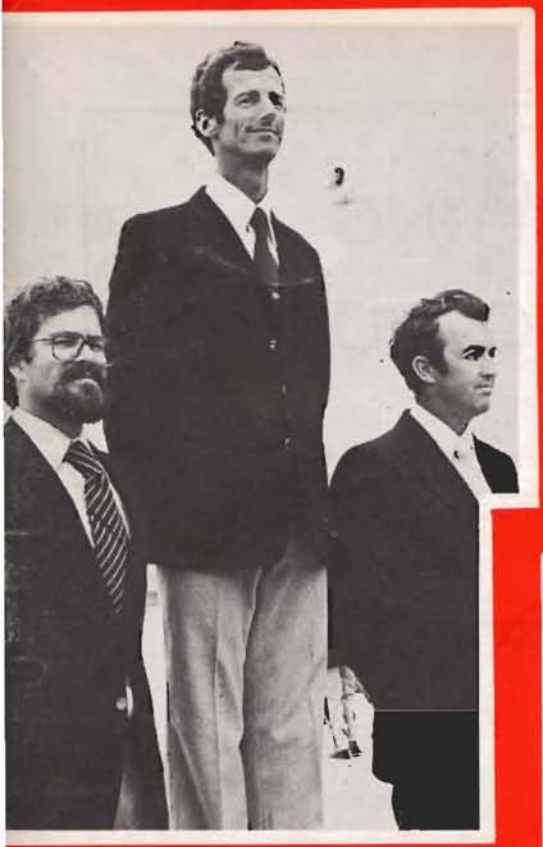

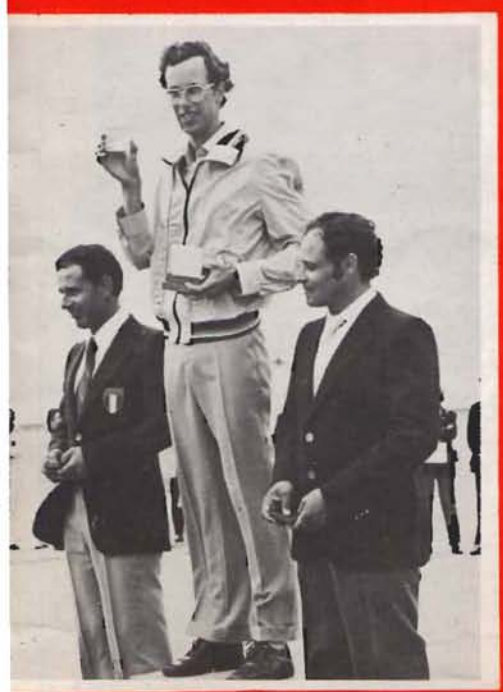

SAILPLANE & GLIDING

OCTOBER-NOVEMBER 1978 65p

WORLD CHAMPIONSHIPS ISSUE

SAILPLANE & GLIDING

Magazine of the BRITISH GLIDING ASSOCIATION

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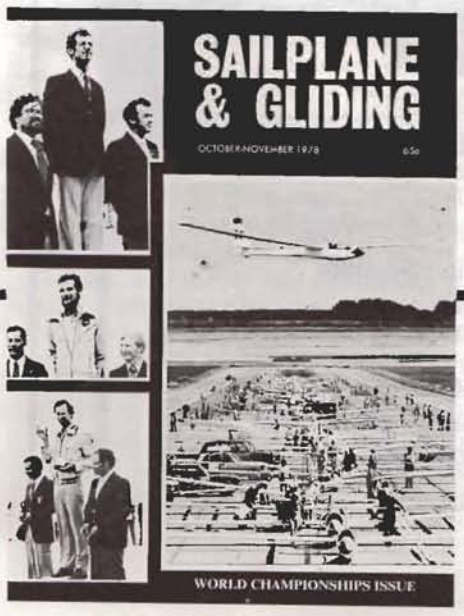
Cover: Hans Smit photographed the World Champions at the prizegiving and caught George Lee in his ASW-17, seen above the busy grid. George, Open Class Champion again, is photographed with Bruno Gantenbrink (2) on his left and Francois Henry (3) at the top of the page with Helmut Reichmann, 15m Class Champion, below. Helmut is with Karl Striedieck (2) left and Göran Ax (3). Below is Baer Salen, Standard Class Champion, with Louis Brigliadori (2) left and Michel Recule (3).



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A FIRST VISIT TO FRANCE

GEORGE LEE

LES FRAISES (Strawberries) ET BON MOTTE (Turf) FRANÇ...

DICTIONNAIRE — The Team Manager is delirious!

PLANURE — Task setter (Wood shavings)

...NE — I am not lost!

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MISE

The site selected for the 16th World Gliding Championships was Chateauroux-Deols – an ex-USAF airfield with an 11 000ft runway set in the heart of the "Texas" of France. The dates for the big event were July 16-29, with the Opening Ceremony on the 15th and the Practice Period the week before. Everything bode well for the Championships – the airfield was more than adequate and set in the middle of the best soaring area in France. The French had a reputation for firmness and efficiency in their organisation – all that what was needed was a liberal dose of the sort of weather that had apparently been experienced there the year before.

I had not flown in France before and was a little concerned about certain potential problem areas – navigational difficulties, changing weather conditions and limited outlanding options in some areas. For these reasons I was pleased to be able to have two weeks' practice at Romorantin, the French Air Force gliding centre some 30 miles north of Chateauroux, before the start of the official practice period. The Centre staff and Station personnel made us feel most welcome and every facility was made available to us – unfortunately the weather was not so co-operative and I went *aux vaches* on my first flight in France! The poor weather, however, gave Albert Johnson, Al Farmer and me the opportunity to do plenty of fettling and O2 at least was in top form.

One valuable exception to the poor conditions was Saturday, July 1, when generally good soaring weather enabled me to fly 738km of a declared 787km triangle and Al Farmer to achieve Diamond distance in his Mini-Nimbus. On the social side we were introduced to the lengthy French ceremony of taking lunch and, along with the South African team who were flying with the civilian club at Romorantin, we were guests at a most enjoyable reception given by the Mayor of Romorantin.

Team O2 was ready

The weather on Friday, July 7, was marginal so I took an aerotow most of the way to Chateauroux and then spent a couple of hours local soaring while my crew resolved some of the inevitable problems on the ground. Two things surprised me at the end of the flight – the first was being given an ATC service during the circuit and the second thing was the size of the vast hangar in which all the competing gliders were to be accommodated. We then sorted out tent and caravan space and booked in, and after our first very acceptable meal from the organisation, Team O2 was ready for a good practice week.

Although I flew on all but the last day during the period, the weather was variable and I elected to cut short most of the tasks, completing just one – a 540km triangle. However, the soarable conditions enabled competitors to sort out problems relating to start, finish and turning point

VENT — Sailplane
— Helper. CRAVACHE — Outlanding
screw) (Horsewhip)
MENT — The too much chat on the radio
(Bewilderment)
EN SCENE — I have landed in the river.
PISALLER — The water ballast
(Makeshift)
DAR BAIL — Is that Father
...nd by para

procedures and every competing glider had to pass a detailed technical inspection.

I began to wonder what sort of number I had got when O2 was drawn twice in a random draw – first for being positioned in front of the crowd on the Opening Day, and secondly for being the first glider to be launched on Day 1. In the event Day 1 proved to be hot, blue and difficult – I ended up 17th, but only 80pts behind Bernard Fitchett, who started off the contest well with a win.

That was the first of 11 gruelling contest days. The weather during the other ten days was very variable with a mixture of blue, cumulus and spread-out conditions. A regular feature of note was the presence of a well-marked inversion which limited the depth of convection and/or gave problems of spread-out – this latter question even had Tom Bradbury puzzled at times!

George with his crew, Alan Farmer (left) and Albert Johnson, taken by an official RAF photographer.

As a basic task-setting philosophy, the organisation seemed to favour the extraction of the maximum out of the forecast number of soaring hours. A generally high task completion rate was achieved but the large tasks in relation to the conditions gave pilots little choice of start time. The last two days produced the best racing tasks although the good conditions were difficult to get into initially on the final day and the air had a thundery feel to it that was very reminiscent of the last day in Finland. For my own part I felt that I did not fly particularly well for the first four days when I lost and gained a large number of points in dramatic style. Things became better then and, as has been proved so often before, consistency was the name of the game.

Apart from the moment of crossing the finish line on the final day, my morale was at its highest on Day 3. A long glide out under a dead sky had brought me to a point some 15 miles from base and a cycling stubble fire finally gave me enough height to scrape over the line as the only competitor to complete the task. Conversely it was at its lowest state on Day 4 when I started pushing too hard after a good first two legs and ended up just making it home after a long struggle from a low point (over 24km/h slower than the winner!).

It was the most satisfying contest to win and certainly the hardest that I have ever flown in. I flew a fairly representative 87 hours during the three weeks and I think we were all feeling the pace by the final day. Team spirit was good throughout and Bernie and I pair flew to good effect on several of the days. The operational organisation was efficient – in particular the system of two start lines with four separate start gates and confirmation frequencies worked extremely well.

We were lucky with the weather during the Championships and it finally broke during the afternoon of the Closing Day with what was to be a long period of thundery rain. We packed up under testing conditions of rain and mud and started the journey back to the UK. The final journey home was long and not uneventful, but we were helped *en route* by a most pleasant champagne reception at Newhaven.

On behalf of all members of the Team, I would like to thank our sponsors and all those supporters of our movement throughout the country who, by their generosity, enabled us to give of our best, free from financial worry. I would also like to thank all those supporters who made the pilgrimage to Chateauroux to rally under the flag.

Last, and by no means least, I would like to thank Albert Johnson and Alan Farmer for their consistently professional approach throughout both the prepatory and the Championships periods – their names should also be on the cup.

A MUCH NEEDED TONIC

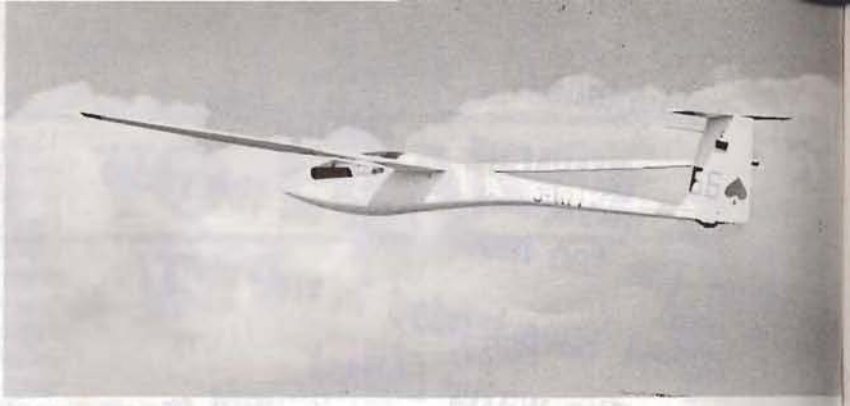
After such a ghastly summer in Britain we needed a tonic – and thanks to George Lee we well and truly got one. Somebody had scrawled on his trailer on the way home WORLD CHAMP AGAIN and you can't say it more neatly than that. Very many congratulations to George, to Dickie Feakes, our hard working Manager and to everyone else in the Team who really pulled out the stops and did so well at Chateauroux. I don't think any of us will want to quarrel with the *Daily Telegraph's* headline, "Britain stamps class on world gliding."

And it's not only glider pilots who are glowing in all the reflected glory (especially of course those who contributed to the Team's funds). Our various sponsors this year must also be pleased that British gliding has delivered the goods.

The first major donation was from Mike Carlton's British Light Aviation Gliding Foundation. This was followed by Punt e Mes sponsoring the Nationals and thanks to them everyone who flew got a £20 rebate on their entry fee. Then the BGA received financial help from a number of companies and organisations for our World Champs Team; well done Sealink, Schweppes Ltd, British Airways and the Sports Aid Foundation for backing a winner. There are more than 10 000 glider pilots – plus all their friends and relations – who will remember.

ROGER BARRETT
BGA Chairman

New Horizons With An Unconventional Aircraft



The SB-11. Photo: Hans Smit.

HELMUT REICHMANN, the 15m Class World Champion, wrote this article about Akaflieg Braunschweig's SB-11 before flying it with such success at Chateauroux

Although the SB-11 is not the first 15m Class glider to be fitted with Fowler flaps (the Swiss "Delphin" designed by Fritz Mahrer, was completed in 1977 and has Fowler flaps between the fuselage and the ailerons), it is the first to have them across the entire span. In addition, the SB-11 has cruise flaps and superimposed ailerons, both of which are coupled to the Fowler flaps, the whole assembly extending and retracting as a unit.

Except for the rudder (which houses a built-in aerial) the SB-11 is constructed entirely of carbon reinforced glass-fibre. The 18 students belonging to the Braunschweig Akaflieg group put in about 20 000 work on its development and construction. The carbon-fibre alone cost DM60 000. Inclusive of other expensive parts, the price of materials amounts to something like DM90 000 and this does not include any element for labour. Six dissertations or degree theses have been, or are being written on the design of the SB-11.

The wing cross-section was arrived at by applying the results of tests carried out in free flight with aerofoils mounted above the fuselage of a Kranich 3 to Prof Wortmann's profiles. Despite the cumbersome Fowler mechanisms, the SB-11 weighs no more than a conventional 15m Class glider, *ie* 270kg. With the Fowler assembly retracted, the wing area is 10.56m^2; in the extended configuration it is 13.2m^2. This means that the wing area, and consequently the wing loading, can be varied by 25%, from 32.7kg/m^2 to 26.1kg/m^2 (assuming a pilot weighing 75kg and empty ballast tanks), or from 45kg/m^2 to 33.75kg/m^2 at maximum permitted all-up weight.

Impressions of the SB-11

The first time you see the SB-11, perhaps with the gigantic, super-streamlined SB-10 still in your mind's eye, you might be forgiven for being a bit disappointed. The SB-11 looks familiar, like any other 15m Class glider; it certainly is not any sleeker, rather the opposite, since the tail assembly (to make it sufficiently effective when the Fowlers are extended) was made in the Janus moulds and looks massive perched on the end of the fuselage, which itself was cast in the ASW-20 moulds. Apart from that, there is nothing special to attract attention, except for the tip plates which protrude suspiciously at the trailing edge (to cover the entire wing-chord even when the Fowlers are extended). There is an extra lever in the cockpit, but otherwise there is nothing to suggest the presence of a technical marvel.

The mechanical subtleties are skilfully hidden: not a single linkage or rod protrudes above the surface, as all the gearing is housed within. The cruise-flaps and ailerons make such a good seal with the rigid part of the wing when the Fowler flaps are retracted, that it looks just like an ordinary production aircraft without Fowlers. When you eventually open the canopy, climb in and operate the Fowler flap lever, you are in for a surprise, because the effort required to extend the flaps is, for example, less than you are used to for raising the undercarriage. What is more, in flight the Fowler assembly rides open of its own accord once the lever has gone through half its travel – and that across a wingspan of 15m.

First impressions in Flight

Immediately after the maiden flight I had word that the aircraft presented surprisingly few problems and that I could come and fly it straight away. My first take-off proceeded conventionally at first – ground run with the Fowler flaps retracted and the cruise flaps set at neutral. At 80km/h, cruise flaps to positive, and the aircraft lifts off. The large elevator seemed less twitchy to me than I had been led to expect by the Braunsweig students. The visibility is as good as in the ASW-20. At 800m I released and flew off, initially with the Fowler flaps retracted. The aircraft handles like a normal 15m Class design, is notably quiet, and has well-harmonised controls. It is manoeuvrable too, since the cruise flaps also move when the ailerons are deflected.

If, like me, you have never flown a glider with Fowler flaps before, you naturally tend to be a bit cautious and curious as well. First positive cruise flap is selected; if this is not done (for the time-being only – a modification or a stop is going to be incorporated) the ailerons may jam. Then I slowly extended the Fowlers. The expected longitudinal trim change does not appear, but the aircraft climbs a little and slows down a great deal. You suddenly have the feeling that you have changed gliders – before, the thoroughbred racing class ship, mercurial and sensitive to the touch, unresponsive at low speed, now an aircraft which reminds you of the Grunau Baby, the Rhönlerche or the K-8, very slow and forgiving. I tried out the low-speed handling and the ASI dropped down through 70 . . . 65 . . . 60km/h. At an indicated 55 or 57km/h the SB-11 finally stalled. Later flights with a trailing static head showed a minimum speed of around 60km/h. The rapid rate-of-roll noticed earlier disappears with the Fowlers extended: with the heavily-cambered wing section, low speed and relatively narrow-chord ailerons and cruise flaps, only residual aileron effectiveness is left. Nevertheless, despite the reduced rate-of-roll, the distance the aircraft flies during the entry into a turn is probably no greater than for a conventional production aircraft, and this is probably the crucial factor when centring.

"Seemed to be climbing faster"

If you fly more slowly, you must expect all changes in attitude to occur rather more slowly. The controls are still pleasantly well-harmonised, but when circling, large applications of opposite aileron soon become necessary. In a turn to the right, in particular, the stick is soon up against the left-hand stops. One then has the impression that if only the ailerons were more effective the turn would be even tighter and steeper. The sensations in the turn are unfamiliar in other respects too (unfortunately it is a very long time since I last sat in a Grunau Baby). Even though one is flying in a medium-banked turn, without a high load factor (centrifugal force), the horizon fairly rushes past. With this aircraft, you seem to be able to "take a short cut round the corner" without risking anything, since it is so slow. I flew around for a while experimenting with the Fowlers in and out, and attacked a few imaginary thermals – cruise flaps down gently, roll in, extend Fowlers. Then I decided to do some comparison flying with other aircraft. The thermals were weak but there were a few gliders in the air. I seemed to be climbing faster – but can one be sure that the others are properly centred? The performance of a glider in thermals is very difficult to estimate or measure. It is often only after several weeks of competitive flying that we find out what the strengths and weaknesses of various types of glider are. It seems particularly difficult to make forecasts for the SB-11. Of course, one can always leave the Fowlers retracted, and then it becomes a normal, high-performance 15m glider. When does the Fowler flap come into its own? The sink rate is, if anything, a little higher with the Fowlers extended than with them in, but the low speed and narrower radius of turn are of great advantage. The question, for which there can never be a

definitive answer, then becomes one about the structure of thermals. There is nothing for it – we shall just have to see in practice what advantages are offered by the SB-11. With flight measurements alone, the picture will never be clear.

Comparison with LS-3 flown by Dr Klaus Ahrens

To digress briefly from the SB-11, I had decided to fly the LS-3 at Chateauroux. It is without doubt one of the best 15m gliders in production, in the climb as well as in the glide. Independent evaluations carried out by the DFVLR and American test flights have confirmed this impression. But in comparison flying, the other pilot is at least as important as the performance of the other aircraft. I know Klaus very well from numerous flights we have made together (*eg* 1974 World Championships and the 1977 German Championships). If we are concentrating on our flying when together in a thermal, neither of us wins. Slight differences of height sometimes appear, but cancel each other out statistically.

Walter Schneider co-operated in a particularly generous fashion. Not only did he make his brand new LS-3A available for the planned comparison flying, but he also offered to arrange for me to be towed to Braunschweig and back by his manufacturing engineer, Wolf Lemke and Dieter Paff from Egelsbach in his tug aircraft. On June 3 everything was ready; Klaus and I were airborne over Braunschweig with several hours to organise miniature racing tasks. Unfortunately the SB-11 was not yet quite finished. The fuselage hadn't been completely rubbed down and polished; there were large lead plates attached with adhesive tape forward of the fin to ensure that the CG came back at least to the forward limit of the permitted range and there was, for example, a chink in the Fowler flap near the fuselage. We were flying without waterballast and our wing loading was almost the same (0.5kg/m^2 different).

"Most thermals favoured the SB-11"

We were unable to perceive any significant difference in the cruise up to 170km/h (the SB-11 was not at that time cleared to fly any faster). If anything there may have been a marginal advantage in favour of the LS-3, but if it existed at all, it would have been offset by improvements to the finish of the SB-11. The interested observers did not see anything very dramatic happening in the climb either. It simply is not easy to outclimb a good pilot in a good aircraft. Here, however, the tendency was clear. Most of the thermals favoured the SB-11. Often nothing happened for a few turns until the SB-11, by turning tighter, succeeded better in capturing a strong core, so that a height differential of three or four metres suddenly appeared. The reason why this could be done without obstructing the LS-3, was obviously that the SB-11 can turn so much more tightly. Klaus, however, did not like being behind me in the turn, because he was not able to fly so slowly and had to take expensive avoiding action. Airbrakes were used to cancel height differentials of 30 or 40m – and then the chase began again. We each independently came to the conclusion that the SB-11's Fowler flaps were of benefit in the climb and, more generally, were useful for cross-country soaring. The advantage in the climb is, however, very heavily dependent on the structure of the thermal and disappears when the thermals are regular and large in area.

Of course, it would have been of interest to us to see what effect ballast had. We could have derived further useful indications from a comparison of the two aircraft at a wing loading of 45kg/m^2, and even more from a comparison of the SB-11 fully ballasted with an empty LS-3. Unfortunately, however, the tank attachments had not yet been installed in the SB-11. Everyone in Braunschweig made a final effort to put the finishing touches to the SB-11 so that I could give the aircraft as good a debut as possible at the World Championships. Beware of exaggerated expectations though: competitions are won by pilots not aircraft. There is no aircraft which will forgive a tactical error on the part of the pilot. And the competition in the Racing Class is more than hard.

Some thoughts about future developments in gliding

Aircraft like the SB-11 make one reflect on the development of sailplane construction and the future of the competition Classes. The influence which the University Flying Groups have exterted, and still exert, on glider construction becomes apparent when one looks at Braunschweig Akaaflieg's aircraft fleet. It is certainly not an exaggeration to say that it was the University Flying Groups, with their forward-looking and sometimes downright revolutionary ideas, which were the driving force behind the glider constructors, and that it was thanks to them that the West German glider manufacturing industry was able, in the post-war years, to establish and maintain its leading position on the world market.

In support of this, let us just recall a few of the aircraft which have had a strong influence on the post-war development of aircraft construction:

1957 Phoenix, Akaflieg Stuttgart
First glider in the world made of GRP.

1964 D-36, Akaflieg Darmstadt
Forerunner of today's Open Class gliders.

1972 SB-10, Akaflieg Braunschweig
Largest, and aerodynamically best glider in the world, 26 or 29m wingspan, partial use of carbon-fibre, measured glide angle exceeding 50 for the first time.

1975 FS-29, Akaflieg Stuttgart
First glider in the world with telescopic wings, variable in flight between 13 and 19m.

1978 SB-11, Akaflieg Braunschweig

I believe there to be few precedents for such successful use of research facilities. Just as long as the University Flying Groups remain keen to innovate and improve – sometimes fanatically so – and as long as they continue to put in so much work (what student these days is prepared to work without pay for 1000hrs or more a year, apart from his studies?), the future is set fair for the development of glider construction. Let us hope that this great asset for the German aircraft construction industry is not threatened by bureaucratic short-sightedness (for instance, by a limitation on periods of study).

At the international level, or more precisely in the CIVV, careful consideration should be given to the problem of which rules to change, if any, and which to leave alone. At the moment we have a situation in which a relatively unchanging competition Class, the Standard Class, stands opposite two Classes which invite technical experimentation, the Racing and Open Classes. The most effective way of improving performance is still by increasing span. The limitations nowadays are imposed more by ease-of-handling considerations and the price of carbon-fibre than by problems of materials. Other available options are more complex technically (and even more expensive) and might thus with advantage be tried out in the Racing Class – if the rules are left as they are now.

I think that the Standard Class should in any case be left well alone. It has produced mature designs which, for a limited financial outlay, provide an excellent basis for competitive flying.

The Open Class gives the designer maximum freedom. In the past, most of the impulses for further development emerged from it.

Serious thought must be given to whether the Racing Class – officially known as the FAI 15m Class – should also be left entirely free, except for the limitation on span, or whether certain highly expensive technical options should be excluded. Let us hope in this respect that the CIVV authorities are sufficiently perspicacious and cautious, so that no uncertainties arise in the minds of manufacturers and pilots. The same hope incidentally applies to the control of competitions. Premature decisions here could do great damage to gliding which enjoys a good reputation as a competitive sport.

Translated by Max Bishop

What's New at Chateauroux?

FRANK IRVING

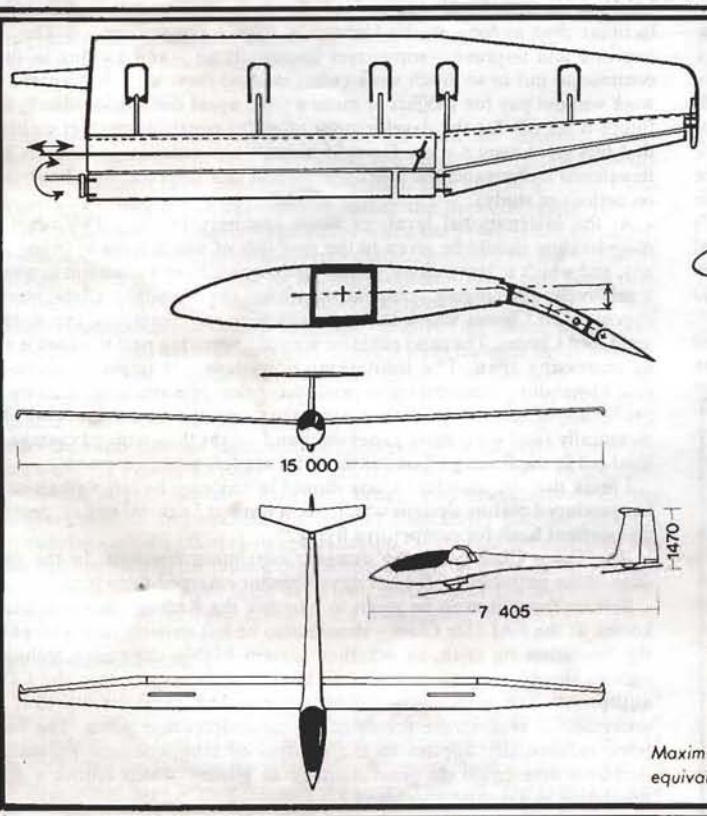
A dramatic shot of the SB-11 by Hans Smit.

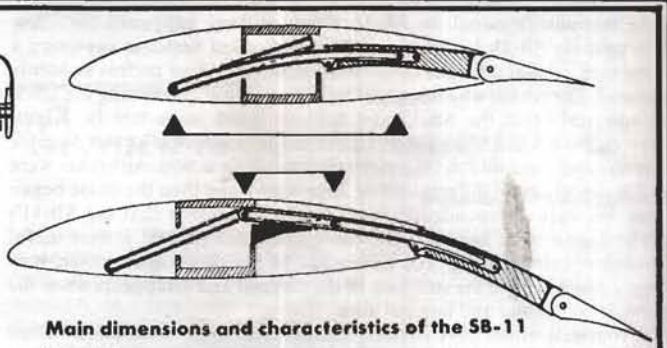
The technological star of the show was undoubtedly the SB-11, a 15m "Sigma" with a 25% chord extension. Helmut Reichmann won the first two tasks in it and stayed in first place until the end. (This is not the same as winning every day, but it is still a remarkable record, particularly when the machine represents a new concept).

The SB-11 managed to remain clean where Sigma was messy by avoiding flexible fairings and spring-loaded spoilers to fair in the flap. The cunning feature of the flap was that it was thickest at its leading and trailing edges, so it fitted into its shrouds like a plug when fully in or out. In any intermediate position, it was clear of the shrouds and could be moved quite easily by a manually-operated lever. This geometry produced a considerable kink on the lower surface with the flap out but apparently there were no adverse consequenses. The fit of the Wortmann flap wasn't quite perfect but it was far better than Sigma's. Hanging on the trailing edge of the Wortmann flap were 21%-chord surfaces acting as ailerons and ordinary camber-change flaps. Apart from the rudder, which housed the radio antenna, all of the rest of the machine used carbon-fibre: in the wings for stiffness, thus easing the geometrical problems when the wing bent, and in the fuselage for lightness. The fuselage used ASW-20 moulds for the front end and Janus moulds at the back, but with such elegant fairing between that there was no sign of its mixed ancestry. The main dimensions and characteristics are given in the box below.

As one would expect, the SB-11 was horrendously expensive (costs given in the previous article) with over 20 000 man-hours of labour in addition. Altogether, equivalent to about twice as much as Sigma, which is probably very reasonable in view of the post-Sigma inflation. The gentle reader can draw his own conclusions about the possible price of a production version.

A curious feature of the design is that it is optimised for very weak and narrow thermals. Flap in, its weight and general dimensions are pretty much those of any other 15m machine. Flap out, the stalling speed becomes only 58km/h (31kt) and it can be circled well inside the outer denizens of a thermal, to their great fury. Sigma, optimised for the typical British thermal, was the other way round. Flap out, its performance was much the same as anything else; flap in, the stalling speed rose to 52kt and it was intended to rush off across the countryside at prodigious speeds. (In fact, its performance was quite impressive albeit less than the "brochure" figure.) In these circumstances and as the daily results of the WGC show, the superiority of the SB-11 was chiefly manifest in weak conditions. Somewhat strange, you may think, but it certainly paid off. It'all goes to





Main dimensions and characteristics of the SB-11

Span (m)	15,00
Length (m)	7.405
Empty weight (kg)	270
Max waterballast (kg)	100
AUW (kg)	470

Wing section: Wortmann FX-62-K-144/21 VG 1.25

	Flap in	Flap out
Wing area (m^2)	10.56	13.20
Aspect ratio	21.3	17.0
Wing loading (kg/m^2)	33.2/44.5	26.5/35.6
	(without/with waterballast)	
Stalling speed (km/h)	75*	58*
Never exceed (km/h)	260	140
Max L/D	41 at 104km/h	36 at 85km/h

*Without ballast

Maximum lift coefficient, flap out, is 1.70 based on the extended chord, which is equivalent to 2.13 based on the unextended chord.

show that it pays to be second in applying new technology: Sigma showed the way and highlighted the snags and the SB-11 has reaped much of the benefit and represents a much more mature device. Braunschweig and Helmut Reichmann are to be congratulated on such a success on its first outing.

Its instrument panel was mostly as sparse as a club K-8, except for one device. This was a box full of electronics, about the size of a Dittel radio, bristling with switches and surmounted with what appeared to be a LCD read-out. We were told that one of its functions was distance-measuring. Flaps in, it assumed that the pilot was flying more or less in the right direction and integrated speed to give distance. No doubt it took note of height to convert IAS into TAS, and the pilot inserted the wind. It was said to be correct within about 1%.

Colour creeping back

Apart from the SB-11, there was little really new. The Jantar 2B showed various detailed improvements over the earlier variants and performed well in the hands of Dick Johnson; carbon and Kevlar are slowly coming into use – Kevlar notably in the LS-3A fuselage; the Cirrus 78L had a fixed tailplane; a little colour is creeping back – some of the anti-collision paint was quite fancy. Tailwheels were quite rare and the concrete was remarkably abrasive, so that tail-skid shoes lasted about three launches. Gerhard Waibel, who was crewing for Ernst-Gernot Peter (ASW-21), looked exceedingly happy on the evening of July 29. Apart from the SB-11 in first place in the 15m Class, his designs were in the next three places in that Class and first place in the other two Classes.

We OSTIV Sailplane Development Panel chaps were fortunate in having at your disposal Victor Whiskey, Gerhards personal ASW-20. The idea was that we should observe the advantage of the flap "gate". This wasn't a gate in the literal sense but rather a projection from the cockpit side separating the *"en route"* flap lever positions from the landing positions. The flap handle went round the gate when rotated inboard slightly further than usual. One advantage was that it was possible to start the take-off roll with the flaps up so as to achieve good aileron control and then to move them into the "thermal" position for take-off without having to observe the flap lever position with one's eyeballs. In fact it was fairly easy to overshoot the "gate", which didn't matter too much in practice. A bigger projection would have solved this problem but only at the expense of skinning the pilot's knuckles on opening the brakes.

