of the cockpit wasn't there, having been the point of impact with the tail of the second glider, and his own tail seemed to be hanging on by a thread. It was quite the nastiest collision I have seen, and in a thermal otherwise unoccupied.

The Finns are absolutely super. It would do us all good to go there and see how happily they live in their vast, almost uninhabited, and beautiful country, sandwiched between East and West.

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Corrections to last issue. — Page 284 (Itford Hill 1930): The machine is a Professor.

Page 357 (US Nationals): Wroblewski's score should be 6270, putting him 23rd, while Wödl becomes highest scoring foreigner in the Open Class. (Letter from H. Stouffs.)

A PLEA FOR CLASSES

By MARTIN SIMONS

EVERY Standard Class sailplane in the world is now out of date—save one. Contest-minded owners of last year's superior Standard Class machine will have to sell, manufacturers who have just established production of some fine aircraft will find their investment turning sour, designers who had better Standard Class designs on their drawing boards will have to erase and start again. These are the effects of the two recently approved changes in the Standard Class rules. These effects are wholly bad. Confidence in the whole concept of Standard Class sailplanes has never been very high; now it is zero. Why not change the rules again, using similar arguments to those used to push through the other changes? Ballast tanks do not cost much, are easy to fill and easy to empty. Parachute airbrakes are very effective, reliable and easy to use; why not stick another metre or two on the span; why not allow variable area wings? Why have a Standard Class at all? Why have any rules? In effect, the latest decisions have not changed the Standard Class—they have abolished it. A new class of sailplane, with the old name, has been formed, and Standard Class as we used to understand it is no more.

In 1956 the present author, in simultaneous letters to *Soaring* and SAILPLANE & GLIDING suggested that at least three classes, based on objective criteria (not on performance estimates) were needed. This suggestion may have been premature. In 1966, after ten years, the idea was offered again in an article in SAILPLANE & GLIDING. The latest moves are entirely and disastrously retrograde. We do not need changes in the Class rules—each change abolishes an existing Class and creates a new one. *We need permanent Class formulae but more Classes.*

The reasons for having classes in gliding are the same as those for having classes in yachting or motor racing. No one races dinghies against twelve-metre yachts, no one races go-karts against Formula 1 cars. Without classes these sports would be in chaos, as gliding is now. Consider what absence of classes is doing to the so-called "Open" competition. It is reported that some top pilots in Germany are feeling obliged to give up Open competitions altogether because they simply cannot afford to buy 22-metre span sailplanes. Except for the very few subsidised experimental machines and an even smaller number of incredibly wonderful home-built aircraft, there may soon be no Open Class at all. Selling their Cirusses (*Soaring*, April 1969, p. 23), the pilots are stepping *down* to compete in the Standard Class. And what do they find here? A class which exists no longer, where the rules keep changing. Naturally pilots with seventeen and eighteen-metre machines will soon be pressing to have them allowed into the Standard Class, and chaos will become worse.

Handicapping is no answer. If it works perfectly, development in design is stifled. A Grunau Baby could win the World Championships with a perfect handicap system, and since such aircraft are small and cheap, why should any keen contest pilot order the latest product? But of course handicapping, as has often been admitted by those who devise the formulae, is never perfect. This amounts to admitting that handicapped contests are decided, not by pilot skill or even by glider performance, but by the particular quirks of the chosen handicap equation. An error of one or two per cent in the scores can play havoc with the final results, as anyone who cares to run his eye over the World Championships tables of the last few years will confirm. Handicapping in small club contests or regattas is one thing; in important competitions it is entirely out of place and always has been.

We need more classes, but not classes based on some criteria of performance. The British "Sport" class was established for one reason only: many pilots in the UK were flying Skylarks which, by today's standards, are "Standard Class" in performance but "Open Class" in size. The rule thus became: any glider of Skylark performance may enter Sport Class Contests. Immediately difficulties arise—is a Standard Libelle better in performance than a Skylark? Yes. But is it an Open Class machine? No. So it may enter the Sport Class? Yes! But why

was the Sport Class formed? So that Skylarks would have a chance of competing against machines of similar performance. This year, adding further confusion, the Dart 17R is allowed to enter Sport Class. So what has happened, after all, to those poor Skylark pilots? They have been outclassed, which was going to happen anyway.

In the long run, if the "Sport Class" were to be made permanent it would encourage designers to aim at this class when working on new designs. But how could a designer build a "Sport Class" machine? Taking, one supposes, the performance of the best Sport Class aircraft as his mark, he would design a machine similar in performance but, presumably, would try to beat his competitors in handling qualities, pilot's comfort, etc. But suppose he achieved a slightly better glide angle than he expected? His product would be pitched willy-nilly into conflict with the "Open Class" giants. So instead of doing this he might as well design a giant in the first place. No good designing for Standard Class, because someone will change the rules before his design leaves the factory. The Sport Class is silly.

The class system that is eventually set up—and set up it must be sooner or later—is a matter for discussion, and details are less important than the principles involved. Mistakes will no doubt be made, but can be corrected in two ways. A class which proves to be very unpopular and which attracts no competing pilots will die a natural death. It will not need any official execution; it will simply remain as a vacant class. This might happen if, for example, we tried to establish an eight-metre span class—a few gliders have been built with spans as small as this, but their performance has been so poor that no one has enjoyed flying them. To set up such a class would probably be a mistake, but it would not matter in the slightest.

The second mistake would be to set up classes which exclude new technical developments. For example, the Standard Class as it used to be excluded wing flaps, even though it was pointed out some years ago that plain flaps could be used as air brakes (as on the BG-12 and HP-12) and were in fact simpler than scissor brakes. But to annihilate the Standard Class by suddenly altering the

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rule is quite wrong. Many extremely good sailplanes have been designed and built to the old rule. There is no need to force them out of serious competition by setting them against flapped aircraft. All that is needed is to set up a *new* co-existing class in which flaps are allowed. The change-over then would become gradual—pilots buying new sailplanes would usually choose the flapped machines (especially if, as a result of their claimed simplicity they were cheaper), and as competitions in the new class grew, the other class would wither away—unless, as one suspects might be the case, some pilots continue to prefer air brakes which open fully in two seconds.

Acquaintance with existing sailplanes suggests that five or six classes could be set up at once with enough members in each class to allow some competitions to be organised. A possible scheme, a revised version of the earlier one published in SAILPLANE & GLIDING, is outlined below. The principles behind this are as before: there are large gliders and smaller gliders, there are complex gliders and simple gliders. This indicates at once four sets in the universe of gliders. But it is certainly desirable to have others. Possibly other interested parties will call for further sets of very small gliders, and some may even wish to establish vintage and veteran classes; but this, for the moment, can be postponed. To have too many classes at this stage would be a mistake.

In each class, regional, national and international competitions should be held. A world championship in each should be a regular event, but need not be held every year or even every two. One way of arranging things might be to run two classes together (as we do now) every two years—then 1970 would be as it is already arranged, 1972 would probably involve Class 2 and Class 5, 1974 would bring in Class 3 and Class 6, and so on. Alternatively, if the gliding movement could afford it, there could be a world championship in every class every three years; the effect would then be that a world championship would be held somewhere, for one class or other, every year. Eventually, as in other sports, it might be possible to hold championships every year for every class. Then any pilot might hope to compete internationally in his class.

At the same time, designers would know exactly what they were to aim at. A manufacturer might set his target on producing a world-beating Class 3 sailplane—the best possible performer within this particular span and complication formula. When finally he got it into production, he would be assured of a market among the pilots who compete in this class, and would not be faced with the prospect of a sudden rule change throwing his machine on to the scrap heap. Some manufacturers would, no doubt, try to fill every class with their products; others might be content to cater for one or two only, concentrating their resources.

Owners would, probably, continue to aim as high as their purses allowed them —a pilot who could afford a Class 2 machine would probably not buy a smaller one, since, when all is said and done, it is more fun to fly faster and farther, whatever the contest results may be. For the same reason, big "Open Class" machines would still be built for world record purposes, and because designers would still from time to time be interested in pushing the technical limits as far as they will go.

To the present writer it seems obvious that the CIVV should at once work on these proposals and establish the class system as soon as possible. Can we hope to see the matter discussed in the immediate future?

A Class System for Gliding Competitions

1. OPEN CLASS:—Any sailplane of any kind (including Classes 2–6 below) would be permitted to enter Open Competitions.
2. EIGHTEEN METRE CLASS A:—The span must not exceed 18 metres, but otherwise any sailplane may enter Class 2 Competitions (i.e., we should expect variable geometry sailplanes to be the usual winners in this class, but the Cirrus *could* enter. Possibly the Class span should be 19 metres, which would allow into this class the ASW-12, BS-1, etc.).
3. EIGHTEEN METRE CLASS B:—The span must not exceed 18 metres, and variable area flying surfaces are not permitted. (Here again, the Cirrus could enter, and would compete

against such types as the Kestrel, FK-3, etc. These types at present are having to enter contests against the Nimbus, BJ-4, and eventually Sigma).

4. FIFTEEN METRE CLASS A:—The span must not exceed 15 metres, but no other restrictions (i.e., existing Standard Class sailplanes could enter, but would probably, in time, come up against variable geometry sailplanes).
5. FIFTEEN METRE CLASS B, OR STANDARD CLASS:—The rule here should be roughly the same as the *new* Standard Class rules, but parachute airbrakes and ballast tanks should be permitted.
6. CLUB CLASS:—The *old* Standard Class, but possibly with some further additions to the specification, compelling designers to conform to the original spirit of the rules—e.g., a minimum wing angle of incidence in relation to horizontal datum when the machine is on the ground, minimum standards of vision, seating attitude, etc. But whatever is introduced, all existing Standard Class machines (except HP-15) would be admitted.

WESTERN REGIONALS 14 — 22 June

By MIKE HARPER

AFTER hearing the Nationals in the air every other week before our Comps., I hardly thought there would be a thermal left, but how wrong can you be—seven contest days out of nine, and a Nympsfield sun tan!

Denis Corrick, the Club Bastion (for want of a better term), officially opened the contest. Tom Bradbury, who supplied our weather, bringing it on charts each day from Fairford, then gave a triangular-shaped forecast. A 177-km. triangle—Bromsgrove, Chipping Norton, Nympsfield was duly set with first take-off at 13:15 hrs.

Unknown to us, there was a large turning point clamp over Bromsgrove, in the form of a decaying large cu, which slipped off Tom's chart, *en route* from Fairford. The four pilots who managed to get clear of it were all but back, with Ralph Jones the only one to finish. Stuart Morrison landed 5 km. short. The scorers had a ball with this one. Stuart had an 8% handicap on Ralph who scored 1,000 points. According to the rules Stuart scored 1,016, subject to a maximum of 999. The anomaly is that if he had completed the course, his score would have been lower than 999 (a good ploy if you know only one chap has got back, and no one else can).

Day 2:—Tom's charts looked very sorry for themselves. A scrappy day—weak lift, low cloudbase and a light wind. If we were to fly it would have to be free distance with pilot-selected take-off. Ralph Jones braved the elements at 12:30 and flew to Doncaster, 215 km., to win the day with 589 points. Second, Ed Meddings 164 km. Third, R. Perrott 128 km.

Day 3:—The charts looked hopeful for an afternoon task. Rain was moving away to the north-east, and clearance was expected to arrive by 15:00 hrs. with soarable conditions by 16:00 hrs. but the main problem was the 25 knot SW wind. The only possible task was a short race, but the problem was where to. We couldn't go down-wind into the rain, so we settled on Shobdon airfield 72 km. First launch was at 16:06 hrs. (well forecast, Tom) but sad to say nobody completed the task. In fact, only two pilots exceeded Y which just made it a contest day and was won by Derek Vennard, flying in his first competition, 114 points, and second, Harry Howitt with 109 points.

Day 4:—The charts reappeared all shiny and newly washed. The forecast looked good with a SW wind 20 knots and sea air coming up the river valley; there was no chance of a closed circuit, so a goal race of 135 km. via Moreton-in-the-Marsh to Lasham was set. Again

Ralph Jones was the only one to complete. Second, Vic Tull and third Peter James.

Day 5:— With the wind still being strong SW another goal race had to be set. This time via Husbands Bosworth to Dunstable, 190 km. But it turned out to be a task setters' fumble day and miscalculation resulted in nobody completing the task. Most pilots landed on the second leg, by the weakening conditions and a strong headwind component. First, E. Elliott, 172 km. Second, Harry Howitt, 156 km. and J. Smoker 155 km.

Day 6:— Owing to a 30 knot WSW wind yesterday was scrapped as a contest day. The charts showed a parcel of good looking weather, but with cu building quickly and spreading out, wind SW 15-20 knots, sea air coming in again by mid-afternoon. After much deliberation a cat's cradle to the NE was set with turning points at: Bromsgrove, Long Marston Sheds, Husbands Bosworth, Bassingbourn airfield, Northleach Church, Blenheim Palace and Didcot Power Station. First take-off at 10:50; again Bromsgrove was clamped and brought many pilots down. Those who made any distance held over Malvern until the turning point had cleared, one of these being Ralph Jones who won the day with 175 km. Stuart Morrison and Harry Howitt both taking late relights made 122 and 106 km. respectively.

Day 7:— Tom's charts made a farewell appearance and provided reasonable last day weather. An alternative out-and-return was set with four turning points to choose from. Most pilots headed for Tewkesbury Abbey (approx. 66 km.), and six of these completed the course. The fastest was Vic Tull at 60 km/h. Stuart Morrison won on handicap, followed by Vic Tull and J. Smoker.

The Egbert Cadbury Cup was presented to Ralph Jones by "yours truly". A very pleasant week, everyone agreed, marred only by rather a lot of prangery which, no matter how unfortunate, does not enhance our reputation with our farmer friends.

On the social side, the barbecue was a great success on Saturday, 21st June, with roast pig rolls serenaded by the Bungey Baker Banjo Band from Booker.

* * *

Final Results — Western Regionals

Pilot(s)	*H'cap %*	*Sailplane*	1000 1	589 2	114 3	1000 4	1000 5	1000 6	517 7	*Total Points*
1. Jones, R.	82	Cirrus	1000	589	0	1000	504	1000	381	4474
2. Morrison, S. A. J.	90	Dart 17	999	121	36	636	540	714	517	3563
3. Howitt, H. V.	98	Skylark 4	445	429	109	507	885	664	265	3304
4. Smoker, J.	98	Skylark 4	254	0	0	646	878	824	444	3045
5. Vennard, D. A.	96	Ka-6E	476	300	114	765	640	361	383	3039
6. Fay, F. W.	90	Dart 17R	754	312	5	626	799	403	0	2899
7. Meddings, E.,	100	Ka-6 (Mod.)	961	542	—	DNF	—	487	—	
Goodwin, P.			—	—	0	DNF	734	—	124	2848
8. Stoddart, R. C.	98	Dart 15	508	320	0	756	612	563	0	2759
9. James, P. W.	98	Skylark 4	389	0	0	815	777	277	383	2591
10. Aldridge, K. R.	104	Std. Austria	532	90	68	547	770	403	88	2498
11. Elliott, E. G.,	98	Skylark 4	421	—	0	—	1000	—	44	
Harper, W.			—	59	—	507	—	269	—	2300
12. Hill, M.B.,	100	Ka-6CR	508	—	0	—	259	—	221	
Winning, E. J.			—	23	—	736	—	504	—	2251
13. Tull, V. F. G.	80	Diamant 18	310	20	0	845	360	168	467	2170
14. Webster, J.	100	Ka-6CR	429	176	0	437	626	420	0	2088
15. Grimes, H.	90	Dart 17R	0	0	40	696	755	370	0	1861
16. Pope, M. H. B.	90	Dart 17R	310	31	—	318	683	311	0	1653
17. Perrott, T. R. H.	108	Skylark 2	262	441	DNF	DNF	DNF	487	148	1338
18. Roberts, D. W. H.,	102	Olympia 463	341	—	0	—	173	—	0	
Gibbins, M. J.			—	0	—	547	—	118	—	1179
19. Latimer, B. H.,	100	Sklark 3F	254	—	0	—	0	—	88	
Wood, D. N. J.			—	59	—	298	—	361	—	1060
20. Brighton, B. W.	98	Olympia 465	0	0	0	318	122	118	—	558
21. Drew, H.	98	Skylark 4	333	176	WITHDRAWN					509
22. Gunner, R. F.	100	Ka-6CR	341	WITHDRAWN						341

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AIRSPACE

The campaign being waged by BALPA for a Special Rules Zone round Luton is of vital importance not only to the London Gliding Club, but by extension to the whole course of the future development of sporting flying in the U.K.

Nick Goodhart and Philip Wills are back in the front line. The following is a selection of the correspondence and articles on the subject which have appeared to date.

From *Flight International*, 17th July

LUTON'S AIRSPACE : THE BGA VIEW

SIR,—Through the courtesy of your columns I should like to draw the attention of the flying community to a campaign being waged by BALPA which, if successful, could among other things result in the destruction of the London Gliding Club, which has operated from Dunstable for 38 years, and currently has over 500 members.

This campaign is for the introduction of a special-rules zone round Luton.

An article, obviously inspired by BALPA, appeared in *The Times* for June 23rd, under the heading "Luton to Ban No-radio Light Aircraft". It reported as a fact that a Government decision would be made shortly to ban light aircraft without radio from flying near Luton, and that this would mark victory for the campaign originated by BALPA. It then instanced alleged cases of "near misses" in the area; but one does not, of course, know how many of these would stand up to proper analysis. All one does know is that, of the nine air misses properly reported and analysed over the past three years, eight proved to involve no risk and one to be due to pilot error.

The British Gliding Association's reply, which was *not* published, was as follows:—

"SIR,—In a report by your air correspondent (*The Times*, June 23rd) it is suggested that the Government is shortly to make a decision to ban no-radio aircraft from the airspace adjacent to Luton airport and that this decision derives from some near misses between commercial airlines and small aircraft.

"In reality the position is very different; there are no reported near misses relevant to the problem (though there are a small number of sightings) and, while it is true to say that the Board of Trade is reviewing the situation in this area, it has certainly not said that a decision to establish a special-rules zone is to be made shortly.

"Before such a zone is established, it is necessary to determine whether there is excessive risk of collision and the exact shape of zone which will adequately meet the many requirements for the use of airspace in this area. This cannot but be a lengthy process.

"We in gliding are as committed as the airline pilots to ensuring an acceptable level of safety from collision for commercial air traffic (and for ourselves) but we are quite certain that this aim is best achieved by working steadily and objectively with the Board of Trade rather than by emotive and unsubstantiated stories about air misses.—*Yours faithfully*, H. C. N. GOODHART, *Chairman, Airspace Committee, British Gliding Association.*"

There have been similar instances over the past weeks in other newspapers and on the radio.

I want to point out to all concerned the impropriety of this sequence of affairs. BALPA has access to the organs of the Press and radio, the BGA not to the same extent. BALPA feeds the Press with uncorroborated scare stories of "near misses". They know as well as we do that, if these incidents did indeed occur, it was the duty of the pilots concerned to report them officially. Each would then have been investigated; and, if indeed any actual danger occurred, remedial action to prevent re-occurrence would then have been taken.

Instead of this, BALPA appear to be using the high status accorded the profession of those they represent to disseminate scare stories directly to the Press. I am quite

certain very few of their members would approve. Might I ask them to register their protest to their representatives, who are after all elected by them to carry out their wishes?

The assessment of the necessity or otherwise of a special-rules zone for Luton is a matter of extreme technical complexity, to be decided by competent professionals, not by an appeal to inevitably uninformed public opinion.

London, SW1.

PHILIP WILLS,
President, British Gliding Association.

From *Flight International*, 31st July.

Luton's Airspace: The BALPA View

SIR,—Mr. Wills's letter "Luton Airspace: The BGA View" (*Flight*, July 17th) does no credit to him or to the British Gliding Association.

His allegation that BALPA has used "uncorroborated scare stories" in a campaign which will result in the destruction of the London Gliding Club would be laughable were it not tied to his office of president of the BGA. Mr. Wills should check his facts before publicly airing his opinions on such an important issue.

BALPA has an active Technical Section whose sole function is to study technical matters affecting aviation; safety is one of these. Under advice from this section the Association for some time has been seeking stricter control over Luton, Stansted, Elstree, Radlett and other areas.

In June of last year BALPA wrote to the Board of Trade expressing concern about Luton airspace. The Board replied that it was aware of the situation and was examining means of improvement. In the spring of this year a draft Notam from the BoT informed us that a Special Rules Zone would be introduced on June 26th. Our view was that this was both inadequate and too late, but nevertheless a step in the right direction.

Subsequently, a CACAC meeting on June 17th decided that the implementation of the Special Rules Zone should be postponed. It may be contended that pressures from private flying clubs (including the London Gliding Club) present at the meeting were not unconnected with this decision.

At no stage did the Association attempt to make this a public issue. The matter came to public attention when thousands of spectators at the recent Vauxhall Motors open day saw a Britannia aircraft, landing at Luton, narrowly miss two Army parachutists in a display.

While Mr. Wills's suggestion that *The Times* prints articles "inspired by BALPA", and that the Association has some special influence with the national Press, is rather flattering, I can assure him that we did not arrange a near miss in front of half the population of Luton, and did not dissuade *The Times* from printing his letter.

BALPA is campaigning for air safety and does not bear any ill-will towards the London Gliding Club or anyone else; in fact, many of our members enjoy the sport. However, the BGA's president seems no longer to be interested in sportsmanship and appears to be more concerned with gamesmanship.

He is not a BALPA member and therefore it is impertinent of him to suggest that we are acting against the interests and wishes of our members. Our actions are the direct result of representations from over 200 of our pilots who operate out of Luton. He suggested that our members protest to us about the action that we have taken; there has not been one single response to his suggestion.

The problem of air traffic control in this area can be solved by competent professionals, as he states in his letter. I suggest he leaves it to them.

Hayes, Middx.

A. F. SHERMAN,
General Secretary, The British Air Line Pilots Association.

From *Flight International*, 7th August.

Luton Special Rules Zone

SIR,—BALPA's reply to my letter (*Flight*, July 31st) puts into very sharp focus the undesirability of what they are doing. They say they have not made this a public issue. In this week's Press there appears a report that they are considering increasing

their pressure by instructing Luton pilots to ignore certain noise abatement regulations. Did they, or did they not, leak this astounding suggestion to the Press?

Once upon a time a private motorist exceeded the speed limit in a certain town. The Association of Professional Drivers started a public campaign against this sort of thing. To prevent it happening again, they wrote, restrictions must be extended for a further 5 miles outside the town perimeter. The public, knowing something about the subject, merely laughed at the irrelevance of the proposal.

BALPA now goes on record that they are basing a case for a Special Rules Zone around Luton partly on a parachute display which took place *inside the Luton Aerodrome Traffic Zone*. The public, not knowing about this already existing zone, cannot be expected to spot the non-sequitur, and may be consequently alarmed.

It is difficult to see how BALPA could make this elementary howler, but this sort of thing happens, even to competent professionals, when they attack a problem from the wrong end—with an intuitive certainty that they know the answer, so all the facts get rationalised, or even stood on their heads, in order to confirm it. May I plead that we do not get hot under our collars about this whole subject. I am not indulging in gamesmanship or sportsmanship, but propounding something of fundamental importance to our country.

I happen to have a good deal of experience of both sides of this problem, and we all have the identical aim—a high standard of safety.

The BALPA method of clamping on restrictions as soon as someone *thinks* there might be a danger, achieves it, but in the process must end by knocking more than half the aircraft now using it out of our sky—producing a Little Britain. Our proposals means a bit more work—properly reporting and analysing the facts, and if they show one to be necessary, producing a system of control involving the minimum restrictions necessary to achieve the required standard of safety. This method achieves the same aim but allows everyone who wishes to do so, to continue to use the air—a Great Britain.



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There are today about 7,000 commercial aircraft in the world, and 170,000 others. Only about 1,000 of these others are in the U.K. and largely because, until quite recently, what could be called the BALPA approach prevailed. Do BALPA really think safety demands control round Luton in some ways more restrictive than those around the New York airports?

London, SW1

PHILIP WILLS,
President, British Gliding Association.

From *The Times*, 12th August.

SAFETY AROUND AIRPORTS

Safety in the air arouses strong emotions, and it is difficult to separate emotion completely from what has been happening in the air space around Luton airport. According to the British Air Line Pilots' Association, their members flying from the airport have been involved in several near misses with light aircraft. Any such incidents are strongly denied by the light flyers and gliding enthusiasts whose view has been supported by the Board of Trade, the responsible government authority in air traffic control and airport matters.

While they assert that there is no danger, the Board of Trade do want, however, to introduce a control zone for Luton into which no aircraft would be allowed to fly before receiving radio permission. Both light flying and gliding fraternities have violently objected to this proposal. The result is that lengthy discussions have been started and the zone will not be in operation before the end of the year.

Whatever the emotional content in the dispute, the proper way would have been to have reversed this procedure, to have introduced the control zone at the start of the busy summer air traffic season, and to have amended it as shown to be necessary by the subsequent talks. When the lives of hundreds of people both in the air and on the ground are possibly at risk the tortuous procedures of democracy must surely take second place to safety regulations.

The predicament at Luton raises far wider issues. National airport planning and the place that light aviation is to find in Britain's overcrowded skies are shown to be in need of urgent consideration. Should Luton, placed as it is in the middle of a whole complex of airfields—executive and sporting, manufacturers' and Royal Air Force—have been allowed by the Government to develop so much that it begins to rival Gatwick and Stansted in the numbers of passengers passing through? The Roskill Commission, now considering the siting of the third London airport, will be doing the country a service if they include this question within their deliberations.

What is to happen to light flying in Britain as the jumbo jets and the supersonic airliners join the thickening stream of jets? As a sport it receives scant consideration from the authorities at present, and there is a danger that if the Luton case is repeated in the future the country will become hedged by control zones with light aircraft so constrained that the sport will become worthless. What is happening at Luton should provide the Government with an ideal opportunity for a full-scale inquiry into the uses of Britain's air space so that both heavy and light aviation can live together happily—and in safety.

From *The Times*, 14th August.

SAFETY AROUND AIRPORTS

SIR,—In a leader (August 12th) you bring out most clearly the difficulties facing the Board of Trade in solving the conflict in the Luton area between commercial aviation and the light aviation (including gliding) interests. However, your suggestion that the proper way to deal with the problem would have been to introduce a zone regardless of the need for it and then start discussions, verges on the shoot-first-and-ask-questions-afterwards philosophy. It would be just as reasonable to stop all vehicles other than lorries and coaches using the M1 on the grounds that private cars might contribute to a crash.

What is needed is, as you so rightly suggest, a full inquiry into the uses of Britain's airspace. Fortunately the National Air Traffic Control Service (a division of the Board of Trade) is and has been doing just this for some years and, while we in gliding have not always agreed that the controls it has introduced are the least restrictive necessary, we do believe that the required level of safety can best be maintained if all airspace users co-operate reasonably and unemotionally with the NATCS to reach acceptable solutions.

As an example of the difficulties facing NATCS, it is of interest to note that more than half the aircraft over the United Kingdom do not operate within the air traffic control system, thus any expansion of controlled airspace for the benefit of those within it has an opposite effect in reducing airspace and thus increasing collision risk for those outside it.

It is also perhaps relevant to note that in 20 years of air traffic control in this country there has not been an air collision involving a commercial aircraft. Statistically, collision with the ground is the more important safety issue, not collision in the air.

Yours faithfully,

H. C. N. GOODHART,

Chairman, BGA Airspace Committee.

From *New Scientist*, 14th August.

BATTERING RAM AT LUTON

When trade unions take industrial action to secure reasonable conditions for their members, the public usually bears the bulk of the inconvenience. That is the situation at Luton, where commercial pilots using the airport have just been given the support of their union in ignoring the regulations which, to reduce noise levels, govern take-off and climb. What makes this wrangle unusual is that the pilots have no grievance against their employers or against the Board of Trade's take-off rules. Their objection is to the failure so far of that government department to regiment those private flyers and glider pilots who take their lessons and their pleasure within a few miles of the airport. The gliding club has been on Dunstable Downs for more than 40 years; most of the flying clubs and schools were operating before Luton airport became commercially busy. But this gives them no inviolable right to free use of the air space when the cry of "safety" is raised as it is in this instance.

Given freedom to use full power at take-off and on the climb, the airline pilots can get above the height of the amateurs before they arrive in their vicinity. That is what they are doing at present, to the distress of people on the ground who have to endure the extra noise. They are, presumably, ready to revert to the muffled procedure if the Board of Trade sets up a "special rules zone" around the airport. Within this zone all aircraft, whether commercial or private, would be subject to the air traffic controller. That would mean they would have to be equipped with radio. Furthermore, they would have to be capable of moving in accordance with instructions from control.

Both points make a difficult prospect for the glider pilots. They have had to cope hitherto with the threat of exclusive regulations in the neighbourhood of the air lanes which now run up and down and across the country, and have argued that the liners have little or no use for air space below 3,000 ft. In the present argument, they are as desirous as the commercial pilots to ensure safety and the Board of Trade has held its hand while a full investigation of the risks and the possible plans for avoiding them is completed. Luton is little concerned with regular air services. Its business is mainly charter flights for packaged tours and is highly seasonal in character. Nevertheless, the town council which owns the airport and the operators who use it are anxious to dispel any suggestion of abnormal hazards lest the flow of traffic should suffer.

No support from these sources can be expected by the gliding club (the biggest in the country) and the aeroplane clubs. The town council and the Board of Trade are more likely to come under pressure from the public to let the commercial pilots have their way; and another example of the technique among the trade unions of using the public as a battering ram is in the making.

SOME LANDMARKS IN SAILPLANE DESIGN

By L. P. MOORE

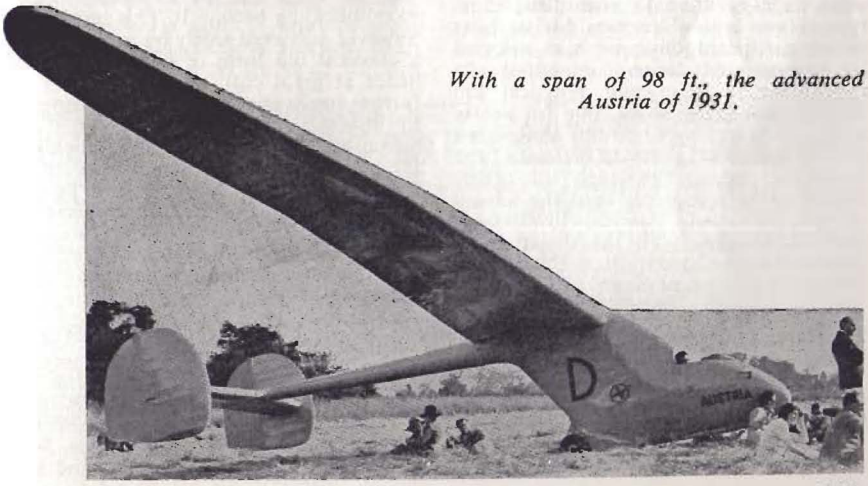
IN the last issue of SAILPLANE & GLIDING I announced the imminent launching of a new British sailplane, the Birmingham Guild "Gipsy 12/15", in which an effort had been made to combine a good performance with low cost, by virtue of improved structural efficiency and economy. This was the outcome of, *inter alia*, a general survey of the history of sailplane design over the last 40 years or so, and it may interest at least the newcomers to gliding to be taken back over some of this ground.

The Era of the "Light-Wind Soarer"

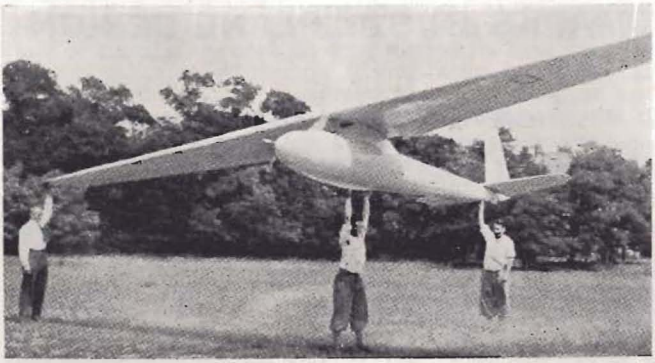
By 1930 the German and Austrian gliding movements were well established and annual championships were being held at the big German gliding centre on the Wasserkuppe. Soaring was then of the slope-soaring kind and the scope of cross-country flight was set by the extent of the windward-facing hills in the locality. The "best" glider of the day was the one able to stay up highest in the weakest uptrend and hence a low minimum sink was the primary aim of design. The only properly explored thick wing-sections suitable for gliders came from the Göttingen research stable—the tadpole-like 652 and 535 and the popular 549. These, however, resulted in "one-speed" designs in which a small reduction of airspeed below the criterion promptly led to a stall, while any significant increase lead to a leaden sink.

As cross-country hill-soaring technique developed, design attention began to be drawn increasingly to the refinement of gliding angle, the better to enable the pilot to reach the next slope-soaring ridge downwind. Crosswind flying was confined to the slope, while upwind flying beyond the influence of the slope was not being seriously considered, so that the concept of what was to become known as "penetration" had not as yet consciously been invented. Wing loadings consequently stayed below 3 lb/sq.ft. and development tended to take the form of a combination of increasing span and aspect ratio and ultra-low area loadings.

Nor did the demonstration by Kronfeld of a revolutionary new form of soaring—that of thermal flight—demand, for some long time to come, any new virtues in sailplane design. Thermal flights continued for a few years to be almost entirely downwind: if anything, the need



With a span of 98 ft., the advanced Austria of 1931.



Ultra-light and clean — the Windspiel.

to circle slowly and tightly without steep bank kept the accent on that particular aspect of performance and bred some hesitation to sacrifice any of it in the interest of better inter-thermal passage. These "light-wind soarers", as they were commonly termed, reached their ultimate in the exotic Austria, first flown in 1931 (span 98 ft., aspect ratio 38, empty weight 865 lb, wing loading 2.75 lb/sq.ft.). It certainly outperformed the field, but what a blunderbuss!

Genesis of the Standard Class

Obviously such extravagances could only be exceptional and the situation began to crystallize in the late 'thirties when an International standardized 15-m. type, Hans Jacobs' famous Meise, later to be christened Olympia, was selected by international design competition. So fundamentally good and practical did this machine prove to be, that for nearly a decade it remained, in its Anglicised and Continental post-war versions, the world's criterion by which all others tended to be measured, until the advent of the so-called "laminar-flow" wing sections, coupled with the demand for penetration, outdated it. From this famous design the modern Standard Class sprang.

Structural Efficiency—Improvement by Refinement

But we should pause and turn the clock back again to the early 'thirties for a while. High aspect ratios and low wing-loadings were being combined solely by resort to heavy planform taper and outsize span. If, instead, the basic structural efficiency (the ratio of strength and stiffness to weight) could be substantially improved, the aspect ratio of handy machines with limited span could be improved without raising the order of span-loading. This is exactly what the Darmstadt Akademische Fliegergruppe set out to achieve in their remarkable Windspiel (D-28) of which I have recently written. It recognized the principle that, if the wings and fuselage skins are efficiently stabilised, in the sense of support over most of their surface, reducing the span of unsupported "panels" between the stabilising elements, the specific strength and stiffness inherent in the thinnest skins can be exploited before panel-buckling betrays it. This result was, however, achieved solely by refinement of a classical old form of construction and hence at great cost, and upon that rock further application of the same principle to marketable types foundered. The astonishing result did, however, highlight the structural inefficiency of other types, but it still failed to bring about a general revolution in structural efficiency. Attempts to miniaturize on that same basis of refinement have since been made, as witness the interesting Scheibe Spatz, the Delphin and the Kria, but these trials never really matured.

In Britain an imaginative and progressive individualist, Mr. L. E. Baynes, designed and put into production his Scud II. Contemporary with Windspiel and of similar diminutive dimensions and of almost comparable performance, Scud II weighed only 150 lb. empty, and cost

but £150. This was achieved, however, by attention to detail weight-saving, by incredible simplicity and by a quality of workmanship that did not call for both belt and braces. Scud II proved rugged enough in service and incidentally conformed to the recently upgraded BGA strength requirement of 6 *g* for the CPF case.

The New Operational Requirement—"Penetration"

By the onset of World War II a design requirement for penetration across and into wind, through masses of downtrending air, had been firmly registered. By the 'fifties it had become a strident demand of the pundits and hence inevitably a strong influence upon designers. High thermalability required the lowest possible sink to be coincided with the lowest possible circling speed, while good penetration called for low sink at the high-speed end of the scale, and this spelt conflict. All of us wanted, of course, the best of both worlds, whereas the wretched designer must inevitably compromise. Penetration, unlike thermalability, is not fussy about high wing-loadings, and I attribute the remarkable inattention of the world's industry to improvement of structural efficiency, over these years, to preoccupation with penetration, especially amongst tropical and sub-tropical Continental countries.

The NACA of America had now presented the world with a series of well-tested thick wing-sections offering deep laminar flow. This meant that, without much further imagination and initiative, a real break-through was in the offing solely by virtue of the aerodynamic asset. But stay!—not quite, for they were found to be much more sensitive to poor finish and deformation than had been the old Göttingen sections. Those canvas-covered wing frames aft of the main spar had now to be covered with a rigid skin, and that "hungry horse" aspect induced by glue shrinkage and panels had now somehow to be ironed out. Up went the skin thicknesses until, in the compelling interests of rigidity and purity of form, the wings had grown to overweight in terms of strength requirements alone. Much higher operating speeds, higher gust loads, higher stresses and higher official proof requirements—a whole sequence of design factors conspiring to defeat the low-speed end of the performance scale.

As I watched the trend from the outside, I could detect no alarm at this march of events. The pundits were screaming for penetration, and so long as the mounting wing-loadings induced by the new order of aspect ratios could be offset by another metre or two on the wing span, they demanded or merely accepted it. Trailers became mobile hangars. Compressed discs flew from the rigging crews. Overstretched bungy ropes lay discarded in the hangar. A new winch at double the power gave 500 feet less on the launch. Capital and running costs mounting and syndicates having to be twice their happiest size in order to raise the money. Anything and everything except an all-out assault upon structural inefficiency.



The diamond-section fuselage of the Scud II shows plainly in this view.

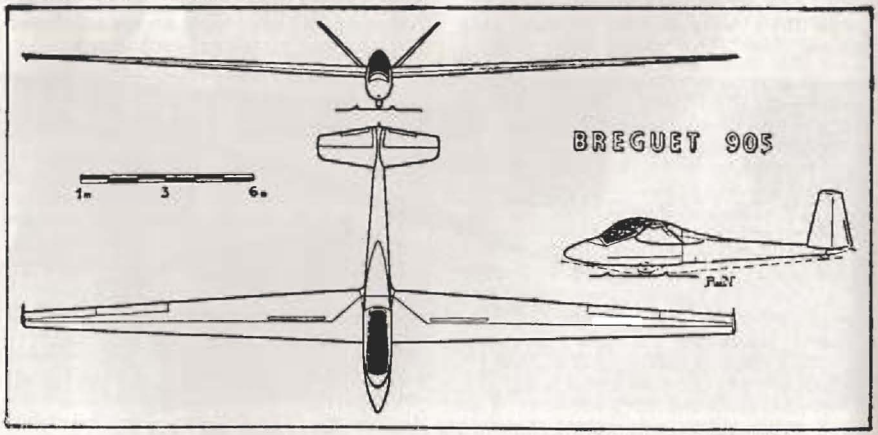
The "Sandwich" Break-through

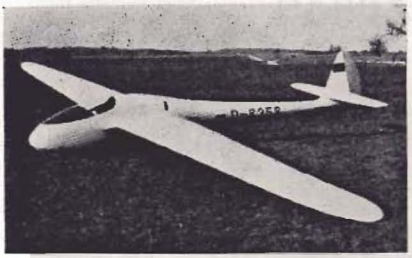
But there was some initiative in this direction, destined in the course of long time to transform the situation. The next serious assault came, once again, from the Darmstadt Group in 1955 in the form of their D-34, and, two years later, D-34B, in which mere 0.6-mm. plywood skins were sandwiched astride rigid foamed plastic which provided complete and uniformly-distributed stabilising support to the skins, eliminating the usual inter-rib panels and providing a near-perfect profile, especially when the wing was under stress at high speed. These 12.65 minis, with aspect ratios of 20, best gliding angles of over 1 : 30, and a sink of 2.28 ft/sec. at 35 kt., weighed but 300 and 330 lb, respectively empty and equipped.

And yet, with one or two notable exceptions, it was to be years before the penny dropped in the production world. The Breguet firm of France launched in 1958 its handsome Fauvette, in which the skins were sandwiches of merely 0.4-mm. plywood astride thin cores of rigid foamed plastic, resulting in an empty weight of 340 lb. and producing a performance comparing well with that of the generation of Standard Class winners only superseded some ten years later.

The other notable exception was the remarkable German Phoenix by Nägele and Eppler, which first flew at the close of 1957 and in which the skins were sandwiches of glass fibre astride thin cores of balsa wood (a heavy core). This 16-m. sailplane, in which an aspect ratio of about 20 was combined with a wing loading as low as 3.8 lb/sq.ft. and a very high-lift Eppler wing section having a double-humped polar, left everything else, of its span, standing, especially in its thermalability and its overall "best cross-country speed" in North European thermal conditions. It represented, I feel, the herald of the new generation of Standard Class sailplanes now dominating this Class in performance contests, although the novelty of glass fibre skin and the exciting (but tricky) new section tended to divert interest from the asset which to my mind really counted, namely, improved structural efficiency.

The signficant feature of the 'fifties was the change from what I would call the "framed skin" to the "sandwich skin". It offered great scope and numerous alternatives: twin concentric skins astride a thin core of an "expanded" material, such as metal foil or glass fibre or resinated paper honeycomb or one of the rigid foamed plastics, may be formed around or within a mould, or alternatively a single skin may be bonded around a pre-formed core or may have the chemical foamed into it while held to contour by a mould. Moreover the skins may be of plywood or glass fibre or of metal. The quest for the optimum combination of materials and dimensions presents a huge research problem, while the search for the most economical process of assembly is at least equally testing and important.





The 1957 Phoenix by Nägele and Eppler.

The correct solution could put the country finding it in the forefront of contests and at the top of the market. Just the job for the RAE, the SBAC and our Universities, working as a team.

The Future?

Resinated glass fibre is strong enough and stiff enough in itself along the axis of its fibres to deal with stresses along that axis, but is remarkably weak across the fibres. Thus, in order to cope with transverse stresses also, further layers have to be superimposed with their axis laid transversely, and this generally results in a skin unnecessarily heavy and thick in relation to either the demands of its strength or stiffness alone. What with this and the cost of hand-laying, we now see how expensive this end-product must inevitably be and how structurally inefficient. And until we find a way to utilise the energy stored in the flexure of slender plywood or glass fibre wings for the improvement of performance without flutter risks, I doubt whether these two skin materials will ever come up to metal skins in so far as very high aspect ratios and efficient tapers are concerned.

When the present cost of carbon fibres comes down to earth, however, there will be a great break-through in structural efficiency, and hence in performance. The technological potential of this exciting material in so many fields is so fantastic that we may be sure that man will inevitably find a way of making it inexpensively.

In the field of metal where cost is not the first consideration, as in the Open Class, and where component stiffness problems predominate, as they tend to do in the slender-winged exotic types, there is a good deal of structural efficiency to be gained by the substitution of magnesium alloy for aluminium alloy. The former has a valuable specific stiffness/weight advantage over the latter, but is unfortunately several times as expensive. The cost of raw material in a sailplane is, however, but a small proportion of its total cost.

* * *

Conclusion

The history of glider design over the past 40 years portrays a singular disregard for the development of structural efficiency in the sense of its relation to improvement of both performance and economy. We have noted a few distinguished exceptions and they have tended to spring from outside the official glider industry and mostly in Germany. By and large, improvement of performance has otherwise been achieved by virtue of a break-through in aerodynamics, such as the so-called "laminar-flow" wing sections or the performance flap, or more usually by an increase in span, and the end-product has more often than not been a heavy, unwieldy and expensive machine.

Improvement of stabilization as best—if not first—exemplified in the wartime military "Mosquito", contributed most to the improvement of structural efficiency. The result of each step has been demonstrably enlightening to all, it seems, except the industry at large, while the pundit pilot has remained unquestioning, neither reading the history books.

Any break-through in structural efficiency offers a leap in performance to every class and category of sailplane. The best way to induce it is, I believe, to go on tightening the restrictions upon span and expensive devices in official competition classes every time a break-through in aerodynamics occurs, regarding this latter as a signal and opportunity to miniaturize and form a new "Class".

At the same time we should encourage our Universities to emulate the intiative and enterprise of the Darmstadt Academy and the Braunschweig and Stuttgart groups, although one feels that their limited time and resources could best be confined to development of basic structures applicable to sailplanes, rather than the complete design of sailplanes, which is a function more suitable for industry.

COMPS. AT COMPTON ABBAS

By "DUNSTABLIGHTER"

ON the last day of the Regionals at Compton Abbas Chris Simpson was in a twitch. He was giving his hands the traditional nail-biting manicure—traditional with pilots in the lead. Chris Wills and Ray Foot were breathing down his neck, and he was hoping the task, a 161-km. triangle via Thruxton and Bath racecourse, would be cancelled.

There was a good chance of that happening. Although it was a nice pleasant day there was only a small promise of thermal activity, and that confined to lower levels. The 14 surviving machines of the contest waited on the grid for hour after hour, hoping for something to pop or not pop, as the case might be. Thermal snifters went up and came down. Simpson became relaxed. Wills and Foot became, perhaps, more despondent. Foot had particular reason to overtake Simpson, as he'd been leading until the previous day.

At last Johnnie Morris, competition director, strode purposefully to the grid. He raised his arms and cried "Let battle commence".

* * *

The Compton Abbas club, catering for power flying and gliding activities, has only been in operation for about 18 months. Its long, narrow strip lies perched on top of the rolling Dorset hills, providing some fascinating hill soaring, in a sparsely populated area away from any large centres. Its membership potential is not large, and it has pursued a policy orientated towards soaring rather than training, unlike so many gliding clubs.

This competition, its first, was an unqualified success, with seven contest days. The first few were dominated by an anticyclone in the south-west approaches, moving slowly east and south-east, gradually declining. Light winds were a regular feature.

On Saturday, 12th July, John Delafield set a 165-km. out-and-return via Lasham—a short task based on a forecast which said that development of good conditions would be slow. Getting away from Compton proved to be a delicate operation, but conditions were better than expected further east. Visibility was poorish. Unfortunately, Lasham welcomed some pilots with a temporary clamp which sank them.

Six pilots completed the task, the fastest handicapped time, 43 km/h., being achieved by Ray Foot in his venerable Skylark 3F. John Delafield got in some useful practice by achieving an *hors concours* time of 47.5 km/h.

Sunday was not dissimilar. The task was a 178-km. triangle via Newbury racecourse and Lasham, set to keep competitors clear of a possible sea breeze effect and the Larkhill gunnery ranges.

Once again some delicacy was required in the early stages of the game, but conditions became quite good later on, with nice high thermals. Visibility was not too brilliant, and downright rotten on the final up-sun leg. All this is mentioned only to excuse your scribe, who got himself lost mistaking Reading for Basingstoke, and finally landing near Winchester. A sea breeze convergence zone south of Salisbury helped six pilots to complete the course. Ray Foot won again with 39.4 km/h., with Chris Simpson and Chris Wills close behind.

On Monday the sea breeze was expected to reach Compton Abbas very early (14:00 hrs.) so a closed circuit was not desirable. A 316-km. dog-leg race was set to Dunstable via Shobdon, an airfield in Wales. It was not expected that anybody would get to Dunstable, but as it turned out conditions were good enough to enable two pilots to complete the course after more than seven hours flying. John Thorne, a Compton Abbas local pilot flying in his first contest in partnership with Simon Marriott, won with a speed of 39.4 km/h. followed by Chris Simpson with 39.1 km/h. Chris Wills, Stephen White and Ray Foot all nearly reached Dunstable.

A short 105-km. race to Nympsfield via Wells Cathedral was set on Tuesday as another sea breeze was expected to arrive early at Compton. Conditions were good (John Delafield made a 360-km. flight) and 11 pilots arrived at ye olde,

hallowed Bristol club site. The writer for once managed not to lose himself, and got there, much to his surprise. A certain amount of finish line tension was caused by Peter King, who spent about an hour digging himself out of a hole in the Wells area. If he failed to reach the goal the slower finishers (times were clustered around two hours) would be heavily penalised. If he did finish, taking perhaps three hours, the points for the others would all be boosted considerably. Peter arrived . . .

Wednesday's task, a vast and complicated cat's cradle, was cancelled as conditions remained so poor that thermals never got started. There was, however, a little local wave soaring in the afternoon.