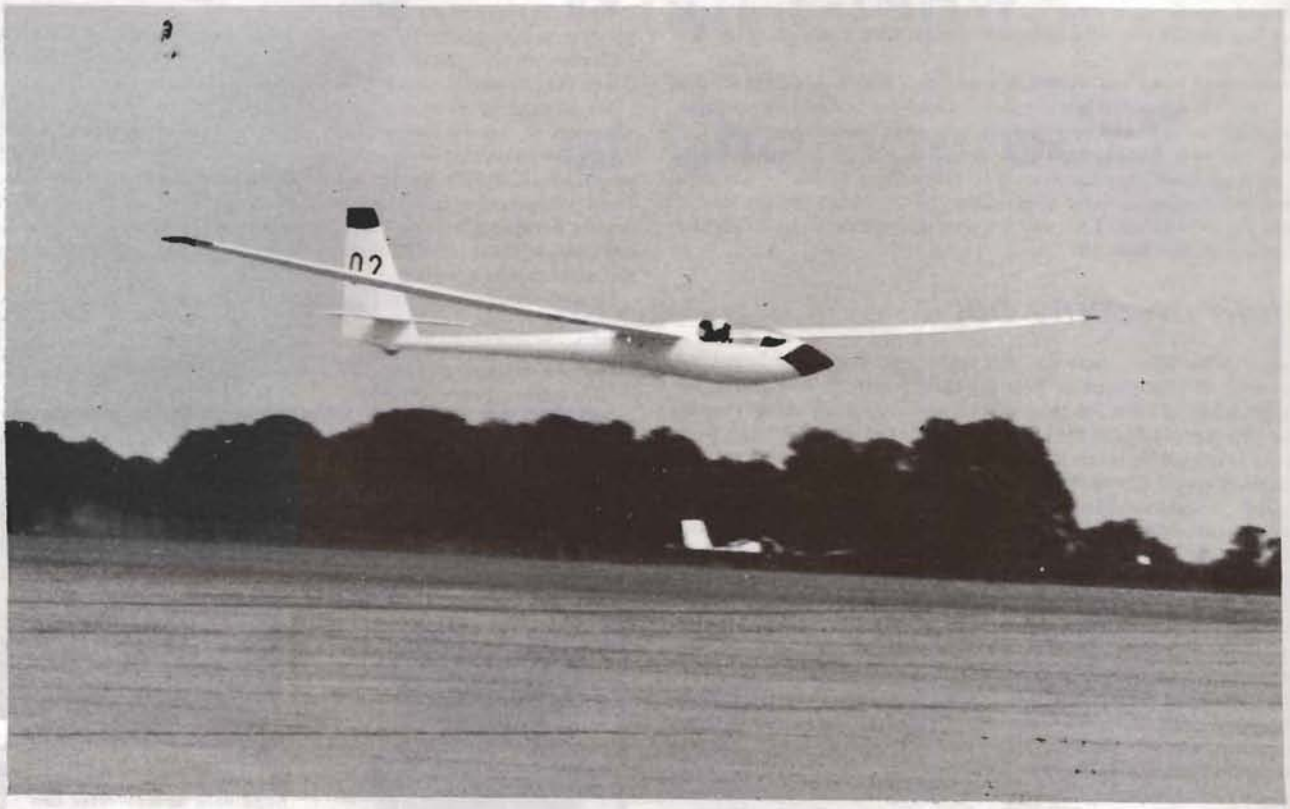
Apart from that, it was very easy to see why the -20 is so greatly favoured by the top chaps. View, comfort, controls and performance all seem splendid, so far as one could tell from a very Gallic aerotow to 500m. This machine was doubtless ballasted for Himself and he, Gerhard, is a big man. The good clean lift he can apply to the wing root of a -17 comes as a great surprise to ordinary mortals. So, with myself on board, the CG was doubtless fairly far aft, which might explain the brisk stall. It was quite unlike the vague wuffle one has come to expect from modern sailplanes and it might indeed make the eyes water if conducted near the ground.

Also present for the benefit of cognoscenti and potential customers was the second Vega. The general shape is very elegant and businesslike and, on the ground, the markedly nose-up attitude is distinctive. The cockpit layout and view are mostly excellent, although this one was equipped with a pair of tubes inside the canopy to keep out Dutch wire fences. The effect, both in terms of blind spots and claustrophobia, is quite unpleasant. Flying-wise, one feels instantly at home and it is possible to scratch around low down in little rough thermals without a qualm – you have to, when dumped in sink at 500m. However, it could do with some more rate of roll, the airbrake lever forces need a little amelioration and it was only possible to open the brakes with the flaps fully up or fully down – an arrangement peculiar to this specimen. The single lever control (twist for flap, pull for airbrake) should quickly become familiar and de-clutters the cockpit. Given the proverbial ha'porth of tar, it should be a very good ship.

We seem to have entered a period of consolidation. Further significant advances in aerofoil design seem unlikely, so improvements in performance can only come from variable geometry and a greater range of all-up weight which, in turn, implies lighter structures and greater water capacity. The development of fancy instrumentation proceeds fairly gently largely, I suspect, because pilots don't really want to be replaced by micro-processors and many of them feel that they can do just as well with an ordinary vario and some capillary tubing.

Finally, words seen on the inside of the British hut door at about 02.00hrs on July 30:

"Some Brits can do it twice
"Some Germans can even do it three times
"But it takes them eight years."



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OSTIV AT CHATEAUROUX

FRANK IRVING

A little-publicised offshoot of OSTIV is the Sailplane Development Panel, a body devoted mainly to contemplating airworthiness and related matters, and the begetter of OSTIV Airworthiness Requirements. Although widely used, OSTIV AR's have only an advisory status, since OSTIV is not an official regulatory body. However, the scene in Western Europe is about to change dramatically, since the major countries have now achieved agreement on Joint Airworthiness Requirements (JAR's) for sailplanes. These had to be based on a set of national requirements, so the German requirements were used, the latter largely following OSTIV AR's. So, within the foreseeable future, Western Europe will have substantially common airworthiness requirements for sailplanes, subject to a few national exceptions. It is worth saying that whilst JAR's are fairly closely related to OSTIV AR's, the latter originally owed much to British Civil Airworthiness Requirements, Section E, although Section E is now distinctly out-dated in some respects and will presumably fade away when JAR's are published.

The compilation of JAR's has been very much a family affair: Heiko Friess of LBA (the German Airworthiness Authority) and the OSTIV SDP was Chairman of the JAR Committee and our own Cedric Vernon of CAA, OSTIV SDP and the BGA Technical Committee, was Secretary.

These developments produced a fair amount of overlapping activity at the OSTIV/SDP meeting at Chateauroux, which occupied the three days before the OSTIV Congress. We heard of the progress of JAR's, we contemplated improvements to future OSTIV AR's and subsequently observed Messrs Friess and Vernon going to the final formal meetings at the Aerospatiale factory on Chateauroux airfield to put the finishing touches to JAR's.

Glider pilots and back injuries

The main items of interest at the SDP meeting included a lecture by Dr Stedtfeld, previously doctor to the German team, on the attitude of the pilot in modern sailplanes in relation to back injuries. Not at all good, he concluded, and displayed photographs of a plastic device for insertion between the pilot and his parachute to provide better support for the spine.

Much time was devoted to fatigue, largely triggered-off by the Blanik situation. Extreme schools of thought supported full fatigue testing of sailplanes on the one hand, or argued that it wasn't really a general problem on the other hand. A compromise proposal suggested something on the lines of the present BCAR Section K Requirements (Light Aeroplanes).

However, it was quite clear, as confirmed by a lecture during the Congress, that owners of old Blaniks have a severe problem on their hands. Alan Patching explained the Australian situation, where some Blaniks had over 7000hrs before being grounded. Nor are FRP sailplanes in the clear. We were told by Heiko Friess that extended tests had shown that fatigue isn't really a problem for the older generation of glass machines (Libelle, etc), with their relatively low stresses in the spar caps. But more recent designs use higher spar cap stresses - about 25% higher - and fatigue may be again a consideration. But no recent tests have been done, so nobody quite knows what the situation really is.

On this same theme, there was a paper during the Congress on the fatigue testing of a PIK-20D wing, with carbon spar caps. The tests were intended to simulate 16 000hrs of flight which, with a scatter factor of four, would provide for an actual airframe life of 4000hrs.

Finally, the static strength of the wing was determined. Whilst adequate, this was lower than expected. However, the wing had been subjected to extensive static testing at high load levels before the fatique testing started, so the validity of these tests is questionable. This sort of bother seems to be endemic: the Blanik wings were accidentally over-loaded during the tests.

So, sailplane fatigue is something of a mess: the Blanik and PIK-20D tests both have questionable features but they have produced some figures, whereas the current glass-fibre situation appears to be totally obscure.

Other topics discussed were that long-playing feature on the definition of motor gliders, units for OSTIV AR (SI for the next issue), load factors for fully-aerobatic sailplanes and flutter (proposals from myself on the height at which flutter calculations should apply and guidance on the type of calculations). After all that, the technical papers of the XVI OSTIV Congress almost came as light relief. There were about 30 of them, ranging from the trivial to the incomprehensible, with a fair sprinkling of really useful ideas. Dr Mai's paper on Harmonic Gust Response Analysis was associated with the PIK fatigue tests mentioned previously and other interesting structural papers were Stafiej's on the Loading Consequencies of Air Brakes and Romeo's on Extruded Structures.

Bob Lampson presented a summary of "An Investigation of Handling Qualities of Current Sailplanes" by Professor George Bennett of Mississippi State University. This is really a NASA Contractor Report (No. 2960) and summarises the opinions of seven pilots who flew six sailplanes and evaluated 73 features of their design, smooth air manoeuvring and flight characteristics in convection, in accordance with the Cooper-Harper Rating Scale. The machines are not named but, since drawings are given, their identities are clear. Few would quarrel with the general assessments and it was noteworthy how the American products rated poorly. The pilots had various mixtures of experience, some with a lot of sailplane hours and not much else, others with few sailplane hours but an awful lot in jet fighters or transports, so their opinions are coloured by their non-sailplane experience. This makes the paper all the more interesting and it is noteworthy that cockpits in general received scathing comments, many pilots disliked the pitch sensitivity of some machines, there were problems in low speed lateral-directional control and most of the machines had objectionable approach and landing characteristics.

"Flight Techniques" encompassed various papers mainly concerned with dolphin-flying. Justyn Sandauer presented an excellent review of the whole problem whilst other authors tended to indulge in splendid displays of mathematical virtuosity, most of which required the pilot to have extensive powers of prophecy.

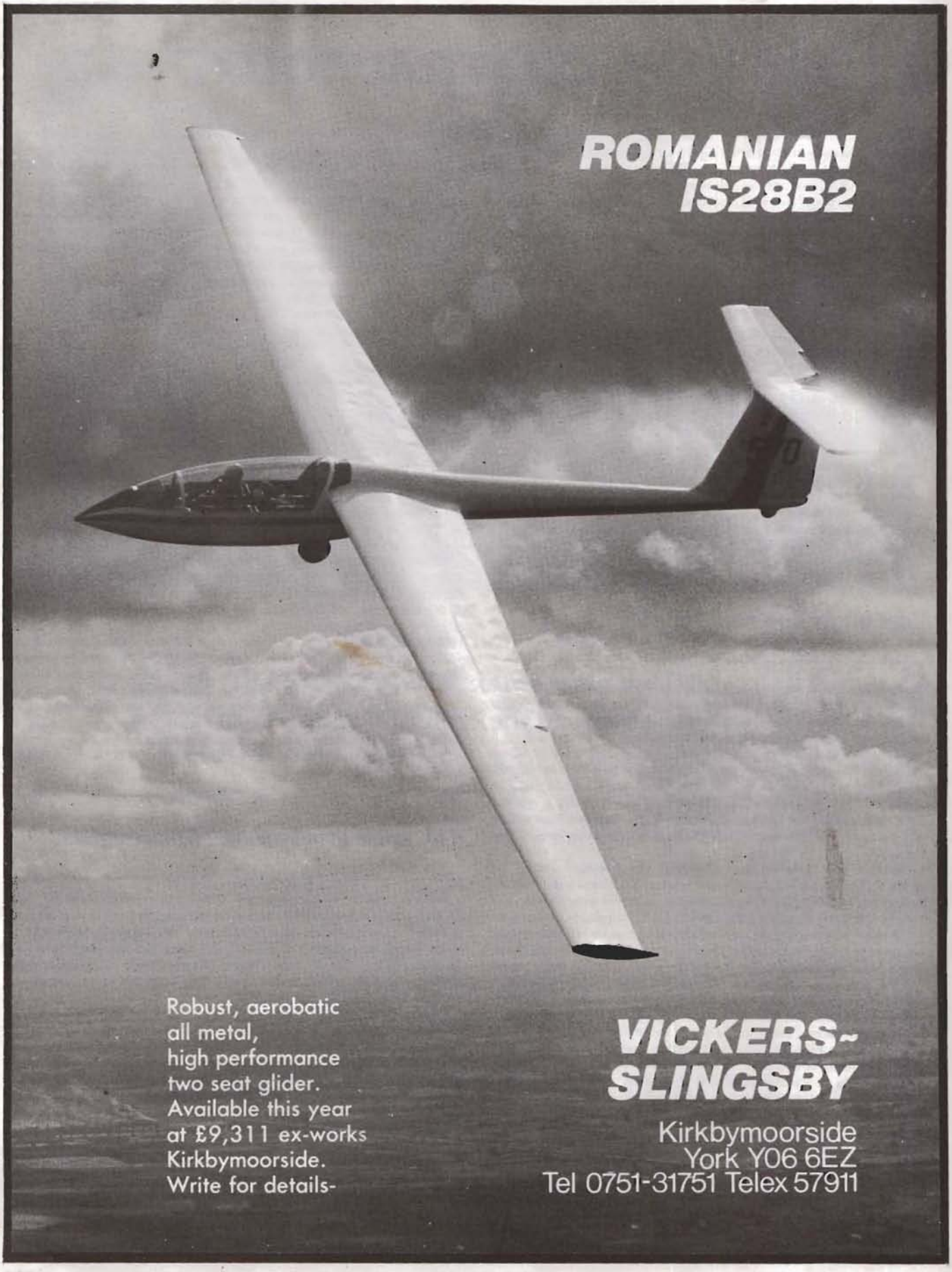
One modest little paper was also one of the most interesting from the pilot's point of view: "Measurements of Sailplane Sink Rates between Thermals" by Dick Johnson. On the average, the air between the thermals must be sinking, but by how much? So Dick went and measured a lot of inter-thermal glides and deduced thermal strength and rate of sink of the air. Plotting one against the other gives a pretty scattered array of points which, according to my sums based on measuring his plot, give a mean value (for rate of sink of the air/thermal strength) of 0.087 with a standard deviation of 0.084.

The noise problems of *"Motorseglers"*

We also had a little seminar on *"Motorseglers"* conducted by Hans Zacher, with much talk about the noise problem. The present requirements provide for a maximum level of 68pndb measured vertically below a fly-by at 300m with cruise power. However, said Hans, this test can be met by a machine having a totally unacceptable sideways noise output, and it says nothing about the noise on the climb. No doubt the requirements will become more elaborate.

The congress concluded with a General Conference which accepted the resignation of Louis de Lange from the Presidency after 28 years of vigorous activity and promptly elected him Honorory President for services rendered. Dr Manfred Reinhardt was elected as the new President. Also, Floyd Sweet retired as Chairman of the Technical Section, amid general expressions of regret. There followed a splendid closing dinner, gracefully chaired by the new President, from which we escaped somewhat after midnight to attend the triumphal party at the airfield.

Abbreviations: OSTIV: *Organisation Scientifique et Technique Internationale de Vol à Voile*; SDP: *Sailplane Development Panel*; OSTIV's: *OSTIV Airworthiness Requirements*; JAR's: *Joint Airworthiness Requirements (for Western Europe)*; CAA: *Civil Aviation Authority*; SI: *Système Internationale, (d'Unités), the current international metric system and* NASA: *National Aeronautics and Space Administration.*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ACCIDENT PREVENTION

BILL SCULL,
Senior National Coach,

writes more about

AEROTOWING ACCIDENTS

Hardly had the dust settled from the accidents and investigations detailed in the last issue when there was another accident – this time to the glider.

The glider involved was a Bocian being towed by a Chipmunk; at about 2000ft the glider, it would seem, got too high. The evidence thereafter is conflicting; certainly the tug's tail was pulled up and the tug pilot who released the rope reckons he lost a 1000ft or so. The rope was not released from the glider end and to confuse matters was around the mainwheel in a manner compatible with an over-run on the ground; but this point is not confirmed and is even denied by the witnesses to the launch.

The glider was observed by a number of witnesses prior to the crash. What is certain is that a large section of wing leading edge broke off and soon after the glider plunged vertically to the ground. The pilot was killed. The accident, at first sight, seemed insoluble but due to the efforts of the CAA Accident Investigation Branch it was eventually established that somehow the rope had caught around the wingtip – paint marks on the rope confirm this theory – and that the damage done initiated the leading edge failure.

Any accident raises questions and the ones that this provokes are:

1. Are we paying enough attention to out-of-position training involving slack ropes?
2. Is there enough emphasis on releasing at an early stage if things go wrong?
3. Are we, in general, positioning the glider too high behind the tug?

The answer to (1) and (2) is "probably not"; (3) warrants further consideration.

The Australians tow exclusively in the low-tow position. This became standard practice after a couple of serious (or fatal) accidents. Since using low-tow there have been no fatal accidents! The arguments in favour of low-tow are, in simple terms, the stability of the combination and the fact that although it is possible to get lower than the low-tow position, the hazards in doing so are less for the tug pilot and the margins to go high are considerable.

In contrast, in high-tow, with the tug on the horizon – approximately – there is little tolerance for getting higher on several counts:

1. Pulling the tug's tail up.
2. Losing sight of the tug.
3. Getting the rapidly divergent situation especially with CG hooks (mentioned in the last article in the August issue, p162).

Maybe the measures suggested – a longer rope and weak links – are not as important as getting power on tow, nearer the slipstream with the tug above the horizon. After all the hazards of getting into the slipstream are not great unless the tug is very powerful and the glider light or poor on control response.

The indications from the recent spate of accidents is that we are towing too high relative to the tug. There's nothing conclusive of course, but the question must be asked: **Are we?**

VEGA ABROAD

by G. E. BURTON

I recently took part in two foreign competitions in the prototype Vega, the Hahnweide International Competition and the American 15m Nationals at Ephrata, Washington State, USA. The Hahnweide is well known for its high standard but this year's competition was the 13th so we may well have expected the unexpected: the answer was rain and after five days of almost continuous rain even the motorways were flooded. We managed two weak "drift away down the ridge" type days before the deluge in which I was lowly placed on derated days, then on the final Saturday we had a good forecast with a 438km task to Donaueschingen and Aalen. Vega was at last able to show her paces and with a long, into wind, second leg, she gradually left the field behind. Near the second turn a large shower almost cut off the turning point but I was able to dodge round it and then have a final glide home. We won the day.

I had hoped to be able to fly in the American 15m Nationals from the beginning of the year. I had all the "bumpf" but I didn't know whether the ship would be ready. It had been intended to take the second and third prototypes for myself and Ross Briegleb to fly but as it happened neither was ready and the somewhat decrepit No. 1 had to go. I hadn't paid the entry fee and I arrived two days late because of a long transatlantic argument I had with my Chairman before the contest but as always I was welcomed with open arms.

Ephrata is a small American town in a desert plain – at least it would be if it were not for the Grand Coulee Dam which now allows about one third of the area to be irrigated. The weather was hot but conditions weren't too different from anywhere else, the thermals in general went to 5-7000ft. George Moffat was in winning form and had already won the first two days: on the second a huge dust storm had cut off most of the field but George said visibility was no worse than a normal day in the UK.

I joined in on the third day and it was rather like a practice day for me. I managed 59mph round a 200km triangle and placed 30th out of a field of 65. They were "hot cats" these Americans, many of them flying "Schumanised" Libelle 301s which went fast! George M won again and again the next day and again the next day. The ASW 20 seemed to have the edge on everything. I was creeping up, then we had a rest day. Afterwards a 538km triangle was set *via* Spokane and Dayton with a forecast of 9500ft base. It wasn't quite right but good enough and this time I managed to beat George M for the first time in the contest – 64.87mph against his 64.59.

I got a round of applause at the briefing and a new batch of curious competitors round Vega the next day. "Gee, you went that fast with those wings?" Our standards of construction are not yet up to scratch (or should I say polish). I had to leave early in order to get the ship back to our agent for another competition but my memories are of a superb site with super weather and the most friendly and welcoming people in the world. Vega obviously goes quite well but I guess it is about 3% worse in glide than the ASW-20 and LS-3. The main reason seems to be that we have almost 5% more fuselage cross section area and almost 20% more tail area: unless the profile drag coefficient is lower by the same percentages you are going to get just that much more drag and it begins to show up very markedly at high speed. The advantages are, of course, better cockpit comfort and better stability so you pays your money and you makes your choice! The 15m "Racing Class" is the Class of the future. The achievable speeds are high, the handling is magnificent and the price is still affordable. What more could you want.

My thanks to Dr Knapp, Doug Ferguson and all their helpers who enabled me to take part.

THE TRANSEUROPEAN 1978

WILLIAM MALPAS, who won the Standard Class, describes the new European competition launched by Jean-Claude Penaud and organised by L'Aero Club de L'Ouest at Angers.

In the April issue of S&G (p67) I annnounced the birth of the "Trans-european" and at the BGA meeting in Oxford I gave some further details. Nevertheless, I was the only British pilot to toe the line at Angers on June 4, 1978. To the enterprising pilots who have already renounced the yoke of the eternal speed triangle let me say right away, "This is for you!" It was a great privilege to participate in this first-of-a-kind and it has left me with a store of unforgettable experiences which no previous competition can match.

Total of 2880km

The contest rules were mercifully simple – even the press could understand what was happening. We all left Angers at the same time (within two minutes) on a journey which included three turning points where a landing was obligatory: 1. Freiburg-im-Bresgau, W. Germany; 2. Osnabruck, Achmer, W. Germany and 3. Niederoblarn, near Liezen, Austria.

Then back to Angers for a total of 2880km. It was possible to take up to 300km of forward movement by road, in order to avoid problems with customs or to leave a zone which was particularly difficult from the point of view of weather or terrain. The 300km could be taken in several small increments or all at one time.

The results

Overall Places	Standard Class		Date of return to Angers or km
1	–	Manfred Dick (W. Germany) Nimbus 2	June 21
1	–	Dieter Memmert (W. Germany) Nimbus 2	June 21
3	(1)	William Malpus (GB) Std Cirrus	2280km
4	(2)	Gilles Navas (F) Std Cirrus	2180km
5	(3)	Jean & Pierre Gianti (F) ASW-15	2030km
6	–	Jean-Claude Penaud (F) Mosquito	1930km
6	(4)	Daniel Maillard (F) LS-1	1930km
6	(4)	Stephen Blaisse (Holland) Std Libelle	1930km
9	(6)	Michel Recule (F) Cirrus 78	1100km
10	(7)	Michel Dubreuil (F) Edelweiss	560km

NB. Recule abandoned on June 18 (obliged to return to work); Dubreuil abandoned on June 9 (damaged tailplane).

The weather

Statistically the month of June is the best period in France and Germany. We were unlucky this year to be plagued by a series of fronts sweeping across Europe with no relief from an intervening ridge of high pressure. We found patches of very good gliding conditions on three days only. Conditions quite good enough for 400 to 500km triangles, but the patches were only once large enough to fly a long distance in a straight line. Our arrival in the Austrian Alps coincided with an epidemic of thunder-storms, so turning Niederoblarn presented some special problems, as British visitors to Zell-am-See will readily understand. Therefore, our anticipated return route along the spine of the Alps was regretfully abandoned. We were particularly unlucky in that the period of the Transeuropean was preceded by a whole week of excellent weather which would have been enough to take us most of the way around the course.

The route

The map shows the route I took which was fairly typical of that followed by all the 15m gliders. Most of us had intended to follow a southerly route on leaving Angers, *via* the valley of the Cher, passing just north of Chateauroux. The weather decided otherwise, leaving open only a narrow corridor of very marginal conditions in the direction of Le Mans and Paris. The competition really got going on June 8 when seven of the pilots left Bailleau-sur-Gallardon (near Chartres) and four reached Freiburg (Dick, Memmert, Penaud and Recule) for a distance of 480km.

From Freiburg the main question was whether to pass east or west of the Frankfurt control zone. The westerly route is more direct, but the easterly route profits from higher ground and better soaring conditions. All except Blaisse chose the easterly route, so we didn't see him for a few days.

After turning Freiburg the two Germans went further east than the rest of us and found better conditions on the high ground close to the East German border. This gave them a 2-300km lead which paid off handsomely after turning Osnabruck, with the wind behind and good conditions developing in southern Germany. Thus they reached the third turning point at Niederoblarn the same day that the rest of us reached the second turning point at Osnabruck.

We had hoped to find good conditions with high cloudbase over the Alps, which would have enabled us to follow a southerly route along the spine of the Alps for the return journey. What we found was a humid and thundery airmass trapped by the mountains, so we were obliged to return along the northern fringe of the Alps, a route which gave us the opportunity to dodge the rain and escape into the plains.

After various vicissitudes Memmert and Dick struggled back to Angers, arriving on June 21 with two days to spare. This was physical evidence that the course was a viable proposition, justification for the promoters and general satisfaction to all concerned. Think what could be done in even average weather!

The route ended for me at the beautiful gliding field at Hutten in the Holzenwald just north of Basle. With the field at 850m and in sight of the French border, I had only to take-off, in order to glide into France. The last day brought low clouds, wind and rain, so my return to France was by road.

This competition requires much preparation. Some of us had spent many hours poring over maps, identifying and marking airfields. Nevertheless, it was not enough. In addition, much work must be done in

advance on control zones, danger zones, radio frequencies, reliable sources of Met forecasts, communication with crew, alternate routes, etc. Above all, the most important question to settle is the exact location of **all** gliding fields where it is possible to find a towplane and pilot any day of the week. Fortunately, much had already been done towards answering this question by the Angers club and by Dieter Memmert. As a result, many clubs were expecting us.

This first edition of the TE was more of a rally than a race. The two Germans flew pairs all the way and crossed the finish line together. The rest of us, like a gaggle of geese, kept together as much as possible for mutual aid and comfort. This may sound very sissy, but it was a factor of major importance in our lives. It is very much easier for two people to prepare two gliders for take-off than for one person to prepare one glider all by himself. And if one of the two pilots happens to have a car and a crew – that's Transeuropean luxury.

In flight it was the same. We were never very far apart and more or less in touch *via* the radio. The pilot who was "up front" relayed back to the others what conditions they could expect and what pitfalls to avoid. In practice it worked well in the difficult conditions we encountered. However, one can imagine a later edition of the TE with daggers drawn and silence on the radio – but it won't be nearly so much fun.

Magnificent welcome

The major feature of the TE was the magnificent welcome we received everywhere from the gliding fraternity. Power pilots, in general, were almost totally indifferent to our problems, but the gliding people could not do enough to help. There was no problem anywhere concerning food and lodging. Sometimes we slept in a small hotel, sometimes in a tent, sometimes in a bunkhouse, once in a bus and once in a caravan. And, most important, every day which was flyable, somehow or other, a towplane was found and a pilot appeared.

The gliding club which had the greatest exposure was Rothenburg, near Nuremberg. Here six pilots, two crews, and our two German friends Hans Sander and Otto Bellinger spent three nights waiting for a front to pass through. We took over the newly-built bar and slept on the floor. The club is very small, and we are eternally grateful to Wilhelm Schutz and Rudolf Jakob for working so hard to make us comfortable and to help us on our way. We can tell many such stories of generous help, without which the TE would have ground to a halt.

Unknown and unseen airfields

Some of us had forgotten how to navigate! How many times do you look at a map when you go round the standard 300km or 500km triangles? During the TE you must navigate *all the time*. When the day starts to die, there is the added spice of a long, sometimes marginal, final glide into a totally unknown and unseen airfield.

Some of us left Angers with the intention of being self-contained throughout the journey. It was very satisfying to land at a gliding field, picket the glider, take out the sleeping bag and small travelling case and ask for the bunkhouse. However, these all weigh something and on several marginal days we would have been very glad to have left them in the car.

Similarly, we left Angers with no intention of using the 300km of forward retrieval permitted. In practice these allowances were mainly used in two ways. Firstly, by some pilots who fell behind the rest, to keep in the race. And this explains to some extent why we were so much together. Secondly, during the last three days of the competition, those pilots who were fortunate enough to have both a trailer and some remaining *depannage positif* used them in a last desperate attempt to drive through the bad weather in the hope of finding something better on the other side. Unfortunately, there was no other side, as we discovered after the competition was over: the bad weather stretched all the way to Angers.

Contrary to dark forebodings from experienced continental travellers, customs formalities were no problem at all. We filled in special forms before leaving for Freiburg and that was all!

Cost and sponsorship

The TE cost me exactly £600. This includes entrance fee, telephone calls, food and lodgings for myself and one crewman, plus one third of the costs for the car, which covered 7000km during the competition. I should add that the crew were very economical in their demands for food and lodging. Otherwise, and bearing the full costs of the car, it could have been much more expensive. I doubt if I will ever, in my whole life, buy better value for money! The only glider which had any kind of sponsorship was the Edelweiss, for which a well-known oil company was paying the petrol bills.

Charging the glider battery by solar power

COLIN DEWS

A solar panel fitted in a Kestrel 19. Photo: Colin Dews.

I read with interest Humphry Dimock's account in the June issue (p141) of his experiments using a solar panel to charge the battery in his Mosquito and I believe my own similar experience may be of value to anyone contemplating fitting a solar charging system in a sailplane.

Like Humphry, my syndicate partner and I had suffered for many years with the problem of alternately charging two large 12v lead acid batteries and in January this year we decided to examine the possibilities of using solar cells to charge a smaller NiCad battery in our Kestrel 19. In March, as a result of that decision, we fitted a solar panel (which measured only 7in x 8½in x ¼in) behind the headrest in the Kestrel and exchanged our massive 12 amphour lead acid battery for a small 4 amphour 12v NiCad battery and we have since enjoyed absolute battery bliss. We connected small meters to measure both the battery voltage and the solar charging current and were very favourably impressed to note that our solar panel produced over 180mA in bright sunlight reducing to 25mA in cloudy conditions. A significant point is that on a flying day the battery is receiving a charge from the moment the glider is removed from the trailer until it is put away after flying.

Theory

Our research into solar cells revealed the following: The conversion of light energy into electricity is a process called Photovoltaics. It is carried out in silicon semi-conductor devices which produce a voltage across their terminals when exposed to light. When an electrical load is connected to the output terminals of the solar panel (in our case a battery of lower terminal voltage) a current is generated within the solar cells by the formation of what are termed "Hole electron pairs". The quantity of these is determined by the amount of absorbed light photons. The rate of current flowing through the solar cells (available to charge the battery) will therefore depend upon:

1. The incident light intensity;
2. The surface area of the solar cells.

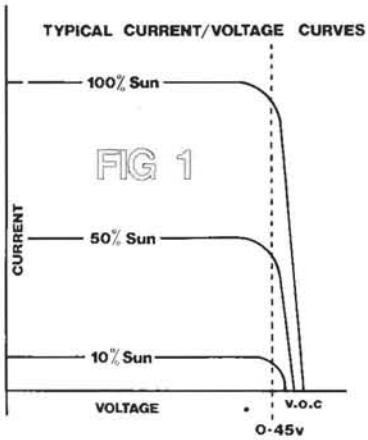


FIG 1

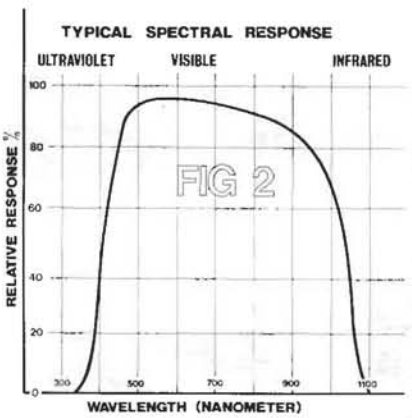


FIG 2

Most of the smaller solar cells available on the market produce an "off load" voltage of approx 0.5v in conditions varying from cloudy to bright sunlight. The current depends upon the intensity of sunlight striking the cell normal to its surface (cosine law), the size of the cell (power capacity) and the load. Sets of typical voltage/current curves for various light conditions are shown in Fig 1. The spectral response (quantum yield) of a solar cell covers a broad band of wavelengths from ultraviolet through to infrared, Fig 2. (In this context we noticed that only a small reduction in solar current occurred when the solar panel was placed under the perspex glider canopy).