During Thursday night a cold front swept the accumulated air away and brought with it a fresh north-westerly wind. A 180-km. triangle via Dunkeswell and Longleat (famed for its lions) was set, with the first leg into a 15-20 knot headwind. There was no likelihood of sea air penetrating the route, the forecasters said, but it did in fact affect part of the route. Only Simpson and Foot completed; two others, Chris Wills and my partner Len Woods, nearly made it back. The later part of their flights involved a good deal of low level scraping, hill-soaring and the very real possibility of some unwanted intimacy with Longleat's lions. At this stage the overall positions were: 1, Foot; 2, Simpson; 3, Wills.

On Friday there was a warm front approaching from the north-west, making a return task to Compton out of the question. Lasham was therefore made the goal of a race which wound itself round various turning points—Chilbolton airfield, Marlborough white horse and Uffington white horse. Total distance 170-km.

It looked a poor day but turned out surprisingly well, with 10 pilots arriving at Lasham. Ray Foot, unfortunately, had a sticky time and spent an hour over Basingstoke trying to get enough height to glide in. This slowed him down to 35.2 km/h. against 50.4 km/h. for Stephen White, the winner. As a result he slipped to 3rd place overall, with Chris Simpson in the lead and Chris Wills close behind.

Saturday delivered a strong south-west wind and general clag, so no task was set. That left, as we have seen, just Sunday for Ray Foot to regain the lead or for Chris Wills to take the yellow sweater.

When launching commenced on that final day conditions were very weak and the depth of thermal activity small. All that anybody could do was to scrape patiently and drift down the gentle wind towards Thruxton. Here and there patches of something better brewed up and pilots did a little better. Very few managed to round the first turning point and the into wind nature of the second leg didn't help those who did. Chris Wills made the best flight, landing at Keevil well along the second leg. Keith Chard did well to take second place, while Chris Simpson landed at Netheravon.

Only two pilots passed Y, making the maximum points for the day 152. Simpson retained his overall lead by less than 30 points and won the contest. Had he flown a mile or two further, passing Y (on handicap), the maximum day points would have been higher and he would, ironically, have lost his overall lead to Wills! Such are our scoring systems!

Final Results *Pilot(s)*	*H'cap %*	*Sailplane*	1000 1	1000 2	1000 3	1000 4	528 5	1000 6	152 7	*Total Points*
1. Simpson, C. R.	90	Dart 17R	815	962	997	726	489	798	88	4875
2. Wills, C. P.	96	Ka-6E	885	995	874	630	390	921	152	4847
3. Foot, R. A.	100	Skylark 3F	1000	1000	889	886	528	357	84	4744
4. Marriott, S. H. C.,	86	SHK	705	727	—	—	281	—	—	
Thorne, J. S.			—	—	1000	918	—	929	53	4615
5. White, S. A.	96	Ka-6E	766	667	858	982	60	1000	74	4407
6. James, P. W.	98	Skylark 4	557	934	725	851	0	742	0	3809
7. Pozerskis, P.	82	Cirrus	557	87	672	1000	0	608	48	2972
8. Chard, K.	96	Ka-6E	183	400	626	608	44	738	126	2725
9. Willbie, R. T.	98	Skylark 4	334	474	16	833	254	697	71	2679
10. Woods, L.	100	Ka-6CR	341	—	706	—	430	—	0	
Locke, G. W.			—	381	—	744	—	11	—	2523
11. Riddell, D. M. R.	96	Foka	667	251	395	198	60	709	2	2282
12. King, P. G.	96	Ka-6E	0	486	395	285	25	267	0	1458
13. MacDonald, A.	90	Dart 17R	0	359	714	68	0	196	0	1337
14. Linee, A.	90	Dart 17R	306	271	138	108	15	11	0	849
15. Smith, R. J.	96	Ka-6E	0	380	—	—	—	—	—	380

KRONFELD NEWS

BY now we should be through our slack summer season and into the beginning of a time when we shall be bringing you an interesting series of films and talks every Wednesday evening. We shall also be back to opening the club on Mondays, Tuesdays, Wednesdays and Thursdays.

The premises are also available as usual for private fixtures or parties by arrangement on any day.

At the time of writing the programme has not been finalised, but members will be kept up-to-date by postcard or newsletter.

A general poster for clubs will also be produced to induce non-members to come along and see what we have to offer. Remember that Wednesday is the general club evening.

J. H. S.

SOARING IN NATAL

By JAMES CHAPMAN

IT was just after 8 a.m. on Sunday, 26th January, 1969, when Sam Barker phoned and invited me to come up and glide from his farm at Rosetta, near Mooi River. After a hasty conflab with my wife and a change of plans for my family, I accepted, and within minutes was on my way. Sam's farm is 98 miles inland from the coast at Durban, and is situated in the Natal Midlands at an altitude of 4,500 ft. asl.; the road inland is mostly a fine dual carriageway, with only the last seven-odd miles an all-weather dirt road.

As usual, on the way up I scanned the skies, trying to assess what conditions we could expect, but this can be rather misleading as often one can find two or three different weather systems on the way. I passed through a wind boundary at Lions River, which is about 20 miles from Sam's airstrip, and arrived at the hangar around 10.15; I was just in time to see Sam take off in his Super Cub to meet Noel Joubert, our tug pilot, who motors down from Colenso, some 45 miles to the north, to the Estcourt Strip, where he is picked up by Sam.

Approximately 25 miles due west of Sam's farm lie the Drakensberg Mountains' eastern buttresses, the highest peak being 11,425 ft. asl.; this buttress is also the boundary between the Republic of South Africa and Lesotho. Just after 11.00 a.m. clouds were forming over the Berg, which is usually a sign of poor soaring in the "farm" area, so we decided to wait until after lunch and—if conditions improved and looked promising—we would get the T-21 airborne. So, after an early lunch, we prepared the T-21 and took off at 1.00 p.m., the wind being northerly at about 5 knots. Whilst on tow, about seven miles away up-wind of the strip we noticed smoke, which appeared to be from a fairly large fire but, owing to a ridge between the conflagration and ourselves, we could not locate the source. Sam released at 6,500 ft. and, after searching around, we picked up a blue thermal which took us up to 8,000 ft. at 2–3 knots.

On running out of lift we searched around but could not find any more thermals, so we flew back towards the strip and circuit area . . . then, at 5,800 ft. we flew into strong lift of 3 knots. Sam turned and centred in 5 knots and, by our third turn, in 6–7 knots; finally, he centred in 10 knots to go up in fine style. Meanwhile, looking around, I saw that the fire was in a forest and, whilst it was up-wind, the smoke was not near. Drift was very slight and we were almost over cross-way of the strip. Looking up, we saw the start of a small cloud, which we estimated at about 12,000 ft., but when we checked our instruments, we were past 12,000 ft., then 13,000 ft., until we stopped climbing at 15,400 ft. The cloud was still some way above us and we were in zero sink—the time 1.30 p.m. We were starting to feel the cold and, looking towards the south, we noticed that the front was getting closer, so we flew towards it until, over Balgowan, we were on the crest of the front. We flew back and forth across the front, drifting slowly back past the farm until we were half-way to Estcourt;

our average height was 13,000 ft. for the flight.

Drifting over the hills near Estcourt, one sees the track of an old railway line twisting over and through the hills—Harris Hill 5,558 ft.—with the odd lonely grave on the hilltops, to serve as a reminder that a few miles to the north lies the scene of bloody battles fought during the Boer Wars. Finally, we had to open spoilers and fight our way down. This we did with reluctance, but Noel Joubert had to be flown back and the bird put away. So, shivering but very happy, we came in and landed at 4.40 p.m., to arrive back on *terra firma* in an atmosphere akin to a Turkish bath.

This front, caused by the wind boundary, is a common occurrence in this area, but never have we had such a remarkable one. The sheer was shown clearly, the northerly edge was smoky and the southerly clear; it was marked by lacy clouds and it was like surf-riding as we drifted across the countryside. Also, further to the south, we could see orographic cloud rolling over the hills. Motoring home, I had a slow trip down to the coast on dipped headlamps through the mist, until I got below 1,000 ft. ten miles from the coast when, once more, I was driving on VFR. The met. people do not refer to these conditions as fronts but as wind variations; in fact, seldom does the area in which we fly have the wind direction or strength mentioned in the forecasts. So, for the lack of a better name, we call them wind boundaries and, if caught at the right time, they provide good gliding conditions. As I motor up-country, I have noticed that one passes often through an area with calm-to-mild breezes, and one then sees the grass and trees being buffeted by a wind which, in a few hundred yards, settles down again to a slight breeze from the opposite direction. It appears that these coastal lows push well inland and push under the northerly winds; these conditions have given us good flying days during summer and winter.

Regarding our first thermal, the fire must have had an influence on our lift, although smoke was well away from our thermal, and only later did the smoke spread out along the sheer line. The lift was strong and smooth, the only turbulence being at sheer line.

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MARFA — A-ZEE

By ANN WELCH

ADDRESS — World Gliding Championships, Box 1970, Marfa, Texas 79843, USA.

ACCOMMODATION — On-site, air-conditioned trailers for pilots; tents for crews.

ALTITUDE — Presidio County Airport, 4,885 ft. Mt. Livermore (32 miles distant) 8,382 ft.

CHAPARRAL — Dense tangled brushwood, not always high. See also Paisano.

CLOTHING (flying) — Materials which absorb moisture such as cotton. Long trousers, sleeves, socks, hat. Comfortable rough-country boots carried if not worn flying. (Two pilots walked over 14 miles this year, and there may be snakes). Sunglasses (polaroid).

CLOTHING (general) — American laundries are good. Assortment suitable for working plus functions in 95-100°F temperatures, with a light sweater as a precaution. To Europeans long Bermuda shorts look funny at first, but they are practical.

COCKPIT equipment — In-flight drink system with ready-use tube. Large emergency water bottle in shaded storage. First-aid outfit including sting relief. Terry towelling seat cover. Spare towel (which can be wet at start of flight). Tie-down pickets suitable for hard soil or sand, or using loose rocks, good enough to cope with twisters, willie-willies and thunderstorm gusts. Hacksaw, padlock and short lengths of chain (to get through ranch gate and re-secure chain, leaving owner's gate locked). Spare hat, anorak. Flashlight with a red alternative or reflective triangle (see highway landing). Oxygen supply suitable for daily use and easy replenishment; refilling of bottles on site. Canopy covering.

CREW-CAR equipment — Small clip-on sunshade to keep cockpit cool, aluminium foil to keep instrument panel and radio cool before take-off. Large insulated container to hold cans or bottles and flasks for prepared iced drinks. Second insulated container to hold films and other small items needing to be protected from heat. Box of tools, tape, cleaning and polishing materials, fine wet and dry, cloths, two buckets, sponges. Rope and padding for airfield overnight tie-down. Wing covers unnecessary; they flap, get gritty and harbour insects. Sunburn cream, insect repellent, Kleenex, telephone money and/or credit cards.

HIGHWAY landings — Divided highways which are straight are usually wide enough. Two-directional traffic roads may be Standard Class only. Steel stakes about 3 ft. high, painted grey and carrying reflectors, are imbedded firmly in the roadside at all bends and where the road crosses culverts. Telephone and power wires running alongside a road cross overhead where there is a building on each side in open country. Dirt roads are unsatisfactory.

Traffic cruises at the limit of 75 mph., fairly well spaced out, with drivers not expecting impediment or frustration, so they may not react quickly to a glider lobbing in front.

Darkness falls quickly and it may not be possible to get the glider off the road while still light, so torch or reflective triangle are advisable. If possible, crews should help with highway landings, but even car/trailer emergency flashers on the road shoulder (Americans always pull off the road) may not stop another car driving on into the pool of darkness — and the glider. Do not assume that traffic will stop, however interesting your accident!

NAVIGATION — No problem. Visibility excellent. Half-million aeronautical charts accurate and good, except that being printed on both sides, are fiendish to use. The championship airfield position is Lat. 30° 15' N. Long. 103° 53' W.

PAISANO — See Road Runner.

PHOTOGRAPHIC evidence — Photographic evidence of reaching the turning point is used entirely, and is the only acceptable evidence.

1. Two simple Instamatic cameras are mounted in the cockpit with the lens between ½-1 inches off the canopy itself, so that photographs show the left wing tip. Neither the cameras nor the mounts need to be sealed.
2. Just prior to take-off the Organizers mark a line on the outside of the canopy across the face of each lens with a grease pencil (or 1/16 in. tape) and display a control board giving date, time, task and glider number for the pilot to photograph with the installed cameras.
3. The pilot then photographs the turning points in the correct order. If he delays crossing the start line he should photograph a time indicator on the ground each hour. (It is in his own interest to photograph this board too frequently rather than too seldom, since it provides proof of taking the turning points

CHRISTMAS CARDS

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Our 1969 Christmas Card is taken from a black and white photograph of a Diamant 16.5 soaring over snow clad peaks in the Swiss Alps.

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Artillery Mansions,
75 Victoria Street,
London, S.W.1.



Steve DuPont photographs the start board before take-off. (Photo: Ann Welch)

between the time of crossing the start and finish lines).

4. After landing, the pilot hands his film to the Organizers. Any negative not carrying the identical image of the Organizers' (random) mark is not acceptable as evidence.

The Organizers provided (this year) each pilot with a diagram, showing from which direction (and position) the photographs had to be taken, including a picture of the turning point as it should appear on the pilot's film.

PHOTOGRAPHY (private) — Colour film in the States is sold without processing included. All usual films are readily available.

RADIO — The Organizers will publish details of official frequencies. Marfa Air is an aircraft put up at 18:00 hrs. each contest day to help pilots and retrieve crews link up.

ROAD RUNNER — Local bird, emblem of the Championships. Goes under all three names, is a member of the cuckoo family without its unique habits, eats the snakes and can run at 23 mph. Does not use thermals.

SOUTHERN PACIFIC RAILROAD — Runs from New Orleans to Los Angeles, 3,000 miles. Built in the 1880s, with Marfa, Alpine, as railway towns, its highest point of 5,078 ft. being between the two. An excellent navigational feature, carrying goods trains 2 miles long with up to 7 engines.

SPARES — Repairs should be arranged to be done on the spot by the team itself. Materials, space and power will be available, but don't expect plugs to fit.

Essential spares include glider tyres, since off-field surfaces may include sharp rocks, and airfield and road surfaces are very hot. Tyres live longer if the wheel brake is used with discretion or not at all. Spare canopies should be carried. If there is doubt that US release rings will fit, bring local rings.

STATISTICS 1969 Nationals — 70 USA and 12 foreign pilots. Standard Class (total) 9. Gliders coming in first 10 places each day. Days 4, 5 and 7 were distances.

Type	Total Nos.	Days 1	2	3	4	5	6	7	8
Libelle Open	14	4	2	3	2	2	2	2	1
Cirrus	12	2	2	2	2	1	2	3	1
HP variants	12			1	3	1		2	
Diamant	8		1	2		1	2		3
Phoebus	6		2		2	1			
Kestrel	4	1	1			1	2		2
Austria SH-1	4				1				
Sisu	2	1	1			1	1	1	1
ASW-12	1	1	1	1	1	1	1	1	1
BJ-4	1	1							1
FK-3	1			1		1		1	

Total nos. completing task

Day 1 — 45
" 2 — 41
" 3 — 43
" 4 — 6 over 500 miles
" 5 — 17 over 400 miles
" 6 — 64
" 7 — 9 over 400 miles
" 8 — 65

For final leading results, tasks and daily winners see S & G Aug.-Sept. page 356.

Ka-6, 3. Schweizer 1-23, 2. Boomerang, 1.
Edelweiss, 1. Std. Libelle, 1. ASW-15, 1. BG-12, 1. Dart, 1. Others, 6.
Average speed of winner on speed tasks (5) 64.2 mph.
Average distance of winner on distance tasks (3) 494.6 miles.
Total distance flown on 8 contest days 176,734 miles.

PLANNING?

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TASKS and Operating procedure — Tasks are likely to be divided between speed and distance, the latter being likely to demand 8-9 hours flying, with a sunset landing.

Starting order by pilot choice. Uniformity of weather — big tasks and actual time of the inversion breaking being not precisely known at briefing — reduces benefit of this system at Marfa. But retention of pilot decision is good.

Start and finish checking and timing efficient. Pilots and crew get information on both over radio without delay. Results and score sheets are produced quickly.

THERMALS — Rough, tough, with strong narrow cores, subject to wind shear, mountains and dew point troughs, 10 knots up — and 10 knots down — on good days. Distribution sometimes unexpectedly irregular with big holes — and landing places up to 10 miles apart. Thermal tops (no cloud flying permitted) mainly about 8,000 ft. above ground in late afternoon. Thermals below 2,000 ft. weak or difficult. Greater heights and later thermals over mountains. Inter-thermal speeds of 120 mph. usual. Gliders and pilots need to be strong. Winds may also be strong, and vary markedly with height.

TIME ZONES — Texas did not want to be divided by a time zone, so the Marfa day is odd and long. Peak thermals at 17:00 hrs. instead of 15:00 hrs. Sunset in June at 21:00 hrs. while still possible to be airborne, so the Organizers have a problem with turn point closing. Points will be lost if gliders cross the finish line after it shuts for the night. Supper becomes practicable around 23:00 hrs., bed after midnight — then breakfast at 07:00-07:30 hrs.

TOW PLANES — 15 Cessna, probably Skylane; tugs are being provided by the Manufacturers. Because of the altitude expect take-off and landing runs to be appreciably longer then usual.

TRAILER DRIVING — American roads are good and American cars large and suitable for trailer towing so everything seems easy. But drivers must be able to go at 75 mph. for hours on end and remain really alert, since at these speeds the accident is arrived at quickly. Wide loads, by no means scarce, also cruise at 60 mph, plus and the aerodynamic disturbance on overtaking is interesting.

Car and trailer tyres must be good and kept at correct pressures. Fuel consumption at 70 mph. with a trailer and air conditioning is unlikely to be better than 12 mpg. or worse than 6 mpg. At shade temperatures of 100°F the car radiator may not be able to cope with towing a trailer and providing air conditioning, so the crew sweats. The car insulated drink container should be stowed appropriately.

Gas stations are signposted, efficient, provide free road maps, and have refreshment automats.

WATER BALLAST — Some gliders carried over 200 lbs. and invariably jettisoned it before landing to the delight of the overheated citizens below.

YUCCA and MESQUITE — Local flora designed to frustrate glider pilots. Yucca bushes have spiny bottoms with tall pretty yellow flowers, maybe 10 ft. high, but can be brittle and will squash if hit hard enough, leaving green glider. Better avoided.

ZIP CODE — 79843 should be put after Texas on letters.

CROSS-COUNTRY HAZARD

By A. E. R. HODGES

IT was Saturday, 5th July, and, after rigging our syndicate Ka-6E and helping with the Capstan, I thought that I would tempt fate by smoking the barograph, always a clamper in my case. Reports from the circuit-bashers that there were small thermals "all over the place" sent me aloft where, indeed, I managed to climb to 2,000 ft. but no higher.

The time was 1330 hrs. and I set course due east, but descended to 1,000 ft. over the A30, where I managed to contact another thermal to regain my lost height. This process continued until 1500 hrs., when I finally ground to a standstill in a field near Yetminster from which the grass had been cut and baled; in fact, I had to dodge a couple of bales on the run in.

As usual, the helpful bod appeared from nowhere, assured me that the glider would be quite safe where it was and directed me to the nearest phone. This really was where the fun started because the telephone was in a farmhouse and, before I could use it, I got involved in an emergency round-up of some young bullocks. On my return to the field in which I had landed, by way of the route which the trailer would have to take, I noticed a shadowy figure flitting about the glider and carrying what appeared to be the cockpit cover. This made me quicken my pace and, sure enough, when I arrived—after having to lose sight of the aircraft while traversing a hollow—there was no canopy nor any sign of the thief. Rapidly assuming that this must be the work either of a youngster or a lunatic, and that the getaway probably would be towards the village, I set off in that direction at a rate of knots. My acumen was rewarded by a brief glimpse of my quarry disappearing through a gap two fields away. This spurred me to Olympic speed, with the thought of the syndicate not being able to fly the best part of the season unless my efforts were successful, and I uttered a prayer of thanks when the cover was jettisoned in a ditch the better to enable the thief to escape.

There were some nasty scratches in the Perspex, caused by dragging the cover through the stubble, and these took an hour or so to polish out. This work was undertaken cheerfully, however, with the thought at the back of our minds of what might have happened had the canopy not been recovered. The sequel on Monday was a conversation with an office colleague living in Yetminster who, knowing that I was a gliding type, thought I would be interested to know that someone had landed there on Saturday, that part of his glider had been pinched and that the village was very upset about this and could only conclude that it was the work of the village idiot . . . a really rough type!

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FOUR OF THE BEST

By DAVID INCE

WINDING the ASW-15 prototype easily and tightly into a late morning thermal — with the outlines of the Wasserkuppe growing smaller below — should have marked the last step in a recent evaluation of four German Standard Class sailplanes.

That it did not do so is due, regrettably, to the fact that the Standard Cirrus fuselage was enclosed in a mould during our visit to Schempp-Hirth some days previous.

How does one attempt an evaluation of this sort?

First, obviously, from data supplied by the manufacturers themselves, and here they are :

SAILPLANE:	Std. Libelle	Std. Cirrus	LS-1	ASW-15
STRUCTURE: Wings	GF/Balsa Sandwich	GF/PVC Foam Sandwich	GF/PVC Foam Sandwich	GF/Balsa Sandwich
Fuselage	GF	GF	GF	GF/Acetate Honeycomb Sandwich
DIMENSIONS: (Metres)				
Span	15	15	15	15
Length	6.2	6.35	6.93	6.45
Height (top of fin)	1.3	not quoted	1.32	1.5
Aspect Ratio	23.6	22.5	23.1	20.45
WEIGHT: (Kgs)				
Total empty	170	190	188*	212*
Max. disposable load	120	140	132	101
Max. AUW	290	330	320	313
Max. wing loading kp/m²	30.2	32.6	32.8	28
PRICE: Ex-works DM	19,800	22,000	18,503	21,610
DELIVERY: (as quoted July, 1969)	Nov. '70	Aug. '70	19,333** 4-5 years	Dec. '70
PERFORMANCE:				
Min. sink	0.6 m/s at 75 km/h.	0.57 m/s at 70 km/h.	0.58 m/s at 70 km/h.	0.58 m/s at 75 km/h.
Max. L/D	38 at 85 km/h.	38 at 90 km/h.	38 at 90 km/h.	38 at 83 km/h.

*Stated to include basic instruments. **Includes improved airbrakes. GF=Glass-fibre

Features shared by all four include a low fuselage profile, narrow root chord and light weight. The heaviest is, after all, not much heavier than a production Olympia 463, and the lightest some 40 kg. lighter.

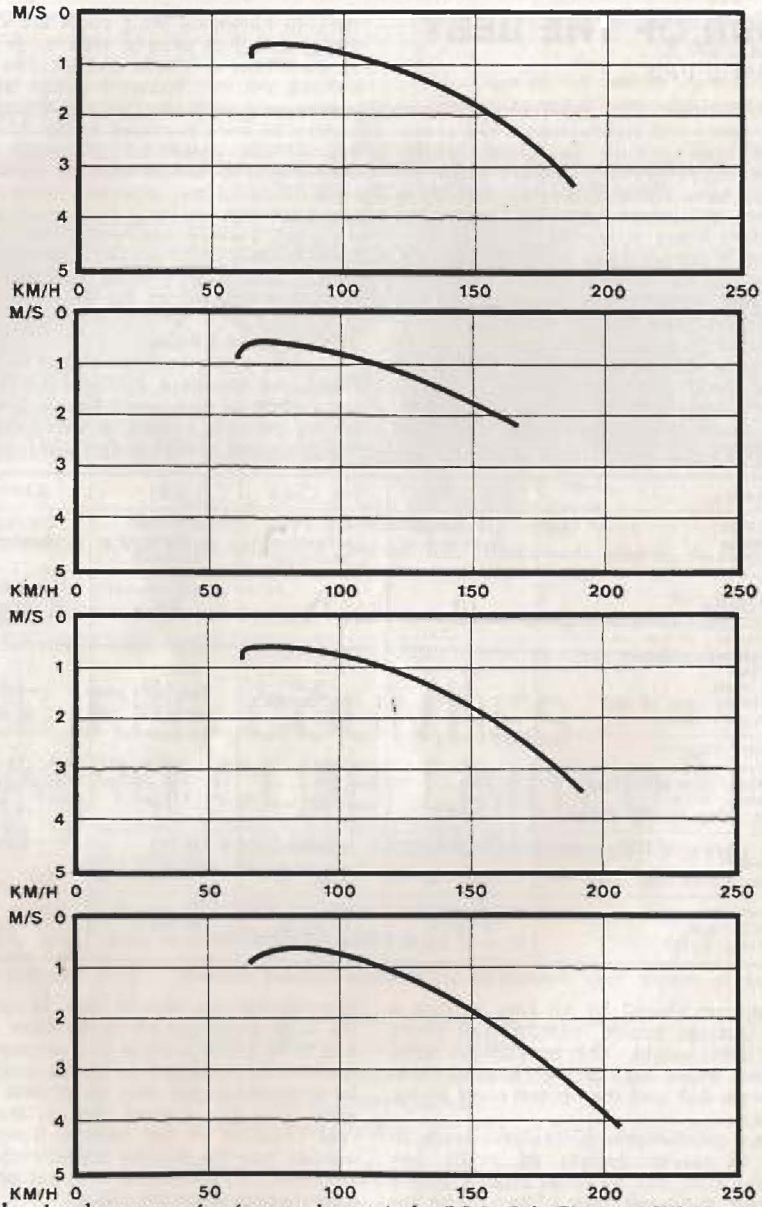
This combination of features lends itself to trailer designs of really low frontal area, and to easier rigging with a realistic minimum crew of two. With the exception of the LS-1 (which has simple beam extensions of the main spars lying back to back), all wing roots are of the wedge and fork plug-in type — familiar to glass-fibre — with one or two pins holding the two halves together and in engagement with the fuselage fittings.

Also, at least common to the ASW-15, Std. Libelle and LS-1 (although there are obvious variations between them), the static longitudinal stability, stick fixed and stick free, is small and positive and the stick force/g pleasantly low. These seem to be similar to the characteristics which have come to be accepted and much appreciated on the Ka-6E.

The Standard Libelle

Starting at the beginning, then — Glasflügel, the Standard Libelle factory, was the subject of two visits, during which it proved possible to fly and soar briefly in the prototype fixed-wheel Standard Class aircraft. On the second visit, in spite of the most strenuous efforts by Herr Hänle and Herr Fürst, a flight in a development model with enlarged airbrakes could not be arranged in the very short time available. This was a great pity, as the only real criticism of the version flown previously was the relative ineffectiveness of its airbrakes, combined with rather poor side-slipping characteristics.

From the very moment when it emerges from its trailer the Standard Libelle im-



Calculated polar curves for (top to bottom) the LS-1, Std. Cirrus, ASW-15 and Std. Libelle.



Low-frontal-area Libelle trailer.

presses because of its attention to engineering detail and extreme ease of rigging. The wing root halves are held together by means of a single pin. Alignment prior to insertion of this pin is made simple by means of a special key which engages simultaneously in two spigots, on top of each spar end, and pulls the two halves together.

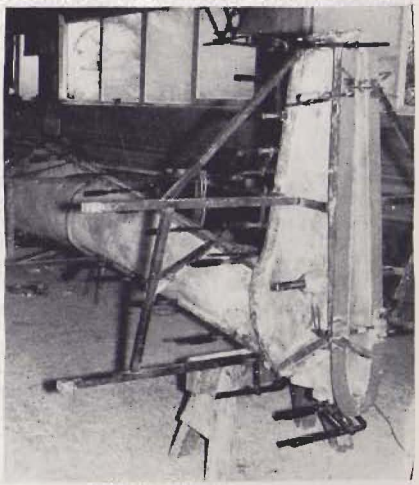
One is particularly struck by the small, hard chine, fuselage, small fin and rudder and the very low profile of the Libelle, even when compared with the other 15 metres. The cockpit, however, is roomy, and considerable attention has been paid to pilot comfort. Rudder pedals and seat back are both adjustable in flight, in addition to which the seat cushion incorporates two inflatable thigh pads, also adjustable in flight. There is ample room for a full length back type parachute and the seating position is very comfortable.

There are three independent methods of ventilation. The first is an eccentric catch raising the front of the canopy — which will hold in any intermediate position between fully open and fully closed. Take-off is permitted fully open and this is most refreshing on a hot day. The second source of ventilation is from air intakes at the nose and two highly effective adjustable vents at the front of the canopy. Finally, there is the clear vision panel.

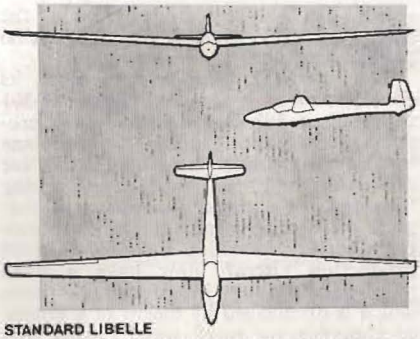
The elevator trim system and its development is interesting. On the H-301 Open Class Libelle and the initial production Standard Libelles the tailplane incidence was adjustable in flight "for minimum drag" with a separate spring trim for the elevator. It was said that such an arrangement was unacceptable for a series production C. of A. Current production aircraft now have a fixed tailplane and a very ingenious spring trim which is disengaged by means of a button on the stick for rapid speed change and re-engages in trim at the new speed when the button is released. Manual trimming —biasing the stick to spring relationship in the normal manner — is by means of another lever. All of this sounds complicated but is essentially simple.

On aero-tow it is difficult to remove small amounts of yaw precisely and completely and the damping after a lateral disturbance is relatively poor. This apart, on tow and in free flight all control forces are light and well harmonised and the aileron drag is very small.

One is also able to appreciate fully the very comfortable and essentially practical cockpit of the Libelle and the superb all-round view, particularly upwards and rearwards. The trade-off for all this is a



Libelle shown in mould.



STANDARD LIBELLE

very marginal loss of view sideways and downwards, where this is obstructed by the wing leading edges and tips.

At 180 km/h. (VNE is 220 km/h.) the Libelle feels solid and is very quiet. Although sensitive in pitch at this speed, control forces are still pleasantly light. Sharp displacement of the controls with increasing speed up to 180 km/h. suggests that closer aileron mass-balance might be a worthwhile improvement.

There is a good rate of roll throughout the speed range — measured from 45°-45° at 1.4 Vs, between 3.5 and 4 seconds.

The straight stall, airbrakes closed, occurs at 60 km/h. IAS with very slight buffet onset at less than 1 km/h. faster. The stall itself — if indeed it develops fully — is very docile, there is no wing drop and no loss of aileron control in the correct sense. With airbrakes open and when turning, the stall is still docile and recovery easy and immediate. The airbrakes — Schempp type upper and lower with spring seals — are surprisingly ineffective. They produce little trim change and no tail buffet except at high angles of attack and/or with side-slip. In view of the rather limited airbrakes the side-slip is disappointing, the rudder is not very powerful and imposes an early limit on the maximum angle of side-slip possible.

With this combination of airbrake and side-slip characteristics the present range of glide path control is relatively small and it is therefore good to know that Glasflügel are actively experimenting with more powerful airbrakes.

What can one say about performance on the basis of two flights totalling less than 2 hours? Only this perhaps, that hill and thermal soaring, in company with two Ka-6ES, a Phoebus 15R and the prototype Kestrel, one could not quite seem to hold any of them in the climb, although the Ka-6s were quite obviously inferior on the glide; that 90 km/h. at 45° of bank seemed about right, but 10 km/h. too fast for Glasflügel, who also said that the Libelle in question, being a prototype, had a pair of wings considerably heavier than subsequent production aircraft.

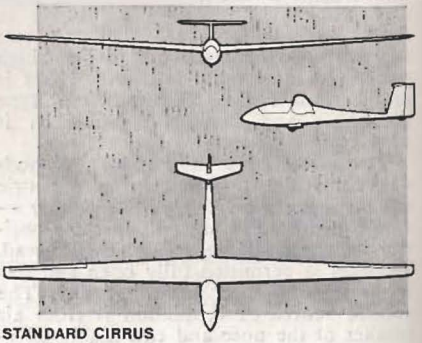
So much — and clearly it is a great deal — for the Libelle, an earlier design than the other three, and still obviously one of the best.

The Standard Cirrus

"If you are going to Germany," they said, "you must look at the new Standard Cirrus; it came 2nd in the German Nationals and won the Hahnweide international contest." As if one wouldn't anyway after studying the new GA drawing and details sent out by Martin Schempp.

Unfortunately the Standard Cirrus fuselage was very firmly in the mould when we arrived at Kirchheim-Teck. We did, however, see the 15 m. wing in manufacture and learned that production is being planned at six aircraft per month. Like others in its class, the Standard Cirrus is being offered with a fixed or retractable wheel.

The front fuselage is dimensionally almost identical to the 17 m. Cirrus and similarly equipped. The transparent portion of the canopy is slightly shorter and is removable as a single unit, making access to the rear of the instrument panel much easier. The cockpit floor, being the



STANDARD CIRRUS



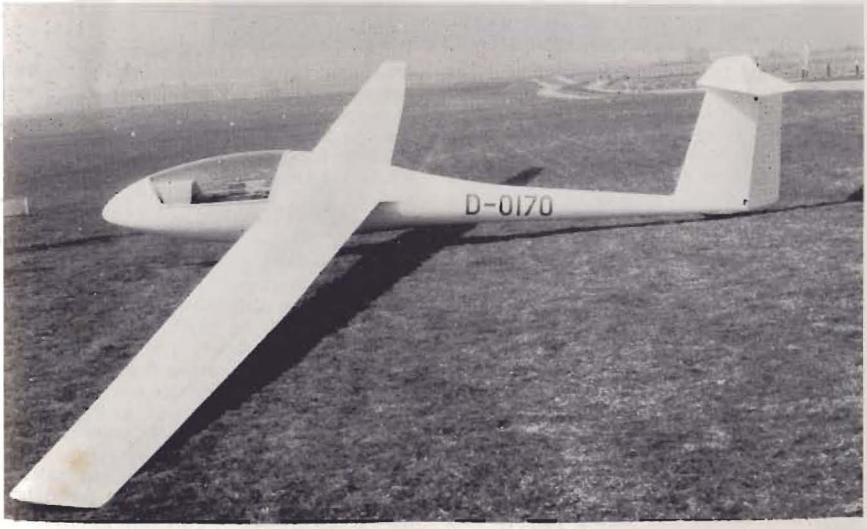
(Above) Cirrus fuselage halves being joined. (Below) Standard Cirrus.

inner skin of the front fuselage, is screwed rather than glued in position, providing easy access to control runs, etc.

Schempp-Hirth are obviously concerned about the risk of ground loop damage when landing in crops with wings of low ground clearance and airbrakes fully extended. As a result, they are considering whether to delete the lower airbrake paddle and move the upper paddle forward in order to increase its effectiveness.

Rigging is very similar to the 17 m. Cirrus, except that the self-aligning spigots have been transferred from fuselage to wing root in order to reduce width for trailering. In addition, a spigot key system is being introduced similar to that on the Standard Libelle to pull the two wing halves together.

Performance comments from all sources seem to agree that the Standard Cirrus is slightly inferior to its nearest competitors when thermalling, but that it fully makes this good as a result of better high speed performance on the glide. Once again this information concerns a prototype somewhat heavier than the target production empty weight of 190 kg. It now remains to fly this very interesting and promising new aircraft in order to complete the picture.



The LS-1

The LS-1 was the mystery ship — there has only been a single descriptive reference to it in *S & G*, page 78, Feb.-March issue, 1968, and there seemed little likelihood that it might be available for sale, although there were some stories about its success in competition.

Imagine one's surprise when a letter to Herr Lemke, its designer, produced a four-page brochure in colour! In the event, and through the kindness of Walter Schneider and Heinz Koblinsky, we were able to watch production in Herr Schneider's works and to fly Herr Koblinsky's aircraft.



The current LS-1 airbrakes, now to be replaced by a more conventional type.

According to the manufacturers, further development of the LS-1 during the next few years will be limited to the introduction of improved airbrakes — now in hand — and reducing the weight of the structure as far as possible. The LS-1 is already pretty light — 188 kg. with basic instruments.

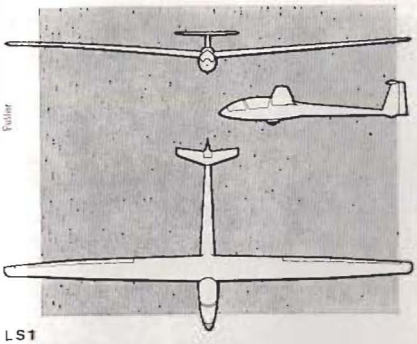
The cockpit is relatively simple but roomy and the seating position is well reclined and extremely comfortable — the shape of the backrest and its angular relationship with the squab being particularly successful. The rudder pedals are adjustable in flight.

The airbrake and undercarriage retraction controls are fore-and-aft sliding levers located respectively on the port and starboard sides. The trim lever mounted lower down on the port side of the cockpit can be locked by means of a friction damper. It was a pity to find that two canopy catches — one on each side of the cockpit — were considered necessary. Really excellent and adjustable ventilation and demisting is provided from a nose intake.

Take-off, in conditions of light cross-wind, was easy and straightforward, although the ailerons were a little slow in becoming effective. Handling on aero-tow and in subsequent free flight was entirely satisfactory, with good elevator and excellent rudder control. Although there was some aileron drag this was not objectionable, and the aircraft felt very stable directionally. The aileron response was rather like that of an 18 m. or 19 m. and created an immediate and not unpleasant "big ship" feel which was to remain throughout the flight. The controls in all three axes felt very pleasant.

Static longitudinal stability both stick fixed and stick free is small and positive and the stick force/g is low — altogether a pleasant combination. A little initial difficulty in thermalling at a steady airspeed, however, suggested that one might be coping with somewhat reduced pitch damping. The phugoid oscillation, following release of the stick after an initial disturbance, is slowly divergent.

There were no control or structural feedback effects in rough air, and sharp displacements of ailerons and elevator at speeds up to 180 km/h. were entirely satisfactory. At 170-180 km/h. (V_{NE} 210 kmh.) sharp displacement and release of the rudder produced a low frequency lateral oscillation which damped out in



LS1

less than one cycle. The rate of roll measured at 1.4 Vs was between 4 and 4.5 seconds.

The straight stall occurs at 55 km/h. IAS (64 km/h. EAS). There is little pre-stall buffet, although a sudden increase in air leakage from the top of the rear canopy joint about 7-8 km/h. above the stall provides some warning. The stall never seems to develop fully and the aircraft continues to fly wings level — with almost normal aileron control — at an increased rate of descent. Stalling in a turn results in a rapid rolling oscillation around the mean angle of bank. This is difficult to control with ailerons or rudder but is not divergent. Recovery in all cases is immediate on easing the control column forward.

The current airbrakes, about to be replaced in production by a modified Schempp design (possibly upper surface only as planned for the Std. Cirrus), consist of an upward hingeing portion of the trailing edge immediately inboard of the ailerons. This airbrake is hinged close to its mid-chord line so that the leading edge moves down while the trailing edge moves upwards.

All one can say is that as airbrakes they seem to be almost totally ineffective over 95 km/h. and below about 75 km/h. —and that two stabilised approaches in light crosswind conditions with full airbrake at about 80 km/h. resulted in touchdowns approximately 150 yards from the 25 ft. height point. Although the sideslipping characteristics are extremely good and it is possible to hold a very high rate of descent (which is aileron limited); it is nevertheless a good thing that the manufacturers are now offering what should be a much more effective airbrake design.

As to performance — flying in the same thermal as a Ka-8 and an ASW-12 — one formed the impression that the LS-1 was holding its own remarkably well. Indeed, one felt that when thermalling it might well be the best of the bunch, but how subjective such an impression is!

At DM 19.333 ex-works, with its improved airbrakes, the LS-1 must surely rank as one of the Standard Class pilot's best buys — if he is prepared to wait 4-5 years! To be fair to the manufacturers, they are trying to do something about this, and it seems likely that deliveries will improve considerably.



The LS-1. (Photos: Ann Ince)

The ASW-15

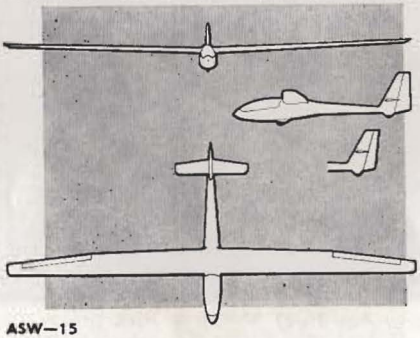
The ASW-15 has its own particular story. The first aircraft to arrive in England suffered from considerable aileron hinge friction and was seemingly loaded to and flown at a very forward C.G. position.

Having flown this particular aircraft at Bicester in June, and the manufacturer's own prototype subsequently at the Wasserkuppe, there is no doubt that the ASW-15 possesses extremely good handling characteristics and that this would by no means have been apparent to those who have flown the first UK example only.

The all-moving tailplane mounted low on the fin has, since the prototype, been repositioned higher so that it enters the downwash immediately thermalling is attempted at too low an airspeed. The effect — perhaps best described as "stick fixed hunting in pitch" — is intended to be a warning to the pilot that he is flying too slowly for good thermalling efficiency.

The cockpit is simple, roomy and comfortable; the rudder pedals are adjustable in flight. The backrest is adjustable only on the ground but three shapes are available from the manufacturers to suit different types of parachute.

Airbrake and undercarriage controls are located on the port side of the cockpit, the latter control is above and forward of the former, which seemed to be positioned rather low and too far aft for comfort. The trim control on the prototype is low down on the starboard side of the cockpit — on production aircraft this has been moved to the much more convenient port side. The lever itself is automatically spring-locked into the nearest detent on the trim quadrant. Ventilation and demisting — which seemed to be barely adequate with the clear vision panel closed — are controlled from a nose intake.



ASW—15



Cockpit shell of the ASW-15.

Handling generally was very good, once the problems of aileron circuit friction and C.G. position had been disposed of. The controls are well harmonised, response is excellent and the ailerons in particular give an excellent rate of roll at all speeds (3.5 seconds approx. at 1.4 Vs). There is some aileron drag but this is quite acceptable.

Static longitudinal stability and particularly stick force/g seemed to be slightly greater than on the LS-1 or Libelle, and a climb of 2,000 ft. in cloud demonstrated that accurate speed control under these conditions is easier than the Ka-6E. One wondered, however, whether the overall characteristics in pitch might be improved even more by closer mass-balancing of the elevator. Sharp displacement of the controls up to 180 km/h. produced no evidence of control or structural feedback. The phugoid oscillation is slowly divergent. The stalling characteristics and speed (63 km/h. EAS) were extraordinarily similar to the

The fork-and-wedge type of spar on the ASW-15.



(Below) The ASW-15.

LS-1, even to the lateral rocking in a turn. There is, however, slightly more buffet warning on the ASW-15.

The airbrakes are first-class — Schempp type upper and lower surface with spring seals. There is virtually no tendency to suck out at high speeds and they provide powerful flight path and landing control. The aircraft also side-slips well, with marked buffet airbrakes open, and there would seem to be no problem in landing it in really small fields.

What of the ASW-15 performance? Evidence gathered in the UK, by comparison thermalling and a few partial glides, suggests that it is probably equal to the SHK up to 60-65 knots but inferior at higher speeds. This is indeed very much what one might expect from the manufacturer's figures for any one of these 15-metre designs.

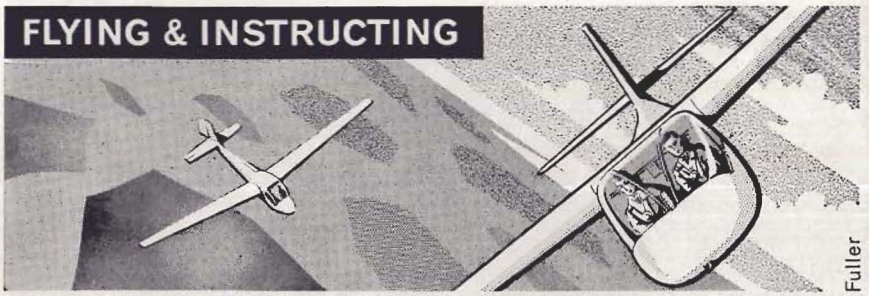
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On performance alone, therefore, all four are pretty attractive. As to which you ought to have — choosing an aircraft is a highly personal matter, and there are certain features about each design which will particularly appeal to different individual pilots.

What does seem safe to predict is that all four will be operated in increasing numbers; that between them they seem likely to dominate the entry lists in National and International Standard Class competitions; and, finally, that if the Standard Class itself comes to dominate the competition scene they will play a not inconsiderable part in the process.



FLYING & INSTRUCTING



The Instructors' Committee

ONE is frequently asked about the machinations of the Instructors' Committee. Some questions arise out of a genuine desire to be informed and to help. Others, arousing great cries of "Bureaucracy!" "Freedom!" and similar emotional noises show that a particular person, if left to his own devices, could not only run a gliding club single-handed, but in his spare time could re-write all the instruction manuals in existence, thereby allowing pilots and instructors to build a better world unencumbered with fussy things like safety and flying standards.

I am all for freedom, but it is a fact of life that freedom must exist within a framework of sensible practices that have been shown to be necessary. In this country, the BGA is responsible to the Board of Trade for keeping its house in order. To enable specialists to bring their own experience to bear on our problems the BGA Executive Committee appoints Chairmen of various sub-committees. One of these is the Instructors' Committee. The chairman of this committee is responsible, with the help of a panel of highly experienced instructors, for operating the following terms of reference:—

(a) Administration and practical aspects of the rating of instructors.
(b) Flying standards as a whole, excluding sporting aspects (i.e. badges, records).
(c) The setting and updating of all relevant examination papers.

Instructing and instructing standards are the lifeblood of gliding. If no new members who needed training existed, then we would eventually collapse. Clubs need new members to pay the subscriptions necessary to keep them viable. It's not too indelicate to say that we need their money. My job, as I see it, is to try to make sure that an innocent member of the public gets value for his money. By value for money, I mean sound basic training and good supervision while he is cutting his soaring teeth.

The equipment in which he flies is the responsibility of the Technical Committee. I don't hear complaints about them laying down the type of glue to be used or the proportions of a scarfed joint. Standardisation of flying instruction is no less vital. On request a member of the public can obtain from the BGA Secretariat a list of gliding clubs so that he can see what exists in his local area. On this list every club is equal. There is no distinction between large or small. The type of two-seaters or numbers of instructors do not appear. All that is required is for the club to be a full BGA member.

But no one will deny that there are clubs and clubs; what I would like to be sure about is that all the instruction is of the same high quality that does exist. This means standardisation, proper training to a definite syllabus, and a National rating system.

Instructor Training

It can be argued that gliding is different, gliding is special. Some say you can't apply the same standards that exist, say, in the Services, where the Central Flying School apply a distillation of over fifty years' experience in the art of flying instruction. It is certainly true that it is not feasible to spend six months with an instructor. Basic facts of life dictate that we must make do with far less. Surely this is all the more reason why

what little we do do must be to the highest possible standard and must be uniform. The syllabus laid down by the Instructors' Panel under Ann Welch was not dreamed up by chair-borne bureaucrats, but by practising instructors, some of whom were CFIs of long standing.

The introduction of the syllabus marked a great step forward in the business of giving the public value for money. It meant that instructors actually had to be trained before being let loose on their unsuspecting victims! Enlightened CFIs, of course, had long been operating their own training schemes; but many were not, and it seemed to be a good idea not only to insist on training for all embryo instructors but that it should be done in a standard manner. This is nothing new in the aviation world, but some uninformed gliding people seemed to think, and still do, that this was an iniquitous act which further restricted "Freedom". If freedom means the freedom to give to someone who trusts you, and who pays you money to teach him to fly, such bad instruction that his very life is in jeopardy, then it ought to be restricted.

The Chief Flying Instructor

To my mind, the CFI is the most important person in the gliding world. He and he alone bears the responsibility for all that goes on in the field at his club. His prime responsibility is to see that all students and pilots get the best possible instruction and supervision. The only way he can do this is to make sure that his instructors are doing their jobs properly and are teaching in a standard manner. It is useless for a pupil to be told one thing by one instructor and then to receive totally different instruction from another. He tends to get confused and frustrated and goes off to play golf.

Although he must do enough basic instruction to keep in practice, the CFI must spend much of his time with his instructors in the air and on the ground. Only in this way can standardisation be ensured.