Solar cells are affected by temperature although not severly if operated in the range -40°C to +30°C. The destruct temperature is probably around +300°C. The temperature characteristics of the solar cell indicate that the output voltage of each cell varies inversely with temperature by approx 2m V/°C and the power available follows this voltage characteristic but varies only at the rate of 0.3%/°C because the current varies directly with temperature and produces a compensating effect. The optimum temperature for solar cells is 25°C +3°C.

In practice we have found no noticable adverse temperature effects on the charging rate during the period of operation, March-August. It is conceivable however, that temperature problems could be encountered if the solar panel reached a temperature above 60°C but this is unlikely unless the glider remained on the ground for hours exposed to bright sunlight in midday heat with the canopy closed.

Solar panels are available for charging both 12v and 14v batteries. The 12v panel consists of 32 solar cells connected in series and the 14v panel contains an additional four cells. The panels take the form of a flat plate with the solar cells encapsulated in a silicon rubber compound. Most panels are provided with a "built in" protection diode to prevent the battery discharging into the solar cells during hours of darkness.

It is very important to note that, because the cells are connected in series and each cell contributes an approximately equal charge to the system, the incident light intensity should be the same on each cell. If shadows are allowed to fall on one or more cells of the panel, the charging current will be reduced considerably.

Choosing the size of solar panel

This can only be determined by the power requirements of the glider electrical system, the capacity of the battery and whether it is intended to rely on the solar cells as the sole means of charging the battery. Our experience with the Kestrel, which is flown regularly (some flights lasting 6-8hrs) is that the 2.4watt solar panel probably operates at about half its rated capacity (*ie*, 50% efficient) due to the varying angle of incident sunlight. It does however give an adequate charge to the 4 amphour 12v NiCad battery which provides power for the following services:

	Min	*Max*	*Average*	*Ratings*
Radio	25mA	350mA	32mA	50:1 ratio
Variometers	18mA	22mA	20mA	Continuous
Artificial Horizon	0	960mA	48mA	1/20th of average flight
			100mA	

Average power = I x V = 0.1 x 12 = 1.2watts

It follows that during a flight in average sunlight, the solar panel has a power capacity equal to the average glider electrical requirements. The battery is also receiving a solar charge during the period immediately before take-off and after landing when none of the glider's electrical systems are taking power. This additional charging period is normally 2-3hrs longer than the demand period and this can result in an additional 0.3 amphour of charge being given to the battery. The battery capacity must be large enough to accommodate a 1-2hr cloud flight when the artificial horizon load will be continuous and the solar charging current low because of poor light. As a protection against overcharging, a form of self-regulation takes place in the system reducing the charging current if

the battery voltage exceeds 13v. This is due to the fact that the solar panel produces a limited maximum voltage, whereas the battery voltage is determined by the load and the state of charge of the battery.

Where to install a solar panel

After some experimentation we determined that the best compromise position was to fit the panel with solar cells facing upwards to receive the best average light and located in such a position that no reflections from the panel's surface could be seen by the pilot, and that the minimum of shadows would fall across the cells in normal flight attitudes. In our Kestrel, the solar panel is fitted behind the headrest as high as possible within the canopy (see photo).

Where to obtain solar charging equipment

The solar panel we used was a type 220D and cost just over £50. These panels and a variety of larger units are obtainable from: Solapack Products, School House, Great Usworth, Washington, Tyne & Wear NE37 1NU. Tel. 0632 464646.

A few little mods to your Astir

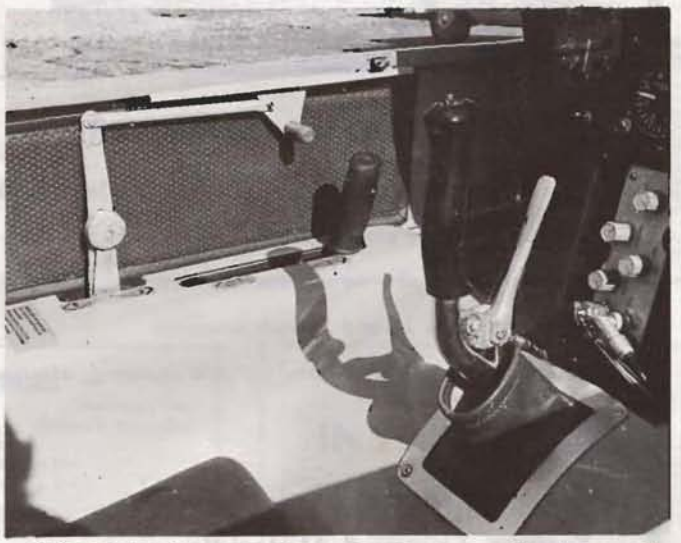
DEREK PIGGOTT

One of the easiest and most annoying ways to waste a good days soaring is to find that your glider is unserviceable just as you are rigging it on that "day of days".

A damaged tail skid is just one way on many of the gliders fitted with a block rubber tail skid. You may have been lucky and have gone for several years without trouble or you may break them several times in a week. You lose the day's flying and the cost is about £25 a time, but more important, you ruin your gliding holiday or your chances in a competition.

At Lasham we quickly realised that a modification was needed. All our club gliders and most of our privately owned ones have the rather neat tail wheel illustrated in the photo, installed by Ken Fripp and approved by the BGA. With both the Astir and the Nimbus which have been fitted with tail wheels the risk of swinging or ground looping when taking-off and landing on hard smooth surfaces is almost eliminated.

The tail skid itself is very heavy so that changing to the wheel adds very little to the weight, about 1 to 1¼lbs in most cases. Many of the Astirs have been found to have damage under the skid and the wheel fairing adds strength to that point of the fuselage. Two to three days in the workshop and the job is done.



If, like me, you have a giant in your syndicate you will be interested in our trimmer modification. This puts the trim lever much further forward so that it is easy to reach.

Later model Astirs have a new undercarriage system but early ones can be improved by attaching a bungey to the base of the operating handle and back to a suitable anchorage near the main bulkhead. This greatly reduces the loads to raise the wheel.

It is not difficult to obtain approval for simple modifications like these which can often make the glider easier, safer and more pleasant to fly. If you have a good idea why not pass it on to others?

PIK 20D-78

☆**Lightest in its class · Space technology in today's sailplane**

☆**Proven design – around 300 now flying**

☆**Effective conventional airbrakes and separate flying flaps**

☆**Available for 1979 flying season**

☆**1978 model features repositioned tailplane and reshaped nose**

☆**Tightly sealed – all pushrods, fairings, wheel box, etc.**

☆**Super handling – an easy aircraft to fly in which you are quickly at home**

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- In series production
- Power to spare
- 41 L/D at 60 knots
- Empty weight only 640 lbs
- Take off to 45 feet in 330 yds
- 1979 options available

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Sole UK Agency

- Latest models in stock
- Very low battery consumption
- All self-contained – no awkward bottles
- Standard sizes 3⅛ and 2¼ inch available
- Netto, cruise, Variable gain, variable damping, averager available

Model 400/6

And of course:

C's of A, Repairs in all materials,
Trailers, Spares & Materials,
Range of Instruments

JOHN HULME

BOTTISHAM · CAMBRIDGE

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EUROGLIDE 1978
Nympsfield, August 19-28
FINAL RESULTS

The report will be in the next issue.

OPEN CLASS		DAY 1 19.8 145km Didcot r/s			DAY 2 23.8 282km □ Frome, Didcot, Gaydon, Nympsfield			DAY 3 24.8 197km △ Ludlow Castle, Northleach, Nympsfield			DAY 4 25.8 152km Banbury			DAY 5 26.8 247.3km △ Stratford-on-Avon, Newport Pagnell, Nympsfield			DAY 6 27 285.7km □ Didcot, Losham, Gillingham, Nympsfield			DAY 7 28.8 145km Didcot				
Pilot	Glider	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Tot. Pts.	Fin. Pos.
Garton, C.	Nimbus 2	84.49	587	4	(276)	1000	1	79.35	773	5	62.67	988	2	61.56	972	4	83.44	860	3	78.69	923	1	6103	1
Fitchett, B	ASW-17	97.98	739	1	(239.5)	855	5	93.53	1000	1	(130.4)	547	6	63.50	1000	1	94.50	1000	1	74.62	887	3	6028	2
Lysakowski, E. R.	Nimbus 2	95.40	710	2	(244.3)	874	2=	84.94	862	3	(60.22)	962	3	59.25	940	6	82.35	846	4	55.17	716	5	5910	3
Kay, A. E.	Jantar 2	78.49	519	6	(244.3)	874	2=	81.56	808	4	(127.5)	532	7	63.01	993	2	79.56	810	5	75.67	896	2	5432	4
Jones, R.	Nimbus 2	92.44	676	3	(240.3)	858	4	88.14	914	2	56.29	920	5	(148.8)	306	10	88.90	909*	2	(112.0)	456	6	5039	5
Glossop, J. D. J.	Kestrel 19	67.51	395	10	(219.6)	775	6	76.06	720	7	(126.4)	527	9	61.89	977	3	77.61	785	6=	60.64	764	4	4943	6
Pozerskis, P.	ASW-17	83.61	527	5	(215.5)	759	7	64.42	533	10	63.78	1000	1	(66.2)	102†	8	77.61	785	6=	(105.2)	385†	8	4141†	7
Miller, A. S.	Kestrel 19	71.59	441	8=	(195.7)	680	9	67.70	538	9	(125.9)	524	10	47.07	767	5	71.08	703	8	(67.9)	206	10	3859	8
Randle, Jane	Kestrel 20	72.23	448	7	(178.2)	610	10	69.84	620	8	59.51	954	4	(245.8)	546	7	(255.4)	354	10	(92.0)	321	9	3853	9
Spottiswood, J. D.	ASW-17	58.26	290	11	(166.5)	544*	11	61.25	482	11	(126.9)	529	8	(203.6)	442	9	(274.7)	383	9	(110.2)	409†	7	3079†	10
Cockburn, D.	Kestrel 19	71.66	441	8=	(198.3)	693	8	78.88	765	6	(55)	156	11	DNF			DNF			DNF			2053	11

* = Barograph penalty, † = no control at TP, ‡ = subject to photographic confirmation, DNF = did not fly

15m CLASS		DAY 1 19.8 145km Didcot r/s			DAY 2 23.8 280.5km □ Frome, Didcot, Gaydon			DAY 3 24.8 197km △ Ludlow Castle, Northleach, Nympsfield			DAY 4 25.8 152km Banbury			DAY 5 26.5 247.3km △ Stratford-on-Avon, Newport Pagnell, Nympsfield			DAY 6 27.8 285.7km □ Didcot, Losham, Gillingham, Nympsfield			DAY 7 28.8 145km Didcot				
Pilot	Glider	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Tot. Pts.	Fin. Pos.
Watt, D. S.	ASW-20	80.44	878	2	(237.5)	843	6	86.88	1000	1	55.81	959	4	51.18	926	5	(263.5)	823	4=	69.20	831	2	6260	1
Rollings, C. C.	PIK 20	81.33	891	1	(273.0)	984	2	72.22	781	6	58.76	999	2	46.75	863	6	69.57	997	2	54.22	651	8	6166	2
Verstraege, A. V.	ASW-20	71.59	752	5	(250.0)	893	4	83.86	955	2	53.45	927	4	56.39	1000	1	(254.0)	791	8	58.93	708	4	6026	3
Dixon, R.	ASW-20	70.12	731	6	(277)	1000	1	69.88	746	7=	58.83	1000	1	53.48	959	4	(244)	756	11	56.07	673	5	5865	4
Sprackley, B. T.	Mosquito	66.59	681	7	(271.9)	980	3	77.60	861	4	(98.9)	349	13	53.62	961	3	70.52	1000	1	77.76	934	1	5766	5
Redman, S. J.	LS-3	74.22	790	4	(234.5)	831	7	69.91	746	7=	54.27	938	5	54.78	977	2	(254.5)	792	7	53.86	647	9	5721	6
Aldous, R. F.	Mini Numbus	79.92	871	3	(239.7)	852	5	72.29	782	5	58.29	993	3	(234.3)	564	10	(274.7)	862	3	54.75	658	7	5582	7
Burton, G. E.	Vega	63.90	643	9	(225.5)	796	8	81.05	913	3	(102.9)	368	12	43.65	819	7	(263.5)	823	4=	55.55	667	6	5029	8
Farmer, A.	Mini Numbus	(128.7)	270	14	(194.7)	673	12	56.88	551	12	49.12	868	8	(236.6)	571	9	(251.5)	782	9	47.27	568	10	4283	9
Aldridge, K. R.	PIK 20	63.07	631	10	(192)	512*	14	58.36	573	11	50.29	884	7	(130.3)	284	11	(197.9)	597	15	61.45	738	3	4219	10
Heames, C.	Mosquito B	66.01	673	8	(215.7)	757	9	62.10	629	10	(126.9)	482	10	(106)	218	13	(249.2)	774	10	(94.2)	269	13	3802	11
St Pierre, A. H. G.	PIK 20s	61.65	611	11	(188.5)	649	13	(187.9)	332	14	(110.9)	406	11	(127.5)	276	12	(225.2)	691	14	(93.2)	265	14	3230	12
Bleaken, L.	Diamant 18	56.13	532	12	(196.2)	676	10=	46.33	393	13	(83.4)	276	15	(94.3)	187	14	(240.2)	743	12	(119)	365	11	3172	13
Watson, A.	Mosquito	55.08	517	13	(178.2)	108*	15	(64.7)	81	15	(128.4)	489	9	49.61	804*	8	(257.8)	804	6	(98.0)	283	12	3086	14
Lusted, E.	DG-200	(119.7)	246	15	(195.5)	676	10=	64.66	668	9	(90.2)	308	14	0	0	15	(235.5)	720	13	0	0	15	2618	15

† = Photographic penalty

STANDARD CLASS		DAY 1 19.8 122.5km Wantage			DAY 2 23.8 213.5km △ Frome, Didcot, Nympsfield			DAY 3 24.8 197km △ Ludlow Castle, Northleach, Nympsfield			DAY 4 25.8 152km Banbury			DAY 5 26.5 137.5km △ Worcester, Moreton-in-Marsh, Nympsfield			DAY 6 27.8 285.7km □ Didcot, Losham, Gillingham, Nympsfield			DAY 7 28.8 151km Gillingham				
Pilot	Glider	Speed (Dist).	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Speed (Dist.)	Pts.	Pos.	Tot. Pts.	Fin. Pos.
Davis, A. J.	Std Cirrus	69.56	881	1	69.38	1000	1	72.24	1000	1	63.82	1000	1	55.74	986	4	66.44	988	2	56.05	972	2	6827	1
Hood, L. S.	Cirrus 75	58.95	708	3	58.77	853	3	65.58	893	5	47.71	730	4	46.40	845	8	68.74	1000	1	57.58	1000	1	6029	2
MacFadyen, T. E.	SHK	51.08	580	9	61.27	887	2	68.46	940	3	58.55	912	2	56.64	1000	1	(277.0)	799	7	45.35	780	6	5898	3
Cawderoy, R. L.	Phoebus 17	52.64	606	7	58.01	842	4	66.59	909	4	52.68	813	3*	56.47	992	2	(279.0)	806	4	44.20	759	7	5732	4
Cook, P. G.	DG-100	55.61	654	5	47.12	691	7	56.19	740	9	40.33	606	10	53.18	948	5	(249.2)	711	9	50.01	864	3	5214	5
Cooper, B.	Std Cirrus	49.57	556	10	52.00	559*	9	56.68	748	8	42.62	644	9	50.10	901	6	(246.7)	703	10	47.14	812	5	4923	6
Webb, M.	Std Cirrus	51.61	545*	11=	55.49	807	6	62.47	842	7	43.79	664	7	47.96	868	7	(239.2)	679	11	(134.5)	417	11	4822	7
Blackmore, R.	Std Jantar	54.18	631	6	57.39	833	5	68.79	945	2	47.33	706	5	(91.5)	332	10	63.55	974	3	(97.0)	224*	12	4645	8
Shephard, E. G.	Std Cirrus	63.33	780	2	(202.8)	489	10	64.52	876	6	(125.9)	369	11=	(86.4)	306	12	(278.5)	804	5=	60.79	697	9	4321	9
Tipney, C. J.	Std Cirrus	55.77	657	4	20	0	13=	49.38	628	11	43.16	653	8	(74.6)	247	14	(278.5)	804	5=	50.04	864	3	3853	10
Gount, N.	DG-100	48.93	545	11=	(202.8)	0*	13=	(109.6)	202	13	43.85	665	6	56.22	994	3	(211)	590	12	41.07	702†	8	3698†	11
Ellis, C. A. P.	Dart 17R	(70.6)	147	14	(194.1)	465	11	164.6	334	12	(125.9)	369	11=	(120.5)	476	9	(251.7)	719	8	(147.5)	467	10	2977	12
Taylor, N.	Astir CS	51.83	592	8	44.55	655	8	51.06	656	10	(100.2)	275	13	(84.6)	297	13	DNF			DNF			2475	13
Webster, J.	DG-100	(112.1)	281	13	(164.6)	384	12	(60.2)	84	14	0	0	14	(86.6)	307	11	(82.2)	181	13	(69.3)	169	13	1406	14

* = Photographic penalty, † = awaiting photographic confirmation

16th WORLD CHAMPIONSHIPS

France, July 15-30

This picture of George Lee was taken by an officiol RAF photographer.

RIKA HARWOOD was at Chateauroux to see George Lee become the World Open Class Champion for the second time running and in the following pages gives us the build up to this fantastic achievement.

IT took eleven days of very demanding flying (in all Classes) for Britain's George Lee to become World Champion for the second time in succession and to make history for being the first pilot to do so in the Open Class*.

History was also made by Helmut Reichmann, Germany, by becoming World Champion for the third time (Standard Class, 1970 and 1974). This time he won in the new 15m Class, with the added distinction of being in the overall lead throughout the contest.

Holland can be justly proud for producing the youngest ever World Champion. Baer Selen, a very likeable and modest 23 year-old student of space technology, was seemingly unaware of the stir and admiration he caused around him. He just flew better and better as the days went by, taking the Standard Class title with a convincing lead as well as the highest number of points scored in any World Championships.

Bernard Fitchett, with four brilliant day wins, also a second and third day place, lost out on Day 8 when only 11 Open pilots completed the course. He failed to make the finish – and thereby a place on the winners' rostrum. Steve White acquitted himself well in the very keen 15m Class, missing tenth place by only two points, having already lost 30pts on a photographic penalty. Unfortunately John Delafield had to withdraw after being taken ill in the air on Day 5, when he felt obliged to abandon the task and landed on an airfield for safety. We feel sure he will have recovered by now.

Although unconnected with the Championships as such, the saddest accident I have to report is that on Day 10 – July 28 – Rex Pilcher (Airways Flying Club, Booker), crewing for Tim Mavat-Biggs of South Africa, took the Andreason BA-4 aeroplane for an aerobatic session an hour before the competitors were due to be launched. He failed to recover from one of the maneouvres and was killec instantly on impact just to the side of the grid. Needless to say that everyone was horror-struck and it caused great sadness amongst us. We sympathise with his family in their sorrow.

That the British pilots did particularly well on this day was perhaps the finest tribute they could have paid to Rex – a friend and fellow glider pilot.

Practice week. Briefings were held daily at 10.30 at which various details of the contest were discussed. Language, however, was at this stage a bit of a problem as the official interpreter had not yet arrived.

Tasks were set throughout the week and in the latter half the various operational sections were tried out. During practice week it was noted that in generol the tasks were rather ambitious and set to the absolute limit of the forecast weather. They were optional, however, so it did not really matter, though it stopped many pilots from flying the tasks. What did matter a great deal were the bugs – they played havoc with performance curves, final glide calculators, etc. Dick Johnson, USA, the well-known authority on such matters, counted no less than 160 insects per metre on his Jantar after six hours flying – reducing, he thought, his glide angle to something like 32:1.

Obviously task setters don't take things like this into account, but this was probably one of the reasons why some tasks remained uncompleted. At least pilots were warned and many were busy working out "bug polars" for their flight planning. Wouldn't it be nice if Met men could give an "insect count" like they do a "pollen count"! Luckily the problem was most severe during the practice week.

Towing, at a rate of 20sec intervals during the contest proper, was excellent, but occasionally there seemed to be too much hurry, especially after weight checks when pilots had little time to get strapped in, check and settle down. Ian Hood, Ireland, lost the canopy of his DG-100 on one such take-off. It took several days to get a new bubble fitted and to be ready for Day 1.

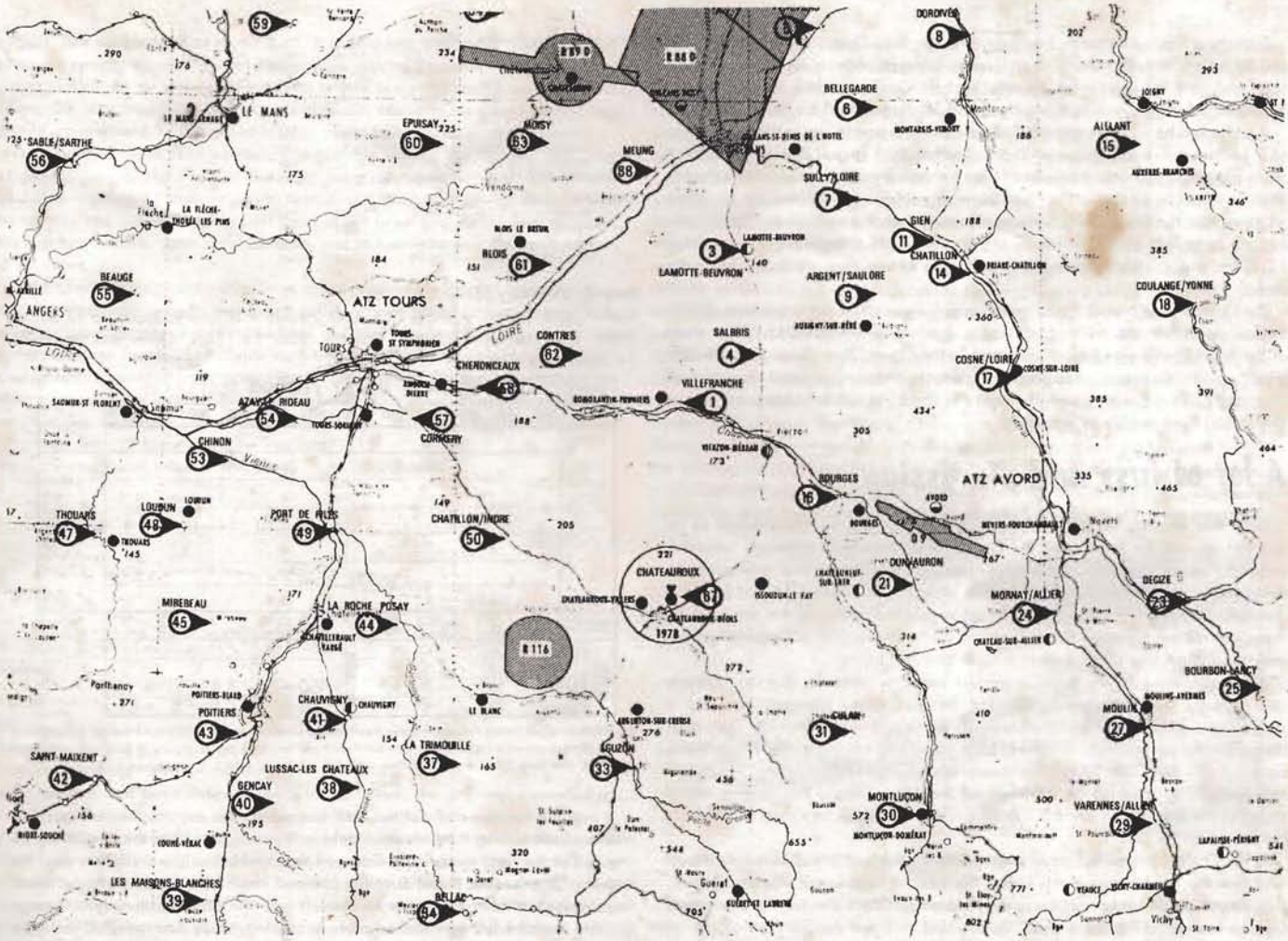
Startline (there were two separate ones) equipment was good but perhaps not sufficiently tested during the practice week. Initial startline radio trouble and poor procedures needed some sorting out. The main problem on one of the startlines seemed to be that the officials themselves didn't stick to the procedure they had laid down and had limited knowledge of English. John Firth, Canada, had the misfortune to hit a photographer on landing when the man stood up suddenly out of the grass. John's radio call "emergency, emergency" produced a pause and then . . . surface wind and QNH were given. Luckily the photographer suffered only one broken rib and the glider only slight damage.

While this incident was being sorted out one pilot, with limited English, obviously having rehearsed carefully the organisers' instructions, was told to land on another part of the airfield at the very last minute. I can still hear his plaintive call – "but what about my procedure?" However, as time went by there was a marked improvement.

On Saturday, Max Bishop, a Sqn Ldr in the RAF, at present stationed in France, started his job as official interpreter. His likeable manner and obvious expertise in translating were greatly appreciated and he and his wife Angela (who helped in the Press Office) quickly endeared themselves to all.

The British Team at the opening ceremony: l to r, Dickie Feakes (Manager), Bernard Fitchett, John Delafield, Steve White and George Lee with Dee Reeves behind.

*Heinz Huth (Germany) did so in 1960 and 1963 in the Standard Class.



The TP map for you to draw on the tasks.

François Henry of the French team also turned up today. He had been practising at his own club rather than getting involved in the hustle and bustle of Chateauroux.

The South Africans invited all teams to an amicable party in their hotel this evening and later on we enjoyed a dress-rehearsal by the Patrouille de France.

Opening Day. A church service was held at 9am. It was, so far as I know, the first service ever held at a World Championships site. About 20 people attended from five countries and it created a feeling of tranquillity in the normally crowded and noisy atmosphere of the briefing room.

The day was very hot – but teams were nicely turned out as they paraded in front of the public enclosure and were led to their positions by two bands and a corps of attractive majorettes. Pirat Gehriger, President of the FAI, made the opening speech. In it he referred briefly to the reluctant absence of some pilots who ought and would liked to have taken part – a sentiment, I am sure everyone present agreed with when he sent them greetings.

After the pilots and Team Managers had been introduced there followed a super display by the Patrouille de France in Magisters, vintage gliders and other aircraft and then a mass take-off and fly past of about 18 gliders. That evening the Brits held a small cocktail party in the "camping" in order to get to know some of the officials, who from now on would have little time for socialising. As far as our team was concerned we were ready to commence battle. A nice gesture, which the Team appreciated, was an unexpected "wish you success" telegram from HRH Prince Philip.

Jeux Sans Frontieres

Eleven days three Classes for 79 pilots add up to 33 tasks in which 12419 task kilometres were set and approximately 2600 flights in toto. More than a million kilometres were flown, which is roughly 25 times round our planet taking into account also a vast aerodrome, with competitors housed over a large area and no focal point at which to meet on site, it should be fairly obvious that no single person could possibly hope to cover all aspects of this contest or experience it in the same way. It was particularly difficult to talk to pilots, knowing that they had just had a gruelling day, probably had to fettle or repair their gliders, were tired or had not done particularly well on a given day. Whenever they could the majority retired early and left the site as soon as they were able, so that they could start afresh next morning.

Frank Irving has kindly agreed to cover what was new at Chateauroux (see p 210) and a separate article on the SB-11 by Helmut Reichmann appears on page 208. In this report I will try to give you some details of the competition.

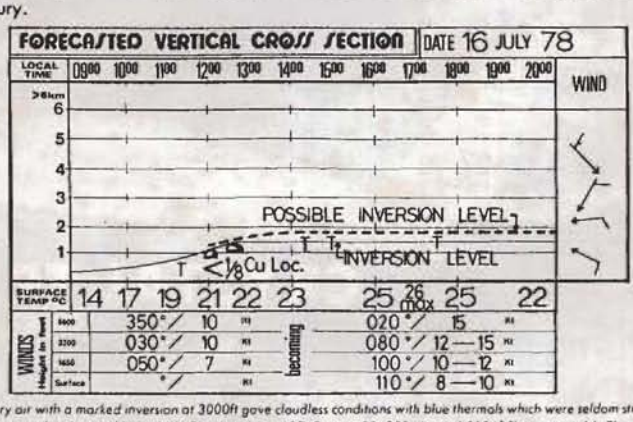
Of the 79 entries from 23 countries there were 24 pilots from 14 countries in the Open Class, 32 pilots from 19 countries in the 15m Class and 23 pilots from 17 countries in the Standard Class.

All tasks throughout the contest were triangles. To avoid long place names only turning point numbers are given in my account with a TP map on which readers can draw their own lines to see the shape of the tasks and area covered.

Day 1, Sunday, July 16

Tasks: Open 336km – TP57, TP11. 15m 309km – TP61, TP14. Standard 272km – TP3, TP17. Launch 12.00hrs. Startlines open 13.00hrs.

The captions under the weather cross sections have been provided by Tom Bradbury.



Dry air with a marked inversion at 3000ft gave cloudless conditions with blue thermals which were seldom strong except when boosted by stubble fires. Max temp 27. Dew pt 08. 850mb wind 010/05kt, temp +16. Thermals from 11.00 – 19.00 (Local time GMT + 2)

Launching started at noon precisely. George Lee, Open, Steve White, 15m and John Delafield, Standard, all decided to leave as soon as the startlines were open and were the first across. Bernard Fitchett, Open, was last, but it took only 17min each for the Open and Standard and 34min for the 15m Class to depart.

It proved to be a rather difficult first day and one had to stay with the goggles as it became more a question of survival rather than speed. But somehow they made progress, and only a few had fallen by the wayside by mid-afternoon. No doubt it would be on the last leg that the real problems would start. By 18.00hrs we knew that the first arrivals were imminent and what a spectacular sight it was as they hove into view! About 17 gliders in a tight goggle arrived at about 18.20hrs and everyone sprang to life hoping to see their particular favourite among them.

Then suddenly in one of the following goggles one could see a tailchute deploy on final approach and, without jettisoning, land inside the airfield but 1km short of the finish line! It was Rantet of France in the Open Class. Soon rumours of a minor collision spread. Apparently Urbancic, Argentina, and Rantet had "bumped" and it it was this which made the damaged tailchute jump out so that Rantet had been unable to jettison it.

A lot of fuss and discussion

Later that evening the provisional results gave Rantet no speed points as he had not crossed the finish line. The French Team Manager, however, lodged a complaint about this and, at the next morning's briefing, it was announced to everyone's surprise that Rantet had come second. This created a lot of fuss and discussion. Apparently the organisers had sought the advice of the Stewards as there was a Frenchman involved. They felt it was impossible to apportion blame and thus Rantet was given the same finish time as Urbancic.