A person becomes a CFI for many different reasons. He may be the only one willing, the only one qualified, the only one innocent enough to get involved or, best of all, the most suitable man in the club for the job. Unfortunately, politics very often dictate the choice, which sometimes give rise to problems. However, regardless of the selection processes, CFIs do their job to the best of their abilities. Most know their limitations, which is perhaps the cardinal virtue. Some willingly send their potential instructors to be trained elsewhere because they do not feel competent to do this job themselves. This is fine, but they must look after them while they are gaining experience. Encouragement, advice and assistance are vital for a new instructor, but in many cases this is lacking, causing non-standard teaching to creep in, to the detriment of the pupils.

Because a chap is elected CFI, this does not give him the right to change the principles of flight! If he trains his own instructors (and most qualified CFIs who ask are approved by the Instructors' Committee) it is only fair to them to do it according to the current standards. I expect we would all like to see some exercises changed, or the syllabuses rewritten. But until the book is altered, in the interests of standard instruction you teach by it. Instructors change clubs, and so it is in everyone's interest that instruction is the same everywhere. The local site problems can be sorted out on an acceptance check.

I hope this article goes some of the way to explain what the Instructors' Committee believes in. We want to see the man in the street given better instruction which will make him safer, cut down accidents and, in the long run, give him more enjoyment with less frustration. In this way we will not only keep the sport out of Governmental hands, but make it easier to achieve the rewards of the last real form of sporting aviation.

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COUPE D'EUROPE DE VOL A VOILE

Or—for the benefit of the Anglo-Saxons—The Eight Days of Danger

By WALLY KAHN

VISUALISE the scene. It's hot, ruddy hot. All the girls wear bikinis some of the time, some of the girls wear teeny-weeny bikinis all the time. The local town's water-wagon sprays the take-off grid in front of each row of gliders between launches, and also any pilot who feels too hot. The wine is cheap, the natives are incredibly friendly and there are no relights after landing out and positively no cloud flying.

We have always called it "The Eight Days of Danger". We must be nuts! The French, who are far more rational, call it the *Coupe d'Europe* or *Huit Jours d' Angers*. But then it does last for 12 days!

It was their thirteenth but my first (though not last) contest held at Avrille aerodrome just two miles north of Angers. Angers is the capital of Maine et Loire Department and lies in the heart of the famous Anjou wine growing district of France. It is noted not only for its Chateau which has a breath-taking collection of Tapestries, but also as the home of Cointreau. Equally famous are the many Chateaux which abound on either side of the Loire river. So as the sun slowly sinks in the West . . . back to the competition.



L'Abbaye Fontevraud turning-point.

This year the contest, which started on 13th July, saw 50 pilots from 8 countries competing in either the Open or Standard Class. No cloud flying was allowed and gyro instruments were either removed or covered with old-fashioned non-see-through material.

To digress—Peter Scott once said that the thought of a day during the British Championships where you sit around waiting for the weather to clear and then have to dice with countless others in cloud quite puts him off his breakfast. Simon Marriott capped this by saying that only one other sport is worse—the Cresta run: that puts you off your dinner the night before as well.

No relights off the airfield are allowed. Glorious! My crew, consisting of wife and daughter, could go sight-seeing, shopping, swimming or what they would rather than indulge in the usual Grand Prix racing with trailers.

All tasks set were triangles so that if you did "join the cows", you were never too far from home. For outlandings a brilliant form was provided. You completed the usual bits and then placed a cross printed in the middle of a piece of tracing paper on to your landing point and filled in rivers, roads or towns so that the control room did not have to wait for you on your return to check your pin position. But the main point of the story is the Organisation—it is fabulous. They have a Super-Human—the Patron—Monsieur Rene Hersen. He must have been made in Heaven just to run gliding contests. Let me try to explain.

A typical day. You get up at seven. You wash in cold water (no he-man stuff this, there is only cold water laid on in the camp behind the bar). At eight the tannoy announces (in French, which you must understand as even the small children over there speak French) where the grid is located for the day. You breakfast and watch keen types polish and re-

polish their gliders which are left rigged overnight ten yards from the tents.

Just before 10 am., you wander to the briefing hangar and before sitting on the chair which has your name on it (so that the Organisation gets to know your name and pilots always sit in the front), you photograph any one of the five identical start boards displayed on the hangar doors. No crowding, no rush, no daily mystery tour looking for the start board. Briefing. The Met. Man displays his Mufax weather pictures, a tephigram and wind charts, explains them quite simply and asks for any questions. He gives heights of thermals at different times and was never wrong. (It was anti-cyclonic and in fairness Wally Wallington did say that it was easy to forecast when there is no weather).

The Patron then explains the airfield lay-out, stresses the start and finish lines and announces the task. He gives you the distance and compass heading to each turn point (wonderful again—no borrowing or lending protractors). The Chief Tug Pilot states the precise time and presto, the briefing is over. Elapsed time—10 minutes.

You know the time of first take-off, so after drawing lines on your map, having a cold shower, you tow your ship out to the grid, place the nose by your number plate, which is far enough from other gliders to make Marshals relics of the Crimean War, and then you wait for take-off. If you are fool enough to remove the canopy cover and sit in your cockpit for more than ten minutes, you must have a sunshade. Mine was thoughtfully, very prettily and sweetly held over me by a charming Spanish Senorita—until my darling wife found her golf umbrella. You can't win 'em all.

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One of the start boards.

Launching takes no time at all with seven Rallye Commodore 180 tugs. French boys who move like the Wimbledon Tennis ball-boys collect the ropes and bring them to the gliders. Soon you are airborne near the start gate ready to go. Before starting you must photograph the time clock on the ground near the windsock to prevent cheatin' ways of nipping off to the first turn point, coming back and then crossing on the way to the second. It has been done!

You fly the task, final glide across Angers at about 1,000 ft., cross the river and hey presto you can't see a thing all the way in because it is dead into a setting sun. You land, fill in your form, use up the rest of your film, go to control where two delightful ladies are in charge and then you get down to the serious business of line-shooting with Pernod. Thus three people at briefing, the tug pilots, the rope handlers and two ladies. Never a cross word, never any bustle, never a panic.

It was like that every day. Scores back from the Bull/General Electric computer by nine, except on the day when that magnificent Gold C pilot Neil Armstrong landed on the moon and our computer suffered a heat stroke and scored us on a 15,000 km. triangle at 500 km/h. If I had my way, no one attempting to run a contest would be allowed to do so until he had sat at the feet of Rene Hersen. Mind you, the weather helped.

The flying was fascinating and different. In the Open Class the spread of gliders ranged from ASW-12 through BS-1 and other glassware to the Darts. As yet handicap is still a dirty word though one wonders what will happen when the super ships see the light of day



Henry Stouffs and his family. (Photos: Wally Kahn)

in large numbers. On one 250 km. triangle, the ASW-12 used two thermals on the second leg and one on the final leg. We left a thermal together on one flight and I swear he switched on his re-heat and just left me standing as he disappeared at over 200 km/h. Yet it is interesting to see that the winner's speed for the same task is not all that different between Open and Standard machines. There is a moral there somewhere.

Thermals were usually 4 to 8 knots in strength and plentiful. Maximum heights varied between 3,500 and 6,000 ft. and tasks were usually started after 13:00 hrs. As thermals tended to strengthen in the afternoon, the trick was to leave as late as possible. The main problem with this form of contest is that without cloud flying, gaggles tend to stick together and you can see gliders all the way round the task. Furthermore with speed flying techniques where you pull up to the stall when you hit lift and then press on and only use thermals if you get low, your glider's performance is obviously of paramount importance. Given more or less equal pilot skill, it is virtually impossible to improve your daily placing unless guys ahead of you make a mistake and join the cows.

The classic example was one pilot with a very hot ship who followed George Burton like a very well trained puppy and would only go ahead of his master on the final glide. After five days and some harsh words from George, this pilot followed Wolfgang Gross who was flying a BS-1 and repeated the performance. Cloud flying would certainly have stopped that little game.

I found it very depressing as I always arrived at the bottom of a thermal and if by luck and a stronger core climbed back to the same height as the hot ships, by the time we arrived at the next to-be-used thermal, there was I at the bottom again. I flew the Dart at 75-80 knots between thermals and felt like a Sunday driver at Silverstone racing circuit during a Formula One race. Another new ploy practised over there was the manner in which some of those guys joined a crowded thermal. They come boring in at 150 plus km/h. and lose their speed in a climbing turn, scattering and frightening those already there. There were some interesting near misses!

In the Open Class, only the FK-3 all-metal glider has not been seen in Britain. Naturally the Standard Class was a fairer contest as the spread of performance was not so great as in the Open. The French-built SF-27 which they call the Faucon A-69 performed remarkably well and seemed to hold its own against the Dart and Ka-6E. The Italian prototype M-300 appears to go like hell but it frightened the pants off me one day when it spun off 300 ft. in the thermal above me. To my mind, the outstanding newish glider is the LS-1. It is beautiful to look at, it goes like a bomb (it seems to be as good as the SHK) and is so delightfully roomy that even I can get my 6 foot 4 inch frame into it comfortably. The only snag is the very long delivery quoted, but the manufacturers (Lemke and Schneider, hence LS) are determined to shorten this.

Fifty gliders started although three withdrew after landing accidents. In large areas around there, there just are not any suitable fields, so if you have to land . . . ! Aart Dekkers, the Dutch champion, was suddenly taken very seriously ill and was still in hospital when we left Angers.

Every entrant received a prize which made one feel good. The one snag for us was the vast cost of getting there and back. To sum up, it was a fascinating contest with fabulous weather. I flew 44 hours and 2,200 kms. in ten flights and have never pushed my Dart so hard for so long. Thank you again Patron and your wonderful team. Please may I come again?

Triangles set and daily winners:

July Date	Open Class kms.	km/h	Standard Class kms.		km/h
13—257	Dekkers	?		Girard	?
14—212	Bucher	73		Defosse	66.5
15—203	De Dorlodot	82.5		Memmert	66.5
17—249	De Dorlodot	85.5		Lartiqu	78.7
18—248	De Dorlodot	72.6		Memmert	68
19—199	Hauenstein	82		Memmert	77.5
20—249	De Dorlodot	88.5	225	Rantet	85
21—277	Labar	57	236	Duran	49
22—302	De Dorlodot	75.5		Memmert	73

* * *

Final Placings

Open Class		
De Dorlodot (Belg.)	ASW-12	8303
Labar (France)	Libelle 301	7974
Gross (Germ.)	BS-1	7955
Weiss (France)	Cirrus	7440
Recule (France)	Phoebus 17	7314
Burton (UK)	SHK	7311
Geskiss (France)	Cirrus	7143
Hauenstein (Switz.)	Elfe AN-66	7104
Bucher (Germ.)	BS-1	6808
Höhn (Germ.)	BS-1	6041
Kahn (UK)	Dart 17R	5931
Burns, Anne (UK)	Cirrus	5872
Spychigar (Switz.)	Cirrus	5184
Litt (Belg.)	FK-3	4853
Van Assche (Belg.)	Libelle	4755
Dekkers (Holl.)	Diamant 18	4572
Dereppe (Belg.)	SHK	3206
Malpas, (UK) Sandford (UK)	Dart 17R	2906
Gavillet (France)	Phoebus 17	?
Smet (Belg.)	Cirrus	?

Standard Class		
Memmert (Germ.)	LS-1	8609
Lartiqu (France	Libelle	8053
Mercier (France)	Edelweiss	7686
Delvigne (France)	LS-1	7422
Stouffs (Belg.)	Ka-6E	7419
Defosse (Belg.)	Ka-6E	7198
Gombert (France)	Wa-26	7120
Rantet (France)	M-300	6802
Hirtz (France)	SF-27	6778
Bluekens (Belg.)	Ka-6E	6582
Pissoort (Belg.)	Libelle	6168
Waldenberger (Germ.)	Libelle	6103
Nizet (Belg.)	Ka-6E	6017
Ruch (Switz.)	Elfe	5762
Bourgard (Belg.)	Ka-6E	5747
Rued (Germ.)	Libelle	5579
Hunalt (France)	Edelweiss	5438
Tavernier (France)	Edelweiss	5420
Fache (France)	Edelweiss	5292
Anglada (Spain)	Phoebus 15	5187
Girard (France)	Edelweiss	5163
Duran France)	Ka-6E	4793
Darriau (France)	Wa-26	4672
Schaffner (France)	Phoebus 15	4577
Dazin (France)	Edelweiss	4495
De Preter (Belg.)	Foka 3	3927
Bohli (Switz.)	Phoebus 15	2934
Hallin (Belg.)	Ka-6E	2419
Brilling (Germ.)	Foka 4	?

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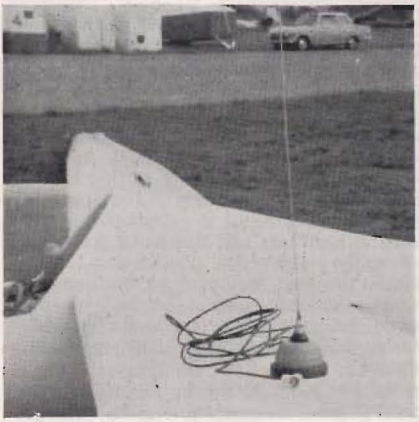
A NEW CAR AERIAL SYSTEM

By WALLY KAHN

AT last a car aerial with a magnetic base is being produced by a firm in this country and sells complete with twelve feet of feeder cable for £7 (about 17 US Dollars), plus postage.

The two obvious advantages of this system are that you do not have to drill a hole in the roof of your shiny new motor car and you have no fixing problems, no trying to feed the cable behind the interior trim, no buying the various bits and pieces (which cost nearly as much as the unit) and no dry solder joint when you have finished the installation! It is also a boon to the glider syndicate with only one car radio as the partners can now swap the complete installation from car to car. It will make the club pilot's life easier if he can borrow a ground radio for short periods like Regionals etc.

The unit is made by Messrs. Radio Communications Co. of 16 Abbey Street, Crewkerne, Somerset, and is called the Type MA Magnetic VHF radio-telephone aerial. It is robust, weatherproof and has been tested in excess of normal maximum road speeds. When ordering, you must specify your radio frequencies so that the whip aerial can be cut to the appropriate length and an extremely low VSWR can be obtained thereby.



For the technically minded, the vital information is: Feeder cable is UR76. Impedence 50 ohms. It has a protective Neoprene boot and yet without this boot the adherance on ¼ M.S. plate is 130 lbs. min. Max. power rating 50 watts. 3db Bandwidth 56°. The frequency range is 68—178 mHz.

A beautifully made unit which will certainly make life easier for proud and lazy glider pilots!

THROW OUT THAT CUSHION

By C. G. DELAND

ABOUT six months ago I outdid Philip Wills himself, albeit unwillingly, when I dived too steeply under a single-strand power line and fractured *two* vertebrae to his one. While the injury was not permanently incapacitating it was painful, and could well have been very serious if the ground had not been unusually soft owing to recent heavy rain. While recovering, I had ample time to think about the whole question of safety in gliding, particularly with respect to back injuries. At any rate, this made a change from watching delectable cumulus clouds float by overhead and the last activity tended to annoy my wife, as evidence of my continuing addiction.

It would seem reasonable to say that the compression fracture of one or more vertebrae is almost as typical an injury in our sport as the broken leg in ski-ing. While less frequent than the latter, it is still common enough. I know personally of five cases, including a former Australian champion and a leading glider manufacturer, and these are only in the by-no-

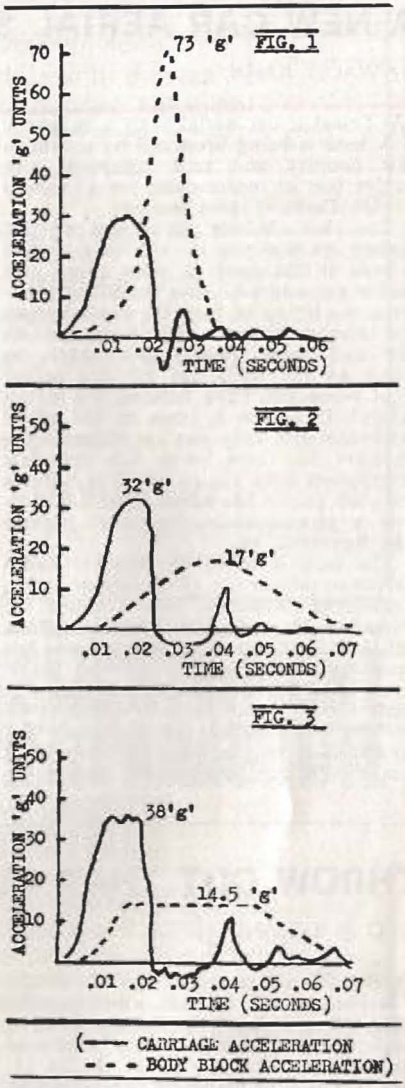
means-large local gliding fraternity. Also, the ultimate effects may be rather more serious than appears at first, although recovery within six months is the rule. There must be many cases when lesser injuries without fracture, perhaps repeated many times, cause an acceleration of the effects of wear and tear in the spine, already vulnerable to early ageing owing to the strains caused by our habit of walking erect.

These compression fractures are brought about by a sudden acceleration of the body in a sitting position, combined with some flexing of the spine forward, the degree of this depending partly on the tightness and design of the straps, as well as the shape of the seat. This is similar to the effects of an ejection seat, and much information on human tolerance to brief accelerations has been obtained from experiments with this device.

What loads can the human spine take? For short accelerations (up to 0.15 seconds) these are surprisingly high and in one test (Ref.1) involving an ejection seat, 26 people in a total of 60 experiments withstood 18-21 *g* in a total duration of 0.1 second without injury and with only mild pain. The oldest of these people was aged 53 years and their weights ranged from 130 to 200 lbs. The importance of flexion of the spine was demonstrated by one subject who lost his grip on the face curtain and suffered chest and back pain for months as a result.

As the glider which I flew into the ground suffered only minor damage—a cracked trailing edge on one wing and slightly bent fittings—one might reasonably ask how I managed to accelerate at the 25 *g* or so which one might expect would have been necessary to produce such an effect on my back, without wrecking a glider which is stressed to about −6 *g*?

The answer would seem to be that the thin rubber cushion I was sitting on, by adding some slack to the pilot-seat system, made things worse than they would have been had I merely sat on the bare wooden floor of the machine. A simple comparison with an egg in a wooden box may make this clearer. If the egg is glued to the side of the box and the box is shaken, probably it won't break; but it certainly will if allowed to rattle around loose.



This effect is shown in Fig. 1, which demonstrates results of tests done by A. P. Vulcan and S. R. Sarrailhe of the Australian Department of Supply Aeronautical Research Laboratories (Ref.2).

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It can be seen that the 2 in. thick, flock-filled cushion on a wooden base, as used in Chipmunks in Australia, more than doubled the *g* load on the pilot relative to the acceleration of the cockpit floor in a simulated crash. This, with other tests, showed that a great deal of protection could be given to the pilot by using either of the main kinds of cushioning.

EXAMPLE A. Firm flexible polyurethane foam of high modulus and 5 in. thick in these tests. Two were tested—one from Germany where it is called *Schaumstoff* (foam material) and apparently is used in gliding, and the other a local product made in Melbourne. Both did very well in these tests, as shown in Fig. 2.

EXAMPLE B. Energy-absorbing material sandwiched between two plywood load spreaders, with a 1 in. thick layer of softer polyurethane sponge under the pilot as a comfort pad. One type used a paper honeycomb element 4 in. thick and the other rigid polyurethane blocks of the same depth. These cushions gave a very high degree of protection with even energy absorption at a safe level of *g*—see Fig 3. This speaks for itself.

The importance of this work to gliding is obviously great, especially as gliders have very high carriage acceleration owing to the thin rigid structure between the pilot and the ground, as well as to their small, often rigid undercarriage. Still, let's face it, for several reasons which need not be gone into here, we are perhaps a little more prone to this kind of accident causing these headward accelerations than are powerful aircraft. It is obvious, too, that gliding can be made safer, perhaps enormously so, if gliders were designed with seats which behaved like a composite cushion with, say, 8 in. of deflection under a load of 180 lbs. But it is too much to hope that glider manufacturers will incorporate this kind of protection automatically in their new models or that people would buy them if they did, although the loss of performance would be very slight and would not matter at all from the competition point of view if the other fellow were in the same boat.

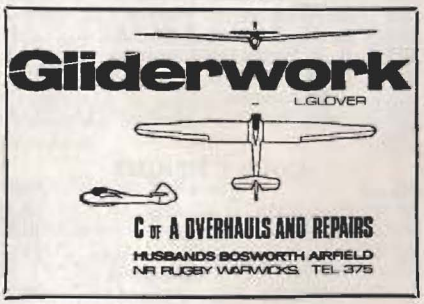
However, the Plimsoll line was not invented by the shipbuilders and shipowners of the day, and the answer seems to lie in sensible regulations. At first sufficient headroom could be made obligatory in two-seaters and in the Standard Class to allow, for example, 5in. cushions of the right type to be used by at least 90% of people and, later, energy-absorbing seats of certain specifications could be part of normal airworthiness requirements for all aircraft. Eventually, it seems probable that the technology of energy absorption will have a large part to play in any design of glider as a matter of course, with a considerable improvement in gliding casualty figures.

Acknowledgment is made to the Chief Superintendent, Aeronautical Research Laboratories, Melbourne, for permission to use the above figures.

* * *

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(2) A. P. VULCAN and S. R. SARRAILHE. The Development of a Seat Cushion for Attenuating Vertical Forces Transmitted to the Spine in an Aircraft Crash. *Structures and Material Report* 316, *Australian Department of Supply*.



GLIDING CERTIFICATES

DIAMOND HEIGHT

No.	Name	Club	1969
3/91	J. R. Barrows	Surrey & Hants	19.4
3/92	H. Dyce	Fulmar	24.5

DIAMOND GOAL

No.	Name	Club	1969
2/284	P. Pozerkis	London	22.5
2/285	B. Brownlow	Bicester	22.5
2/286	R. H. Traves	618 G.S.	7.6
2/287	P. Trenchard	Swindon	27.6
2/288	R. H. Wright	Dorset Flying Club	6.6
2/289	R. P. Saundby	Bicester	28.6
2/290	A. R. Caveen	Midland	28.6
2/291	J. Allerton	Wrekin	28.6
2/292	P. G. Jeffers	Airways	7.6
2/293	N. P. Elliot	Surrey & Hants	19.4
2/294	C. J. Gill	Bicester	28.6
2/295	P. Grenet	Airways	30.4
2/296	J. H. Stanley	RNGSA	5.6
2/297	F. J. Sheppard	Thames Valley	7.6
2/298	P. W. Williams	Army	5.6
2/299	M. H. Livesay	Heron	5.6

GOLD C COMPLETE

No.	Name	Club	1969
226	T. P. Docherty	SGU	19.5
227	B. B. C. Watson	Surrey & Hants	22.5
228	J. R. Barrows	Surrey & Hants	19.4
229	R. Feakes	Moonrakers	5.4
230	R. H. Wright	Dorset Flying Club	18.6
231	R. P. Saundby	Bicester	28.6
232	A. R. Caveen	Midland	28.6
233	J. Allerton	Wrekin	28.6
234	J. H. Stanley	RNGSA	5.6
235	P. J. Partridge	Coventry	26.5
236	K. J. Nurcombe	Coventry	29.5
237	Ann Welch	Marfa, USA	20.6

GOLD C HEIGHT

Name	Club	1969
R. T. Constable	SGU	30.3
T. J. Goodwin	SGU	30.3
A. Davie	Cambridge	25.5
L. C. A. Haynes	Derby & Lancs	30.3

GOLD C DISTANCE

Name	Club	1969
B. Brownlow	Bicester	22.5
P. Pozerkis	London	22.5
R. H. Traves	618 G.S.	7.6
P. Trenchard	Swindon	27.6
P. G. Jeffers	Airways	7.6
N. P. Elliot	Surrey & Hants	19.4
C. J. Gill	Bicester	28.6
P. Grenet	Airways	30.4
F. J. Sheppard	Thames Valley	7.6
M. H. Livesay	Heron	5.6

SILVER C COMPLETE

No.	Name	Club	1969
2391	R. I. Armstrong	E. Midlands	19.4
2392	G. D. Humphries	Bath & Wilts	27.4
2393	P. R. Luckett	Kent	30.4
2394	E. M. Mallinson	Crusaders	11.4
2395	P. Clay	642 GS	19.4
2396	G. C. Harris	Bristol	19.4
2397	S. A. Stewart	London	8.4
2398	C. R. Chorley	Surrey & Hants	29.4
2399	S. L. Javett	Surrey & Hants	29.4
2400	L. J. Bittlestone	Air Scouts	26.4
2401	H. B. Watkins	Ulster & Shorts	16.4
2402	L. Ballard	Midland	4.5
2403	D. Searle	Heron	18.4
2404	G. E. Ramsden	Avro	16.5
2405	P. A. King	Cambridge	20.5
2406	D. M. Toulson	London	20.4
2407	K. W. Sherriff	Staffordshire	21.4
2408	Elizabeth Edwards	Cambridge	28.5
2409	D. B. White	Surrey & Hants	3.5
2410	J. Bundy	Swindon	22.5
2411	F. G. Bradney	Surrey & Hants	28.5
2412	J. C. Taggart	Ulster & Shorts	31.5
2413	P. W. J. Martin	In Australia	15.1
2414	R. J. L. de Las Casas	Kent	26.5
2415	R. A. Mitchell	RAE	7.6
2416	J. Watson	RAFGSA	7.6
2417	R. A. Wood	Bristol	19.4
2418	D. J. Butler	RAFGSA	7.6
2419	S. E. Richardson	616 G.S.	7.6
2420	P. B. Nelson	RAFGSA	7.6
2421	L. J. Hockings	Bristol	5.4
2422	G. F. Brindle	Crusaders	27.4
2423	H. Whelan	Cambridge	2.6
2424	P. L. Sears	Cambridge	11.6
2425	P. I. Normand	E.T.P.S.	22.5
2426	W. Fearon	Bannerdown	14.6
2427	P. D. Wheatland	Derby & Lancs	12.6
2428	N. S. Dawson	643 G.S.	7.6
2429	H. D. Gardiner	Kent	19.4
2430	D. Bowden	London	7.6
2431	C. R. Spink	RAFGSA	14.6
2432	S. R. Lewington	Cotswold	9.6
2433	P. F. J. Martin	Cotswold	19.4
2434	M. C. Mercer	Two Rivers	20.4
2435	E. H. Aylett	Bristol	20.4
2436	Gail Jackson	Derby & Lancs	1.6
2437	G. C. Fidler	Burton & Derby	7.6
2438	D. Biggs	Portsmouth Naval	7.6
2439	E. R. Giles	Thames Valley	14.6
2440	Gillian Howe	Cotswold	28.6

2441	J. J. Smith	Essex	22.6
2442	R. C. Sharman	Chilterns	14.6
2443	L. A. Edyvean	Bath & Wilts	7.6
2444	A. M. Withington	Anglia	1.6
2445	E. W. Fry	Worcester	4.6
2446	H. Evans	South Wales	1.6
2447	J. Janssen	Two Rivers	21.6
2448	G. M. Hall	Derby & Lancs	25.6
2449	M. J. Whitman	Bristol	20.4
2450	B. T. Taylor	Humber	26.6
2451	M. B. Sutton	S. Command	29.6
2452	A. M. Southwood	Essex	28.6
2453	P. G. Cook	Eagle	8.6
2454	H. G. Stachowski	Polish	28.6
2455	Judith Haslam	Surrey & Hants	27.6
2456	P. K. Goozee	Bicester	29.6
2457	H. F. Oxer	Wrekin	20.4
2458	A. T. Appleby	Derby & Lancs	1.6
2459	H. H. Stevenson	Bannerdown	29.6
2460	B. N. House	Mendips	24.6
2461	A. J. Whitlock	Chilterns	29.6
2462	Christine Day	Swindon	29.6
2463	A. T. Kenworthy	Yorkshire	6.7
2464	L. J. Welburn	Doncaster	5.7
2465	P. S. Wybrow	Cornish	22.6
2466	H. R. Sharman	Surrey & Hants	11.7
2467	D. Wright	Bath & Wilts	28.6
2468	G. C. Woods	Bicester	28.6
2469	P. Lazenby	Yorkshire	6.7
2470	G. K. Moore	Crusaders	2.7
2471	E. F. Higgins	Cotswold	12.7
2472	M. R. Pack-Davison	Southern Command	28.6
2473	Sir Roger Conant	Bicester	27.6
2474	P. J. Martin	Coll. of Aero.	13.7
2475	H. F. Lamphrey	Serengeti	7.7
2476	J. K. Bamford	643 G.S.	7.6
2477	M. C. Barker	Derby & Lancs	5.7
2478	R. Terrett	London	29.6
2479	C. R. Ayers	Worcester	14.7

BGA NEWS

British Team Manager

The British Team pilots (announced in the Aug. issue, page 326) have selected Gerry Burgess to be their Team Manager. This appointment has been confirmed by the Association in early August.

Gerry was reserve pilot in Argentina, 1963, and Team Manager at South Cerney, 1965.

Paul Tissandier Diploma

Congratulations to Wally Kahn on the award of the Paul Tissandier Diploma for 1968 by the FAI in recognition of his work for British gliding for over 24 years. The citation refers to him as "one of the most important and impressive figures in post-war British gliding." He has served on the BGA Council in many capacities, and has shown a remarkable flair of encouraging patronage, and initiating negotiations with commercial interests and government departments.

Perhaps Wally's greatest triumph was concerned with Lasham's long lease of the airfield and the building of its club-house. A pilot of no mean ability, he jointly holds several British two-seater records.

Slingsby Aircraft Ltd.

Many of our readers are already aware of the distressing fact that the Company has been in the hands of a Receiver since July, at which time it was too late to record this sad happening in our Aug.-Sept. issue of S & G.

However, it is now believed that a certain well-known Company is resurrecting Slingsby Aircraft Ltd., and that they will be back in business very soon on all fronts reverting to the old established name of Slingsby Sailplanes.

In particular a movement into a new area, covering the manufacture and sale of glass-fibre sailplanes in conjunction with a well establisned manufacturer of this type of aircraft, will help Slingsby Sailplanes to assume once again the position which they so successfully occupied up to a few years ago.

The production of the T-53, as well as all repairs and maintenance on all Slingsby products, will also be resumed.

We hope that the final negotiations will be completed successfully so that British glider manufacture will again form a part of the leading glider industries of the world.

Project Sigma

Due to the difficulties being experienced at Slingsby Aircraft. all work on Sigma stopped on 11th July. It is now hoped to restart work in September entirely separate from Slingsby's in the south of England.

This added delay must, of course, put back still further the expected first flight date. We hope to fly in the Spring, but a more specific date must depend on when work is actually restarted and an analysis of the rate at which it can be expedited. H. C. N. G.

South African Nationals

Pilots who wish to fly in this event at Bloemfontein from the 27th December to 11th January, should write forthwith to Ted Rudnick, The Aero Club of South Africa, P.O. Box 2312, Johannesburg, South Africa, for further details.

Final Results — Northern Regionals 16-24 August

Pilot(s)	H'cap %	Sailplane	1 964	2 658	3 376	4 1000	5 1000	6 620	Total Points
1. Seymour, J. C.	96	Ka-6E	464	512	376	1000	455	620	3927
2. Sandford, R.	90	Dart 17R	920	198	373	328	1000	338	3157
3. Knipe, F.	96	Ka-6E	964	658	0	325	447	604	2998
4. Seth-Smith, M. P.	96	Ka-6E	885	114	242	667	447	474	2829
5. Riddell, J. C.	100	Ka-6CR	784	122	139	888	128	338	2399
6. Ash, L.,	98	Skylark 4	570	—	—	—	—	97	
Gaunt, N.			—	273	79	708	345	—	2072
7. Hill, M. B.,	100	Ka-6CR	348	82	—	353	—	—	
Winning, E. J.			—	—	180	—	922	76	1961
8. Crawshaw, G.,	102	Olympia 463	420	—	0	—	366	110	
Kenworth, A.			—	165	—	477	—	—	1538
9. Mawson, J. J.	98	Ka-6E	454	—	0	546	—	121	
Boddy, R. A.			—	35	—	—	0	—	1156
10. White, A.	110	K-13	457	18	0	506	165	0	1146
11=Millett, D. H.	100	Skylark 3B	515	89	0	284	148	50	1086
11=Tarr, J.	106	Olympia 460	355	70	0	467	139	55	1086
13. Adams, A. B.	102	Olympia 463	589	15	0	70	232	150	1056
14. Provins, J.	84	HP-14	60	111	0	358	178	162	869
15. Benson, M.	98	Skylark 4	9	—	0	—	165	—	
Banks, C.			—	44	—	458	—	125	801
16. Ramsden, P.	125	Olympia 2B	0	50	0	149	143	0	342

Final Results — Lasham Regionals 26 July-3 August

Pilot(s)	H'cap %	Sailplane	1000 1	1000 2	1000 3	1000 4	143 5	620 6	Total Points
1. Jones, R.	82	Cirrus	938	835	1000	771	105	620	4269
2. Watson, A. J.	96	Ka-6E	1000	1000	719	995	106	239	4019
3. Paul I.	98	Skylark 4	818	710	810	878	102	506	3824
4. Cousins, R.	90	Dart 17R	428	711	755	862	40	577	3373
5. Jerzycki, E.	98	Pirat	487	837	462	1000	106	404	3296
6. Watson, B.B.C.,	98	Skylark 4	219=	—	—	—	—	—	
Watson, Patricia			—	514	751	878	75	541	2978
7. Gee, M. I.	90	Dart 17R	359	880	356	717	143=	497	2952
8. Przewlocki, J.	90	Dart 17R	273	792	798	833	143=	63	2902
9. Eccles, J. A. S.	90	Dart 17R	258	—	414	—	—	—	
Burgess, P. G.,			—	913	—	—	66	—	2471
Day, C. G.			—	—	—	820	—	0	
10. Horne, P. R.	90	Dart 17R	157	—	534	—	61	—	
Barrows, J.			—	27	—	810	—	484	2073
11. Krzystek, T.	98	Pirat	0	376	427	946	75	192	2016
12. Stark, E.	100	Ka-6CR	226	337	411	868	36	DNF	1878
13. Vivian, J. A.	98	Skylark 4	5	—	137	—	57	—	
Challinor, K.			—	604	—	872	—	192	1867
14. Honey, M.	98	Skylark 4	45	200	293	667	83	200	1488
15. Burne, A. G.,	98	Skylark 4	219=	—	704	—	44	—	
Buckley, Philippa			—	18	—	0	—	0	985
16. Dimock, H. R.	80	Diamant 18	207	WITHDRAWN					207

Future Events

Dec. 27-Jan. 11. S. African Nationals.

Jan. 18-19. International Symposium on Soaring Flight, Los Angeles.

Feb. 14. 2nd Symposium on Competitive Soaring, Pittsburgh, Pa.

Mar. 14. 2nd Symposium on Soaring Cross-country, Pittsburgh, Pa.

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

Aviation Art Society

Pictures from the Battle of Britain Collection showing at Dominion Theatre, W.1, until 26th Oct. On 5th Nov. Peter Scott opens Exhibition/Competition at the Club, judges, and presents the new Gliding Trophy and prize donated by the BGA for the best gliding picture by a non-professional artist. Entry forms from Mrs. Bonham — return by 20th Oct. Annual dinner on 8th Nov., Eccleston Hotel, S.W.1.

CORRESPONDENCE

POWERED GLIDING

Dear Sir,

I really thought I had said my lot on this subject, but the letter by J. C. Riddell in S & G April-May, 1969, makes me see red.

To avoid repetition, please read this letter of mine in conjunction with his, whilst I knock a few chips off the glossy coat of paint he has spread over the present gliding system.

The one object of a gliding club should be to get its members into the air. Any member who joins for the "fun" (?) of working on the ground could get the same "fun" from any other group or organization. Anyone who places the ambition to drive a double-decker bus before his ambition to soar solo is certainly zany and is probably responsible for club statistics which show more bus driving than gliding.

Frustration in gliding is not restricted to ambitious beginners. The most valuable people who slip through the fingers of the gliding movement are the ones who reach a reasonable standard of competence and then get married. These experienced enthusiasts simply haven't the time for "comradeship of joint effort" — all day — and driving double-decker buses in order to get "some flying" if they are very lucky.

Super-saturation in membership is not solved by forming another club, because the few who can fly — they have the time available — are able to do so only because of the subscriptions paid by many, many more who cannot. Let's face it, if *every* club member turned up at any club in this country at any one time, it would take days to get all of them one launch and circuit.

The self-launching glider is of greatest importance to the small club. To operate it requires only a place to keep it in its trailer and a field from which to fly. Initial cost may be higher than that of an unpowered glider but this will be recovered rapidly by the greater utilisation possible. More flying means more income.

By the way, Mr. Riddell, who is the slightly odd private-owner who takes off in his powered glider across-wind?

With regard to the possibility of cheating with a powered sailplane when competing against unpowered ones, isn't this just a little absurd? The letter by P. G. Jeffers in S. & G. April-May, 1969, shows clearly the disadvantage inherent in the powered sailplane when it comes to the decision to re-start the motor in flight. Anyone who wants to blind around a triangle with his motor on and then try to convince us that he did it on thermals is welcome to try. He will not get the same satisfaction from cheating as he would get from winning honestly.

Take heed, all you PPOPs — Purist Private Owner Pundits. The day of the motor-glider is at hand. I'll bet that, when it reaches the degree of development reached already by your unpowered sailplanes, you will be proudly showing off your powered Sigamantus with its mini-motor which tucks away out of sight after you have launched yourself.

In the meantime, we who are out in the cold as far as present day gliding goes, are waiting anxiously for the small club to sell its present two or three gliders which sit idle on the ground and buy a powered two-seater. Then sell us flying, flying, flying! We don't mind paying for that.

No doubt any zany types who want to drive a double-decker bus will send their club membership to Mr. Riddell. I have spent at least £40 on club membership, which has resulted in more driving than flying.

With the present state of the organisation, gliding needs us as much as we need gliding. Come and get us.

More flying means more members, means more money, means more gliders, means more flying, means more members . . . means more power to the elbow of the BGA in getting gliding recognised by *everyone* as a great sport and pastime.

The motor-glider means more flying . . . for all!

Ipswich, Suffolk. PETER M. WARREN

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METHODS OF SCORING

Dear Sir,

Now that we have seen a new scoring system in operation in two National Championships, I feel that I must voice what I expect will prove to be quite widely held views on the subject.

Although the present methods of scoring for races is undoubtedly a long overdue improvement on the old "speed squared" system, it does have flaws which were highlighted by the successful speed tasks flown in the Sports Class this year. In my opinion, the system has two basic faults. First, while the old system overrated distance with respect to speed, the pendulum has now swung too far the other way. Thus, as we saw at Dunstable, it is now possible for a pilot to complete a speed task at 75% of the winner's speed and find himself with 100 points. This would be perfectly fair if equally mediocre performances were penalised equally on distance days or days on which few pilots complete the task. As it is, 100 points on a distance day often means one thermal past X, and staying airborne for as long as the daily winner at 75% of his speed could be good for 700 points or so. Furthermore, whether a day is "speed" or "distance" depends on the optimism of the task-setter. My second objection is that marking in terms of the slowest finisher as well as the fastest can produce some odd results. Unlike daily winners, slow finishers are rather eccentric and unpredictable and their performance may bear little relation to what the day is worth, especially on under-set tasks. The recent Dunstable Nationals again gave an example of this.

On Day One, a 200-km. triangle was set and 40 out of 41 pilots completed. Thirty-nine pilots had handicapped speeds distributed evenly over the 51–67 km/h. range. However, one gentleman kindly completed the task at 43 km/h, so 51 km/h.—76% of the winner's speed—was worth 350 points. On Day Six, again we had a successful 200 km. task; this time 35 pilots—I think—completed. The day died a little earlier than Day One, so the really slow competitors did not make it back, giving the slowest finisher—again with 75% of the winner's speed—about 170 points, and the points of the other finishers were distributed evenly over the 170–1,000 point range.

This, combined with the abolition of any significant bonus for merely completing an easy task, suggests that if a pilot has a really colossal time-wasting fumble he should deliberately refrain from finishing, so as not to push everybody else's score up. I know that the 60% "cut-off" rule is supposed to take care of this, but clearly, in a Nationals, 60% is just not high enough. Constructive suggestions? Well, I've had one idea in the last couple of days—still partly baked. Why not use the average speed of the day as a second fixed point for speed scoring? Thus, a pilot who finishes at exactly the average speed—after handicap—gets, say, 55% of the speed points. The fastest, of course, gets 100% and the others are scaled in proportion; anyone coming out negative gets zero. This should give slow finishers about 10% of the speed points—not an intolerably high figure. At the same time, to maintain some sort of comparison with distance days, we should have a minimum of 200 distance points. To the objection that this will "effectively devalue successful race days to 800 points", I can only reply that any distance day on which everyone passes X is similarly "effectively devalued".

Old Harlow, Essex. RICHARD BRISBOURNE

TIMING OF NATIONALS

Dear Sir,

I was only at the Open Class Nationals for a couple of days so I am not in a position to comment on Dr. Javett's letter in the Aug.-Sept. issue and the reasons for the attitude of competitors there—except to say it has always been apparent that the weather has a considerable effect on the mood of pilots and crews. Given Sports Class sunshine, I guarantee Dr. Javett would have had no reason to write as he did.

Which brings me to . . . can we please get our priorities right regarding the timing of Nationals? The reason the Open Class in 1969 started as early as 17th May

was because great plans were made to select the Marfa team in time for them to get in lots of World Champs.-type practice in England during the summer.

Surely we have our priorities wrong if we reduce significantly the chances of getting good soaring weather in Nationals for a reason like this? Should not the first priority be to choose dates for the Nationals which give the best chance of sunshine? After all, 40 pilots plus another 100 or so crews spent a lot of money to go to Lasham—yet by the met. statistics available to us it was apparent the chances of getting a good week that early in the year were small.

Of course, whatever the dates chosen, we can never be certain of getting the weather we want. However, the best evidence Peter "High" Wickham can find in Met. Office records suggests that early June and early September are the right periods to choose. Early June was absolutely right this year, and it will be interesting to see what September brings. These weeks also have an incidental advantage: arable crops are either not too high or they are stubble.

The main plea I want to make to the BGA and organising clubs is: please put weather considerations *first* and do not ever again be tempted by Bank holidays or British Team lobbyists to start Nationals in the middle of May.

London Gliding Club. ROGER BARRETT

PS.—Having written this on 1st August, I'll bet by the time it appears in print everyone will be talking about the floods we had in September this year!

DIFFERENTIALLY OPERATED SPOILERS

Dear Sir,

I was very interested in Humphry Dimock's article on differentially operated spoilers in S & G for February-March, 1969.

I decided to ask a few questions about this and learned that they are indeed more effective than the ailerons. In fact, the two can be separated so that one pilot can use the spoilers and the other opposite aileron, and the aircraft will turn with the spoilers. The banking effect is caused by the lift being reduced on the side to which the turn is being made, so causing the outer wing to lift and thus bank the aircraft. As Mr. Dimock says, this gets rid of aileron drag. Also, many modern aircraft which have this arrangement can turn without the use of rudder.

I should think that a sailplane fitted with differentially operated spoilers could have much smaller ailerons and thus improved performance.

Perhaps it's time that the manufacturers looked into this and put British sailplanes back in front.

RAF Benson, Oxon. A. P. GOODWIN

FIELD LANDINGS FROM THE MIDDLE OF THE ROAD

Dear Sir,

I am an expert at choosing the right field to land my glider in. I am not talking about slope, size, approach, wind direction, surface and other such factors vital to the continued good health of the glider. What I really mean is that I am an expert in not annoying farmers. You see, I was born a farmer's son.

A few months ago I landed in a field just after the farmer had lovingly caressed it with his muck spreader. The farmer didn't mind a bit. My retrieve crew did.

Yesterday I chose a nice pasture field. Some picnickers were very helpful and gave me a cuppa fresh from their primus.

I popped over to the farmhouse. The door was opened by the farmer's wife. "I saw you land. I suppose you want to use the phone." There was a hint of hostility. "Well, actually, I came to thank you for the use of your field which I was forced to land in." There was an immediate thaw. "You are the third glider to land in that field and the first to take the trouble." I played my ace. "Well, I'm a farmer's son, so I know how inconsiderate some people are about farmland." We moved rapidly on to

farming topics and it was not long before I was admiring the herd which was doing its best to fill the brand new bulk milk tank.

It transpired that when the first uninvited glider guest arrived, the farmer's young son was dispatched with some sandwiches and a flask of tea. The glider pilot sent them back! The second glider was a two-seater. The pilots were invited to tea. They forgot to say "thank you"!

The picnickers had left when my crew arrived. They had left behind a plastic bag, some papers and two empty tins.

A friend of mine also landed out yesterday. He could teach you a thing or two about glider-farmer relations. His farmer returned with the retrieve and is now our newest member.

Thirsk, Yorks. J. W. HARRIS

NEW SECRET FORMULA X

Dear Sir,

How terribly confusing! There I was going to all sorts of trouble to enter the Nationals, thinking the results would be taken into account in selecting the British Team for the World Championships next year, only to find that some entirely different measure was used.

You might think that, having been one of the selectors myself, I would have been let into the secret, but nobody told me; all I did was to study the achievement of the various pilots, primarily in this year's competition but also with a good look at past years.

Since then I have had a go at finding out what is the new secret formula X ingredient that gives added selectability to some pilots. This is what I found.

All four selected pilots competed in the Open Nationals this year, coming 1, 3, 8 and 18 in the handicapped results. (I used the handicapped results as these are designed to eliminate variations due to different gliders and give only the relative performance of the pilots.) The selected pilots scored 100, 88, 65 and 54 per cent of the top pilot's score. There were therefore 14 pilots with scores from 99% to 56% who were not selected.

But two of the pilots were selected to fly in Standard Class gliders and thus one must also look at the *Standard* Class results in the Sport Class Championships. This helps a bit as the pilot who was 3rd in the Open was 2nd in the Standard Class and thus demonstrated his special ability in Standard Class gliders. However it also raises the question of what happened to the first in the Standard Class. So there are now 15 pilots who, on this year's results, are short of secret formula X.

My next step was therefore to look at past results. This is rather a long analysis and depends on judgment of the relative values of results of varying antiquity, but my assessment is that about 7 of the 15 come out better than the lowest selected pilot.

And there I stuck. New secret formula X for added selectability apparently is not connected with demonstrated competition winning ability. Curiouser and curiouser. However, while the BGA selection arrangements remain in wonderland, I think I will stay on this side of the looking-glass. I have just had a thought! Perhaps secret formula X only occurs on the other side.

Bagshot, Surrey H. C. N. GOODHART

APPRECIATION

Dear Sir,

The main purpose of this letter is to express my sincere appreciation to you and your staff for all the assistance you have given me in the last two years. One so often hears complaints about how little the magazine and the BGA do to further the sport of gliding. I would like to say a few words to belay that line of thinking.

It was about two years ago that I found I had been posted to Singapore from North Borneo by my company. This seemed like the opportunity I had been waiting for for quite a few years. Having lived overseas almost 15 years, and although having

had a long association with the gliding movement, I found I had lost contact with modern trends and all my old contacts in gliding.

I had heard that gliding was taking place in Singapore and so, during my leave to the UK before my posting, I went along to the BGA and put my problem to them. I had obviously gone to the right office for, within a very few minutes and the flicking of a few filing pages, I was in possession of the names and addresses of all the contacts I wanted. As an afterthought, I asked about getting in some gliding in the UK to get my hand in again. "Oh, that's easy," they said, and it was, for, in a few minutes, I was fixed up to visit the Cornish Club, under the invitation of George Collins. My wife, having just had a very serious operation, accompanied me and we had a most enjoyable two weeks with George in Cornwall.

The magazine has gone one further to help me in my return to gliding. My wife and I thought it a good idea to take up the advertised subscriptions to the various world gliding magazines. This we did and, in consequence, decided to spend part of our last year's leave in the USA on a gliding holiday, finding out how the methods used over there differed from those in the UK. After a few enquiry letters, we finally decided to visit the Great Western Soaring School at Pearblossom, in California, or, to be more explicit, Fred and Georgia Robinson. If anyone is intending to do as we have done, you cannot wish to meet two more enthusiastic gliding folks anywhere. I have never been made to feel more welcome and at home as under their care; even my wife enjoyed herself and is looking forward to our next visit.

From the above you will see that the BGA and the magazine have done all and more in helping me to get back into gliding, and I am looking forward to many more years of happy association with gliding through the BGA and S. & G.

Singapore, Malaysia. JOHN E. HOMEWOOD (CAPT.)

CIRCULAR AEROPLANE

Dear Sir,

In your account of gliders before 1914, reference is made to a circular wing aeroplane by Cedric Lee and G. Tilghman-Richards.