This incident took two days, a protest made in order to get the problem discussed by the International Jury for the rest of the Competitions, and a statement read out by one of the Stewards at the briefing of July 18. Then after discussion the protest was withdrawn, but it had come to light that the collision para 7.1.d in the Code Sportif had been deleted at a CIVV meeting. Few Team Managers (who make up the International Jury) knew about this, neither was it stated in the local Regulations. All in all a rather unsatisfactory state of affairs – but now, back to Day 1.

In the Open Class all but three pilots made it back and it was Bernard Fitchett who took the first honours in this Class. The surprise landing out was Bert Zegels, Belgium, who lost out heavily on points, but only 108pts divided the others and George Lee with 17th place was 80pts behind.

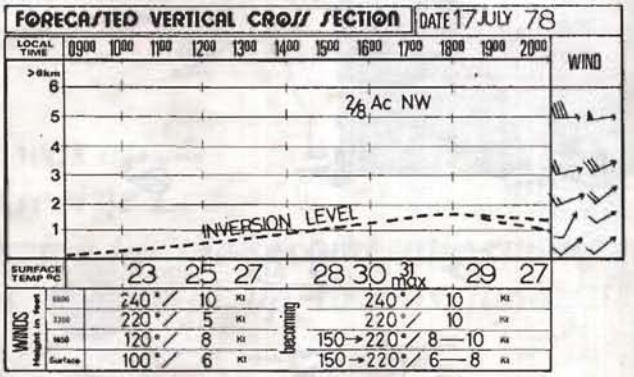
In the 15m Class 17 of the 32 finished, with Helmut Reichmann in the much talked about SB-11 first; but his team mate Ernst-Gernot Peter had gone *aux vaches* just after the second TP. Herbert Mozer, USA, just had the edge on Michel Mercier, France, to win the day in the Standard Class in which 16 out of 23 pilots returned.

The conditions that day had favoured the large span machines. Several gliders finished up in the workshops with minor landing damage – the other bane of contention raising its head was that of photographic penalties.

Day 1: Leading Results – Open				km/h	Pts
	Fitchett	GB	ASW-17	67.58	1000
	Rantet	F	Nimbus 2	66.92	987
	Goudriaan	ZA	ASW-17	66.64	982
17	Lee	GB	ASW-17	63.44	920
15m					
	Reichmann	D	SB-11	61.63	1000
	Striedieck	USA	ASW-20	68.86	990
	Musters	NL	LS-3	60.45	985
12	White	GB	ASW-20	56.46	933
Standard					
	Mozer	USA	ASW-19	56.40	1000
	Mercier	F	Cir 78	56.32	998
	Riera	RA	Std Cir	55.44	982
14	Delafield	GB	ASW-19	53.45	945

Day 2, Monday, July 17

Tasks: Open 238km – TP58, TP3. 15m 202km – TP1, TP9. Standard 178km – TP62, TP4. Launch 13.30hrs. Startline 15m 14.15hrs, Open and Standard 14.30hrs. RTI 60min.



Dry stable air again limited the depth of blue thermals until temp rose above 30°C when a few thermals reached 6000ft. A weak convergence line produced a band of lift and later both high level cumulus and weak wave cloud appeared. Max temp 32. Dew pt 11. 850mb wind 240/10. Temp +16.5. Thermals from 11.30 to 19.30 (but very shallow until 13.30)

It was the farmers and not the Met who saved this day, as the only possible means of completing the task were stubble fires and even then they had to be be reached at the right moment as George Lee found out at the end of the day. He and Bert Zegels were together rather low and behind the leading goggle, when they spotted stubble fires, one to the left and the other to the right. George decided that the left one looked more promising, while Bert selected the right hand one and so they parted company. George had to land, but Bert just managed to hang on to his and eventually got home – there were many stories just like this one. Only five pilots in this Class completed the course at speeds similar or less than the Standard Class.

The 15m Class fared somewhat better, having been given, as it turned out, the better area and 21 got back with speeds varying between 73.70 and 52.95km/h. It was again Reichmann's day or was it the SB-11. His fortune, in fact, was that he found a good stubble fire on the way out which took him to

6300ft. This enabled him to round the 1TP and fly half way along the second leg where he caught up with the leading gaggle. Michel Bluekens, Belgium, had a similar climb early on and this showed up in their somewhat faster speeds. Steve White, GB, who had done well in getting round, found to his chagrin later, that he and some others, had incurred a 30pt photo penalty.

The Standard Class likewise could not manage without the farmers' aid – the 11 who managed the fires at the right time averaged between 57.28 and 38.53km/h giving a comfortable win to Haavard Maelum, Norway. Mercier was the unlucky one today stopping 50ft short of the finish line. At the very minimum this cost him 125pts. John Firth, Canada, was luckier – he was the last to get in at 19.46hrs.

Unfortunately, the many outlandings again produced a crop of minor damage and the workshop was busy repairing the ten or so gliders – mainly with undercarriage damage. Antonio Martinez of Spain was less fortunate; he had a broken fuselage and his Std Libelle took several days to repair. It had not been a very happy second day for many. Daan Paré, Holland, probably summed it up when after a very low point he announced over the radio, "I have aged at least ten years on this flight," to which the reply from Musters, Holland, also in the 15m Class was, "I know just how you feel."

	Day 2: Leading Results – Open			km/h	Pts	**Two Days**		Pts
	Schubert	A	Nimbus 2	57.50	1000	Goudriaan	ZA	1945
	Henry	F	Nimbus 2	55.10	987	Henry	F	1924
	Goudriaan	ZA	ASW-17	50.77	963	Schubert	A	1911
	Gantenbrink	D	Nimbus 2	48.34	950	5 Fitchett	GB	1712
	Zegels	B	Jant 2A	47.22	944	8 Lee	GB	1674
6	Lee	GB	ASW-17	217km	754			
9	Fitchett	GB	ASW-17	207km	712			
15m								
	Reichmann	D	SB-11	73.70	1000	Reichmann	D	2000
	Bluekens	B	ASW-20	72.66	978	Bluekens	B	1957
	Striedieck	USA	ASW-20	67.75	921	Striedieck	USA	1911
15	White	GB	ASW-20	63.07	828	9 White	GB	1761
Standard								
	Maelum	N	LS-1F	57.28	1000	Maelum	N	1976
	Selen	NL	ASW-19	54.19	961	Riera	RA	1929
	Lund	DK	Std Cir	53.59	951	Selen	NL	1915
13	Delafield	GB	ASW-19	149km	507	11 Delafield	GB	1452

Tuesday, July 18

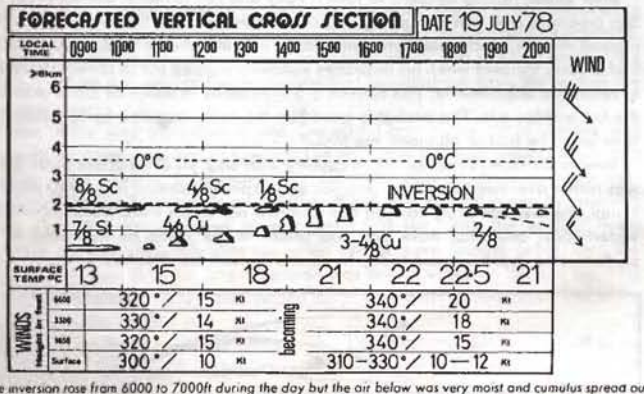
Cloudy with some torrential showers in the afternoon

After briefing had been delayed twice to 13.00hrs, the day was cancelled as showers and thunderstorms were expected later in the afternoon.

So far nine pilots had been given photographic penalties – and obviously the pilots involved and their Team Managers were unhappy about the interpretation of the photographic rules. The Code Sportif para 6A2 was, I believe, interpreted as a mandatory one and, although there was a lot of discussion on this topic, no one had actually put in a protest – and thus they had to grin and bear it. Also penalties for exceeding RTI were applied for the first time.

Day 3, Wednesday, July 19

Standby Tasks: Open 343km – TP53, TP60. 15m 311km – TP44, TP66. Standard 279km – TP57, TP63. Launch 13.00hrs. Startline Open, Standard, 13.45hrs; 15m 14.00hrs.



The inversion rose from 6000 to 7000ft during the day but the air below was very moist and cumulus spread out to form an extensive layer of Sc. Max temp 21.5. Dew pt 12.5. 850mb wind 290/11. Temp +7.5. Thermals from 13.00 to 19.00

After yesterday's storms and rain everyone felt rather despondent of what today might have in store for them. It certainly did not look very inviting to be faced with another slog of crawling along and however hard the pilots tried after briefing to fit their flight plan to the time available it just could not be done!

The tasks, originally 422, 376 and 343km were changed to the standby tasks on the grid, and launching had also to be delayed by 1hr 10min to 14.10hrs, which meant that the startlines would not be open until 14.55 and 15.10hrs – very late for the still very long tasks.

Owing to a fumble the startline opened too early and the first four Open Class pilots to take-off had not signed for the standby task. This was then done over the startline radio which again led to some confusion. However, in due course, things got back to normal. Pilots were pretty convinced that they were on a distance flight but getting away was not all that easy and lost them more time. Once out on course, however, conditions improved considerably for a period and reasonable progress was made as far as the Loire. Then a large clamp started to take its toll around the 2TP. It had also completely clamped over site and any hope there might have been to see any finishers, quickly disappeared.

Even by 19.00hrs the board with landing pins was already well out of date. It was very difficult to ascertain where pilots had landed and by now it was getting on for 20.00hrs. Then the Dutch came running. Had I heard that George Lee together with Rantet and their pilot Daan Paré were in a stubble fire about 25km out? Daan had told them over the radio that George might still make it – it was difficult to believe but hope rekindled. Causing a small sensation in the public enclosure and almost disbelief from people supposedly in the know, George did come in at about 20.20hrs on a marginal final glide at min sink. Nothing moved on the aircraft, he touched down gently outside the enclosure and rolled over the finish line under loud applause from the bystanders. It reminded me promptly of another arrival I had witnessed back in 1960 when Nick Goodhart had done a similar final glide in the World Champs in Germany. No doubt it would help George's morale enormously, but more important than that it put him right back in the contest, jumping from 8th to 1st with 156pts in hand, which had to be a good investment on these difficult days. Bernard's and Bruno Gantenbrink's, Germany, 620pts for third equal showed clearly how much George had gained by coming home.

Ingo Renner (ASW-19) with George Lee on his tail.

Daan Paré with his smaller 15m ship obviously could not make the finish and he came to ground 9km out, but also 9km ahead of his nearest rival, Peter, for his 1000pts. Ingo Renner told me that so far he had not had the chance to know what a stubble fire looked like and hated to have to creep along. He could not settle down under these conditions.

The Standard Class shared many equal placings with Göran Andersson, Sweden, and Karl Lund, Denmark, tying for first. Only Ian Hood of Ireland did not manage to leave site after his third launch.

The tendency of oversetting the tasks was still apparent. Unfortunately it cost a great deal in petrol for retrieves and, once again, many gliders had to retire to the workshop with minor damage. The fields in France are littered with stones and hidden ditches or undulations, which was the major cause of the damage.

	Day 3: Leading Results – Open			km/h	Pts	**Three Days**		Pts
	Lee	GB	ASW-17	66.12	1000	Lee	GB	2674
	Rantet	F	ASW-17	331km	816	Gantenbrink	D	2518
3 =	Fitchett	GB	ASW-17	261km	620	Henry	F	2460
3 =	Gantenbrink	D	Nimbus 2	261km	620	6 Fitchett	GB	2332
15m								
	Paré	NL	Mini-N	302km	1000	Reichmann	D	2889
	Peter	D	ASW-20	293km	966	Striedieck	USA	2659
	Reichmann	D	SB-11	273km	889	Schulthess	CH	2638
15 =	White	GB	ASW-20	229km	721	11 White	GB	2482
Standard								
1 =	Mercier	F	Cir 78	255km	1000	Maelum	N	2962
1 =	Andersson	S	Std Jan	255km	1000	Riera	RA	2924
1 =	Lund	DK	Std Cir	255km	1000	Costa	BRA	2887
1 =	Mozer	USA	ASW-19	255km	1000	Selen	NL	2878
19	Delafield	GB	ASW-19	220km	837	14 Delafield	GB	2289

Thursday, July 20

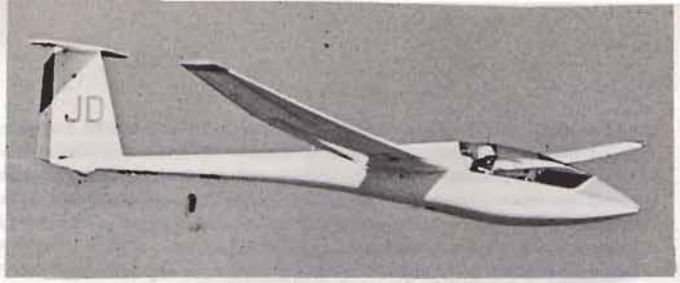
Cloudy with very moist air beneath a 5 500ft inversion and strong winds (up to 32kt) measured at flying levels.

At the daily prizegiving the Director thanked George Lee (I still wonder if he had his tongue in his cheek) for showing that the task was possible. After a delayed briefing, at which the 15m and Standard Classes were cancelled, the Open was put out on the grid – but the weather did not improve sufficiently and at 14.30hrs this Class was scrubbed too.

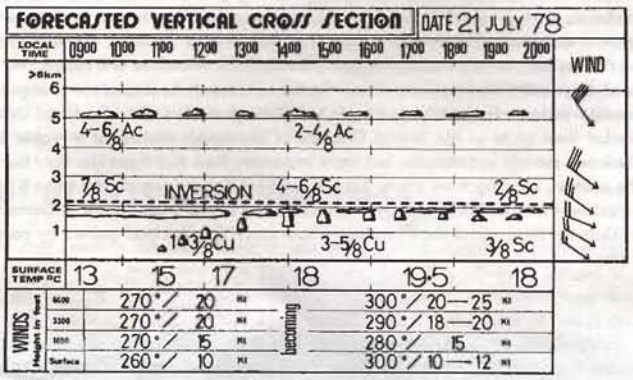
Day 4, Friday, July 21

Again a delayed briefing at 12.15hrs was necessary, but the outlook was more hopeful and the Met were taking more soundings. A novel idea was that model aircraft were used for this and it seemed to work well and quickly.

Tasks: Open 333km – TP45, TP39. 15m 287km – TP43, TP34. Standard 260km – TP49, TP43. Launch 13.15hrs. Startline 15m 14.00hrs. Open/Standard 14.15hrs.



John Delafield (ASW-19) on final glide.



There was again very moist air below the 6000ft inversion and there was extensive spreading out of cloud. Max temp 19. Dew pt 09. 850mb wind 290/10. Temp +05. Thermals from 11.15 to 20.00

When launching commenced it was still rather cloudy and base was only slowly rising. The Frenchmen, Henry and Rantet left at 14.17hrs. The Germans, Müller and Gantenbrink also left in pairs at 14.21 followed by Bernard at 14.31hrs and George 10min later.

Fortunately the weather improved and in fact turned out better than forecast over the whole task area; thus much higher speeds than hitherto possible were achieved and while not an out-and-out roce day the problems were certainly fewer.

It was not all plain sailing, however, for having done well on the first two legs George, by going too fast, got stuck in a large gap on the last leg and was really scraping the bottom of the barrel to stay airborne. He lost over on hour on the winner Bert Zegels and was lucky to get home that day. Dick Butler, USA, and Malcolm Jinks, Australia, were among four others who landed out; their points loss would not easily be retrievable. But Alf Schubert, Austria, probably won't forgive himself for he failed to find the first TP and as it was no good continuing without the photo all he could do was to land!

In the 15m Class it was Göran Ax, Sweden, who at last found the conditions more to his liking and came home in under three hours. Steve White had to relight because of radio trouble and, although making up for lost time and overtaking various gaggles on the last 50km or so, he lost this gain as he tried to set out on his own which promptly, believe it or not, slowed him down. Helmut kept his SB-11 well among the leaders and for the second time claimed third place.

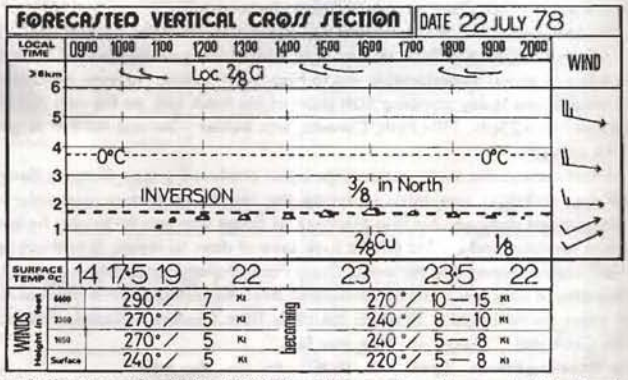
The Standard Class with a slightly lower best speed was hotly contested by Baer Selen, Holland, and Michel Recule, France, the latter, however incurred a photo penalty and thus came second. It was the best day so far for John Delafield and it moved him up three places in the overall standings. It was nice to see Antonio Martinez back in the competition but alas he had lost two days.

Photo penalties again caused a lot of aggro but the French seem to be unduly severe about it. This time the Italians have put in a protest – so at last this subject will be discussed by the International Jury. One unhappy penalised pilot was overheard saying – "if the organisers make a mistake all they say is 'sorry', when we make a slight error we get penalty points!"

Day 4: Leading Results – Open				km/h	Pts	**Four Days**		Pts
	Zegels	B	Jant 2A	98.67	1000	Henry	F	3413
	Gavazzi	I	Nimbus 2	95.76	965	Gantenbrink	D	3394
	Rantet	F	Nimbus 2	95.41	961	Lee	GB	3380
9	Fitchett	GB	ASW-17	84.47	829	Rantet	F	3344
15	Lee	GB	ASW-17	74.21	706	Fitchett	GB	3161
15m								
	Ax	S	ASW-20	96.53	1000	Reichmann	D	3869
	Striedieck	USA	ASW-20	95.60	987	Striedieck	USA	3646
	Reichmann	D	SB-11	95.08	980	Gordon	NZ	3521
	Musters	NL	LS-3	94.62	974	Widmer	BRA	3508
23	White	GB	ASW-20	80.79	786	12 White	GB	3268
Standard								
	Selen	NL	ASW-19	79.22	1000	Selen	NL	3878
	Recule	F	Cir 78	79.23	970	Riera	RA	3831
	Delafield	GB	ASW-19	76.68	960	Maalum	N	3763
	Bradley	ZA	Std Cir	75.59	944	Recule	F	3702
	Carpenter	CDN	Std Cir	74.42	925	11 Delafield	GB	3249

Day 5, Saturday, July 22

Tasks. Open 570km – TP47, TP8. 15m 524km – TP47, TP5. Standard 475km – TP55, TP11. Launch 11.45hrs. Startline Open/Standard 121.5hrs. 15m 12.30hrs.



The marked inversion rose from 5000 to 6000ft but the air below was drier and the spread out of cloud was chiefly confined to the NW and N of the area. Max temp 23. Dew pt 10. 850mb wind variable/04. Temp +08. Thermals from 10.30 to 20.00

Conditions looked as good as we had seen them so far. The British pilots reported a rapid rise in cloudbase soon after they were launched and by noon it was 4600ft.

This time it was the German pair in the Open who left first at 12.19hrs, the French following at 12.21hrs, George at 12.27hrs with Bernard nearly last at 12.28hrs. Until mid-afternoon excellent progress was made, but overall the day was more difficult than expected. A band of cirrus had moved in over the task area and lift became rather broken so that pilots had to slow up and become more cautious.

From 18.15hrs onwards finishers came home in droves and it looked like the airborne glider invasion of Arnhem – most spectacular!

We knew fairly soon that Bernard had won for the second time and George was closely behind. All but Fahrafellner, Austria, finished with times between 6hrs 6min and 7hrs.

Ax led the 15m Class home with the highest speed of the day, giving him a jump from 12th to third over the last two contest days. Andy Hämmerle, Austria, was the unlucky one today when all his instruments went u/s. Being on his own at the time, he had no idea of what speed he was doing – he sank to earth 4km from the finish. Steve White, still not believing that gaggle flying could be fast on occasions, had set out on his own on the last leg to find thot the thermals were more elusive. He was the slowest of those who got back, but ten pilots didn't make the finish line at all.

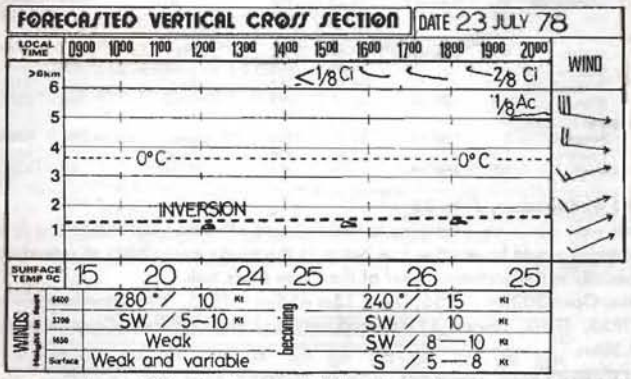
Baer Selen, having decided to take it easy and not to hurry, did not encounter any problems and was pleasantly surprised to find that he had won the day with a good margin which took him comfortably into the overall lead. John Delafield had a nasty incident when his airbrakes suddenly jumped out at speed and he had to return for adjustments. This caused a 30min delay in which he stood around in the hot midday sun. This probably gave him the nasty migraine he complained of later when he had to abandon the task.

Renato Zanitzer, Luxembourg, a country with only 40 or so active glider pilots, was rather overawed by all the goggles and expertise around him. After Manfred Kreipl, the German Met, advised him to throw out all his computors, calculators, waterballast and what have you and return to the flying he was used to, his performance improved and today he flew over half the distance.

Day 5: Leading Results – Open			km/h	Pts	Five Days		Pts
Fitchett	GB	ASW-17	93.26	1000	Lee	GB	4375
Orleans de B	E	ASW-17	93.02	996	Henry	F	4354
Lee	GB	ASW-17	92.91	995	Gantenbrink	D	4302
Johnson	USA	Jant 2B	90.62	959	5 Fitchett	GB	4161
15m							
Ax	S	ASW-20	94.22	1000	Reichmann	D	4829
2= Peter	D	ASW-20	90.66	963	Striedieck	USA	4604
2= Karlsson	S	Mini-N	90.66	963	Ax	S	4470
Reichmann	D	SB-11	90.30	960	Musters	NL	4427
Striedieck	USA	ASW-20	90.10	958	12 White	GB	4120
Standard							
Selen	NL	ASW-19	81.20	1000	Selen	NL	4878
Recule	F	Cir 78	78.20	965	Recule	F	4667
Brigliadori	I	Std Cir	78.10	958	Maelum	N	4646
19 Delafield	GB	ASW-19	389km	358	Brigliadori	I	4637

DAY 6 Sunday, July 23

Tasks: Open 505km – TP8, TP25. 15m 446km – TP15, TP27. Standard 402km – TP14, TP29. Launch 11.45hrs. Startline 15m 12.15hrs. Open/Standard 12.30hrs.



The inversion was down to 4000ft at dawn but rose to 7000 during the day. The air was much drier than before and only scattered cu formed. Upper cloud spreading from the WNW cut off thermals at times during the afternoon. Max temp 25.5. Dew pt 11. 850mb wind 290/10. Temp +08. Thermals from 11.30 to 18.30 but several gaps after 16.00

The generally long tasks gave the pilots little choice of start time and the Open had left within 15min, the Standard in 21 and the 15m in 27min.

Bernard and one of the Swedes were put at the back of the grid today for being overweight, although the crew swore that they had taken less water on board than usual. This bothered Bernard a great deal and for some time he kept passing messages over the radio on how to sort this out before settling down to the task in hand.

Klaas Goudriaan, South Africa, who had held the lead at the start of the Comps and was still eighth overall, got himself lost around the second TP and eventually had to land in that area. Unfortunately he hit the far side bank of a big ditch which ripped off his undercarriage and part of the frame it was attached to. The damage was too serious and costly for a local repair and so Klaas had to take his ASW-17 all the way to Germany and had to withdraw from the rest of the Championships.

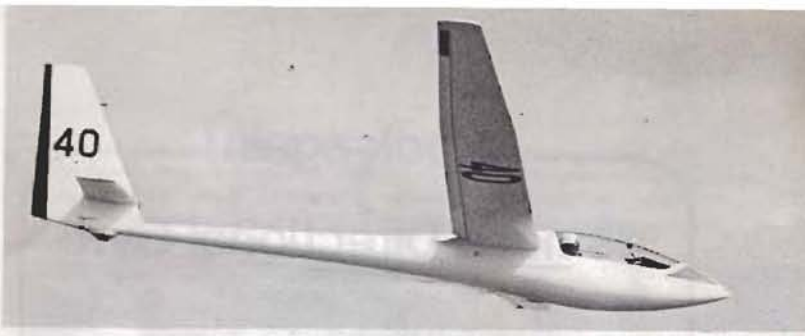
Today there was jubilation in the German Open Class camp. Müller and Gantenbrink came in ahead of George Lee and took first and second place at a fraction under 100km/h, Bernard was the sixth pilot to average more than 96km/h. Also the French with over 90km/h did well enough again to remain a worry. Dick Johnson reported a very good first leg, with the second being mediacre for him with only 3m/sec when others were finding 6-8m/sec. The clamp which came in in the late afternoon was only a worry on the last leg. This time it was Gavazzi, Italy, who landed only 1km short of the finish line while another four also landed out.

Ernst-Gernot Peter took first place in the 15m Class, where 69pts had to be shared by the first nine. Karl Striedieck had managed at last to chisel 47pts off Helmut's lead. With the seven he had gained on him on Day 4 he still had a long way to go to reduce the 178pts Helmut had in hand – but he certainly was going to have a go. Bobby Clifford, SA, only just made the finish by overflying a forbidden zone on the airfield and, despite a protest, it cost him 250 penalty points.

For Herbert Mozer it was the second win. For the first time, he said, it felt like the conditions we get at home and the thermals were actually . . . "round".

The Italian protest after Day 4's photo penalty to Nino Perotti was upheld and he was given back the 30pts which had been deducted. It was interesting to note that after this protest only one more penalty was applied for photographic evidence. Perhaps it should have been made sooner.

That evening Bernard, his crew and the Team manager, spent a long time getting Four Zero weighed and reweighed in all possible configurations – the officials finally departed scratching their heads. The outcome was that neither Bernard nor the Swede were given penalty points. It was therefore just as well that Bernard



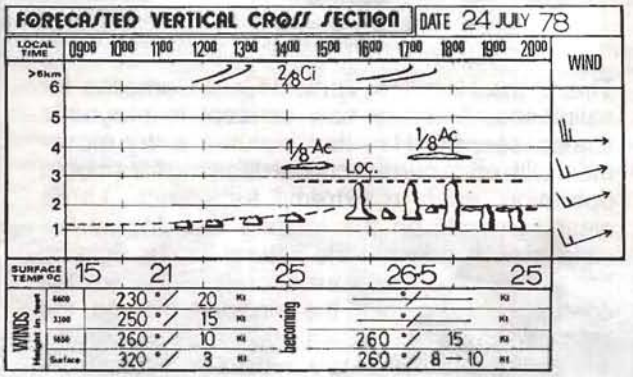
Bernard Fitchett flying his ASW-17.

and Dickie Feakes had insisted on a thorough checking. Later, on July 28, after weight penalties given on Day 6 were also withdrawn and substituted by warnings.

Day 6: Leading Results – Open			km/h	Pts	Six Days		Pts
Muller	D	ASW-17	99.95	1000	Lee	GB	5338
Gantenbrink	D	Nimbus 2	99.12	994	Gantenbrink	D	5296
Lee	GB	ASW-17	98.19	983	Henry	F	5239
6 Fitchett	GB	ASW-17	96.09	958	5 Fitchett	GB	5119
15m							
Peter	D	ASW-20	96.65	1000	Reichmann	D	5769
Widmer	BRA	ASW-20	95.60	989	Striedieck	USA	5591
Striedieck	USA	ASW-20	95.38	987	Ax	S	5408
14 White	GB	ASW-20	86.64	893	12 White	GB	5013
Standard							
Mozer	USA	ASW-19	88.70	1000	Selen	NL	5860
Recule	F	Cir 78	87.99	992	Recule	F	5659
Brigliadori	I	Std Cir	87.34	984	Brigliadori	I	5621
Selen	NL	ASW-19	87.15	982	Riero	RA	5585

DAY 7, Monday, July 24

Tasks: Open 469km – TP15, TP25. 15m 430km – TP18, TP29. Standard 395km – TP7, TP27. Launch 11.30hrs. Startline Open/Standard 12.00hrs. 15m 12.15hrs.



The inversion had lowered to 3300ft by dawn and the air below was dry but a few cumulus clouds formed over marster areas. Max temp 25.5. Dew pt 13. 850mb wind 280/10. Temp 12.5. Thermals from 10.00 to 19.00

With the Championships in its second week, the top half in each Class had shown itself as being very competitive. Although Reichmann and Selen had a comfortable lead in their Classes, only 119pts separated Bernard in fifth place and George leading with 42pts. It would be vital to be among the leaders every day from now on if the Brits were to take the accolades home.

Bernard and George had left last at 12.18hrs and 12.21hrs, Francois Henry, however, started again at 12.32hrs with Joques Rantet following at 12.35hrs. Obviously, they were keeping an eye on our boys – or maybe they felt that with the shorter task they could afford a slightly later time!

The weather albeit somewhat different from that forecast was good. The thermals, according to Kees Musters and Baer Selen, were difficult to get into, but apart from that there were few problems and good speeds were achieved in all Classes.

Bernard, who had caught up with the two Germans near the second TP, found his best lift after the latter two had gone on and was able to centre on the core with a rapid climb to 6000ft. For the third time he collected a bottle of champogne at next morning's briefing and had moved up to third place overall. Alvarez Orleans de Borbon, Spain, after very low scores at the beginning of the contest, worked himself up from bottom to 15th place with some very fine performances. Dick Butler, fifth for the day, had his undercarriage collapse on landing, scraping the bottom of the fuselage rather badly on the tarmac. George beat the French, but the Germans beat him and his lead was now only 25pts.

Karl Striedieck, third, took another 29pts from Helmut, ninth, his worst day so far, if you could call it that. Basically, Helmut's lead stemmed from the earlier slower days, but on the faster ones the others seemed to be able to pace him better.

Ingo Renner still had not shown his form and perhaps by now he was somewhat disheartened to see the days slip by without any great impact. Steve White still

felt he was not flying his best, but it was normally the last bit before final glide which seemed to bother him most.

Akke Pettersson, who referred to the conditions on the first leg as "rather strange", had been down to 1500ft three times. He settled down well enough after that and was the only one in the Standard Class to average over 81km/h. Baer Selen, it seemed, could do nothing wrong and he had been among the top three for the last four days. According to John Firth, this was really the first reasonable task which was not overset. Only two pilots in the 15m and Standard Class had to land out and Radic of Chile suffered a 100pts penalty for being in the forbidden airfield zone.

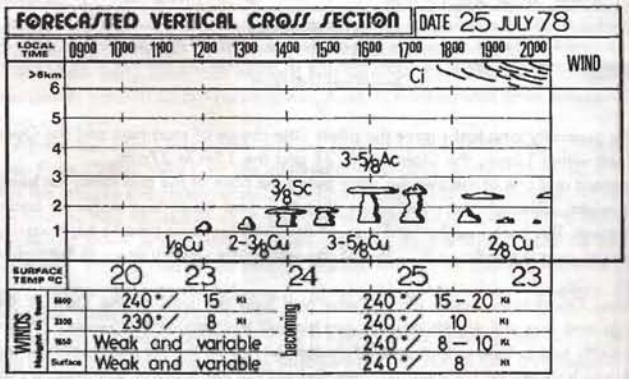
During the day a large group of police were searching all cars and trailers leaving the site. Apparently, souvenir hunters had stolen two 20mm guns from a couple of Super Sabres in the hangar – the French were not amused.

Day 7: Leading Results – Open			km/h	Pts	Seven Days		Pts
Fitchett	GB	ASW-17	97.30	1000	Lee	GB	6274
Orleans de B	E	ASW-17	95.81	977	Gantenbrink	D	6249
Müller	D	ASW-17	94.95	964	Fitchett	GB	6119
Gantenbrink	D	Nimbus 2	94.23	953	Henry	F	6088
8 Lee	GB	ASW-17	91.85	916	Rantet	F	6047
15m							
Musters	NL	LS-3	89.64	1000	Reichmann	D	6725
Peter	D	ASW-20	89.59	999	Striedieck	USA	6576
Striedieck	USA	ASW-20	88.67	985	Ax	S	6371
18 White	GB	ASW-20	82.81	893	13 White	GB	5906
Standard							
Pettersson	S	ASW-19	81.25	1000	Selen	NL	6784
Carpenter	CDN	Std Cir	77.40	936	Recule	F	6559
Selen	NL	ASW-19	76.72	924	Riera	RA	6462

DAY 8, Tuesday, July 25

Pilots were obviously beginning to feel fatigued after the very demanding flying and today would be another true battle as there was a possibility of spread out, especially in the northern corner of the Open Class task.

Tasks: Open 503km – TP56, TP42. 15m 458km – TP55, TP39. Standard 407km – TP55, TP40. Launch 11.45hrs. Startline 15m 12.15hrs. Open/Standard 12.30hrs.



The inversion was at 7000ft in the morning with enough moisture to threaten another day of spreading out of cu. During the day the air became drier and the inversion descended so that the cu dispersed and thermals were weakened by thin cirrus spreading over from the west. Max temp 27.5. Dew pt 15. 850mb wind 220/08. Temp +11. Thermals from 10.45 to 20.00 (very sparse towards the end).

After startline tactics of the leaders in the Open Class, the Germans left at 12.50hrs and 12.15hrs, followed by Ranter, Lee and Fitchett at 13.00hrs, 13.02hrs and 13.05hrs.

Conditions seemed fine when launching started and, in fact, improved locally for a time later. The band of cirrus forecast for late afternoon and just visible on the horizon seemed to slow down and reached us later than expected. However, after fairly good progress on the first leg, we learned from radio messages that there were some problems on the second leg of the Open task and progress was becoming much slower as pilots tried to divert to escape these areas. Cumulus was disappearing and wide bands of cirrus had taken their place.

Bernard, who had taken under 2hrs for the first 189km leg, needed 2.30hrs for the shorter 159km second leg, reaching the second TP at around 17.30hrs. There was no news of any landings at that time, but thermals were by now getting weak as the gaps got larger and the sun kept disappearing. In the end it proved to be the last 35km which clobbered half of the Open Class pilots and only two small goggles made it to the finish line. The first at 18.40hrs contained the day winner, Malcolm Jinks, accompanied by Johnsan, Serra, Italy, and Français Henry. We then had to wait for another agonising half hour before we knew that George, who needed another 4-500ft, was safely in. But Bernard, who had been with the last but one gaggle only two thermals ago, had been too low to make use of the 1kt the others got and so he,as well as Rantet,had to share bottom place, with any hope to recover from this gone. Ages later Bert Zegels scraped in. George by virtue of his later start had just pipped the Germans on time and his 25pt lead had increased to 45.

The two other Classes fared much better, with only four in the Standard and nine in the 15m Class landing out. Again several gliders needed some repair but luckily nothing very serious.

It was Striedieck's first day win, but Helmut was hot on his heels and the difference was only five points . . . and Selen, he increased his lead yet again.

				km/h	Pts	Eight Days		Pts
Day 8: Leading Results Open								
	Jinks	AUS	Nimbus 2	84.72	1000	Lee	GB	7241
	Johnson	USA	Jant 2B	84.33	997	Gantenbrink	D	7196
	Serra	I	Nimbus 2	82.06	977	Henry	F	7061
	Henry	F	Nimbus 2	81.52	973	Müller	D	6796
5	Lee	GB	ASW-17	80.85	967			
22=	Fitchett	GB	ASW-17	468km	593	Fitchett	GB	6712
15m								
	Striedieck	USA	ASW-20	85.64	1000	Reichmann	D	7720
	Reichmann	D	SB-11	85.23	995	Striedieck	USA	7576
	Peter	D	ASW-20	85.21	995	Ax	S	7330
20	White	GB	ASW-20	73.31	845	12 White	GB	6751
Standard								
	Pettersson	S	ASW-19	82.63	1000	Selen	NL	7745
	Mozer	USA	ASW-19	82.33	995	Recule	F	7514
	Nietlispach	CH	Hornet	81.16	978	Brigliadori	I	7421

WEDNESDAY, July 26

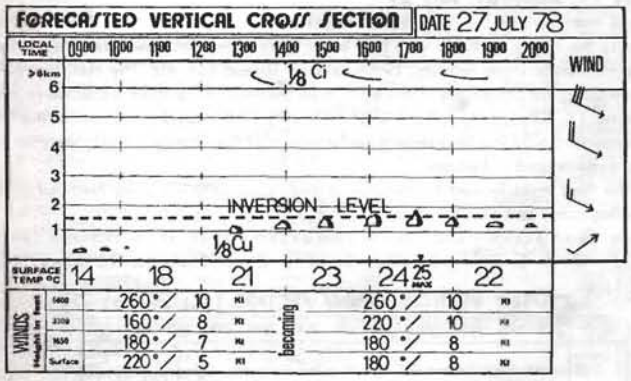
An Atlantic frontal system brought periods of rain for much of the day

After a delayed briefing at 13.00hrs the day was cancelled in all classes. It was a welcome relief to the rather tired pilots.

DAY 9, Thursday, July 27

We could hardly believe our eyes to see the mammoth tasks on the briefing sheets. The Met, however, made promising noises, although with the startlines not open until 1 o'clock, pilots realised that unless they were saved by stubble fires, or the weather was a good deal better than forecast, it just was not on.

Tasks: Open 536km – TP56, TP6. 15m 488km – TP47, TP11. Standard 457km – TP55, TP7.



During the day the inversion descended from 5000 to 4000ft and the wet ground seemed to delay the rise of temperature. Although small cumulus developed for a time thermals were weaker than expected. Max temp 26.5. Dew pt 10.5. 850mb wind variable/05. Temp 14.5. Thermals from 11.30 to nearly 20.00

With cloudbase only just over 2300ft, starting and then finding the next thermal made things even more difficult right from the beginning. The by now usual departures of the Brits, French and Germans were all within ten minutes of each other, with the Germans last this time.

It turned out to be an agonisingly slow day, in weak, scrappy blue thermals. An unexpected windshear at around 3500ft had seen to this, so that once again one had to fly in gaggles to survive. Surprisingly, there were relatively few early outlandings, but the unfortunate few who did suffered damage. Renato Zanitzer wrote off his Std Jantar and had been lucky to escape injury. Ian Hood had a badly broken undercarriage and his glider finished up in the workshop again.

As radio contact was lost, partly becouse of the low level flying, we could only sit and wait and hope for the best, while watching the trailers go out on the road. By 7pm a trickle of landings had been reported, which by 8pm had become a flood and the landing pin board and telephone just could not cope. The pins which were up showed mass landings around the second TP in two Classes, with some spread out on the last leg, but only four Open Class pins were on the map. Two of these were 40 and 44 (Bert Zegels) about 50km from the finish. But the map could not be relied on and no one had any accurate information. The last pilots landed in fact at around 9.30pm and some had been airborne for nine hours or more, but no one managed to get home.

As the evening progressed and trailers started to come back and drove straight to the workshops, we realised that once again outlandings had taken their toll in damage. This time it included Malcolm Jinks. He landed in the same field as George Lee, who described it as being like "blancmange". Malcolm, however, had semi-stalled in with his tailchute deployed just after clearing a line of trees on the approach. His main fittings had token most of the strain and needed re-aligning. Also Bruno Gantenbrink had fairly bad undercarriage damage, while Birger Bulukin, Norway, had to wait for help before he could be released from the cockpit. He had come to a standstill underneath a barbed-wire fence, causing deep scratching on the canopy. Luckily, it did not break and so he escaped serious injury.

The workshop at midnight. Photo: Dickie Feakes.

The workshop was a beehive of industry with about ten gliders under repair. But as always in these circumstances everyone helped everyone else and one could observe Gerhard Waibel of Schleicher working (with a sledgehammer) on Bruno's Nimbus of Schempp-Hirth with Klaus Holighaus. By next morning the gliders looked as good as new and if one had not been in the workshop, one would never have known of the sweat and toil of the repairers!

We had to wait for the results until next morning, but there was no change in the leaders in the Open Class, won by François Henry, all but one had flown over 400km. Bernard was second and George sixth had increased his lead to 78pts. The only two in the 15m Class to exceed 400km were Peter and Striedieck, the latter taking another 35pts from Helmut in 14th place. The strain on Helmut hoving led for so long must hove been considerable. For Steve it was his best day yet and he shared equal third with six others. In the Standard Class, only Baer Selen covered over 400km!

Gerhard Waibel and Klaus Holighaus at work. Photo: Dickie Feakes.

				km	Pts	Nine Days		Pts
Day 9: Leading Results – Open								
	Henry	F	Nimbus 2	491	1000	Lee	GB	8203
	Fitchett	GB	ASW-17	481	978	Gantenbrink	D	8116
	Zegels	B	Jant 2A	480	976	Henry	F	8061
6	Lee	GB	ASW-17	473	960	5 Fitchett	GB	7687
9 pilots over 472km, 9 pilots over 440km, 4 pilots over 400km.								
15m								
	Peter	D	ASW-20	411	1000	Reichmann	D	8661
	Striedeck	USA	ASW-20	402	976	Striedieck	USA	8552
3=	White	GB	ASW-20	392	949	Ax	S	8281
						12 White	GB	7700
2 pilots over 400km, 16 pilots over 380km, 12 pilots over 300km.								
Standard								
	Selen	NL	ASW-19	403	1000	Selen	NL	8747
	Brigliadori	I	Std Cir	399	992	Recule	F	8425
	Andersson	S	Std Jan	377	928	Brigliadori	I	8415

The grid.

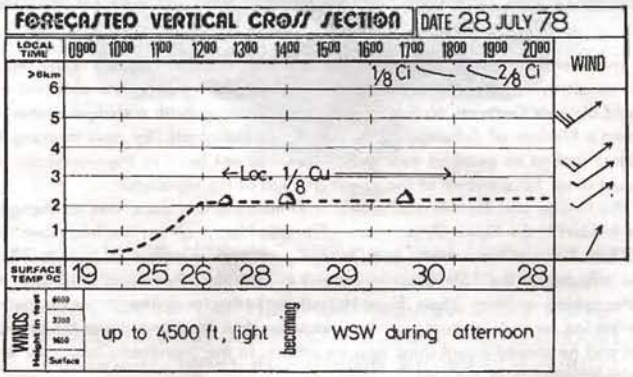
Baer Selen, the youngest ever World Champion, in his ASW-19.

The British Team looking very British at the pr

DAY 10, Friday, July 28

The organisers had the sense after the many problems of yesterday to reduce the tasks despite a better forecast.

Tasks: Open 332km – TP7, TP24. 15m 304km – TP14, TP24. Standard 273km – TP3, TP17. Launch 12.45hrs. Startline 15m 13.15hrs. Open/Standard 13.30hrs.



The inversion rose from 3700 at dawn to 5300ft by early afternoon. This altered conditions which became much better than suggested by the dawn sounding and scattered cumulus marked many thermals. Max temp 31. Dew pt 15. 850mb wind variable/05. Temp + 15. Thermals from 12.00 to 19.15

After the tragedy this morning of Rex Pilcher's fatal accident, the grid was very quiet and subdued. Launching started on time as usual.

Canadians were as good as, if not better, than forecast and it certainly was the best task we had had over the last nine days. For the first time the whole fleet came home and there was tremendous applause for Nagore and Martinez, Spain, when they crossed the finish line for the first time in the contest. It was a fine win for Bernard at 115km/h, which put him back in fourth place in the contest. George, in second place, beat his closest rivals once again and increased his overall lead to a more healthy 156pts, but between Gantenbrink and Henry there were only 6pts.

National records broken

In the 15m, Ingo Renner brought home the victory, but alas for him it was too late – it did not even gain him a single place on the overall score. Striedieck, however, had managed finally to reduce Helmut's lead to 36pts; it had taken him six days to achieve this – could it be tomorrow? As for Baer Selen, he looked as strong as ever, but here too, only 24pts separated second and third place. A number of National records were broken on this day.

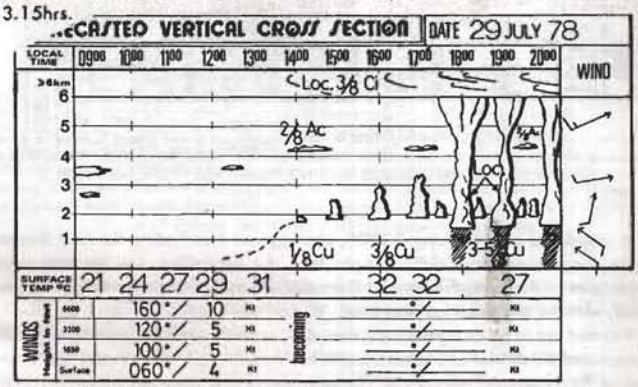
Day 10: Leading Results – Open			km/h	Pts	Ten Days		Pts
Fitchett	GB	ASW-17	115.06	1000	Lee	GB	9174
Lee	GB	ASW-17	112.83	971	Gantenbrink	D	9018
Orleans de B	E	ASW-17	111.60	955	Henry	F	9012
Henry	F	Nimbus 2	111.33	951	Fitchett	GB	8687
18 pilots over 100km/h.							
15m							
Renner	AUS	LS-3A	107.09	1000	Reichmann	D	9563
Peter	D	ASW-20	105.44	977	Striedieck	USA	9527
Striedieck	USA	ASW-20	105.32	975	Ax	S	9191
11 White	GB	ASW-20	101.54	922	12 White	GB	8622
Standard							
Pettersson	S	ASW-19	94.41	1000	Selen	NL	9682
Mazer	USA	ASW-19	94.37	999	Recule	F	9368
Carpenter	CDN	Std Cir	93.30	982	Brigliadori	I	9344
9 pilots over 90km/h.							

DAY 11, Saturday, July 29

Vivid memories of the last day at Räyskala two years ago must have flashed across the minds of those who had been there. Then, as now, the forecast had told of thunderstorm activity, cirrus, alto-cu spread out, etc. The Met, however, promised good conditions to the east. Blue thermals were to be expected to start around 12.30hrs, but medium level instability could rapidly increase in the late afternoon. Could this be a repeat performance of the chancy last day weather we had experienced in Finland?

The final tasks looked formidable indeed, especially when we filed out of the briefing room and saw the sky.

Tasks: Open 329km – TP27, TP17. 15m 292km – TP29, TP21. Standard 268km TP24, TP17. Launch 12.30hrs. Startline Open/Standard 13.00hrs. 15m 13.15hrs.



A broad line of thunderstorms which extended from SW France to near Paris at dawn threatened to move over the area during the day. Only a very shallow stable layer over the region near and to the east of Chateauroux prevented storms from developing over the task area until evening. Max temp 31. Dew pt 18. 850mb wind variable/03. Temp + 18. Thermals from 11.30 to 17.30. (After 17.30 the shallow cu which persisted over most of the routes during this period began to grow rapidly and several heavy thunderstorms with vigorous squalls affected areas around Chateauroux during the evening and night)

A bouquet for the Champion's wife, Maren Lee.

The scoreboard outside the briefing hangar.

George's glider is lined up with the trophies ready for t

h at the prizegiving.

Steve White relaxed on the ninth day.

Bernard and George at briefing.

All the photographs without credits of the World Championships were taken specially for us by Hans Smit to whom we are most grateful.

Crossing the startline was one of the main difficulties and many pilots were seen leaving well below permitted height. George, especially, seemed to have a problem to get going. For the first time he showed that he was under great pressure, when twice on calling the startline he used the British method "O2 Gate" instead of "Startgate O2". He had not made this error before in the whole contest. Luckily the startline was not busy at the time and responded and George tip-toed away at 11.38hrs, nine minutes after Bernard, who had gone on to find the next thermal and was making encouraging noises over the radio. Dick Johnson must have been even more worried as he was down to 300ft getting ready for a relight before finally scraping away, but by then it was 14.17hrs.

Luckily, the weather held and no storms affected the area. Out on the track the conditions were considerably better than we could see and had dared hope for and our earlier gloomy thoughts quickly disappeared. . .

It was only 16.14hrs when Baer Selen crossed the finish line – the youngest ever World Champion was home – coming second for the day which was won by Karl Lund of Denmark.

Bruno Gantenbrink, with his first day win, could not unseat George in third place – so George Lee had defended the Open World Championships title successfully, without doubt in his toughest competition ever. Bernard Fitchett, who had been so close to being among the first three, managed to retrieve one place after his downfall on Day 8 and come fourth.

Also the private battle between Helmut Reichmann and Karl Striedieck had been decided with Helmut beating Karl by one minute and thus taking the title of World Champion for the third time. The day was won by Rønnestad of Norway. Steve White, with a last final effort to get into the top ten, failed by just two points and although he may not think so, it was a very good first effort.

The other well-deserved places on the rostrum were taken in the Open by Bruno Gantenbrink, Germany, in his first World event and François Henry, France, World Champion in 1965. Second place in the 15m Class was also taken by "newcomer" Karl Striedieck, USA and third by Göran Ax, Sweden, World Champion in 1972. In the Standard Class, Louis Brigliadori, Italy, and Michel Recule, France, mounted the rostrum for second and third places respectively.

Helmut and Bruno were whisked off by aeroplane to appear on live TV a few hours later in Germany and were back in time for the prizegiving. The Dutch had started their celebrations. Not only had they a World Champion, but all four pilots had finished in the first ten. The only other countries to achieve this were France and Germany . . . and the Brits – we sat and waited until 9pm, for George would not allow anyone to congratulate him before his photos had been checked . . . Then we too rolled out the barrel, or rather the whisky and had a super combined pre-arranged party with the Germans and Brazilians, to which everyone was invited. It went on to the early hours of the morning.

Day 11: Leading Results – Open

				km/h	Pts
	Gantenbrink	D	Nimbus 2	105.14	1000
	Serra	I	Nimbus 2	104.82	995
	Lee	GB	ASW-17	104.39	989
6	Fitchett	GB	ASW-17	100.68	936
15m					
	Rønnestad	N	LS-3	96.16	1000
	Reichmann	D	SB-11	94.88	981
	Widmer	BRA	ASW-20	94.87	981
7	White	GB	ASW-20	93.46	960
Standard					
	Lund	DK	Std Cir	93.05	1000
	Selen	NL	ASW-19	92.97	999
	Mazet	USA	ASW-19	92.13	986

See pages 232-233 for final results.

Closing Ceremony

I am sure that the French would like to forget this day as quickly as possible, as everything went wrong from the start.

The wind was high, the tannoy system kept breaking down, photographers and others ran in front of the winners' rostrum so that official guests and other competitors could not see or hear a thing. As for the party afterwards in the briefing room with a prize for every pilot, the trouble was the pilots did not know about it. The whole thing was an absolute shambles . . . and then the rains came down and so the 16th World Championships came to an end. However, much of this competition had been excellent and the organisers ought to be thanked for that. If only interpretation and local rules had been thrashed out in the practice week, instead of being dealt with in a somewhat abrupt manner, a lot of aggro could have been avoided and it would have been almost perfect.

The British Team had an informal dinner party that evening, before packing up next morning in dreadful rain, which had turned the site into a quagmire.

On arrival at Newhaven on the Tuesday, a small champagne reception had been arranged by the RAFGSA. Air Vice-Marshal Stanbridge and Air Commodore John Brownlow, as well as Roger Barrett, BGA Chairman, Barry Rolfe, BGA Secretary, and a few other friends were there to greet the World Champion and the other team members.

Among the telegrams awaiting George which were read out by Roger Barrett was one from HRH Prince Charles sending "congratulations to a brilliant instructor from a most recent and grateful pupil".

eady for the prizegiving.

Bernard being presented with one of the four bottles of champagne he won for coming first on four days by the Operations Director, Yves du Manoir.

The triumphant British party taken by an official RAF photographer during the reception given them on reaching England.

Final Results Open Class

Pilot		Country	Sailplane	16.7.78 Day 1 336km ▲	17.7.78 Day 2 238km ▲	19.7.78 Day 3 422km ▲	21.7.78 Day 4 333km ▲	22.7.78 Day 5 570km ▲	23.7.78 Day 6 505km ▲	24.7.78 Day 7 469km ▲	25.7.78 Day 8 503km ▲	27.7.78 Day 9 536km ▲	28.7.78 Day 10 332km ▲	29.7.78 Day 11 329km ▲	Total Points
02	Lee, G.	GB	ASW-17	(17) 920	(6) 754 (8)	(1)1000 (1)	(15) 706 (3)	(3) 955 (1)	(3) 983 (1)	(8) 916 (1)	(5) 967 (1)	(5=) 962 (1)	(2) 971 (1)	(3) 989 (1)	10163
10	Gantenbrink, B.	D	Nimbus 2	(10) 948	(4) 950 (4)	(3=) 620 (2)	(7) 876 (2)	(12) 908 (3)	(2) 994 (2)	(4) 953 (2)	(7) 947 (2)	(10) 920 (2)	(9) 902 (2)	(1)1000 (2)	10018
19	Henry, F.	F	Nimbus 2	(13) 937	(2) 987 (2)	(11) 536 (3)	(4) 953 (1)	(9) 941 (2)	(12) 885 (3)	(13) 849 (4)	(4) 973 (3)	(1)1000 (3)	(4) 951 (3)	(10) 907 (3)	9919
40	Fitchett, B.	GB	ASW-17	(1)1000	(9) 712 (5)	(3=) 620 (6)	(8) 829 (5)	(1)1000 (5)	(6) 958 (5)	(1)1000 (3)	(22=) 593 (5)	(2) 978 (5)	(1)1000 (4)	(6) 936 (4)	9623
13	Mueller, E.	D	ASW-17	(9) 953	(8) 729 (7)	(16=) 454 (10)	(9) 814 (9)	(10) 934 (7)	(1)1000 (6)	(3) 964 (6)	(6) 948 (4)	(11) 920 (4)	(6) 915 (5)	(12) 903 (5)	9534
04	Johnson, R.	USA	Jantar 2B	(6) 962	(21=) 563 (15)	(8=) 553 (13)	(5) 950 (6)	(4) 959 (6)	(14) 874 (7)	(19) 777 (7)	(2) 997 (7)	(9) 958 (6)	(14) 879 (6)	(15) 868 (6)	9340
20	Finlayson, I.	NZ	ASW-17	(5) 966	(24) 541 (17)	(6=) 572 (12)	(11) 780 (11)	(7) 945 (9)	(13) 881 (8)	(7) 925 (8)	(10) 911 (8)	(15=) 889 (8)	(5) 948 (7)	(13) 894 (7)	9256
18	Rantet, J.	F	Nimbus 2	(2) 987	(14=) 580 (11)	(2) 816 (4)	(3) 961 (4)	(13) 906* (4)	(7) 908 (4)	(11) 889 (5)	(22=) 593 (6)	(15=) 889 (7)	(20) 764 (8)	(5) 948 (8)	9238
31	Jinks, M.	AUS	Nimbus 2	(12) 940	(12) 605 (12)	(6=) 572 (11)	(21) 384 (20)	(11) 914 (19)	(9) 890 (14)	(12) 878(14)	(1)1000(10)	(5=) 962(11)	(11) 890 (9)	(9) 912 (9)	8947
44	Zegels, B.	B	Jantar 2A	(22) 320	(5) 944 (22)	(16=) 454 (22)	(1)1000 (15)	(21) 809* (15)	(10=) 889 (13)	(10) 896(12)	(11) 861(11)	(3) 973(10)	(19) 788(10)	(16) 868(10)	8802
05	Tabart, A.	AUS	Nimbus 2	(11) 941	(13) 588 (14)	(22=) 407 (19)	(10) 804 (13)	(19) 853* (13)	(8) 900 (10)	(14) 841(11)	(8) 935 (9)	(15=) 889 (9)	(21) 764(11)	(17) 864(11)	8786
07	Butler, R. *	USA	Kestrel 604	(4) 973	(12) 601 (10)	(5) 592 (9)	(20) 390 (19)	(8) 944 (17)	(5) 980 (11)	(5) 947 (9)	(18) 626(12)	(12) 900(12)	(7) 911(12)	(18) 840(12)	8704
11	de Orleans-Borbon, A.	E	ASW-17	(24) 237	(17=) 575 (24)	(14) 494 (23)	(6) 894 (23)	(2) 996 (22)	(4) 982 (18)	(2) 977(15)	(12=) 630(16)	(15=) 889(16)	(3) 955(14)	(4) 983(13)	8612
16	Evans, I.	NZ	Nimbus 2	(8) 954	(17=) 575 (13)	(12=) 519 (15)	(12) 772 (12)	(14) 884 (12)	(10=) 889 (9)	(15) 825(10)	(19) 625(13)	(21) 800(14)	(18) 811(13)	(19) 839(14)	8493
06	Schubert, A.	A	Nimbus 2	(20) 911	(1)1000 (3)	(22=) 407 (7)	(24) 168 (21)	(17) 868 (20)	(15) 859 (16)	(16) 792(18)	(17=) 627(18)	(5=) 962(18)	(12) 889(18)	(7) 929(15)	8412
45	Urbancic, L.	RA	Nimbus 2	(19) 913*	(14=) 580 (19)	(15) 474 (17)	(14) 753 (14)	(22) 800**(16)	(16) 783 (15)	(20) 751(17)	(9) 919(14)	(13=) 896(13)	(22) 671(16)	(20) 837(16)	8377
21	Hansen, M.	DK	Nimbus 2	(7) 961	(7) 750 (6)	(10) 539 (8)	(17) 647 (10)	(18) 859 (11)	(18) 700 (12)	(21) 744(13)	(12=) 630(15)	(19) 887(15)	(8) 902(15)	(21) 752(17)	8371
14	Gavazzi, M.	I	Nimbus 2B	(15) 934	(21=) 563 (18)	(8=) 553 (14)	(2) 965 (7)	(23) 780*W(10)	(20) 405 (17)	(9) 909(16)	(20=) 622(17)	(13=) 896(17)	(16) 864(17)	(14) 878(18)	8369
26	de Dorlodot, L.	B	ASW-17	(14) 936	(23) 545 (20)	(16=) 454 (20)	(16) 697 (16)	(6) 946 (14)	(22) 385 (21)	(6) 937(19)	(20=) 622(19)	(4) 971(19)	(17) 813(20)	(8) 924(19)	8230
50	Oswald, M.	CH	Nimbus 2	(16) 933	(14=) 580 (16)	(19) 432 (18)	(18) 639 (17)	(20) 852 (18)	(19) 668 (20)	(23) 723(20)	(12=) 630(21)	(5=) 962(20)	(10) 897(19)	(11) 905(20)	8221
47	Serra, S.	I	Nimbus 2	(21) 892	(19=) 563 (21)	(12=) 519 (16)	(22) 372 (22)	(5) 946 (21)	(21) 397 (22)	(18) 782(21)	(3) 977(20)	(20) 809(21)	(13) 887(21)	(2) 995(21)	8149
01	Fahrafellner, O.	A	Nimbus 2	(18) 915	(10) 699 (9)	(24) 182 (21)	(13) 768 (18)	(24) 233 (23)	(17) 776 (23)	(22) 732(22)	(16) 627(22)	(23) ***(22)	(15) 877(22)	(22) 715(22)	6524
49	Mouat-Biggs, E.	ZA	Nimbus 2	(23) 256	(17=) 575 (23)	(21) 421 (24)	(23) 355 (24)	(16) 873 (24)	(23) 335 (24)	(17) 785(24)	(12=) 630(23)	(22) 328(23)	—(23)	—(23)	4558
15	Gaudriaan, K.	ZA	ASW-17	(3) 982	(3) 963 (1)	(20) 429 (5)	(19) 590 (8)	(15) 883*W (8)	(24) 318 (19)	—(23)	—(24)	—(24)	—(24)	—(24)	4165

Photo Penalty * = 30 pts; ** = 50 pts; *** = TPI out of sector; *W = Weight penalty 30 pts. Figures in brackets: first column – day position; last column – overall position.