During the 1914-18 war up to the formation of the RAF, a circular aeroplane of this type was stored in the hangar at Shoreham-by-Sea aerodrome—presumably built by the firm operating there under the management of Mr. Naylor-Spence. Under construction were Avro and Bristol biplanes, for which no engines were available.

The circular plane featured a complete circle for the lower wing and forward half-circle only for the upper wings. Construction consisted of wooden ribs with streamline tubing for the trailing edges.

The company maintained occupation of the hangars due to a Navy contract which was invalidated by the merger into the RAF. All the airframes were thus taken to the seaplane sheds on Shoreham beach and, I believe, eventually burned below the high-water mark. I did not see this as I was suddenly taken to hospital with appendicitis (acute).

There are no photos or records of this aeroplane in any of the books I have seen.

It was said that E. C. G. England was to have demonstrated the machine for Winston Churchill in July, 1914, but it crashed on a pre-demonstration flight. It was also said to have a speed of 60 knots with the 40 h.p. rotary Gnome engine.

Newbury, Berks. J. E. CRAMP

BRITISH TEAM SELECTION

Dear Sir,

How much simpler and more satisfactory for all concerned to select the British team for Marfa from the Open and Standard Class respectively in the order of success in the National Competition immediately previous.

If the complicated voting system comes to the same thing in the end, the comment is made — look, it does work!

Newbury, Berks. J. E. CRAMP

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WANTED

WANTED. Port wing for Oly. 2. Anything repairable considered. Hunt, 10 Leabank Avenue, Kidderminster. Telephone 5302.

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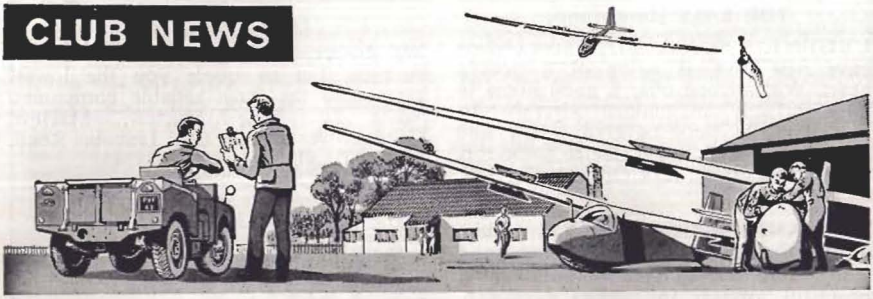
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It will, of course, be understood that the British Gliding Association cannot except responsibility for the claims made by advertisers in "Sailplane and Gliding".

CLUB NEWS



COPY and photographs for inclusion in the December-January issue should reach me typed, double-spaced and on foolscap paper, not later than 15th October and, for the February-March issue, not later than 3rd December. Please send news to me at 11 Great Spilmans, Dulwich, London, S.E.22. Telephone : 01-693 3033.

13th August, 1969

YVONNE BONHAM (MRS.),
Club News Editor

BATH AND WILTS

OLD Warden, Beds, was the goal which Eric Hales set himself when he was launched in Olympia 419 *Wild Goose* from Keevil. When he arrived, the field was full of people and buzzing with improbable old aeroplanes from the Shuttleworth Collection. So he picked a playing field at Biggleswade which was even closer to the relatives with whom he duly took tea.

No Golds, but quite a lot of Silver heights, distances and durations and endless hours of local soaring—that has been the summer so far in Wiltshire.

The Swallow's ten-year C of A kept it out of action for some time but its return was immediately marked by two or three first solos, a brace of C flights and a Bronze leg or two.

One of the more unusual items of soaring was David Barker's Olympia 463 encounter with a sea breeze front funnelling inland from Weston Bay. He flew along one side for 25 miles or so, gaining 200 feet on the way, and left it at Shaftesbury to thermal home after a round trip of some seven hours. He said that the sea breeze portion was just like bicycling downhill.

At the time of writing the club is about to invade Sutton Bank for a week, leaving a skeleton crew at Keevil.

R.J.C.

CAMBRIDGE UNIVERSITY

THIS summer we have been doing our best to break away from the Cambridge circuit. A party of nine members with four sailplanes, including the Club Skylark 4, successfully exploited the Austrian site of Zell am See, Tony Maitland making a Diamond climb. They flew in Germany at Hahnweide and München Gladbach on the way home. The June camp at the Long Mynd produced some five-hour flights, including that of Paul Sears from the Malverns, where we repaired for a couple of days bunjying into an easterly wind. The chairman, Anthony Edwards—fresh from his armchair—delivered his Olympia 463 to the Mynd by air from Cambridge, and subsequently flew on the Black Mountains.

Nearer home we have been exploiting the freedom of Duxford for training, but we are still not allowed to aerotow or soar from there. Please, no visitors yet! From Marshall's there has been some determined circuit-breaking and -making. Paul Loewenstein produced the most distinguished Silver distance of the year so far, by following his flight to Dunstable by an aerotow and a soaring retrieve which only took 55 minutes. Meanwhile, the chairman kept an eagle eye on him by completing the same course nonstop, and Cecil Willcocks went to Norwich and back.

The following day, 26th July, Catharina Edwards completed her first out-and-return, to Bury St. Edmunds, whilst Tony Maitland reached Silverstone before abandoning his 300 km. dog-leg and returning home. 27th July was a day of such promise that Sigfrid Neumann and Anthony Edwards set off on attempts to be the first round a 300 km. triangle from Cambridge—we are very backward. Both reached the first turning point at Kidlington, there is reputed to be a university nearby, before deciding to scamper home. Sigfrid reached Cardington, and Anthony finally floated home to Marshall's after seven hours aloft.

Lesser distances are becoming quite commonplace, and we look forward to a respectable crop of badges and legs by the end of the year.

A.W.F.E.

COLLEGE OF AERONAUTICS

WE used to be an entirely closed Club until three years ago, when we were allowed to take on some members from the public. This saved us from financial ruin and, as Naomi Christy pointed out during a recent welcome visit, we have fewer problems than most. The most pressing at present is the siting of the Third London Airport, and I have already appeared before the Roskill Commission at both the Nuthamstead and Wing enquiries, with only that at Bedford to go.

Our fleet consists of two Bocians, used for all levels of training and solo flying, together with an Olympia and a Ka 6E. All launching facilities are syndicate-owned, the Terrier tug by Pat and Derek Wilcox; Derek also does a large part of our repairs. The Diesel tow-car belongs to the builders—Heinz Karney, Nick Parker, Bob Taylor and Dave McQue. We gave up winching two years ago and used a variety of Daimlers and Jaguars culled from various breakers' yards. Last winter the sums were done and a Ford 6D 5.1 litre diesel was "fitted" into a Jaguar Mk.9 chassis. Top speed 52 mph was enough to give hon. member Ray Stafford Allen a 1,200 ft. launch on its first trial. Some 800 launches later, and using a 13G. piano wire which lasts longer than 11G., we are pleased with the performance and consumption.

Currently, we are investigating nylon rope and a winding-in winch to reduce hazards to other users of the runways and complaints from our grasscutter.

Flyingwise, we operate at weekends and after 17:00 hours on weekdays. During working hours the airfield is very busy and it is best to stay away, but visitors are welcome at other times. Circuits are variable; power aircraft go round the tower, we use the opposite hand and land on the grass to the "outside" of the runways, i.e. away from the tower. Cranfield 321 is our number. Preferably drop a line to our Secretary, Emile Kay, College of Aeronautics, Cranfield, Bedford, if you wish to come one weekend.

D.McQ.



Dave McQue in the College of Aeronautics diesel tow-car.

CUMBERNAULD

SINCE our last report appeared we have had quite a few happenings around Cumbernauld. Our new winch, which was made from a Corporation bus, is now going from strength to strength. It is putting up our launch rate, and causing less wear and tear on cables. Roy Surtees has been almost living in the bus until its completion, and Marjorie had almost forgotten what he looked like!

Owing to other heavy commitments, John Goodwin resigned as Club Secretary a short time ago, and we thank him for all the work and effort he put in in the past.

Instructors have been our greatest problem, and at one time we were down to one instructor; however, things have eased considerably with the valued help of Bob Rothnie and 'Zed' Goudie from Portmoak.

With the good weather we have had some excellent flying days and Neil Meiklejohn completed the second leg of his Bronze C with a 45-minute flight. We keep churning out A & Bs, and our latest additions are Phil Aitken, Sam Knox and Roddy McLean.

We read with envy the tasks which have been completed by members of other clubs, while our task continues to be the hut—the old Quarry—and back; however, with the possibility of a tug in the near future, it will make the elusive Campsies a reality.

E.N.D.

DEVON AND SOMERSET

FINE weather is always a bonus to those sites which are fortunate enough to enjoy particularly good scenery, and North Hill has attracted many summer visitors who came primarily to a beauty spot and found the gliding to be an added interest. Courses have been fully booked and thoroughly enjoyed, and thanks are due to those instructors who voluntarily gave up their holiday time for this purpose. Two of our erstwhile CFIs are in the news in this issue, Owen Corsbie having obtained his Gold C distance by flying to Winthorpe Airfield in Lincolnshire and John Fielden having obtained a free pint of bitter which was thrust into the cockpit of the Ka-6E as soon as he landed—perforce he says at Yeovilton one stinking, to use his own adjective, hot evening. Owen's 306 km. journey, which took 7 hrs. 15 mins., was a particularly good effort as the wind was SE making the first part of the trip, as far as Bristol, a real scrape. Three of our junior instructors have now obtained PPLs and joined the Tiger drivers. This seems to have fired the enthusiasm of at least one ex-Spitfire pilot, who now hopes to do the same.

A.E.R.H.

ESSEX

THE sun never sets on the Essex Gliding Club! Well, that's the kind of weather we've been enjoying lately; the sun has uncovered dozens of hairy, and now sun-tanned, legs and chests—apologies to our lady members. It has also produced some very fine soaring weather, yielding a handsome crop of Silver legs and Bronze Cs. Martin Southwood in the Skylark 4 missed Gold distance by some 20 miles on his second-ever cross-country attempt. The club-house is echoing to tales of "60 kts. with full air-brake and still going up!"

The *ab-initios* are gradually being transferred to a "group training system", where one instructor takes the same small group of pupils every week throughout their training. The system, like anything new, has its teething troubles but results are very promising and we hope to have all the *ab-initios*, about 70 of them, on group training within the near future.

Launch rate is being maintained at its high level and we reached last year's total of launches by the end of July.

Bill Scull and his Capstan spent a week at North Weald putting three of our prospective instructors through the hoop—we're pleased to see that Mike Audritt, Elvin Hibbard and Denis Pearl can now add their names to the instructors' rosta. Also on the course were John Ellis and Vic Wright from Camphill. We hope that they enjoyed their stay at North Weald as much as we enjoyed having them.

The end of the instructors' course coincided with our Barbeque on 9th August; Bill Scull seemed to be enjoying himself, although we had better not go into detail! Our thanks to Liz Harris and John Critch for organising the evening.

We have heard nothing more on the subject of the proposed power lines which were to be laid across the airfield, but now we have to worry about the suggested route for the new M.11 and the possibility of the army moving back to North Weald to make more extensive use of the airfield.

Finally, a quote from one of our instructors, who shall remain nameless, when faced with an out-landing in the T.21 after encountering extremely strong sink "J----z, she's coming down faster than a pair of drawers!"

G.F.M.

LONDON

THE good soaring weather which prevailed in early June continued into August and, as a result, there has been a good deal of cross-country flying. Nothing really spectacular has been achieved, the furthest being a 300 km. triangle by Mike Garrod; Rupert Griffiths failed by only a few miles attempting the same task. Weekend contests have been well supported, and it has been pleasing to see determined attempts by our less experienced members to outdo the pundits.

Our Club fleet has now increased to three Ka-13s. We still have our old faithfuls, the T21s. A fourth Ka-13 and a Ka-6E are planned, but these will be for next year. Tugs are also under review, our four ancient Tiger Moths being somewhat expensive to maintain.

With the arrival of an ASW-15 at the end of July, we now have three glass-fibre hot types on the site, the others being a Cirrus and an ASW-12. Rather down the other end of the scale the Kestrel two-seater has now flown, initially at a secret site somewhere in southern England! The syndicate claim it has no vices, but we await proof of this with some interest. Our second ancient two-seater, the Nimbus, is being overhauled largely by Noel Quinn; Noel used to be on the Club workshop staff in the 'fifties.

In June the Board of Trade officially announced a deferment of a Special Rules Zone around Luton airport, and have set up a working committee to examine the whole problem. During August a surveillance radar was in operation at Henlow to keep a check on all air movements in the area, Luton's equipment being inadequate for this purpose. In the meantime a pitched battle is being waged in newspapers and on radio and television—on one side the light aircraft movement and the gliding fraternity, supported by some commercial operators such as Handley Page and HSD (Hatfield), and on the other the British Airline Pilots Association, Luton Air Traffic Control and Luton Corporation. Mixing in with this are the Luton and Dunstable public, plus neighbouring towns in Hertfordshire, mainly concerned with the increase in aircraft noise in the area. A third aspect, affecting the whole boiling pot, is a decision on the third London airport!

M.P.G.

MIDLAND

THIS season has so far produced much more flying than did last year, the most notable achievement being the site's first Diamond height gain by Mike Horan, who reached 18,000 ft. in wave from a bunjy launch on Saturday, 19th July. It is now going to be very difficult for anyone to prevent Mike from winning the height trophy again this year.

Our new Jaguar-engined winch is performing well, with very few teething troubles. Bob Scarborough has instituted a revised winch-driving policy involving, among other aspects, longer driving spells. The new winch, combined with better driving, is resulting in higher launches. The Ka-13s are reaching 1,350 ft. plus and the single-seaters 1,600 ft.

The good weather has encouraged much trailer painting and similar activities, although the keen observer can detect various levels of enthusiasm. New sliding doors are being fitted to the workshops and improved heating is to be installed in the aircraft workshop in readiness for the winter programme of C's. of A. Finally, great news for the traditionally unwashed — showers are to be installed.

K.R.M.

NORTHUMBRIA

OUR two-week courses for club members were successful — if success is judged by the rash of first solos. Congratulations to Graham Addison, Andy Johnson-Laird, Doug Hinchley and

Simon Doughty. Chris Holmes also re-soloed and managed a C. Many of our more advanced pilots used gliding as an excuse to sample Yorkshire hostelry, and visited Sutton Bank. Dave Osborne flew Silver distance, while Silver durations were achieved by Dennis Driver, at the third attempt in one week, and John Williamson.

Three weeks of intensive work by the regular army has carved the clay of our west field into an excellent airstrip; the topsoil is now being replaced ready for reseeding by a local farmer. Looking forward to next year we should have a lush green aero-tow strip and double the number of cattle on the field.

J.R.G.

OUSE

THREE glorious summer months gave us continuous opportunities for good gliding. Our members, from many parts of Yorkshire, were leaving home before 6 a.m. to get an early start on the airfield at Rufforth. It has been a busy, enjoyable period, and we have made the most of it.

Bob Bowhill got his Silver C distance, Wilf Taylor his Silver C distance and height and John Cameron, who has been gliding for only three months, his A and B. Bob Mersey, a very busy businessman, not only gained his A and B but found time to write a magnificent article for our newsletter about his part in the Trans-atlantic Air Race in the VC10 which carried competitor Stirling Moss.

We have had several parties of visitors, ranging from the Royal Air Force Association — York — and the Royal Naval Association — Dewsbury — to NALGO, Scouts. Young Conservatives and Frickley Colliery — a really mixed bag!

John Mawson, Chris Riddell and Peter Ramsden competed in the Northern Regionals at Sutton Bank in August, Derek Moore and Wilf Taylor left our Yorkshire sunshine that weekend for the hotter sunshine of Spain, and several members seemed deliberately to fix their family holiday close to a gliding club in Scotland or the South of England!

The rest of us have bashed away, searching for thermals and enjoying ourselves in our quiet, unspectacular way. We shall long remember this happy, sunny Summer of 1969. Now we are in the season of mists and mellow fruitfulness, preparing for our winter programme.

A.H.S.

OXFORD

SINCE the last report of Arthur Speechley's retirement as Hon. Secretary, we are pleased to record his agreement to take up the reins once again. His unfailing enthusiasm for the sport, wide knowledge of the activities at the top and call for greater support from all members have launched him into this thankless task.

The quiet weather this summer has, fortunately, allowed the military parachutists to complete their programmes early in the week, leaving Wednesday evenings free for Peter Pratelli and Malcolm Laurie to run some most successful and popular flying sessions.

Disappointment was apparent in the face of Graham Smith at the end of July, when he just missed a 300 km. triangle Weston - Newmarket - Leicester - Weston, having to glide it out to Banbury — a fine effort, however.

At the end of the long, happy association, both on and off the field, with Flt. Lt. Peter Williams, Commanding Officer of R.A.F. Weston-on-the-Green, and his family, the entire club wish him every success for his new appointment in Bahrain.

C.J.T.

PERKINS

IN the June issue the club scribe forecast that the Phoenix would rise from the ashes . . . methinks it has risen. Commencing the year with four aircraft, July saw nine machines operating from the site. The original T-21B, EoN Baby, Olympia 2B and Skylark 2 had been joined by a Bocian 1E, Skylark 4, an Italian-built M100S, an Olympia 463 occasionally, and a Beagle Terrier tug aircraft. Although some of the latter were syndicate-owned, they are available for use by all club pilots suitably qualified.

Unfortunately, however, the weekend of 12th-13th July brought an accident on two consecutive days, writing off first the club T-21B, followed on the Sunday by the EoN Baby. We were fortunate that, in both incidents, the only injury sus-

tained by the occupants was to their pride. Following an insurance settlement, it is the Club's intention to add another two-seater to our fleet.

To say that we are impressed by the soaring capability of our E-type Bocian two-seat sailplane would be an understatement. Since its arrival, its duration flights have been legion; this factor, coupled with its penetration potential, makes it a club two-seater second to none. This is bearing in mind particularly that we have pioneered gliding in an area of the country previously thought to be "duff" — the flat fenland immediately adjacent to the Wash.

Duty pilots prudently search the long grass alongside our main runways nowadays, at least ever since the "Day of the Flying Pump", an incident which occurred in June and which could have had disastrous results. A knot in the winch cable got fouled up with a flange of a water pump used for draining a flooded area, and such is the lifting capability of a T-21 that, by the time the cable was released, disentangling the said pump, the equipment was some 300 feet above ground and travelling SW at 45 knots. This, if nothing else, solved an O level brain teaser; we now know how many minutes it takes three men — knowing the sub-soil density — to dig a 40 lb. water pump, buried to a depth of three feet, out of a Fenland wheatfield.

On the Club attainment side, June recorded Tony and Gordon Figg and Gordon Truss going solo, thus acquiring their A and B certificates. On 27th July Haden Haresign gained the last leg of his Silver C by flying the Bocian solo and keeping aloft for over five hours, as did Harry Feneley, flying the M100S, going into cloud to achieve his target and emerging at over 8,000 feet over Peterborough.

J.V.L.

RAE FARNBOROUGH

WERE there a decoration for "pressing on regardless", certain members of the RAE Gliding Club at Farnborough think that it should be awarded to Major Evans, of the Army Gliding Association.

On a day when, with the honourable exception of CFI Peter Dale, even the club's Gold and Silver had been flopping out of the sky like shot partridges, the Major, his Olympia 419, radio truck and ground crew came to visit. He was due to give an exhibition of powerless flight at the Army Show on Aldershot's Queen's Parade.

All was well until the tug which was to take him to 3,000 ft. for the opening of his show somehow got mislaid . . . Ruffled but undismayed, the gallant Major approached the remaining "locals" — grounded by Show flying activity — and asked for a car launch. Despite the massive odds — the wind light on the short runway and the tow-car sickening for something terribly expensive — the 419 got a 1,000 ft. launch. For several minutes this fighting soldier held his own, then followed a highly polished demonstration of how to soar in almost impossible conditions. True, one of his ground crew who had the temerity to call him on the radio — as he fought furiously with some very indifferent thermals — got a military answer that, in more printable language, meant that the Major was busy and would he please not disturb him. But, in a surprisingly short time, our hero was calling control to say he was ready . . . and at two-and-a-half thousand!

From this point the story has a predictable, and deservedly happy ending. The expectant crowds on "Queen's" got their display of glider aerobatics, but few of them could possibly guess at the "damned close-run thing" on which it had depended.

D.F.E.

SCOTTISH GLIDING UNION

THE SGU's "Flight of the Year" award, to date, must go to Tom Docherty, our Chairman, on achieving the first Gold distance from Portmoak — and only the second from Scotland — with his flight to Rotherham in the SHK on 19th May. We offer him our congratulations and say "hard luck" to the three others who attempted the task on the previous day. Of these, Andrew Thorburn did succeed in getting "o'er the Wa'" to land near Penrith.

There was a noticeable absence of usable wave this Spring, although one Diamond height was achieved, and several people exceeded 10,000 ft. on 30th March. The Summer has produced several good thermal days, none better

than the day of the Club's AGM, including one with a cloudbase of 6,000 ft. — unusual in these parts.

Reg Curwen has now relinquished the duties of CFI, which have been taken over by Roger Constable. In April, Bill Scull presided over a successful Instructors' Course, which was attended by candidates from all over Scotland. They weren't the only ones to benefit from his knowledge, illustrated in glorious technicolor with the aid of his "infernal machine". More recently we have been visited by Lt.-Col. Naomi Christie, and are looking forward to the arrival of Ann Welch with the Ka-14.

Summer courses have been proceeding successfully, in spite of shortages of two-seaters, winches, cable, instructors and favourable winds from time to time.

New syndicate machines on the site include an SHK, a Ka-13 and a Skylark 2, and these should be joined shortly by C. Ross's SHK and a Pirat — winter migrants from the South.

R.A.S.

STAFFORDSHIRE

WE had two weeks of Club flying during the Summer; the first was run by Boris Clare for ordinary club members to give them a period of concentrated flying, the second was designated C week and was designed to encourage cross-country flying. We were fortunate with the weather and had cross-country flights on all five days of the week and a total distance of about 450 miles was flown. The machines taking part were a Skylark, an Olympia 463 and two Olympia 2Bs. The competition spirit between syndicates, which this week engendered, was quite astonishing; one syndicate, on hearing of the supposed crash of another syndicate machine, were intent only on enquiring if the artificial horizon in the supposedly crashed machine was now for sale. Tony Dodd got his Silver distance and height and Ray Johnson his distance during C week. The Cup for the best performance, which was presented by John Lloyd, went to Laurie Birch for a monumental scrape under difficult conditions, the most repeated remark over the wireless during the flight being, "Hang on a minute, I'm a bit low."

Unfortunately, we lost the Club Olympia during C week, but a hired Prefect is providing plenty of frustration for club members and we propose to buy a replacement as soon as possible. The syndicated Tutor continues to do a flourishing trade.

R.B.L.

SURREY AND HANTS

WE reckon that we must have the youngest lady pundit ever, as Lyn Watson went solo on her 16th birthday and completed her Silver C on her 17th with a flight of 77 km. to Keevil. The Lasham competitions achieved six days, all launches from Lasham for a change, remembering 1968, when an "upsticks" to Compton Abbas was necessary to obtain a third day. The Wednesday of the contest provided two local pilots with their goal Diamonds — Peter Horne in a Club Dart and Tricia Watson in her Skylark 4. Tricia's excitement was very evident as she announced her final glide over the radio. Some Club pilots also went around this 320 km. task, Lasham-Cheltenham Racecourse-Pitsford Reservoir-Lasham, in passable times of about 57 km/h. Talking of 300 km. flights, our tally is now 35, the fastest Club one being a 318 km. triangle at 62 km/h.; two pilots have done ten 300 km. each!

Hugh Hilditch was a few thermals short of a 500 km. out-and-return when he took his Cirrus to Lake Bala and back to South Marston on 30th July; he tried again on 6th August but landed at Llanfair Caerienion, a long way from Lasham and it took all night and . . .!

We now have a fleet of four Ka-8s, all thermalling madly as pilots discover the delights of 15 metres at 35 knots, particularly as we have bought some special Ka-8 cushions from Schleicher to make 5 hours more bearable. We hope to report plenty of jewellery in the next issue, as our annual invasion of Portmoak begins on 27th September.

C.L.

SWINDON

SINCE our last club news we have had a very eventful time. One Saturday Harry Daniels and Tug Wilson, flying a Blanik, set a new UK record for the 100 km. triangle for a two-seater, South Marston-Shipton Under Wychwood-Aston

Down-South Marston, travelling 104 km. in 1 hr. 20 mins. at an average speed of 77 km/h. The following day, leaving South Marston and flying via Long Marsdon and Halton, they accomplished yet another feat by also setting a UK record for the 200 km. triangle — 214 km. in 3 hrs. 25 mins. at an average speed of 62.5 km/h. Back in 1966, Harry and Tug gained the 300 km. record, so here at South Marston we are all feeling very proud of them indeed.