Final Results Standard Class

Pilot		Country	Sailplane	16.7.78 Day 1 272km ▲	17.7.78 Day 2 178km ▲	19.7.78 Day 3 343km ▲	21.7.78 Day 4 260km ▲	22.7.78 Day 5 475km ▲	23.7.78 Day 6 402km ▲	24.7.78 Day 7 395km ▲	25.7.78 Day 8 407km ▲	27.7.78 Day 9 457km ▲	28.7.78 Day 10 273km ▲	29.7.78 Day 11 268km ▲	Total Points
SB	Selen, B.	NL	ASW-19	(13) 954*	(2) 961 (3)	(15) 963 (4)	(1=)1000 (1)	(1)1000 (1)	(4) 982 (1)	(3) 924 (1)	(5) 961 (1)	(1)1000 (1)	(8) 935 (1)	(2) 999 (1)	10681
OK	Brigliadori, L.	I	Std Cirrus	(10=) 959	(8) 924 (5)	(10=) 972 (5)	(1=)1000 (4)	(2) 965 (2)	(2) 992 (2)	(7) 900 (2)	(6) 955 (2)	(7) 909 (2)	(6) 943 (2)	(17) 817 (3)	10185
MM	Recule, M.	F	Cirrus 78	(8=) 962*	(10) 798 (8)	(10=) 972 (7)	(1=)1000 (4)	(15) 798 (5)	(7) 956 (4)	(9) 877 (3)	(12) 901 (4)	(3=) 928 (4)	(14) 826 (4)	(14) 878 (4)	10001
AA	Riera, J.	RA	Std Cirrus	(3) 982	(5) 947 (2)	(2=) 995 (2)	(8) 907 (2)	(11) 883* (3)	(15) 787 (5)	(5=) 911 (5)	(7) 941 (5)	(18) 798 (5)	(5) 951 (5)	(16) 847 (5)	9884
HM	Maelum, H.	N	LS-1F	(5) 976	(1)1000 (1)	(8=) 986 (1)	(14) 801 (3)								
CD	Carpenter, J.	CDN	Std Cirrus	(16) 909	(6=) 937 (6)	(20) 712 (10)	(6) 925 (8)	(12) 829 (8)	(12) 853 (9)	(2) 936 (8)	(8) 934 (7)	(6) 917 (7)	(3) 982 (6)	(10) 931 (6)	9869
VB	Nietlispach, H.	CH	Hornet	(12) 956	(9) 857 (7)	(10=) 972 (6)	(17) 618 (10)	(8) 895 (9)	(10) 935 (8)	(13) 834 (4)	(3) 978 (6)	(16) 876 (6)	(11) 922 (7)	(7) 956 (7)	9812
US	Mozer, H.	USA	ASW-19	(1)1000	(18=) 283 (15)	(6=) 991 (15)	(7) 908 (13)	(10) 885 (10)	(1)1000 (10)	(10) 861(10)	(2) 995 (9)	(13=) 881 (9)	(2) 999 (9)	(3) 986 (8)	9790
RR	Mercier, M.	F	Cirrus 78	(2) 998	(12) 640 (10)	(6=) 991 (9)	(4) 945 (7)	(4) 957 (6)	(11) 866 (6)	(11) 854 (6)	(18) 728 (8)	(17) 840 (8)	(17) 749 (8)	(12) 919 (9)	9474
AR	Rizzi, R.	RA	Std Cirrus	(20) 284	(4) 948 (16)	(3=) 995 (16)	(10) 899 (14)	(14) 799 (13)	(6) 974 (12)	(8) 879(11)	(11) 902(11)	(3=) 928(11)	(13) 838(10)	(13) 878(10)	9329
CN	Firth, J.	CDN	Std Cirrus	(15) 922	(11) 765 (9)	(10=) 972 (8)	(16) 792 (9)	(18) 418 (14)	(14) 821 (13)	(4) 914(13)	(15) 847(13)	(10) 903(13)	(4) 981(12)	(6) 967(11)	9311
IS	Costa, J.	BRA	LS-1F	(4) 978	(6=) 937 (4)	(10=) 972 (3)	(15) 795 (5)	(13) 808 (7)	(13) 840 (7)	(14) 836 (7)	(19) 293(12)	(13=) 881(12)	(9) 931(11)	(15) 853(12)	9149
VI	Pettersson, A.	S	ASW-19	(7) 964	(20=) 46 (17)	(8=) 986 (17)	(19) 357 (20)	(5) 943 (19)	(9) 937 (16)	(1)1000(14)	(1)1000(14)	(8=) 906(14)	(1)1000(13)	(8) 955(13)	9094
LB	Andersson, G.	S	Std Jantar 2	(8=) 962	(17) 344 (14)	(1=)1000 (13)	(20) 130 (19)	(7) 896 (18)	(8) 955 (15)	(5) 911(15)	(9) 918(15)	(3=) 928(15)	(12) 884(14)	(18) 807(14)	8739
SG	Stoegner, G.	A	ASW-19	(10=) 959	(15) 469 (12)	(18) 907 (12)	(9) 903 (12)	(16) 756 (11)	(5) 980 (11)	(19) 793(12)	(10) 917(10)	(20) 348(10)	(18) 705(15)	(5) 975(15)	8716
LI	Lund, K.	DK	Std Cirrus	(17) 456	(3) 954 (13)	(1=)1000 (11)	(18) 611 (15)	(6) 904 (12)	(19) 443 (14)	(17) 809(16)	(17) 813(16)	(12) 898(16)	(15) 793(16)	(1)1000(16)	8692
MH	Bradley, R.	ZA	Std Cirrus	(19) 368	(14) 497 (20)	(16=) 935 (20)	(5) 944 (17)	(9) 893 (15)	(17) 467 (17)	(12) 852(17)	(13) 888(17)	(8=) 906(17)	(16) 767(17)	(19) 803(17)	8326
LZ	Junqueira, C.	BRA	ASW-19	(18) 447	(16) 428 (19)	(16=) 935 (19)	(13) 804 (18)	(17) 738 (17)	(20) 435 (18)	(16) 826(18)	(14) 885(18)	(11) 901(18)	(7) 940(18)	(11) 924(18)	8270
CV	Perotti, N.	I	Std Cirrus	(6) 973	(22=) 0 (18)	(3=) 995 (18)	(11) 838 (16)	(23) 25 (20)	(18) 447 (20)	(18) 799(19)	(16) 825(19)	(15) 878(19)	(19) 702(19)	(9) 949(19)	6606
JD	Delofield, J.	GB	ASW-19	(14) 945	(13) 507 (11)	(19) 837 (14)	(3) 960 (11)	(19) 358 (16)	— (19)	—(20)	—(20)	—(20)	—(20)	—(20)	3607
EE	Martinez, R.	E	Std Libelle	(22=) 0	(18=) 283 (21)	- (21)	- (21)	(20=) 220 (21)	(22) 360 (21)	(20) 321(22)	(20=) 185(21)	(19) 655(22)	(20) 353(21)	(20) 0(21)	2073
DI	Hood, I.	IR	DG-100	(22=) 0	(22=) 0 (23)	(23) 0 (23)	(22) 0 (23)	(22) 209 (22)	(21) 389 (23)	(21) 312(21)	(22) 155(22)	(22) 202(21)	—(22)	—(22)	1279
RP	Zanitzer, R.	L	Std Jantar	(21) 78	(20=) 46 (22)	(22) 0 (22)	(21) 0 (22)	(20=) 220 (23)	(16) 482 (22)	—(23)	(20=) 185(23)	(21) 204(23)	—(23)	—(23)	1029

Final Results 15m Class

Pilot	Country	Soilplane	16.7.78 Day 1 309km ▲	17.7.78 Day 2 202km ▲	19.7.78 Day 3 311km ▲	21.7.78 Day 4 287km ▲	22.7.78 Day 5 524km ▲	23.7.78 Day 6 446km ▲	24.7.78 Day 7 430km ▲	25.7.78 Day 8 458km ▲	27.7.78 Day 9 488km ▲	28.7.78 Day 10 304km ▲	29.7.78 Day 11 292km ▲	Total Points
66 Reichmann, H.	D	SB-11	(1)1000	(1)1000 (1)	(3) 889 (1)	(3) 980 (1)	(4) 960 (1)	(5) 940 (1)	(9) 956 (1)	(2=) 995 (1)	(14) 941 (1)	(14) 902 (1)	(2=) 981 (1)	10544
97 Striedieck, K.	USA	ASW-20	(2) 990	(3) 921 (3)	(11) 748 (2)	(2) 987 (2)	(5) 958 (2)	(3) 987 (2)	(3) 985 (2)	(1)1000 (2)	(2) 976 (2)	(3) 975 (2)	(5) 973 (2)	10500
71 Ax, G.	S	ASW-20	(11) 948	(18) 785 (10)	(13) 737 (12)	(1)1000 (7)	(1)1000 (3)	(6) 938 (3)	(8) 963 (3)	(9) 959 (3)	(3) 951 (3)	(12) 910 (3)	(9) 951 (3)	10142
60 Widmer, J.	BRA	ASW-20	(5=) 966	(13) 858‡ (5)	(12=) 748 (6)	(10=) 936 (5)	(12) 894 (6)	(2) 989 (4)	(11=) 938 (5)	(11) 952 (5)	(4=) 949 (4)	(13) 908 (4)	(2=) 981 (4)	10119
73 Musters, C.	NL	LS-3	(3) 985	(20) 739 (11)	(5=) 813 (8)	(4) 974 (4)	(10) 916 (4)	(8=) 993 (5)	(1)1000 (4)	(12) 946 (4)	(19) 873 (5)	(5) 955 (5)	(10) 948 (5)	10082
61 Peter, E-G.	D	ASW-20	(26) 378	(4) 913 (18)	(2) 966 (14)	(9) 941**(14)	(2=) 963 (11)	(1)1000 (10)	(2) 999 (8)	(2=) 995 (6)	(1)1000 (6)	(2) 977 (6)	(17) 894 (6)	10026
76 Bluekens, M.	B	ASW-20	(4) 979	(2) 978 (2)	(19) 660 (5)	(26) 708 (11)	(7) 937 (9)	(4) 947 (9)	(11) 938 (9)	(6=) 966 (7)	(4=) 949 (7)	(17) 896 (7)	(4) 976 (7)	9934
82 Gordon, W.	NZ	LS-3A	(14) 899	(6) 885 (8)	(4) 840 (4)	(14) 897 (3)	(15) 885 (5)	(20) 816 (8)	(4) 979 (7)	(21) 805 (8)	(9=) 946 (8)	(23) 804(10)	(15) 902 (8)	9658
99 Teunisse, P.	NL	Mini Nimbus	(16) 833	(7=) 880 (12)	(9) 786. (10)	(5) 958 (9)	(18=) 864 (8)	(10=) 923 (7)	(23) 829(10)	(17) 926 (9)	(24=) 841(11)	(22) 859(11)	(8) 955 (9)	9654
74 Poré, D.	NL	Mini Nimbus	(7) 965	(23=) 414 (15)	(1)1000 (13)	(6=) 949 (10)	(8) 930 (10)	(13) 899 (11)	(21) 844(11)	(4) 971(10)	(9=) 946 (9)	(9) 935 (8)	(22) 736(10)	9589
65 White, S.	GB	ASW-20	(12) 933	(15) 828* (9)	(15=) 721 (11)	(23) 786 (12)	(20) 852 (12)	(14) 893 (12)	(18) 893(13)	(20) 845(12)	(4=) 949(12)	(11) 922(12)	(7) 960(11)	9582
91 Karlsson, G.	S	Mini Nimbus	(9) 952	(22) 423 (16)	(8) 805 (17)	(8) 947 (15)	(2=) 963 (13)	(12) 922 (12)	(5) 974(12)	(15) 944(11)	(17) 916(10)	(7) 946 (9)	(21) 785(12)	9577
63 Hömmerle, A.	A	Mini Nimbus	(8) 964	(11=) 859 (6)	(14) 733 (7)	(13) 908 (8)	(21) 512 (14)	(17) 858 (14)	(19) 884(14)	(5) 970(13)	(9=) 946(13)	(8) 937(13)	(11) 945(13)	9516
81 Renner,I.	AUS	LS-3A	(13) 915	(26) 345 (20)	(20=) 645 (20)	(15) 878 (21)	(6) 942 (18)	(8=) 933 (16)	(15=) 902(15)	(8) 965(14)	(9=) 946(14)	(1)1000(14)	(20) 814(14)	9285
70 Rønnestad, E.	N	LS-3	(29) 145	(9) 863 (24)	(10) 763 (23)	(16) 877 (23)	(14) 891 (20)	(7) 935 (17)	(6) 967(17)	(19) 896(15)	(4=) 949(15)	(4) 971(15)	(1)1000(15)	9257
58 Schulthess, A.	CH	Mini Nimbus	(5=) 966	(11=) 859 (4)	(5=) 813 (3)	(17) 863 (6)	(13) 892 (7)	(10=) 923 (6)	(15=) 902 (6)	(32) 68(17)	(4=) 949(17)	(10) 931(16)	(12=) 939(16)	9105
69 Sorensen, O.	DK	Mosquito	(21) 551*	(16=) 805 (17)	(20=) 645 (19)	(12) 928* (18)	(11) 906 (15)	(18) 854 (15)	(20) 858(16)	(23) 781(16)	(9=) 946(16)	(20) 873(17)	(14) 923(17)	9070
87 Buchanan, J.	AUS	LS-3A	(19) 584	(27) 335 (26)	(25) 576 (24)	(10) 936 (24)	(9) 922 (23)	(15) 883 (20)	(17) 897(22)	(6=) 966(20)	(20) 871(19)	(6) 950(19)	(6) 964(18)	8884
78 Stouffs, H.	B	LS-3	(22) 490	(19) 752 (21)	(5=) 813 (18)	(19) 839 (19)	(18) 864 (16)	(26) 450 (22)	(7) 965(20)	(13=) 945(19)	(26) 822(20)	(21) 864(20)	(16) 901(19)	8705
93 Webb, D.	CDN	Mosquito	(18) 593	(7=) 880 (14)	(15=) 721 (16)	(22) 792 (17)	(23) 446 (22)	(19) 844*(19)	(14) 917(18)	(22) 786(22)	(23) 857(22)	(16) 898(21)	(12=) 939(20)	8673
94 Werneburg, H.	CDN	Mini Nimbus	(10) 950	(14) 852 (7)	(17) 707* (9)	(25) 715 (13)	(29) 332 (19)	(16) 865 (18)	(25) 753(19)	(10) 957(18)	(15=) 925(18)	(19) 886(18)	(26) 676(21)	8618
84 Clifford, R.	ZA	LS-3	(25) 414	(10) 860 (19)	(24) 622 (21)	(6=) 949 (20)	(16) 884 (17)	(22) 486 (21)†	(10) 943(21)	(16) 932(21)	(30) 771(21)	(26) 739(22)	(25) 685(22)	8285
96 Innes, D.	G	Mosquito	(17) 807*	(16=) 805 (13)	(22) 638* (15)	(24) 772 (16)	(22) 469 (21)	(24=) 452 (23)	(26) 675(23)	(18) 908(23)	(15=) 925(23)	(30) 666(23)	(18) 881(23)	7998
62 Baumgartner, K.	CH	LS-3A	(27) 275	(5) 912 (22)	(18) 679 (22)	(21) 795 (22)	(25) 420 (24)	(23) 478 (24)	(22) 840(24)	(28=) 400(25)	(18) 881(24)	(24) 763(25)	(19) 819(24)	7262
59 Fowler, B.	NZ	ASW-20	(23) 465	(32) 78 (29)	(28) 519 (27)	(20) 807 (26)	(17) 883 (25)	(21) 786 (25)	(24) 766(25)	(13=) 945(24)	(32) 334(25)	(18) 895(24)	(28) 639(25)	7117
72 Bulukin, B.	N	Pik 20E	(31) 0	(21) 673**(27)	(23) 630 (26)	(18) 849 (25)	(24) 420 (26)	(27) 445 (26)	(13) 920(26)	(24) 452(26)	(24) 841(26)	(15) 899(26)	(23) 728(26)	6857
67 Bryson, J.	IR	Pik 20D	(30) 76	(25) 379 (30)	(26=) 542 (28)	(28) 546 (28)	(28) 358 (28)	(29) 404 (28)	(27) 699(27)	(26=) 431(27)	(27) 817(27)	(29) 688(27)	(27) 658(27)	5548
68 Seistrup, N.	DK	Pik 20D	(28) 215	(30) 207**(31)	(26=) 542 (30)	(27) 627 (27)	(26=) 388 (27)	(31=) 329 (27)	(30) 511(28)	(25) 436(28)	(21) 868(28)	(28) 706(28)	(24) 687(28)	5517
89 v. Schaaffhausen, C	BRA	LS-3A	(15) 852	(28) 304 (23)	(30) 183 (25)	(29) 0 (29)	(26=) 388 (29)	(28) 418 (29)	(31) 249(29)	(22) 863(29)	(27) 737(29)	(30) 490(29)	4800
80 Radic, S.	RCH	Mini Nimbus	(20) 599	(23=) 414 (25)	(31) 19 (29)	(31=) 0 (30)	(31) 270 (30)	(24) 452 (30)	(28) 620(30)	(28=) 431(30)	(28=) 792(30)	(25) 746(30)	(32) 118(30)	4321
90 Urbina, R.	RCH	Mosquito	(24) 415	(29) 208* (28)	(32) 0 (31)	(30) 0 (31)	(30) 296 (31)	(30) 335 (31)	(29) 616(31)	(28=) 400(31)	(28=) 792(31)	(31) 605(31)	(29) 493(31)	4160
64 Nagore, P.	E	Mini Nimbus	(32) 0	(31) 107 (32)	(29) 443*W(32)	(31=) 0 (32)	(32)	(31=) 329 (32)	(32) 129(32)	(31) 259(32)	(31) 526(32)	(32) 310(32)	(31) 127(32)	2189

‡ = RTI penalty 20 pts.; † = Overflying forbidden zone at base, penalty 250.

CLUB NEWS CONTRIBUTORS

Please help us by watching the deadline given under the Club News heading.

BGA AND GENERAL NEWS

NATIONAL LADDERS

The current Ladders haven't changed greatly since the last one, which is hardly surprising in view of the lack of good soaring weather in July. But Mike Garrod, National Ladder Steward, is pleased to see the return of the main Scottish contingent, which makes him think there must have been some wave flying as well as cross-countries.

Open Ladders

Leading pilot	Club	Pts	Flts
1 D. Hodsman	Bristol & Glos	5096	4
3 L. Beer	Thames Valley	4958	4
3 A. C. Waite	SGU	4703	4
3 N. Hackett	Coventry	3851	4

Club Ladder

Leading pilot	Club	Pts	Flts
1 C. Cockett	Thames Valley	2866	4
2 A. B. Crease	Imperial College	2170	2
3 R. Christey	London	1699	3
4 J. Roland	Airways	1380	2

CONTRIBUTION TO PHILIP WILLS MEMORIAL FUND

The Wrekin GC (RAFGSA) has dreamed up a novel way of raising money for the Philip Wills Memorial Fund. Members have recently discovered a new hill expedition site in the Clwydian Hills which is suitable for bungy and auto bungy launches in strong westerly winds. They intend to launch in suitable conditions into the Snowdon wave and are arranging the next flight to be a sponsored gain of height attempt. Sponsors pledge a certain sum of money to the Philip Wills Fund for each 1000ft gain of height of the glider. The first launch from the site on Easter Sunday gave a three hour flight in a Blanik reaching 7000ft asl.

Details are obtainable from: Wrekin Gliding Club, c/o Rodney Witter, Lindholme, Skips Lane, Christleton, Chester.

GROUND-LOOP DAMAGE TO T-TAIL GRP GLIDERS

An incident has been investigated in the UK of large amplitude/low frequency torsional flutter of the rear fuselage, occurring close to VNE in competitions.

By comparing the torsional stiffness of the rear fuselage (by applying loads to the tailplane tips) between samples of the same type on the same site, it became obvious that the suspect glider was indeed noticeably "soft". Removal of the rudder allowed limited inspection within the rear fuselage.

This method of inspection showed up significant damage to internal support structure. Further inspection disclosed cracks around the elevator hinges. There was no trace of such damage visible on a cursory inspection of the sailplane.

It was later established that this glider had been damaged in ground-loop type incidents. BEWARE!

R. B. Stratton,
BGA Technical Officer

DG-200 VARIANTS

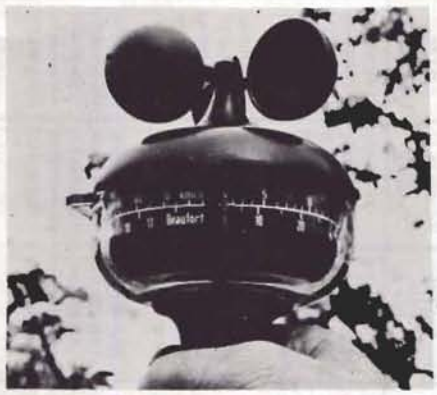
Glaser-Dirks are producing tips for the DG-200 to make a 17m version. Also a fully aerobatic DG-200 "Acroracer" with 13.1m span will be available with tips to revert it to a normal 15m Class glider. The DG-100 Club Class version is fitted with a fixed wheel but an easily fitted undercarriage mod can be provided so that it can fly either in the Club or Standard Class.

WORLD CHAMPIONSHIPS' FUND 1978

The BGA acknowledges donations to the World Championships' Fund from the following:

Anonymous
Borders (Millfield) GC
Fenland GC
Inter-Services Regionals' Competitors
Lasham Gliding Society
National Championships' Pilots
L. E. N. Tanner
J. H. Wheeler
M. Audritt
J. P. Boneham
J. E. G. Harwood
D. Kenlow
W. R. Longstaff
Pegasus GC
Southdown GC
Two Rivers GC
Wyvern GC.

NEW ANEMOMETER



This Anemo hand-held windspeed indicator, which is believed to be the only instrument quality drag-cup anemometer at its price, is completely portable but has a threaded socket on the handle for mounting on a camera tripod. It indicates windspeed on four scales simultaneously - kt, km/h, m/sec and Beaufort - and works on a similar principle to most car speedometers with the driving member a bar magnet and the driven member (connected to the two fluorescent-red pointers) a ferrous-metal vane. It is priced at £38 plus p&p and 8% VAT, direct from Auto Tempo Meter Co Ltd, 140 Kings Cross Road, London WC1X 9DS.

OBITUARY

REX PILCHER

Rex Pilcher was killed at Chateauroux on July 28 when the aircraft which he was flying spun in. He was 27 years old.

The loss is not only a personal one to those who knew him but to gliding as a whole. To everything he did he brought tremendous enthusiasm and a capacity for hard work which was exceptional by any standards. Coupled with this was a politeness – even an old-world charm – that made being in his company a genuine pleasure.

His flying activities alone were enough to fill the day for most people; as well as being a first officer on Tridents he was improving steadily as a Nationals pilot – fifth in the Open Class this year – and also found time to instruct in gliders and was on the point of qualifying to instruct in aeroplanes. Besides this he also found time to be active as a Committee member in the Guild of Air Pilots and Air Navigators but more important from a gliding point of view he represented the BGA as the Chairman of its Airspace Committee. His efforts in representing the gliding view were considerable; he worked unstintingly to maintain the degree of freedom that we presently enjoy. In doing so he won the respect of everyone with whom he worked.

There can be no better tribute to Rex than to say he will live long in our memories. There will always be sadness at his loss softened only a little by the good fortune of having known him. To his family and friends we extend our heartfelt sympathy and condolences in their tragic loss.

W.G.S.

Appreciation

An extract from an appreciation by Dave Watt

Rex was a great personal friend of mine and his tragic death seems to me to be incredibly unfair.

He will be greatly missed by all his many friends at Booker and indeed throughout the gliding movement for Rex was such excellent company and his genuine character left a lasting impression on all who met him.

Reading through what I have written highlights how difficult it is to write satisfactorily about someone whom you admire, but suffice it is to say that Rex was plainly and simply "an incredibly nice bloke" and if you never met him I think you missed out badly.

To Rex's many friends, Sue and Rob Pilcher and family would like to thank you all for your beautiful letters, which gave us so much comfort at a sorrowful time; also for the lovely flowers sent to his Memorial Service.

Correction: *S&G, April-May issue, p69. Restricted Class 100km triangle. This should read: 100km triangle, 109.7km/h, D. S. Watt, Std Jantar, 16.8.1976.*

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1978
88	A. B. Crease	Surrey & Hants	19.6
89	M. Valentine	Cairngorm	11.6

DIAMOND DISTANCE

No.	Name	Club	1978
1/147	A. B. Crease	Surrey & Hants	19.6

DIAMOND GOAL

No.	Name	Club	1978
2/872	N. Meiklejohn	SGU	10.6
2/873	A. Stocks	Derby & Lancs	25.5
2/874	M. A. Simmons	Fenland	29.5
2/875	W. Tootell	Phoenix	27.5
2/876	D. A. Salmon	Derby & Lancs	3.6
2/877	M. G. Shaw	SGU	11.6
2/878	G. M. Polkinghorne	SGU	6.7
2/879	D. E. Findon	Coventry	28.8
2/880	I. R. P. Abel	Kent	19.6
1/881	A. C. White	SGU	12.6

DIAMOND HEIGHT

No.	Name	Club	1978
3/345	R. A. Wood	SGU	10.6
3/346	D. K. Gardiner	SGU	10.6
3/347	D. M. Phillans	Derby & Lancs	11.6
3/348	M. Valentine	Cairngorm	11.6
3/349	M. G. Shaw	SGU	11.6
3/350	G. D. A. Green	SGU	8.7
3/351	A. C. White	SGU	11.6

GOLD C COMPLETE

No.	Name	Club	1978
662	N. Meiklejohn	SGU	10.6
663	A. Stocks	Derby & Lancs	25.5
664	M. A. Simmons	Fenland	29.5
665	W. Tootell	Phoenix	27.5
666	M. Pocock	Bath & Wilts	2.6
667	D. A. Salmon	Derby & Lancs	3.6
668	D. Hodsman	Bristol & Glos	31.5
669	B. A. Bateson	Southdown	22.7
670	M. G. Shaw	SGU	11.6
671	G. M. Polkinghorne	SGU	6.6
672	D. E. Findon	Coventry	28.8.77
673	T. F. Crockett	Thames Valley	15.4
674	I. R. P. Abel	Kent	19.6
675	A. C. White	SGU	12.6

GOLD C DISTANCE

Name	Club	1978
N. Meiklejohn	SGU	10.6
A. Stocks	Derby & Lancs	25.6
M. A. Simmons	Fenland	29.5
W. Tootell	Phoenix	27.5
D. A. Salmon	Derby & Lancs	3.6
M. G. Shaw	SGU	11.6
G. M. Polkinghorne	SGU	6.6
D. E. Findon	Coventry	28.8.77
T. F. Crockett	Thames Valley	15.4
I. R. P. Abel	Kent	19.6
A. C. White	SGU	12.6

GOLD C HEIGHT

Name	Club	1978
J. W. Lang	SGU	11.6
D. H. Conway	Swindon	26.3
M. Pocock	Bath & Wilts	2.6
R. Greason	Blackpool & Flyde	10.4
H. D. Gardiner	SGU	11.6
G. J. Evison	Yorkshire	2.7
G. Piggott	SGU	10.6
J. F. Stuart	Midland	5.7
K. A. McGregor	SGU	11.6
J. Wotherspoon	SGU	11.6
D. Hodsman	Bristol & Glos	31.5
C. S. F. Turnbull	SGU	11.6
B. A. Bateson	Southdown	22.7
A. E. D. Hayes	Cotswold	1.6
S. T. Evans	S. Yorks & Notts	2.7
I. H. Adam	SGU	11.6
B. McPhillips	SGU	8.7

SILVER C

No.	Name	Club	1978
5056	D. H. Conway	Swindon	26.3
5057	R. A. W. Downing	Airways	27.5
5058	A. C. Eltis	London	19.6
5059	D. M. Lush	Lasham	19.6
5060	J. E. Blakemore	Stratford	31.5
5061	W. J. Ashbridge	Two Rivers	28.5
5062	B. C. Kear	Cotswold	15.4
5063	M. H. Heath	Devon & Somerset	29.5
5064	T. R. Jackson	Lakes	9.6
5065	P. Yule	SGU	11.6
5066	J. Schneibel	Oxford	29.5
5067	B. A. McCann	Dorset	11.6
5068	A. W. A. Kay	Thames Valley	20.6
5069	P. Britton	Woodspring	3.6
5070	J. A. Curley	Coventry	19.6
5071	L. R. Henderson	SGU	11.6
5072	K. C. Jenkins	Devon & Somerset	20.6
5073	R. S. Travis	Humber	29.5
5074	J. D. Hogarth	Borders	10.6
5075	E. Stephenson	Hambleton	5.7
5076	N. C. White	SGU	8.7
5077	P. Grose-Hodge	Surrey & Hants	3.6
5078	B. R. Pearson	Deeside	15.7
5079	M. J. Willet	Buckminster	18.6
5080	A. C. Garside	Kent	14.7
5081	R. D. Evans	Inkpen	14.7
5082	R. Moyse	Surrey & Hants	14.7

REGIONALS' RESULTS

The dreadful weather this season, which is a positive theme song of the club news contributions, ruined two Regionals. The Scotish Regionals at Portmoak from June 17-25 failed to achieve a competition day and the Northern Regionals at Sutton Bank from August 5-13 had only two days. These results will be in the next issue.

EAST MIDLANDS REGIONALS – Saltby, June 3-11

Open Class

No.	Pilot	Sailplane	H'cap	Day 1.3.6 248.7km ▲	Day 2.6.6 163km ▲	Day 3.9.6 160.2km ▲	Total Points
1	Carlton, M.R.	Nimbus 2B	118	996	199	1000	2195
2	Throssell, M	SHK	100	1000	–	926	
	Manwaring, A.J.			–	171	–	2097
3	Cherrill, J.	Jantar 1	116	383	0	917	1300
4	Pope, M.H.B.	Kestrel 20	118	950	188	142	1280
5	Vennard, D.	Pik 20B	106	743	0	429	1172
6	Hartley, K.	ASW-20	108	676	0	482	1158
7	Mason, E.	Kestrel 19	116	179	0	974	1153
8	Reid, D.W.	Kestrel 19	116	507	187	317	1011
9	Dimock, H.P.	Mosquito	106	649	0	351	1000
10	Fleming, A.M.	Nimbus 15	106	369	38	588	995
11	Marshall, P.	ASW-20	108	693	26	265	984
12	Warren, R.W.	PIK 20D	106	516	24	432	972
13	Tipney, C.J.	Std Cirrus	100	511	0	378	889
14	Houghton, J.	Kestrel 19	116	179	129	540	848
15	Jones, R.	Nimbus 2	118	393	200	222	815
16	Jefferyes, M.	Astir CS	100	284	0	497	781
17	Joint, T.A.	Std Cirrus	100	38	8	469	515
18	Marczynski, Z.	Std Cirrus	100	35	55	204	294
19	Sampson, D.	Astir CS	100	65	0	0	65
20	Nicholls, G.	Nimbus 15	106	19	0	0	19

Sport Class

No.	Pilot	Sailplane	H cap	1.3.6 177.2km ▲	2.6.6 132.2km ▲	3.8.6 Weinholtz	4.9.6 120.5km ▲	Total Points
1	Blacklin, P.A.	Std Libelle	98	1000	214	472	276	1962
2	Bromwich, R.C.	K-6E	90	867	67	547	447	1928
3	King, J.R.C.	K-6E	90	950	56	303	302	1611
4	Vesty, I.	K-6CR	84	825	–	510	–	
	Willett, P.			–	0	–	248	1583
5	Bricknell, D.	Cirrus	100	703	0	365	288	1356
6	Cooper, B.L.	K-6E	90	707	67	148	310	1232
7	Evans, B.	Astir CS	100	779	0	24	315	1118
8	Cowley, C.	K-6CR	84	798	93	15	199	1105
9	Webster, M.	IS-29D	94	414	0	403	118	935
10	Whelan, H.W.	Skylark 3	84	543	0	104	70	717
11	Corbett, C.G.	Std Libelle	98	84	29	383	183	679
12	Stewart, K.	BG-135	82	126	0	294	201	621

SOUTHERN REGIONALS – Booker, July 22-30

Sport Class

No.	Pilot	Sailplane	H cap	1.24.7 147km ▲	2.25.7 210km ⇄	3.25.7 168km ■	4.28.7 Weinholtz	5.29.7 301km ▲	Total Points
1	Jones, R.	Nimbus 2	118	958	916	479	1000	975	4328
2	Woodford, J.M.	ASW-15B	100	784	730	200	839	1000	3553
3	Randle, Jane	Kestrel 20	116	787	723	–	282	–	
	Randle, M.			–	–	495	–	967	3254
=4	Campbell, D.R.	Astir CS	100	934	721	260	268	861	3044
=4	Welsh, J.H.	Std Cirrus	100	936	719	270	515	604	3044
6	Stafford-Allen, P.R.	PIK-20	106	213	586	529	956	725	3009
7	Young, J.R.	Nimbus 2	118	527	852	365	500	739	2987
8	Forsey, L.K.	Jantir 1	114	887	758	392	740	110	2887
9	Lysakowski, E.R.	Janus	102	900	1000	516	391	46	2853
10	Freeman, D.J.	ASW-19	102	257	819	246	692	771	2785
11	Ellis, J.J.	Std Cirrus	100	418	729	200	753	604	2704
12	Cook, I.R.	Nimbus 15	108	794	599	242	191	768	2594
13	Pennycuick, C.J.	Cirrus	104	1000	790	1	626	64	2481
14	Cockett, T.F.	Jantar 1	114	891	469	151	806	128	2445
15	Day, C.G.	Jantar 1	114	831	580	0	524	485	2420
16	Davies, F.J.	Kestrel 19	114	777	668	211	566	91	2313
17	Fleming, A.M.	Nimbus 15	108	613	546	478	539	53	2229
18	Rollings, C.G.	Twin Astir	102	373	–	342	–	–	
	Watt, D.S.			–	780	–	313	0	
	Kay, A.			–	–	–	–	–	1808
19	Belbin, E.R.	Pheobus 17	102	190	565	0	453	554	1762
20	Gardiner, D.	Cirrus	104	33	591	229	167	542	1562
21	Houghton, J.L.	Kestrel 19	112*	495	154	3	635	109	1396
22	Appleby, D.	Cirrus	104	187	378	29	634	99	1327
13	Hegner, A.	ASW-20	108	184	758	50	42	0	1034
24	Walker, D.B.	Kestrel 19	112*	553	–	–	–	–	553
Hors Concours									
	Watt, D.S.	Jantar 2	118	990	–	479	–	–	
	Kay, A.			–	850	–	–	–	2319

Club Class

No.	Pilot	Sailplane	H cap	1.24.7 103km ▲	2.25.7 210km ⇄	3.26.7 76km ▲	4.28.7 Weinholtz	5.29.7 190km ▲	Total Points
1	Wilton-Jones, M.	K-6E	90	509	604	727	765	581	3186
2	Keogh, B.	Std Libelle	98	630	627	737	681	441	3116
3	Garringe, J.P.	Std Cirrus	100	640	838	440	668	455	3041
4	Hall, R.A.	Skylark 4	86	0	647	545	1000	539	2731
5	Elkin, D.	K-6E	90	–	614	–	783	–	
	Jackson, R.			288	–	379	–	628	2692
6	Marczynski, Z.	Std Cirrus	100	680	650	384	387	540	2641
7	Hynes, K.	Astir CS	100	575	163	318	632	555	2243
8	Green, G.D.A.	Std Libelle	98	534	606	357	669	0*	2166
9	Cooper, B.	Skylark 4	86	635	599	314	290	266	2104
10	Cousins, R.	Std Libelle	98	580	533	406	349	140	2008
11	Brisbourne, R.P.	Cobra 15	96	512	725	167	354	188	1946
12	Murphy, T.J.	Std Cirrus	98	574	601	416	142	109	1842
13	Harrington, T.C.	Std Libelle	96	667	184	465	86	411	1813
14	Giddins, J.G.	Astir CS	100	–	244	–	202	–	
	Hawkins, G.P.			451	–	272	–	558	1727
15	King, P.J.S.	K-6E	90	523	–	194	0	503	
	King, J.R.C.			–	476	–	–	–	1696
16	Davey, R.	Astir CS	100	514	524	295	78	–	
	Leach, G.C.			–	–	–	–	155	1566
17	Wilson, D.A.	Skylark 3F	84	37	342	493	448	236	1556
18	Luck, V.	K-13	76	193	1000	143	184	0	1520
19	Busby, I.	Dart 17R	94	–	526	–	–	172	*
	Doughty, A.			478	–	–	313	–	1489
20	Roberts, P.	Std Libelle	98	84	525	297	305	210	1403
21	Nunneley, J.H.	Std Libelle	98	6	719	134	196	135	1190
22	Sampson, D.	Astir CS	100	591	247	178	0	173	1189
23	Wilks, E.	Dart 17R	94	81	460	0	104	172	817
24	Burne, A.G.	Std Libelle	96	530	254	0	0	0	784
25	Townsend, A.T.	Dart 15R	88	0	619	0	0	0	619

* = photographic penalty.

OVERSEAS NEWS

Please send news and exchange copies of journals to the Overseas Editor: A. E. Slater, 7 Highworth Avenue, Cambridge, CB4 2BQ, England

FIRST EUROPEAN MOTOR GLIDER CHAMPIONSHIPS

With more than 1000 motor gliders being operated, mostly in Europe, and with a number of interesting meets and competitions held in Germany during the last ten years, FAI's CIVV found it fitting to have a real international competition and asked the German Aero Club to run it. This they did very competently from May 28 to June 11 at Burg Feuerstein, north of Nuremberg, and – helped by excellent weather – it became an intensive soaring competition with ten valid competition days.

Although the British flag was present outside the buildings the only British entrant did not appear and really only four countries (W. Germany, Denmark, Austria and Switzerland) participated. The reason probably is that while the motor glider is being used for training in a number of countries few have discovered what pleasant competitions you can run with them.

Fritz Rueb, European Open Class Champion.

According to FAI statistics there are 666 motor gliders in Germany (probably about 800 now), 123 in Austria, 25 in the UK, 30 in Switzerland, 23 each in Denmark and Finland, ten in Sweden and less than ten in other European countries.

Launching 31 gliders at a motor glider competition is only a matter of a few minutes, when they are all lined up and ready. On some days they took-off together, on others at the choice of the pilots. There were three Classes: Open, Standard and Two-seater. The only new type was a magnificent Janus M with the same retractable Hirth 0-28 motor used in the Nimbus M. It was built by the team who made the ASW-15M two years ago and performed very well taking Walter Binder to first place in the Two-seater Class.

The Open Class was won by Fritz Rueb who, with Willibald Collée (placed third), gained a number of world records in South Africa in December and January. Rueb was in the lead from the beginning with an average speed of 107km/h on a 300km triangle. Four tasks were over 300km and flown by Rueb and a number of others without the engine. Second was the alpine soaring pilot Günther Cichon, who was first on several days but couldn't threaten Rueb.

In the Standard Class world out-and-return record holder Kurt Heimann (SF-27M) was in the lead for the first three days until overtaken by Wolfgang Clas (ASW-15M) who kept his position with the exception of the seventh day. Klaus Gschwind (K-14) was second with Kurt Dunzendörfer (K-12) third. Heimann dropped back to fifth place owing to motor trouble.

While the Janus won eight of the ten days, there was strong competition for the other places in the Two-seater Class with Ludwig Kümmel (Super Falke) coming second and "the flying priest" Pater Hugo Jannichen (Sperber) third.

On the rest day, June 3, Walter Hermann (K-16) set up a Swiss 100km triangle motor glider record with a speed of 66km/h, which is faster than the equivalent Swiss two-seater record for gliders. And Jaksland with a German co-pilot set the first Danish 300km triangle record at 62km/h.

Condensed from a report by Per Weishaupt

SWISS NATIONALS

Leading results of the Swiss National Championships, held at Grenchen from June 2-11, were: Open Class: Frehner Nimbus 2, 4466; Wegscheider (Germany), Nimbus 2, 4113; Trentini, Nimbus 2, 4001. Standard: Nietlispach, Hornet, 4053; Obrist, DG-100, 5547; Schmetz, DG-100, 2794; 15m Class: Mauthe, Mini Nimbus, 3725; Lueth, LS-3, 3747; Baumgartner, LS-3, 3618.

This was Hans Nietlispach's 13th participation in a Swiss National Championship. – *Flugsporzeitung.*

SAFETY ANALYSIS

Transport Canada has analysed nearly 100 accidents reported during the six years of Canadian gliding, 1971-77. From their tables the following maximum and minimum figures are extracted.

Flight stage: circuit and landing, 48 accidents; cruise, nine. Cause: spin or stall, 42; aerial collisions and "exceeded aircraft limits", two each. Damage: major, 53; none, 12. Injury: none, 53; fatal and minor, ten each. Licensed pilot, 78; student pilot, 15. Wind: over 10kt, 34; less, nil. Pilot's age: 25 to 40, 32; over 50, nine. Time of day; pm, 91; am, two. – *Free Flight.*

This year's President of the Soaring Association of Canada is Mr A. O. Schreichter; Vice-President, Dr K. H. Doetsch; both of Ontario.

AUSTRIAN RECORD FLIGHT

Austrian pilots made some outstanding flights during the spring. Karl Brauer on June 2 flew 705.1km from Turnau to Lake Geneva, and on the following day returned from the Mont Blanc region with a 682.625km goal flight to Turnau.

On June 3 Andi Haemmerle made a goal-and-return flight of 885.836km from Trieben to Bedrun in Switzerland and back.

A two-seater goal-and-return record of 623.005km was set up in a Twin Astir from Turnau to Seefeld and back by Rudolf Göbel and Fritz Wech. – *Flugsportzeitung.*

OBITUARY

DEJAN GOLIK

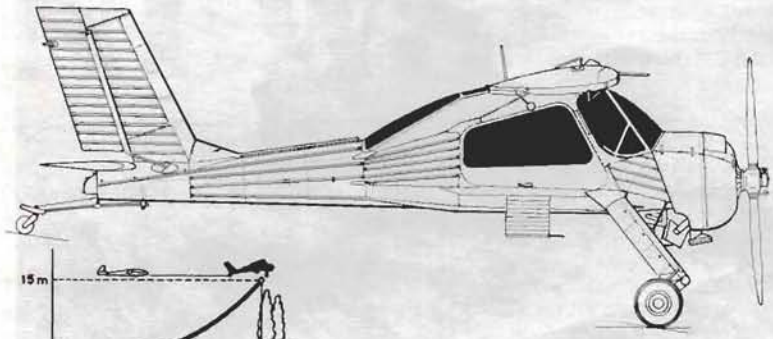
Those who attended the 1968 World Gliding Championships in Poland may recall the Manager of the Brazilian team: a neat, compact figure clad in a spectacular blazer, speaking perfect English with great charm and clearly an outstanding personality even in the exceptional company gathered at Leszno. Such was one's first impression of Dejan Golik, an extrovert of Yugoslav birth, English education and Brazilian nationality, who had served in the Royal Air Force during WWII. He lost his life early in January this year as a result of a structural failure whilst performing aerobatics in a powered aeroplane.

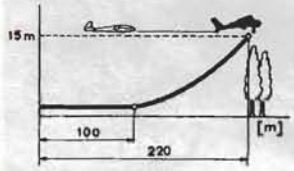
Whilst working briefly in Brazil in late 1969, I came to know him quite well and enjoyed his hospitality and kindness at the Club Politechnico, Jundiai, where he was Presidente. He lived and flew with quite remarkable zest and bubbled over with schemes which were usually designed to add to the fun, circumvent bureaucracy and improve his fortunes all at once – a formula which did not always endear him to the bureaucrats, whether amateur or professional. But his friends were numerous and they recognised that behind the twinkling eye, the rakishly tilted hat and the light-hearted manner, there was a brave man, a man dedicated to flying, who went to endless trouble to share with others the joy he found in aviation.

Dejan was one of those rare individuals who, more than they know, enrich the lives of their friends. He will be sorely missed.

F.G.I.

300 feet to freedom





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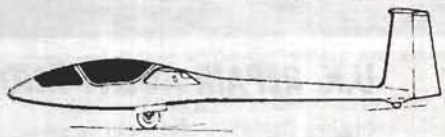

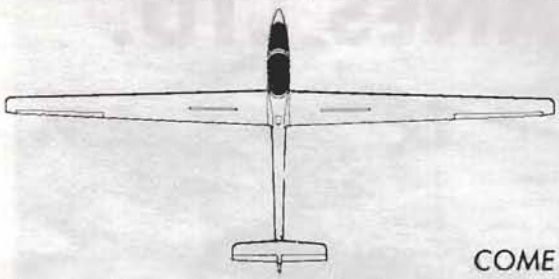

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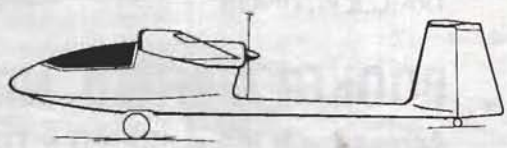

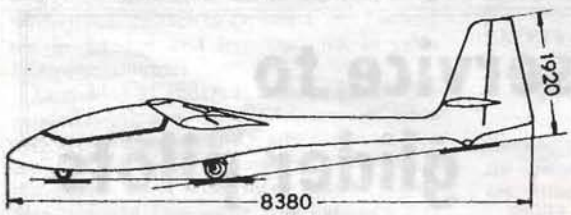

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Book Reviews

Jane's World Sailplanes and Motor Gliders edited by Andrew Coates and published by Macdonald and Jane's Publishers Ltd, London. Price £6.95 and available from the BGA at £7.40 including p&p.

When the first copy of **The World's Sailplanes** appeared at Leszno in 1958, venue of that year's World Gliding Championships, orders came flooding in and within 18 months the edition of 2000 copies was sold out. It had been compiled under the auspices and with the co-operation of OSTIV, but was published by Betsy Woodward, USA, at her own expense.

It took another five years to 1963 for Volume 2 to see daylight and OSTIV itself took over publication of it. It sold equally well and today both volumes are great collectors' items and those who own a copy are fortunate indeed.

Now 15yrs later **Jane's World Sailplanes** has arrived to fill the gap of an era during which revolutionary design, construction and material improvements have come about.

Books of this nature, especially, take a long time to compile and Andrew Coates ought to be congratulated for so painstakingly sorting out all the data in a comprehensive order and checking the details with designers and manufacturers and the few printing errors (and a mix-up of photographs on page 119) should not distract from the mine of information this book provides.

Each sailplane/motor glider described is illustrated with a photo and accompanied by a (perhaps too small) GA drawing, the text and technical data making up a complete page. Drawn from 19 countries and embracing historic pre-war gliders, as well as a number of experimental "one-off" and home-built designs, the book contains over 170 types. Like its pre-decessors World Sailplaines 1 and 2, **Jane's World Sailplanes and Motor Gliders** will be a valuable asset on the bookshelves of the gliding fraternity.

RIKA HARWOOD

The Book of Airsports by Ann Welch. Published by Batisford at £5.50.

This excellent book is concerned with flying for fun and tells you where to obtain information, how to get started and gives you a brief glimpse of some of the aerial pleasures that can lie in wait. It contains six main sections dealing with hang gliders, gliders, aeroplanes, man-powered aircraft, balloons and parachutes, plus a further section on weather and its effects on the different airsports.

A fair selection of facts and statistics abound and they seem reasonably accurate and up to date (although in a reference to this magazine the price is given incorrectly!). A confusing factor creeps into the statistical comparisons in that figures for gliding, ballooning, etc. are quoted as the number of hours flown annually, whereas for hang gliding the figures are for numbers of flights annually.

A large number of very clear drawings by Piers Bois, together with some attractive photographs, illustrate the text although sometimes I found it a little confusing at first glance to decide which captions fitted which illustrations.

The book should prove most interesting for pilots wanting to broaden their aviation horizon and to switch from one air sport to another, either for variety or progress. It is difficult to believe that devotees of one particular aspect of flying are not more than a little interested in the activities of their fellow aviators. After all, they are all sharing the same medium and a little more understanding might breed some more co-operation.

We are by now well accustomed to the literary skills of the author Ann Welch. Suffice to say that at one stage in the reading of this book I left a mug of coffee untouched to get stone cold - a very unusual occurrence which implies the grasping of my undivided attention.

BARRY ROLFE

Environmental Aerodynamics by R. S. Scorer. Published by Ellis Horwood/John Wiley at £7.50 (paperback), 488 pages.

Environmental Aerodynamics is a successor to Professor Scorer's earlier **Natural Aerodynamics** and, as one would expect from the title and the author's reputation, is full of good words for the soaring pilot. It also contains quite a lot of mathematics, some of which is likely to look pretty forbidding. Do not be discouraged! Between the vectors, the differential equations and the Fourier integrals are lucid physical explanations of almost every aerodynamic phenomenon, both natural and artificial, known to man.

The first two chapters are devoted to fundamentals and are pretty heavily laden with mathematics (99 equations in Chapter 1 alone). Even so, there are sections on boundary layers, paths of small particles, separation, and so on, illustrated by all sorts of unusual and interesting phenomena. Chapter 3 deals with Secondary Vorticity, including motion in a teacup, Chapter 4 with the Rotating Earth, including much of the theory associated with "ordinary" winds and weather and Chapter 5 with Waves in a Stratified Fluid. Initially, the treatment is again very mathematical, but the second part of the chapter goes on to deal with lee waves in a manner which will delight the sailplane pilot. It also mentions other curious matters, like the pressure waves produced by the Great Siberian Meteorite. Chapter 6 is entitled "Billow Mechanics" and is concerned with instabilities in a vortex layer, leading to billows and "cat's eyes".

The second section of the book (Chapters 7 to 12) is concerned with Turbulent Phenomena, Clouds and Dispersion. Much of Chapters 8 and 9 is devoted to thermals, Chapter 10 speaks of cumulus and contrails and Chapter 12 deals with birds (dynamic soaring!) and insects. Finally, there is a section entitled "Questions and (perhaps questionable) statements for discussion". No. 2 is: "Could a glider with an average sinking speed of 1m/sec stay aloft by dynamic soaring in the wind gradients that actually occur?" Rather more inscrutable is No. 26: "Is any purpose served by defining any kind of irrotational motion as turbulent?"

The style of writing is lucid and pleasant, there are many good diagrams and photographs and the book is generally of excellent quality. Inevitably, some sections emphasise Scorer's particular interests and some illustrations have been around for a very long time, but they wear well.

The mathematically-minded will find it a delight: the less numerate will be kept very happy by the words. In paperback form, it is very good value.

F. G. IRVING

Start In Den Wind (Start Into Wind) by Peter Riedel, edited by Jochen von Kalckreuth. Published by Motorbuch Verlag, Stuttgard.

This book is by the gliding pioneer Peter Riedel and has the subtitle Ereote Rhöngeschichte (Experienced Rhön History 1911-1926) and its English edition may come out shortly.

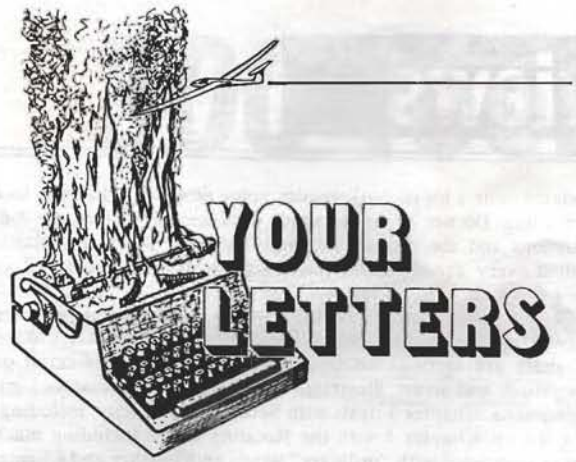
Still an active glider pilot, Peter Riedel started gliding at the age of 14 when he took part in the first Rhön Meeting in 1920 at the Wasserkuppe with his second glider, which he learnt to fly with an instructor running in front telling him what to do and two men ready to catch the wingtips.

Drawing from his own experiences and interviews with old Rhön pilots, and by making use of many beautiful, high quality, old photographs, he has created a truly magnificent book, plunging the reader into the atmosphere of those historical Rhön Meetings. The text is vivid. With the help of interviews, Peter Riedel reconstructs the Rhön Meetings back to 1911 and begins his account by writing about earlier gliding pioneers. He gives credit to Sir George Cayley, as being the first to construct a man-carrying aircraft in 1851 and to other pioneers who built their machines before Litlienthal.

Peter Riedel and the late Jochen von Kalckreuth, the great alpine glider pilot, photographer and author of two magnificent alpine gliding books - **Segeln über den Alpen (Gliding Over the Alps)** and **Das Stille Abenteuer (The Silent Adventure)** - have created a unique book of the greatest interest to all concerned with gliding history. It is the story of a small band of men and their aircraft who gave Germany their wings back after 1918 and, in doing so, started the world's first gliding movement.

Peter Riedel is producing another book, **'Über Sonnige Weiten (Over Sunlit Distances)**, describing gliding at the Wasserkuppe from 1926 to 1939 and devoting some space to postwar gliding from this site. If as good as the first one, it will be another must for gliding libraries.

C. WILLS



ON SUPPORTING THE BRITISH TEAM

Dear Editor,

After thinking on many occasions that I should write to S&G in response to the latest letter advocating the right to commit hari-kari in a glider or etc, the suggestion that BGA subscriptions should be used to support World Championship entries has finally struck home.

Many years ago, when we had a thriving glider manufacturing and design industry, it made sense for the British gliding movement to support the World Championships as a means of improving the breed. We no longer have this industry, but every two years we are asked to support an entry as usual. By all means carry on with the voluntary appeal, but to use subscriptions for this purpose when clubs are losing their sites for lack of funds is the most idiotic suggestion I have heard since Sigma.

If there really is money to spare from our subscriptions, I would suggest that it would be far better spent on designing a cheap, easy to build and reliable winch; a visit to a few of the smaller clubs that constitute the backbone of British gliding will soon prove that such an exercise would be money well spent, especially as tugs are becoming prohibitively expensive to buy and run.

It is worth remembering that a very large proportion of the gliding movement will **never** graduate to the World Championships because they will not be able to fly high performance glass ships and therefore under the present competition set up will never reach the level required.

Unless gliding is to go the way of so many other sports in the modern world, I would suggest that we concentrate a little less on clipping another few seconds off the 300km triangle record and devote our energy and above all our subscriptions to getting more people in the air, more often.

Thrisk, North Yorkshire C. G. TAYLOR

Roger Barrett, Chairman of the BGA, comments: Undoubtedly a number of pilots will support this view. On the other hand nobody present at the last AGM did so when the matter was discussed informally. The Executive Committee has therefore now decided that BGA general funds should in future be available to "top up" the British Team's income if this should prove to be necessary. Recognising this is a precedent for the BGA (though other countries like Australia go as far as imposing an obligatory "team tax" on top of their general membership subscriptions) we shall be putting a motion to this effect before the next AGM. So if you feel strongly, one way or the other, be sure your club representative knows your views.

FOCUS ON TUG ACCIDENTS

Dear Editor,

The apparent increase in the number of serious incidents connected with glider towing during the past year suggests that this is an area of gliding upon which our attention should be focused, without delay.

My own experience of towing has increased during the previous 15 months and I have formed the impression that a number of the towing accidents I am aware of may have been avoided by a different approach to the training and briefing of tug pilots. I am particularly perturbed that tug pilots with relatively little experience are spending many hours of their spare time towing, with little or no regard given to fatigue or the associated problem of flying complacency, usually due to the pressure of club operations.

Towing gliders with powered aeroplanes is a safe and sensible means of launching, but it is unarguably placing the aeroplane in a flying configuration for which it was not originally designed and in certain aircraft the induced drag coupled with a nearer to stall flying speed leads, in my mind, to a large reduction in the flying safety margin.

I would like to see considered, as part of the standard briefing, the requirement that tug pilots should, during the initial and most vulnerable stages of launching, fly with their hand on, or near, the glider release lever as I can think of no more instantaneous increase of power than that of releasing the induced drag which may in itself be causing adverse symmetry due to the glider being out of position.

The recent fatal accident of a BA4 at Parham comes immediately to mind when I believe, after experiencing engine trouble, the pilot proceeded to carry out the "normal" procedure of waggling the wings to signify release of the glider which led, not unnaturally, to a spin developing, from which the pilot was unable to recover in time.

The very nature of the glider is such that it should easily survive, without mishap, premature release resulting from the tug pilot recognising and taking early precautionary action to avoid actual or progressive decay in the tug's flight characteristics. It follows therefore that attention should be given to placing more emphasis on maintaining the integrity of the tow plane's flight envelope, at the probable expense of a number of untidy glider out-landings.

The purpose in writing this letter is to invoke response from those far more experienced than I in this field of flying and, of more significance, to reduce what clearly is an unacceptable statistic.

Sevenoaks, Kent M. R. CARLTON

THOROUGH TRAINING NEEDED FOR TUG PILOTS

Dear Editor,

Bill Scull's article on tug accidents in the last issue (p162) is, I feel, long overdue and it is sad that three accidents, two of them fatal, should spark off concern about the safety of tugging.

I think that the generally high and safe standard of aerotowing is developed in this country more by luck than judgment and it is high time the BGA published a thorough syllabus of training through which an embryo tug pilot has to go before being let loose with a paying customer behind him.

Aerotowing is unquestionably an "extra risk" activity needing the right techniques if it is to be both safe and effective and the towed glider pilot does not want to pay out expensive launch fees while the tug pilot learns by hard experience what he could have acquired on a thorough dual conversion course.

From the tug pilot's point of view, I think there is often a naïve and "soft" attitude towards releasing the glider in emergencies such as extreme out-of-position situations or engine failures. It seems that the fatal result of one of those accidents mentioned by Bill Scull may have been caused by the pilot of the tug with a failed engine, only a few hundred feet after take-off, pausing to give a wing-waggling "wave-off" signal instead of pulling the bung himself.

Those of us unlucky enough to have engine failures in a powered aircraft just after take-off would, I think, agree that it is usually nothing short of a life-or-death situation where a few seconds delay in doing the right things can mean disaster. Surely it should be **instinctive** for a tug pilot low down with a failed engine to pull the bung at the same time as he lowers his nose to maintain airspeed. No one wants to dump a glider pilot in a bad area, but his aircraft was built to **glide**, the tug pilot's most certainly wasn't and, if it crashes, can not just injure its pilot but burn as well. And how many gliding clubs can honestly say they are equipped to rescue people from an aircraft which has just caught fire?

Witham, Essex CLIFF BARNETT

A sadder and wiser flying instructor, tug pilot and glider pilot

C OF A MAY BE INVALIDATED

Dear Editor,

In Bill Scull's article in the last issue on "Tug Accidents" (p162) he comments on the use of weak links and carriage of passengers. It may be worth pointing out that some tug aircraft will have a flight manual which forms part of its C of A. In the flight manual of an aircraft certified for towing gliders, the CAA lay down certain additional limitations such as maximum weight of glider to be towed or weak link strength and the number of persons on board the tug during towing. It is therefore possible that if a tug is being operated outside its flight manual limitations its C of A may be invalidated.

Westbury-on-Trym, Bristol C. R. HODNETT

R. B. Stratton, BGA Technical Officer, says that Mr Hodnett is absolutely right about the flight manual and this is confirmed in the BGA Technical News Sheet, 6.7.78, para 3.2.

SAFETY IN TUGGING

Dear Editor,

With reference to Bill Scull's article on tugging accidents, I heartily agree with all his comments but would like to add one point which I find over the years has been a great safety factor for the tug pilot, namely a decent slightly convex rear view mirror. This should be positioned as near to the pilot as possible, giving him a good spread view of a towed glider in any position.

Wheelton Chorley, Lancs IAN N. JENNISON

PLATYPUS BEWARE!

Dear Editor,

Mrs Platypus "Bedtime Reading" in the June issue (p105) is assured of a bright future. The index to Volume XXIX will contain such choice items as "The Energy Loss in Pitching Manoeuvres", "Mrs Platypus takes French Leave" and "Accident Prevention Who Has Control?"

I urge Platypus to keep his copy of S&G to himself. Having read what Mrs Platypus can make of a mere index the mind boggles at what will happen if she isn't kept off the adverts. For instance, should she be allowed to read of "The Electric Ball with cruise control and diaphragm capilliary leak" or of, "The Cook expanded for low rates of climb where maximum sensitivity is needed, with fast response and damping retained to fit a 58mm hole."

If Mrs P does get hold of S&G and starts to go a little wild, may I take the liberty to advise Platypus to invest in Irving's Total Energy tube manufactured in non-corroding stainless steel?

Carshalton Beeches, Surrey R. A. LOWNDES

NOTAMS AND AIRSPACE

Dear Editor,

In the June issue (p140) there was a letter from Mr Charles Ellis on the above subjects. While we are not sure exactly what the author means by a "micro-library" – especially at £7.50pa – from April this year it is possible to pay a reduced subscription of £5pa solely for Class B NOTAMs (Temporary Navigational Warnings).

We have also tried, through co-ordinating bodies such as the Private Aviation Committee, to make known the currently free Pre-Flight Bulletin service. This may meet the "micro-library" need as these bulletins contain a précis of the current NOTAMs in force. They are designed as an aid to assimilation of relevant material prior to flight and are available by post from Prestwick, Manchester and Heathrow AIS units. In addition, they can usually be collected from most BAA and municipal airports. We are happy to add clubs to our address list, but to keep costs within bounds we prefer not to add private individuals unless they have very special reasons.

A further service we offer, which is little used, is the last-minute telephone up-date of information from any AIS unit. Most aviators can up-date on a local call since the AIS units are spread around the country as follows:

Pinner 01-866 8781	24 hrs
Heathrow 01-759 4321, ext 7204 or 7205	,,
Gatwick 0293-28822, ext 281 or 077	,,
Manchester 061-437 5200, ext 2147 or 2160	,,
Prestwick 0292-79800, ext 2638	,,
Birmingham 012-743 4272, ext 206	0800-2200 daily

It is our belief that information is in fact readily available, but it is up to individuals to take advantage of what is on offer.

Turning now to the second part of the letter; NATS uses the forum of NATMAC to introduce all changes to controlled and special rules airspace. You may rest assured that your representatives on that committee play an active part in the discussions which take place. While we must meet ICAO standards for the protection of international public transport operations, the shape and type of airspace chosen for the task can sometimes be tailored to meet the needs of other airspace users, including gliders – and this is done frequently. That said, the NATS Director of Control (Airspace Policy) – the Chairman of NATMAC – has other fields of responsibility in addition to controlled and special rules airspace, including danger areas, restricted areas and prohibited areas. For these, which fall outside the purlieu of NATMAC, he seeks advice as and when necessary, the aim of course being flight safety. Even when a restricted area is considered necessary, it may be possible – as in the case of Kemble and gliders – to introduce proceedures to minimise the effect upon some section of the aviation community.

I hope you will all see that we are not unmindful of the interests of the whole aviation community. We try to conduct our task of making flight safer without imposing more than the absolute minimum of restrictions upon the private and sporting sectors.

IAN B. BULLOCK
NATMAC Secretary

CRITICISM OF THE WEINHOLTZ TASK

Dear Editor,

In the Southern Regionals at Booker we flew a Weinholtz task (see S&G, April, p57) on one day. After the experience the great majority of competitors were against the concept. I am happy to say that I scored quite well with it and so can hardly be accused of unfair bias since I too am against it.

It might be argued that better turning points could have been chosen, but the task setter and competitors had to learn a new game and this doesn't really bear on the task itself. Points are allocated for speed and distance around a closed triangle at the rate of one for each kilometre covered and two for each km/h if you get back. If you were able to fly at your average speed throughout this implies that getting back is equivalent to flying for more than two hours. In practice you slow down as the

evening thermals become weaker so the equivalent is more like 2½hrs. This gives a very heavy emphasis on getting back, much more so than conventional scoring. I believe this is a valid criticism and perhaps an equivalent of one or even a half hour would be better, but the arguments against it is a serious competition task are more important.

Competition gliding has a scoring system which is frustrating to the pilot and spectator. On the days that prove to be poor, the odd individual struggles for five or six hours and gets back or goes much further than average, only to end up with perhaps 70pts out of a possible 1000pts because the day has been devalued or made a no contest day. This is to reduce the effect of luck upon the score.

Compared with conventional tasks, Weinholtz adds the dimension of pilot selection which carries two extra luck factors. Met information is not reliable and so successful task choice is dependant on luck. Even with good Met the actual conditions vary locally and one small bad patch can ruin speed or cause outlandings on one route while a nearby route is booming. This adds up to the fact that as competitors in the same Class are not subjected to the same route and its problems, there isn't a sound comparison between pilots. As such it isn't a satisfactory competition. I think this makes the Weinholtz task unsuitable for serious competition but for less serious occasions, such as task weeks and Enterprise, it could be very enjoyable.

London KENNETH HYNES

COMMENT ON SPEED INCREASE IN A DIVE

Dear Editor,

I read Richard Forrest's letter in the June issue (p140) on the speed increase in a 45° dive and agree with the conclusions. A 45° dive however is not the normal gliding situation but changes in attitude about some datum attitude is normal and it is here that performance differences show. As an example, a quick flip through back issues of S&G found a polar diagram of a K-8 and a Std Cirrus on the same graph, see December 1974, p269. Two lines from the origin were drawn to cut the K-8 polar at 50 and 60kt respectively. The angle between these two lines was obtained by using tracing paper and a pin was put through the tracing paper at the polar origin. The K-8 50kt line was then repositioned to cut the Std Cirrus polar at its 50kt position.

The second line now cuts the Std Cirrus polar at approximately 72kt. Hence a change in attitude giving an increase of 10kt on a K-8 gives 22kt on the Std Cirrus and these two different increases in speed will take very nearly the same time. Thus the Std Cirrus will take only half the time to increase its speed to the same value as a K-8 for the same change in attitude. Note, the change in attitude probably represents only half a degree. The above shows that a K-8 pilot converting to a Std Cirrus will initially overcontrol in pitch.

Tarvin, Cheshire LEN CHADWICK

A JARRING NOTE IN S&G

Dear Editor,

This is to let you know that I enjoy reading your magazine tremendously and find the articles well balanced and covering the whole field of gliding very well. One article that really struck a chord and which I would like to mention was "The Human Side of Gliding" by Keith Nichols in the June issue (p110). I doubt whether I have ever read anything which so accurately describes many of the emotions and reactions experienced by myself during my involvement with gliding.

Unfortunately for me there was a jarring note in the letter from Bob Rodwell (p140) that made me feel quite sad. I feel that his nit-picking was quite uncalled for in his comments on Chris Simpson's interesting article in the previous edition (p60).

When I read the article in question, I assumed that Chris was referring to the local chaps, probably having a quiet pint in a pub, but if this is not what he meant, then surely the choice of words was his own and in no way a reflection of the attitudes of his hosts. We in South Africa are saddened by the fact that so many people are always ready to look for flaws even where none exist. We of the gliding fraternity love our gliding and don't stand in the way of **anybody** who cares about gliding in this country or elsewhere for that matter. We are also sorry about your losing the government grant for the World Championships, but surely the sport of gliding must triumph and please not the politicians.