Our recent Flying Week has brought a good number of individual achievements — the most notable being a Diamond goal and Gold distance triangle; this was South Marston-Kidderminster-Bognor Regis-South Marston, flown in 6½ hours by Peter Trenchard. Christine Day flew to Booker to complete her Silver C and also collected the return trophy. Congratulations, Chris — our first lady Silver C. Sally Hargrave and Ian Powdrill, both of whom are sixteen and our youngest solo pilots, also gained their Cs on their first solo flights, Bill Foddy and Ralph Childs gained Cs on solo flights, Dave Elliot achieved his A and B, John Trenchard completed his Bronze after converting to the Skylark 3 and Mike Clarke — who soloed recently — completed a Bronze leg. Successful conversions during the Week were Sue Harbour to Olympia and Rex Collins and Henry Devonshire to Skylark 4.

The Club played host some weeks ago to the then Mayor and Mayoress of Swindon and the Mayor and Mayoress elect. Unfortunately, the weather was not good but the Mayor very sportingly elected to fly and was launched to 2,000 ft., piloted by George Turner — our CFI — and aero-towed by Fred Butcher in the Terrier. Both glider and tug disappeared very quickly into the murk. The tug soon returned but, after an anxious 45 minutes and still no sign of the Ka-13, Fred set off to comb the countryside and there they were, sitting calmly in a field some four miles away. The Mayor's face was wreathed in smiles and apparently he had thoroughly enjoyed his first flight in a glider. The weather improved slightly after this and the rest of the party had their flights and were given tea and refreshments in the Clubhouse where, by now, several members of the Press had arrived to take photographs and notes, so that the events were duly recorded in our local paper the following day.

T.G.T.

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THAMES VALLEY

THE Booker-Swindon pot is now held by Peter Trenchard of Swindon, who picked it up on 7th June. On 8th August it was still with them. Some flights worthy of mention are Ian Hobday's out-and-return to Yeovil for a Diamond, Silver C completed by Adrian Wagner and Richard Harris, Bronze C completed by John Tournier, and numerous As, Bs and Cs. Bunjy Baker's Goal flight to Bickmarsh is something he won't let us forget too soon — quite a feat of navigation. Lin Steynor, our youngest girl member, has converted to Skylark 3 and is trying hard for Bronze legs.

On the day of the Wycombe Air Display, Harold Fletcher organised passenger flying in all of the two-seaters he could muster and clocked up 117 passenger flights. This must surely be a record for a total flying time of approx. 3½ hours after the big show. Several new members were signed up.

At the time of writing, 9th August, it

is the first day of the Wycombe Regionals, with 28 entries, and the rain is bucketing down.

J.W.

WESTCOTT

CONGRATULATIONS are due to Malcolm Lassan and Jean Godfrey, who have succeeded in completing their Bronze C badges, and to our Club Chairman, Dennis Thompson, who has qualified for his A and B certificates. Malcolm got both his half-hour flights whilst on holiday in Cambridge and Jean managed all her flying at Westcott. Jean's last half-hour flight was certainly a memorable one — she never went higher than 700 feet!

On 31st May we held a Flying Display at which we welcomed several visiting pilots and a variety of aircraft. We should like to thank Booker for all the assistance they gave us, and also Richard Wade for bringing his Tiger Moth over once more.

We have recently started weekly bingo sessions to raise money for the Club. We hope that this will be as successful as the Tote which is being run by the Bicester members. This scheme has already provided a T-21B for the Club's use and we are hoping to obtain another aircraft soon. We had hoped to have our reverse tow pulley working for the soaring season, but there has been some delay. However, it is now in the final stages of manufacture and we should have it very soon.

Unfortunately, we have not been flying for a month during the period covered by this report, as a result of a "grounding" order issued by the Director of the Establishment from which we operate. Finally, we should like to welcome two new instructors — Ted Newman and Fred Fermor. We hope that we shall see a good deal of them and that they will enjoy their stay with the Club.

E.A.C.

YORKSHIRE

WHAT a whale of a time we have had over the past few weeks! — Westerlies almost without a break and thermals galore, together with wave to tempt the local punditry aloft in search of this elusive beast.

Honours aplenty have been rolling into the Club. David Lilburn completed his Gold C, Geoff Crawshaw bagged his Gold height with a climb in wave to 11,600 ft., and Lewis Ash got his Gold height with a magnificent climb in wave to just over 12,000 ft. Bob Addis got both Silver height and duration, both Mike Carter and Bob Fort have secured their Silver height, whilst Tom Reynolds and that doughty Scottish mariner, Ian Johnston, literally scratched their way to their 5 hours on the ridge. Laurence Walker and Wilf Smith have got themselves on to the Swallow, whilst Dick Bourne has soloed on the T-21. Even the YGC belle, the beauteous Jo Hibbert, has started flying again!

We are all very proud of the fact that Barry Goldsborough, in his famous Sky, outflew many of the hot types to come fourth in the Sports-Standard Class at Dunstable.

Public courses have been a huge success again this year, and an even bigger and better programme is being planned for next year. Watch this space for future announcements! Mains water and electricity have now been fitted in the Clubhouse, so that every club member can, as Club Director Cliff Banks put it, "now *see* to have a shower every month, whether they need it or not!"

Our AGM was held on 9th August and two new Directors were elected to the Board. As we go to Press we are all looking forward to the Northern Competitions to be held at the Club, an event which we are hoping to hold annually.

T.H.R.

SERVICE NEWS

EAST MIDLANDS

THE club continues to flourish and, although this season has not been as good as last year's, some excellent flying has been done. By the end of July we had achieved, at one end of the scale, 20 first solos and, at the other, a total of well over 4,000 miles of cross-country flying. With, we hope, much good soaring weather ahead, we should achieve something near 1,000 hours flying this year — not as good as our 1,200 hours

last year but still a fair effort.

John Delafield and Jack Harrison both flew in the Nationals this year, John in the Open and Jack in the Sport. Whilst neither of them managed to do as well as last year, John was seeded second Open Class pilot for Marfa and Jack won the last day of the Sport Class. Two other club members, Rod Rea and Sid Green, flew in the Bicester Regionals at the end of August; this was their first experience of competition flying.

On the social side club life is rather quiet. We are not at present able to run a bar and the only suitable local pub is several miles from the airfield. However, with luck, we hope to have something organised for the Winter. The really big forthcoming attraction is the wedding of Jack Harrison and Stella Benton. Stella learnt to fly with the club about two years ago and, since then, has not only managed to catch Jack but has also gained her Silver C. We wish them the best of luck.

J.D.

CRUSADERS

THIS Summer we have had a large membership change. A new "hard core" has been formed by pundits who have been on the Island for 6-to-12 months; they have now taken on many of the Club posts from tourex members, and a pleasing influx of new *ab-initios* is keeping the T-21 busy. The main Committee changes at our recent AGM were: Chairman, ex-Lt.-Col. E. F. Twiss, R.E. — now Wg. Cdr. J. E. Sewell, RAF. CFI, ex-Sgt. Tim Oulds — now Cpl. George Ross. Secretary, ex-Mr. Len Judd — now Fg. Off. John Dennis. Secretary's address: 35 Squadron, RAF Akrotiri, BFPO 53.

Tim Oulds's letter on parachuting in the June-July *S & G* and the follow-up article in *Instructor* prompted three of our instructors to take the local Para Club's short course — result, two instructors with big grins and one with a plaster cast.

The local sea breeze front endows our airstrip with a strong cross-wind most days and, once the front has moved inland, we are left in the stable sea air. A "detachment" recently tried another site three miles inland and found that they were able to launch near into wind and soar all day, much to the chagrin of those left at base. We were very pleased that Dave Sillett took time off from his carpentry — three T-21s to repair in three months! — and did his five hours and cross-country from the trial site, thereby completing his Silver C.

By the time this appears in print, our planning for the RAF Akrotiri Battle of Britain Open Day will have come to fruition. We hope to have the Olympia 401 on static display, the Swallow on flying display from aero-tow launches, and perhaps T-21 passenger flights to help swell the Battle of Britain funds.

M.I.O.



CISAVIA—*HRH the Duchess of Gloucester with Sir Richard Hayward, Chairman of the Civil Service Sports Council, talking to Lionel Alexander, Cisavia's Chairman, at the opening of the new pavilion at the Civil Service sports ground.*

OVERSEAS NEWS



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

SHEAR WIND WAVES were used entirely to complete a 150-km. triangle, apart from an initial thermal climb to reach them, by Ingo Renner of the Darling Downs Soaring Club, flying from Oakey, Queensland.

These are travelling waves set up at an inversion when the winds above and below it differ in direction or speed or both. The waves travel at much less speed than the wind at their level.

Forecast winds on the day of Renner's flight, 3rd November last, were NE 10 knots at the surface and SW 25 knots at 15,000 ft., the inversion being between 9,000 and 11,000 ft. Lenticular clouds suddenly appeared all over the sky at 11 a.m. Renner's thermal took him in the Club Libelle to the downgoing side of a wave at the inversion, and when he eventually contacted the wave lift, he found the waves were drifting from SW to NE at about 20 mph, but the SW wind in which they formed was "travelling a lot faster". He climbed in front of the wave cloud and continued until lift petered out 1,500 ft. above the cloud tops, or 10,500 ft. asl. He only used four waves in completing his 150-km. triangle.

The next flight of the kind was on 27th December by Ken Sowden, who started gliding in 1929, got his B in 1934, gave it up, started again and got his C in 1964, and now, with this shear-wave flight in an Arrow, climbed to 14,700 ft. to get Gold C height. There was a strong inversion at 12,000 ft.; forecast winds were SW at 2,000 ft., 20 knots below the inversion, and NW by W, 40 knots, at 15,000 ft.

On this same day John Moore tried for a 500-km. triangle in the Libelle. Finding the best thermal lift to be between 2,500 and 5,500 ft., he stayed in that region until he thought he had better see how high the thermals went because he would soon be crossing poor country. Thus he climbed to 8,000 ft. and found one of the waves, but as the lift was only 1 knot, he had to leave it because he was after speed.

Australian Gliding

AUSTRIA

NATIONAL CHAMPIONSHIPS. — These were held at Mariazell from 24th May to 7th June, with 11 competitors in the Open Class and 28 in the Standard. Types entered varied from the L-Spatz to the exotics. Dr. Alf Schubert won in the Open Class with an FK-3. In the Standard, Ernst Schraffl won in a Phoebus and Hermann Schenner came second with a Ka-6E — a feat which is described as a "sensation". Schenner had the reputation before this meeting of never having made an out-landing.

On the opening day, 24th May (a Saturday), all participants had to attend the opening ceremony in their Sunday clothes at 9 a.m. A succession of speakers each said he would keep his remarks very short; a priest gave a blessing, and they all went off to change. Goal-and-Return tasks were set: 316 km. for the Open and 251 km. for the Standard, and the machines were ready at noon, but at 15.00 hr. the thermals weakened and the later competitors to be launched had difficulty keeping up.

Johann Fritz was circling in a place

known as the "Cold Wall" near Eisenetz when one wing of his Standard Libelle hit a rock and (as already reported in *S & G*) he suffered fatal injuries.

May 27th. — Dog-leg race, 237 km., completed by all the Open Class and 21 out of the 27 in the Standard.

May 30th. — 213-km. Triangle. Ludwig Sandhöfner radioed that there was a snake on board his Standard Austria and, after describing it, asked for advice on whether it was poisonous; however, he got it trapped under the seat, stopped up all escape routes with his cap, gloves, etc., and continued his flight to be 8th.

May 31st. — 328-km. Triangle. A big thunderstorm at Mariazell allowed only eight pilots in each Class to get back.

June 1st. — 213-km. Triangle. In difficult weather only some of the Standard Class exceeded the lower limit of 80 km. to make it a contest day, but no-one in the Open Class got beyond 40 km.

Leading Results, Standard Class

1. E. Schraffl	Phoebus	4836
2. H. Schenner	Ka-6E	4373
3. O. Fahrafellner	Std. Lib.	4370
4. W. Szabo	Ka-6CR	4187
5. O. Rizzi	Std. Austria SH	4176

Open Class

1. A. Schubert	FK-3	3676
2. H. Wödl	FK-3	3521
3. F. Ulbing	Cirrus	3452
4. A. Girschick	Phoebus	3094
5. E. Gehrer	Diamant 15	3035

Aerokurier

BELGIUM

VICTOR BOIN CONTEST. — This annual distance event was flown during the three-day meeting at Keiheuvel (to which British pilots were invited in our June-July issue, p. 195). There were 43 entrants, including 14 from Holland and two from Germany. A Cat's Cradle was set on 24th May, but an overcast sky caused its postponement to the next day, when cumulus appeared in the afternoon and was well developed by 3 p.m. The winner, Bert Zegels, made 52 km., and A. Litt 40 km., each with a Ka-6E. Four pilots tied for 3rd place with 28 km.: L. de Dorlodot (AS-12), L. de Preter (Foka), W. Janssens (Vasama) and M. van Assche (Libelle).

Conquête de l'Air

CANADA

OUR Canadian Nationals of two years ago somewhat damped the reputation of Hawkesbury, Ontario — but that town can now hold up its head again after this year's rainout in sunny Alberta. The official place name was Innisfail.

The contest dates were 1st to 10th July inclusive, and in that time only four contest days were squeezed in, fortunately including all the mandatory tasks, so we did get a champion. During that same time quite a lot of water flowed under the bridges over the Red Deer River, and not much flying was done. As the met. man said, if anyone asked any Albertan what part usually produces the best weather of the year, the reply would invariably be the first half of July.

The Alberta Soaring Council were the organizers. They got a reasonable entry — 26 sailplanes, including a few from the US. Makes represented were quite modern — a couple of Diamants, several Libelles, several Phoebuses and, of course, a sprinkling of HP-11s and 14s. The field facilities were somewhat primitive, and runway verges often too soft for use — they would have been good, but for all that rain. The organizers had obtained the assistance of the Army in the form of two towplanes complete with air and ground crews, and these were the contest lifesavers, as the civilian towplanes loaned by the area clubs lacked reliability due to pilot absence. The Army also assisted with communications — only one telephone line existed into the field, and road calls were made to an adjacent airport to be relayed to the contest headquarters by Army radio-teleprinter.

The Imperial Oil Company came through with a sizable donation of aviation fuel for the towplanes, the local Innisfail Chamber of Commerce sponsored a barbecue of fine Alberta beef, and the Government of Alberta sponsored the awards presentation dinner at one of the best Red Deer City hotels.

Thermals or no thermals, the new Canadian Champion is Dave Webb, of Montreal Soaring Council, flying a Cirrus owned by Chas. Yeates, another Montreal member. This is not the first time he wins the championships — who said champions never come back? ONTAERO

EAST GERMANY

NATIONAL CHAMPIONSHIPS. — After an interval of two years these were held in Neustadt-Glewe from 14th to 29th June. In no other country, *Aerosport* claims, is the average age of competitors so low, being under 30 in this contest. Visitors were Chuvikov and Rudenski from the Soviet Union, who took 1st and 3rd places, and Kluk and Popiolek from Poland, who finished 5th and 7th. Elke (who was involved in a collision in Poland last year) was best among the German pilots. There were 44 competitors.

Tasks were: 101-km. Triangle, won by Leistner, of Dresden; 149-km. Goal-and-return, won by Chuvikov; 132-km. Goal-and-return, won by Voss, of Leipzig; 170-km Triangle, won by Popiolek; 101-km. Triangle, won by Rudenski at 80.4 km/h., with Chuvikov 2nd at 75 km/h. Ursula Wotzel, of Gera, set up a national feminine record for the 100-km. triangle at 73 km/h.

Leading Final Results

1. Chuvikov (Sov.)	A-15	4688
2. Elke	Foka 4	4656
3. Khalisch	Foka 4	4615
4. Rudenski (Sov.)	A-15	4486
5. Kluk (Pol.)	Foka 5	4450

Aerosport

FRANCE

WAVE HEIGHTS. — At St. Auban sur Dirance from 1st April to 30th June there were 21 height gains of over 3,000 m. for Gold C, and 13 of over 5,000 m. for Diamonds, plus 95 gains of over 3,000 m. not done bor badges. During the three months, 2,766 hours' flying and 19,641 kilometres distance (including circuits) were put up.

Mountain Soaring Rally. — The fourth of these annual events, held at Vinon aerodrome from 28th June to 5th July, was favoured by better weather than last year, though it was rather thundery, causing some of the set courses to be abbreviated; nevertheless, seven tasks were set, all of them for speed, though the longest one transformed itself into distance along a set course. Eighteen of the 25 expected entrants turned up, including four foreigners: Humphry Dimock (GB), Waldenberger (W. Germany), Torgler (Austria) and Stucchi (Italy). Dimock's 18-metre Diamant was the largest machine present. Five tugs were in action.

June 28th. — 202-km. out-and-return to Savines on Serre-Ponçon lake; eight completed it and Abeille (Edelweiss) won at 67.5 km/h. Four could not get away from the site.

June 29th. — 152-km. triangle via Blegliers and Souribes. Everybody completed it except yesterday's winner, who landed after 98 km. Cartry won at 79.6 km/h.

June 30th. — Longest task of the meeting to be completed: 230-km. triangle via St. Vincent-les-Forts and Aspres. Seven completed it and Waldenberger (Std. Libelle) won at 68.5 km/h.

July 1st. — 98-km. Out-and-return Souribes. Only two completed it: Barrois at 47.07 km/h. and Cartry at 40.41 km/h.

July 2nd. — Owing to risk of thunderstorms, a short task was set: 72 km. to Pont d'Aiguines. All completed it, Cartry making 87.45 km/h., and Dimock coming 4th at 78.43 km/h. Many came back for a second try but were frustrated by a thunderstorm, and Neuville crashed his Ka-6E in a field landing.

July 4th. — 301-km. triangle via Luc-en-Liois and Chateauroux. Nobody completed it and only Cartry rounded the 2nd turning-point.

July 5th. — 102-km. triangle via Mousiliers and Pey-ruis, won by Humphry Dimock at 81.42 km/h. Cartry made 77.96 km/h. and Tabernier 77.15 km/h.

Leading Final Results

1. Cartry	Edelweiss	5729
2. Barrois	Foka	4775
3. Delbarre	Edelweiss	4224
4. Abeille	Edelweiss	4055
5. Gallizi	Edelweiss	3729
6. Dimock (GB)	Diamant 18	3711
7. Waldenberger (Ger.)	Std. Libelle	3568

Aviasport

HOLLAND

THE pilots selected for Marfa to fly in the Open Class are Aart Dekkers and Jaap Steinfoort, the latter flying for the first time in a World Contest. Ed van Bree and Dick Reparon have been selected to fly in the Standard Class.

NORWAY

NATIONAL CHAMPIONSHIPS. — These were arranged at the local airfield of the Maarud farm (Norway's largest producer of potato crisps and Camembert cheese). Only four contest days were flown in the competition period between 24th and 31st May, as the last half of the period was washed out. Harald Hoimyr, in the A-15, became National Champion, winning two days and coming second on two.

On Day One he set a new national record for the 100-km. triangle, 86.1 km/h., and that with only a few hours' previous training on the machine. Second was Bulukin, flying *hors concours* in a Ka-8 for part of the competition; he managed 70 km/h., so the conditions were booming (3-4 m/s.).

After this warming up, the competitors were ready for larger tasks, but the weather didn't co-operate. Day Two saw blue thermals starting late, dying early. Task: out-and-return, 150-km.; no-one got home. Bulukin furthest, within 25-km. from base. Hoimyr second. The day was interesting nevertheless, as the thermals were rather narrow and turbulent, but some going high to 2,200 m.

Day Three produced a bit more instability, but a small task was chosen as a 15-kt. wind made matters a bit problematic during the return. Task: 90-km. triangle. Hoimyr was winner with 54 km/h., Simonsen in an Austria coming second.

The fourth and final day saw Simonsen as winner, as Hoimyr misjudged his final glide from 2,400 m., 50 km. out (quite a lot of headwind and sink in the process). Eventually he got home by doing some frenetic scratching, saving second place for the day and winning the title of National Champion.

B. W. BULUKIN

POLAND

National Championships. — Andrzej Kmiotek won this event with 8,333 points, flying a Zefir 2. All the others flew Fokas, most of them the Foka 4 but some the Foka 5. Henryk Muszczynski came 2nd with 7,869 and Julian Ziobro 3rd with 7,738. Among others, Popiel was 4th, Kepka 6th, Krolikowski 7th, Witek 9th. Of the ladies, Adela Dankowska was 20th and Pelagia Majewska 27th. There were 34 participants, including two from East Germany: Blauert (17th) and Fleischmann (23rd).

Ten contests were flown during 15 days. Five were triangular races, the longest being 318 km., two were goal-and-return races, and three were distance along a given course.

The meeting was held at Leszno from 8th to 22nd June.

THE team for Marfa will consist of J. Wroblewski, F. Kepka, E. Makula and A. Kmiotek, who will be flying in his first World Contest. The SZD factory is producing two new sailplanes for the contest: the Kobra 15 and 17; but neither is ready yet, and Makula considers the 17 will not be good enough for Marfa.

Aerokurier

SWEDEN

NORDIC CHAMPIONSHIPS. — This contest between Northern European countries was held this year at Alleberg in Sweden from 6th to 12th July, and was won by Walter Hansson of Sweden, a 38-year-old engineer, who was also the daily winner on the first three of the five contest days. There were 12 competitors. Tasks were :—

July 6th. — Race along broken line via Redberg and Oerebro to Eskildstuna, 230 km. Hansson averaged 108.9 km/h.; Göran Andersson made 105.6 and Irve Silesmo (the 1967 winner) 99.2 km/h.

July 7th. — Race to Moholm, 118 km. Hansson's speed, 63.7 km/h.

July 9th. — 200-km. Triangle, with a wind of 30 km/h. blowing at 1,000 m. Hansson averaged 83.5 km/h.

July 10th. — 217-km. Triangle, not completed. Göök made 145 km. and Seistrup 142 km.

July 12th. — Out-and-return Oerebro (site of the 1950 World Championships), 312 km. Göök again won, averaging 52.9 km/h.; Hansson made 52.1 km/h.

Leading Final Results

1. Hansson	Libelle 301B	4876
2. Göök	Std. Libelle	4465
3. Silesmo	ASW-15	4192
4. Seistrup	Austria SH	3726
5. Andersson	Phoebus C	3662

UNITED STATES

THREE WORLD RECORDS. — A multi-seater world record for speed round a 100-km. Triangle is claimed by Ross Briegleb, who averaged 112.44 km/h. (69.87 mph.) on 31st July, flying a Schweizer 2-32 with his brother, Kenneth, as passenger. The course was El Mirage, Wrightwood, Little Rock and back, 65.02 miles, and took 55 minutes 50 seconds. The existing record is 66.97 mph. by Stanislaw Kluk, of Poland, in a Bocian in 1964. Briegleb thereby beats his own National record of 59.36 mph., set up in 1965. He is chief flight instructor at the Briegleb soaring school at El Mirage, California.

A World Record for Goal Flight is claimed by Alvin H. Parker, who flew 917 km. (570 miles) from a point 10 miles south of Odessa Airport, Texas, to Blanding, Utah, in his Sisu 1A on 8th August, taking 9 hours 53 minutes. The existing record is 520.55 miles by Wallace Scott, another Odessan, in a Ka-6CR in 1964. Al Parker is the only sailplane pilot to have exceeded 1,000 km. distance, which he did in 1964.

On 22nd August, Wally Scott challenged Al Parker's flight of 8th August in the ASW-12 and increased the goal distance to 976 km. (606 miles), flying from Odessa to Gila Bend, Arizona. These two pilots thus continue their private battle for possession of this World Record.

All three records await homologation.

S.S.A.

WEST GERMANY

MOTORIZED RALLY. — Nils Hiorth writes that this year's motorized sailplane rally, held at Porta Westfalica, brought no new technical advances compared with last year's meeting. There were 30 examples of the ASK-14, which now has a delivery delay of one year. The change of propeller adjustment from the motorized to the soaring position increases the gliding ratio by five units to 29. He mentions no soaring competitions during the two-day meeting, but one morning, when there were no thermals and a distance contest was set, only the SF-25B and the RF-3, 4 and 5 types were able to take part.

Aerokurier

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