Steytlerville, South Africa DENZIL WARD

THE PREJUDICES AGAINST SOUTH AFRICA

Dear Editor,

Mr Rodwell's letter to you from Belfast is another example of the reasons why, in this world, double standards and contentions in sport continue to exist. I must presume that his suspicions are based upon experience and not the usual degree of ignorance which is so often consistent with his style of comment. Mr Rodwell may be pleased to learn that I too was with Chris Simpson during the flight in question and that the local boys to which he refers were, in my opinion, probably under the age of 14, if indeed they were as old as that.

However, in dismissing Mr Rodwell's presumably unintended flippancy, I would like to highlight the very real misconception that it is South Africa's participation that may be causing gliding teams, including that from Ireland, to suffer financial hardship by losing Sports Council or other gratuitous grants.

South Africa, a founder member of the FAI, participates as it always has whenever possible in FAI competitions and in no way does its sportsmen cause or affect the decisions of governments, whether considered justified or not.

It is fortunate that the prejudices against South Africans in sport are not applied to other members of the sports world, whose political or religious problems may not be entirely acceptable to the community as a whole.

I believe I speak for many in sporting circles who find abhorrent the continual creation by individuals of unnecessary, inflammatory and ignorant comment.

Newmarket, Suffolk M. R. CARLTON

A SOUTH AFRICAN INVITATION FOR BOB

Dear Editor,

To Bob Rodwell I would like to say "boys will be boys" and in time will grow up to be men. How about him coming to the South African Championships at Vryburg in December and seeing for himself? I am sure he will enjoy it.

Salisbury, Rhodesia. LUDI PIO

TIME FOR AN INFORMAL GROUP

Dear Editor,

Paul Williams' letter "A Glider in the Garage" (S&G, June, p139) strikes me as the most sensible contribution on the subject of light gliders that I have read so far, my own alongside it appearing mainly polemic. Most of his points defining a light glider I agree with, especially that of limiting component size to fit within the length of a standard garage, which was one of the first criteria that I set up also; in fact, once handiness comes to rate higher in the specification, there is no reason why this limit should not be applied to any size of machine, as three and four piece wings are already common, and only one extra joint, in the fuselage, would be needed. The suggested upper limit to the empty weight of 300lbs (136kg) seems to me on the high side, for my analysis of performance at low span-loadings predicts that it is possible, with the right choice of existing wing sections, to build a 15m sailplane within that weight which could both outclimb and outglide the current "heavyweights". But that's another story, as Kipling used to say, and for the small span machines which we are discussing here, I suggest an empty weight not greater than the disposable load (pilot plus accoutrements) at about 110kg. Also, my vision of a universal machine for coarse soaring has really effective flaps for a wide speed range, and a long-travel undercarriage which would have to be retractable for taking-off and landing on rough sites, so I would hate it to be ruled out of competitions by such features, which I do not regard as optional extras.

Now, as to organisation for action, I feel that forming a specialised association before there is a reasonable amount of hardware ready to get airborne would be premature. My impression is that in Britain now we are still in the study and software stage, and that an informal group corresponding, meeting, and reporting to the world at large, would be the appropriate starting point. By the time this is published, I expect to be back in the UK and would be delighted to join or help to lead such a group. But I must say here that I am a pessimist about the scale of effort that we shall find ourselves involved with at first; my experience of getting anything done, in the gliding movement as elsewhere, suggests that when the "many people who have been working in isolation" come out to be counted, we shall find ourselves with very few effectives. And my experience, as a professional engineer, of taking a new line in any field, not too far from the well beaten track of orthodoxy, tells me that "the vast body of relevant information" will probably turn out to be more than 90% irrelevant. Still, you never find out till you try, and I am sure the time has come to burn our boats and get going; like the first time one turns downwind from a hill site, what a lot of unfamiliar country there seems to be, and yet it was there all the time, behind you.

Basrah, Iraq. PETER RIVERS.

MORE ON HORSES FOR COURSES

Dear Editor,

Mike Randle asks in the June issue (p141) in reply to my article ("Horses for Courses", S&G, February, p18) "to what extent do Chris's conclusions depend on his assumption about the radius of thermals?" The quick answer is: Not at all.

Mike's remarks would appear to be based on the pictures and not on the argument, for the curves are asymptotic. However, the radius of a thermal is meaningless as a definition if the velocity distribution is not stated. Nowhere do I see Mike's reference to velocity distribution across the thermal, and so his letter would not seem to take the state of knowledge much further.

Certainly Reading University and others have carried out measurements in order to gain a greater understanding of the nature of thermals and the velocity distribution across them, but this study is by no means complete. I believe a Russian has also come up with four different forms of velocity distribution. I doubt if this work will help us very much at this stage, as there are so many variables that affect the thermal's progress, and the vertical velocity can vary throughout the day and up the height of the thermal as a result of changes in the air through which it ascends. I suggest that Mike has a look at a Tephigram from time to time.

It is understood that Wolf Lemke made mention of the need to increase the $C_{l\ max}$ of wing section in his address to the Washington Soaring Symposium, so it would seem that we are in good company. The advantage is that a higher lift section allows a higher aspect ratio to be used now that the materials are available to produce them. As the Sprite has shown the high C_l section improves climbing performance, in spite of a highish wing loading. This is linked with a good glide angle, and would seem to suggest a useful line of development.

Where I think Mike is in difficulty in understanding the problem is that he expects sailplanes to be compared on an absolute reference. But this has never been the case. For as design progresses, we can only compare performance with what has been available up to then. Thus an effective basis for comparison is all that is necessary. We used the Goodhart thermal which was devised for the work on Sigma and it has been a useful means of comparison. However, the proof lies in the sky and after about 100hrs of sitting there flying the Sprite ship, I am impressed with the result and, dare I say it, perhaps it's ahead of the pack.

Wetherby, Yorks J. C. RIDDELL

South Wales GC's Usk Mountain Soaring week got off to a good start with Ivor Shattock giving an air experience flight to Miss Caerphilly. The club Chairman, Norman Evans, is showing her the controls before take-off in the photo taken by THE NEWS

CLUB NEWS

Copy and photographs for the December-January issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 47725, to arrive not later than October 10 and for the February-March 1979 issue to arrive not later than December 5.

August 17, 1978

GILLIAN BRYCE-SMITH

AQUILA

In spite of the weather we are delighted with overall progress. Badge flights are too numerous to mention and the Silver distance flight to Booker is reaching epidemic proportions. Our thanks to Booker for helping our "190" syndicate and providing facilities for rating checks, etc. We are grateful for this goodwill.

Height claims have, however, been scarce, due to the persistent low cloudbase, but at least club flying is being learnt at an earlier stage.

M.F.L.

BATH & WILTS

Our task week from July 29-August 6 was a bitter disappointment due to the weather, in spite of the efforts of the organiser, Chris Rowland. However it gave Richard Marsh and Bernard MacBride, with help from others, a chance to build our new launch vehicle and work on the F100 which is now a brilliant canary yellow.

J.L.

BOOKER

We held the largest competition (Southern Regionals) ever this year with 25 Club and 24 Sport Class gliders under the directorship of Chris Tipney (and his wife Marnie). They made an excellent job of their first competition.

We started with a no contest day when the only noteworthy event was the £50 bet offered to Chris Rollings, CFI, to shave off half his beard and wear it like that for the duration of the Comp. He accepted and looked ridiculous! He is now in the West Country cultivating a new one.

Alison MacDonald was 16 on July 28 and went solo on her birthday.

D.W.

BRISTOL & GLOUCESTERSHIRE

Preparations for Euroglide are now virtually complete with the new toilet and shower block the scene of frenzied activity.

Another instance of the "clutching hand" has put our recently revamped Auster back in the workshop under the care of "Chalky" White. A Swallow has been sold, leaving the club fleet at three two-seaters, two K-8s, a Swallow and Skylark 4. A wave safari to Shobdon is planned for October.

R.A.R.

COTSWOLD

We have had five cross-countries this season and Dave Roberts did us proud by finishing seventh in the Nationals' Open Class and flying the highest placed 19m glider.

We have had three task weeks and last year's idea of running restricted entry club member *ab-initio* courses at the same time was again a great success. A K-7 and an instructor were reserved during the task week for a limited number of *ab-initios* who paid an additional fee. This way they can pile up their circuits and bring their training on at a much faster rate – most averaged about five or six launches a day.

There was a fair bit of cross-country flying during these weeks and on June 1 the site was visited by magnificent cu nims. Three members got away before the deluge, Tim Macfadyen gaining his third Diamond with a climb to 22 000ft – the price was having to strip the filler off the SHK's fuselage and repainting due to hail damage. Tony Hayes tried to bring his Oly 2B out of the clout at 10 000ft and eventually succeeded, a frightened man, at about 17 000ft, unfortunately missing Diamond height by a few feet.

Dave Roberts picked up wave late one afternoon and eventually found himself over Ludlow at 10 000ft, arriving back at dusk to find that everyone had gone home.

We had typical summer weather for our open day – that is to say most of the flying displays had to be cancelled. However we managed 106 air experience flights and made a modest profit.

In contrast our VIP evening was a great success. We launched the Lord Lieutenant of Gloucester, the Bishop of Gloucester, seven Gloucestershire Mayors, the OC Flying, Kemble, Sports Council and PSA representatives and wives and families. There were 43 launches and it was so enjoyed many stayed to help put away the gliders.

Chris Batty held a good party to celebrate the rebuilt Diamant 18 emerging from his lounge and Larry Bleaken very soon completed a 300km in it before taking it to the Northern Regionals.

Congratulations to Bob Mountjoy, Phil Chambers and Len Brown on going solo and to Pat Sims for completing her five hours.

Transmitting on our new frequency has helped to minimise the bad effects of the new rules zone, but we are now left wondering what effect the opening of Fairford as a US tanker base will have on us.

J.D.H.

DEVON & SOMERSET

Although Enterprise produced some good distance flights and fine flying, our season in general has not been good. Both task weeks were dogged by weather only really suitable for local soaring although some heroic performances were made.

During the last two months, Ian King and David Silverlock have both kept their syndicate B-4 up for five hours and David, Kevin Jenkins, Simon Minson and club Secretary, Andrew Blackburn, have all completed their Silver distances, giving the last three their full Silver C.

At a Special General Meeting in July it was decided to raise the money needed for a new tug engine by means of a long term loan of £25 from all full flying members, to be repaid over the next five years. We hope to have the tug back with us fairly soon.

Meanwhile, our special thanks to Dorset GC who, on hearing we were tugless, immediately offered and supplied their Auster plus pilots to fly it until our Husky returns. They have helped us out of a hole and shown us what inter-club relationships are all about.

Both the barbecue and the pig roast were a great success and helped to swell the club funds.

M.G.P.

DORSET

We are now between task weeks, dreaming of high cloudbases. Regardless, B. McCann quickly chased R. Buckett with a completed Silver C and John Purchase and Steve Chivers have their Bronze Cs. Congratulations also to Hugh Stewart, another 16-year-old to gain his A and B certificate. The recent tie-up between us and the Devon & Somerset GC proved highly successful.

We must end on an official note which concerns the, always welcome, visitors to our airfield: please will all powered aircraft note that Tarrant Rushton is strictly PPR from Flight Refuelling Ltd (tel Blandford 52501) and that **no** member of the Dorset GC may authorise such permission.

B. Mc.

This photo by Brian Rush, Chairman of the Coventry GC, shows a club Bocian in the foreground and the western end of the airfield taken up by the traction engine rally in May which was visited by more than 20,000

DUMFRIES & DISTRICT

Congratulations to Alastir Morrison, our Treasurer, on going solo – this was particularly rewarding as he is one of several newer members who joined since we moved to our new site.

Ian Steel, CFI, and Ryan Fenion took their Oly 460 to Lasham for an instructors' task week and both flew the Twin Astir. Ryan had a Silver distance attempt to Shoreham.

Later in July Bob Rodger, Dave Chesney and Frank Smith went to Lasham with the syndicate K-2, Dave gaining a Bronze leg.

Our flying week at the beginning of August hit poor weather but we tried to get airborne as often as possible, even when cloudbase was at times 800ft above the site.

F.S.S.

DUNKESWELL

June thermals brought Julian Pearson his second Bronze leg, Tony Eastlow Silver height and distance and Doug Menzies a Bronze leg and Silver height. Dick Froggett has squeezed a C from his Swallow and the July courses produced A and Bs for David Hoskins and Tim Stirgess with a first solo for Roy Boddy.

B.H.F.

EAST SUSSEX

We have had some useful lectures by the duty instructors during the weekends disrupted by bad weather. We welcome our new members and congratulate Tim Fludes on his Bronze C and Ken Manley on going solo.

B.W.

ESSEX & SUFFOLK

Cross-country flying has been drastically reduced thanks to the miserable conditions. Members of Anglia RAFGSA came this summer and Gerd Meier and his son again joined us from Germany.

We have purchased a second Condor tug which will be given a 130hp engine and a C of A before sharing the workload with Foxtrot Echo.

Ian James went solo, Francis Whiteley joined the SHK syndicate and completed his Silver C with a duration and Alan Hall flew the club K-6 to Duxford and is also claiming his five hours. Several Bronze hours have been flown and the club 100km triangle is being attacked regularly. Mike Bailey is on an instructors' course at Husbands Bosworth and Tony Woof completed his at Lasham.

C.C.S

HEREFORDSHIRE

Task week was washed out but despite the weather some good flying has been achieved this season. We congratulate Ken Martin on his Silver C and Stan Jackson on a mystery tour for Silver distance.

J.C.

HIGHLAND

The weather has been impossible, vandals and petty thieves have plagued us and an accident to our Bocian has stopped all two-seater flying for some time to come.

The Bocian was caught in a curl-over behind trees at the back of the site and landed some-

what heavily in a field, losing its tail and suffering other minor damage. However, our solo pilots keep in practice and our only good day saw several soaring flights from thermal into wave, a 300km attempt by Trevor Armstrong, which unfortunately ended half-way between the 1st and 2nd turning points, a Silver height by Gerry Robson and a Bronze C half hour by Colin Foreman.

The Oly is back in line, several pounds lighter, with a new coat somewhat jaundiced in colour. Finally, the $64000 question, put at a village fair after the Astir had crept in under a lowering cloudbase and was on static display: "Is it radio-controlled?"

R.E.T.

IMPERIAL COLLEGE

The season started well with the Astir and Skylark 4 completing several 100 to 200km flights in late spring. Since then the indifferent weather has meant that few badge flights have been completed successfully, the one notable exception being Tony Crease's 500km triangle, which makes him our first pilot to have all three Diamonds.

Richard Metcalf finally completed his Silver C with a downwind dash but Stewart Bean narrowly missed his distance. The Skylark was sadly destroyed and as yet we haven't a replacement. It seems all we can hope for this year is some good wave flying on the expeditions to Aboyne, Portmoak and Issoire.

C.J.H.

KENT

Our third task week at the end of July proved a great success with 22 pilots and 11 gliders (including a T-21) taking part. Even the weather relented, allowing six contest days out of a possible nine. The League One honours were closely contested between Glyn Richards and Tony Moulang, the former just winning, mainly due to his heroic efforts in the T-21. League Two was convincingly won by Alan Garside with Mike Johnson, who achieved Silver distance during the week, second.

The welcome return of south-westerlies have given us ridge soaring and many Bronze legs and durations have been obtained, Ron Parsons (first flight in the K-6E), Ray Smith, Cecil Hogarth and Mike Johnson claiming five hours. Ridge soaring offers more cross-country possibilities than before, as following reductions in controlled airspace we can now attempt tasks of up to 150km using the North Downs from Folkestone to Sevenoaks.

A second Jodel D140 tug has been obtained from France and will be restored during the next few months by Peter Kingsford and his team. Congratulations to Bruce Wickens on gaining his full rating.

D.H.

LAKES

Winter flying time was down this year due to very rough cold weather and to our tug being out of action for nearly five months. The brightest spot recently was the purchase of a Pilatus B-4 for the club. The first weekend it flew there were three Bronze C flights – on the slag-bank of course. In March, two pilots, Norman Reeve and young David North, made their first solos.

We had our annual pilgrimage to Shobdon for a fortnight over the spring Bank holiday in search of thermals. No outstanding achievements, but a lot of fun, and Ray Jackson completed his Silver C with a flight to Nympsfield.

We regret that Ron French, Roy and Heather Partington, all very active members who have been carrying out some of our more onerous work, are leaving, but hope to stay in touch. (Ron and Roy are also instructors.) However, we are pleased to welcome Geoff Bailey-Woods. Our courses are in full swing and have so far been very successful.

E.G.A.

LONDON

Contrary to general expectation, we have had a lot of exciting flying this summer. *Ab-initio* courses have had no undue restrictions implied by the adverse weather and our soaring courses have contrived to prove that a lot of unsuitable looking days are in fact soarable. Probably not one soaring course member ended his five days with less than 15hrs flying.

One of the most frustrating courses was attended by club members John Mottershead and Colin Cruse who, despite a lot of rain, managed 20-30hrs, but unfortunately never got further than 20-30 miles from base.

We have two new K-13s to regenerate our fleet and a four-man syndicate have an Eagle 3. We have also received planning permission for a major building project to give us an additional hangar, plus new offices and a few dormitory facilities, etc. Work should start soon and be finished in September, 1979.

D.Y.

MIDLAND

The highlight of the last few months was our task week at the beginning of August, the first for a few years. In spite of variable weather conditions, tasks were set on six of the nine days, including a 217km triangle. Over 3100km were flown, the winners being 1, Bob Scarborough (Dart 17R); 2, Chris Alldis (Dart 17R) and 3, Peter Orchard (Skylark 4).

Our thanks to Chris and Carol Day (Lasham) and John Bundy, the tug pilot from Husbands Bosworth, for their very professional organisation.

John, Addy and Garry took the club Dart 17R to Portmoak and returned with two Gold heights and a Gold distance. Congratulations also to Messrs Benson, Matheson, Nuttall, Tyler and Wildey on going solo; Tony Jones, Bob Nicholls and Heather Stephenson on their Bronze; Vic Teague on Silver height (7700asl) and Jim Parks on his duration.

Thanks to Robin and helpers for their completion of the overhaul of our newly acquired K-13.

S.H.

NEWCASTLE & TEESSIDE

We have made the most of the few good days this season to gain experience with the new club fleet and CFI Norman Revell's course in June was particularly successful. A new two-drum winch has completed the revitalisation of our flying equipment and we are now striving to increase membership. Anyone wishing to fly from Carlton would be most welcome and there is still room in the hangar for a few more gliders, despite the recent arrival of Alan Henderson's M100s.

Congratulations to Ken Cutty who went solo earlier this year and has started collecting Bronze C legs. We welcome back Don Harker, who has been absent for a few years while building his own aircraft – the "Harker Hawk".

G.M.T.

NORFOLK

Our lovely Tibenham airfield has been offered for sale as a possible alternative site for Norwich airport. The asking price of ten million pounds is beyond our Treasurer's reach at the moment, so we are looking for wealthy new members! Perhaps it's the size of our fleet which keeps us poor – a Super Falke, two Condors, two K-13s, a Skylark 2 and a Swallow; also a Primary for the really advanced pilots. The private fleet is quite impressive, too. Our President's Kestrel 19 is supported by a Std Libelle, Astir, 1S-28, two Pirats, two Skylark 4s, a Dart 15, Oly 2B, K-18, K-6CR and another Swallow. The club's T-21 and Tutor are now owned by the Kitchen brothers.

Nor are we short of instructors. With 23 of them, eight holding full Cat, it is apparent we are primarily a training club. We offer full training on the Super Falke from *ab-initio* to MGPPL and have six members with a full instructor rating on motor gliders. Five of the seven one-week initial training courses on the

Super Falke planned for this year have been completed.

The demise of the 40gall Avgas drum has been countered by sinking a 2000gall steel tank into a vast hole in the ground and surrounding it with 30 tons of concrete. The tedium of this task was relieved by an inrush of water from the rain-soaked airfield and the need for long and hard pumping.

M.T.B.

NORTHUMBRIA

The signing of a 30yr lease with the National Coal Board has given us security of tenure, which means we are able to go ahead and build our clubhouse.

With valuable voluntary help from club instructors and other members, we are running a fully-booked three month course season. The Chipmunk made a welcome return from its C of A, but August sees the anniversary of the collapse of the IS-28's undercarriage and the glider has yet to be repaired.

Despite poor soaring weather, the 30 strong syndicate Grunau has been gaining Bronze legs and there has been a notable increase in the first solos by lady members - congratulations to Viv Buckland, Trysh Walton and Gladys Mallender. Finally, our attempt to corner the market in Skylark 2s has further advanced with the purchase of a fifth syndicate machine.

A.T.

RATTLESDEN

We continue to progress thanks to the hard work and enthusiasm of many members and our small band of instructors. We have now added a K-8 to the fleet, thanks to the generosity of Mick Lee. We also have two twin drum diesel winches operational which greatly improve the launch rate.

Several Cs and Bronze legs have been achieved in recent weeks despite the indifferent weather. Congratulations to Kay Lee and Tony Emmerson on attaining the first complete Bronze Cs by Rattlesden trained pilots.

K.L.

SCOTTISH GLIDING UNION

As opposed to the general UK weather scene, good soaring conditions have continued to be a regular feature at Portmoak and our cross-country achievements are still well above previous years. The Lasham expedition has now returned, having thoroughly enjoyed the trip, but it would appear they had a better chance of badge flights by remaining here.

The old "Saturday Syndicate" concept, whereby a team of pre-solo pilots begin Saturday flying at 6am with priority on launching, has been revived. The good weather plus Roy Surtees' enthusiasm has resulted in a high number of solo flights.

Our crowded calendar continues this month with an advanced soaring course run by Bill Scull in a Twin Astir.

R.H.

SHROPSHIRE

Our two weeks annual camp at Chetwynd, by kind permission of the RAF, was somewhat of a washout due to the abysmal weather. However, we managed a few modest triangles and out-and-returns coupled with considerable outlanding practice. Jan Scott (Std Cirus) made a quick dash to Worcester and back in the last dying moments of the week, narrowly beating yet another front.

Our group is now at full strength with a Chipmunk and 12 syndicate aircraft, comprising a Kestrel 19, Cirrus, Std Cirrus, Hornet, Std Libelle, Pilatus B-4, SHK, K-13, Skylark 3, Sky and two Dart 15s.

D.V.

SOUTHDOWN

We have had an increase in new pilots with Malcome Blair, Steve Turner, Jane Turner, Lawrence McKenzie and Bill Wood all going solo. John King, having let some of his Silver leg claims lapse, completed all three in a matter of weeks. Brian Bateson made the best of some weak wave from Sutton Bank and gained enough height to complete his Gold C.

Our task week was run on the "pilot selected task" basis which proved to be a very popular and appropriate method of task setting. It was won by the SHK syndicate, Chris Backwell, Keith Michell and Peter Henderson. Campbell Boyce and Brian Bateson (Astir) came second with Mike Smallridge and Jim Rochelle (Pirate) third.

We now have our Super Cub, looking pristine but unfortunately without a tow hook.

B.B.

SOUTH WALES

Our mountain soaring task week did better than average for weather although the wave didn't appear. It opened with press photographs and Ivor Shattock made the first flight with Miss Caerphilly. George Collins worked hard setting tasks suitable for the wide range of gliders taking part - the K-6E was the only duplicate, and they included a 70km goal flight and 300 and 500km triangles.

Comparing the distance covered by Std Libelle 773 at Competition Enterprise, there is a striking similarity - 800km for 18 flying hours at Usk and 860km for 22hrs at North Hill. Some use was made of almost all the mountains and high ground in the routes, including the Beacons, the Shropshire Hills, Malverns and the Cotswolds. In spite of our fears regarding the mountain soaring aspect, only one glider was damaged and that landed on an airfield!

We ended with an excellent kebab party prepared by Joice and Peter Storey. Our thanks to all the workers and organisers of the week.

I.H.S.

STAFFORDSHIRE

Sixteen members with a K-13 and three single-seaters went to Camphill for five days at the end of June and despite indifferent weather there was 30hrs of soaring.

Four syndicates took their gliders to Chetwynd at the end of July at the invitation of Shropshire GC. Vic Carr borrowed the BGA Twin Astir for advanced instructor training.

We had a Continental evening on July 22 when Bob Willshaw provided a first class buffet and raised £50 for club funds.

P.F.

STRATFORD ON AVON

We welcome Steve Broomfield, Martin Eglajs, Richard Newton and John Taylor. Congratulations to Tony Edlin, Sue Linnegar and Chris Roberts on going solo and Geoff Bateman and Don Birks on their durations.

Last time we missed Alan Wright from the list of new committee members and since then Alan and Mike Coffee gained their instructors'

rating. Gerald Kelly and Gary Print are now full Cats.

Sunday, August 13, was possibly the best day of the year and Martyn Davies, Peter Kenealy and Don Birks gained their Silver distance. The club K-13 is tremendously popular and will be refurbished by Geoff Grainger in the autumn when it can be spared.

H.G.W.

SURREY & HANTS

Still no one has done a Gold C flight this year but Tony Crease managed his 500km triangle on the day they "all" did it from North Hill. An enterprising flight, especially with a 12.30pm start (see Imperial College).

We have a new tug and a new K-13 is on the way giving the fleet a uniform four K-13s. One of the Falke's on a field landing exercise ran out of fuel . . . and landed in a cornfield.

We have the best grass for years, thanks to Bob Lintern's fleet of giant tractor towed machines and Hugh Hilditch and Pam Davis (the Manager's wife) have completed her Vega trailer in record time.

Portmoak preparations are going ahead - all the high-performance club fleet have oxygen systems permanently installed so 230 litre bottles on your lap become a thing of the past.

This year is the 40th anniversary of the Surrey Gliding Club and in November we plan a special dinner to mark the occasion. We wish to contact as many founder and early members as possible, so any of you who know glider pilots who were in at the beginning of SGC as it was then at Redhill in 1938 and later after the war when we moved to Lasham, Mike Wilson, present Chairman, is the man to contact at Lasham airfield.

C.L.

ULSTER

Summer 1978 was sired by Foul Spring out of Filthy Winter. By mid-August cross-country opportunities had been virtually nil. Paradoxically, we'd enjoyed excellent local soaring and some short out-and-returns from Bellarena without so much as a single weekend without **some** soaring.

The pleasures of the new site have included exploring its potential in winds from N through E to SW. We now know that Binevenagh generates a handy primary wave in even light NE winds. July 23 will be remembered as a day when most of us soared under, beside and above a particularly majestic laminated lennie off the mountain's SW slopes.

Sadly, plans to keep the Blanik on the site fell through and after 12yrs of sterling service it is now with a Coventry GC syndicate. Its successor, the Twin Astir, is popular save for some undercarriage problems.

CFI's son, David Hill, put paternal example to the test on July 10 when he soloed. The previous day, his 16th birthday, had unhappily been unflyable.

Planning approval has now been granted for the site and thoughts are turning towards a possibly interim shelter for the tug, prior to erection of full hangarage. We now have piped water on site and a caravan, but lack facilities except, of course, for our incomparable ridge.

R.R.R.

YORKSHIRE

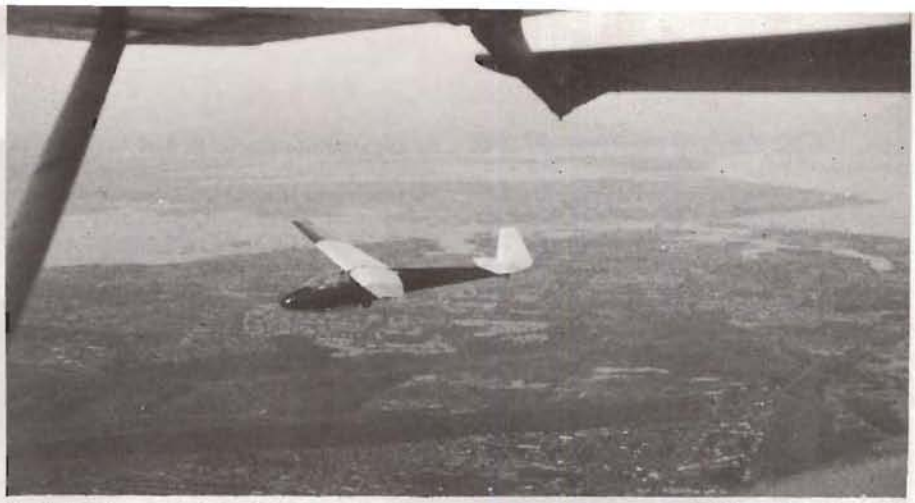
This has not been a vintage year for cross-countries although the ladder board shows a good number of relatively short flights and uncompleted triangles. The height latter board shows a high number of wave climbs, however, the norm being around 12 000ft plus. Congratulations to Graham Evison and Tim Brown on their Gold heights (and to several visitors on their Gold and Silver).

Congratulations also to Jim Grainger, Adrian Hatton and Phil Lazenby 'onully completing their instructors' courses and to Dave Chaplin and Euan Spink on becoming fully rated.

The new B-4 is proving very popular and one wonders if it may outdo the forthcoming Astir in the popularity stakes. Those of our friends who normally visit us for their winter soaring will be pleased to hear that the clubhouse heating is being altered to provide all-day comfort rather than evenings only as before.

E.S.

Service News



H. Clarke photographed Portsmouth Naval GC's K-7 flying over the Solent

CRANWELL

Congratulations to Ken Pick on going solo after continual winch failures and to Tim Dickinson on completing his instructors' course at Bicester. Peter Stratton, our youngest solo pilot, is leading the "Tutor flight of the year competition", having accomplished a Silver height climb to 4500ft without a barograph!

N.J.H.

FULMAR

Our few chances of soaring days have been ruined this season by the sea breezes. The Blanik is back to bring our fleet back to full strength, thanks to Steve Stevenson and Paul Wells, and the trailer for our new Astir should be finished in time for our Aboyne trip in October.

Our resident moles are still finding bits of the airfield to dig up but we now have a road to get the aircraft onto what is left of the airfield. We are sorry to say goodbye to John Harber who has gone to Valley to learn about helicopters. He put a tremendous lot into the club. But we welcome back John Burns and congratulate Steve Stephenson and Ted Norman on becoming full Cats; John Harber on getting Silver distance and duration shortly afterwards; Steve Partridge, Bob Fox and Roger Bagnall on gaining Bronze legs and Dick Dawe and Mick Ustianovski on their A and Bs.

HUMBER (RAF Lindholme)

We are pleased to report that Keith Taylor is now out of hospital after his tussle with the L-Spatz and we look forward to seeing him back in an aircraft in the not too distant future.

Dave Cockburn has now taken over as CFI and is flying in Euroglide. We have lost our beloved K-6E and have in its place a new Astir 77, for which we now have to build a trailer.

Clive Brealey converted to the K-8 and on his third launch managed a Bronze leg. Phil Airey narrowly missed his, but made sure of it the following weekend in the Blanik. Tony Smith and Alan Clarke are off on instructors' courses in September.

K.M.G.

KESTREL (RAF Odiham)

We lose one of our instructors this month, Martin Durham, who is entering RAF Cranwell. We wish him success in his new career.

Although the weather has drastically reduced our cross-country flying, the *ab-initios* have been pressing on and first solo flights have been made by Gary Livings, John Cockfield, Ken Rogers and two lady members, Christina Phillips and Jenny Roberts. Both Bronze legs have been flown by Ian Roberts, Dick Brooks, Bruce Dew and Keith Allen. Trevor Cole and Pete Eggleton achieved Silver height, whilst our only cross-country badge flight goes to Warwick Creighton for his 50km.

Work progresses on our third winch, a converted London Transport single-decker bus. Thanks are due to Ian Roberts for the many hours work which has gone into this project.

We shall shortly be losing our last wooden glider, 388 our K-6E, who has to go to make way for an Astir. Finally, Paul Mulhern and "Taff" Williams are off to Bicester on their instructors' course.

P.W.A.

PHOENIX (RAF Brüggen)

We have had many changes of late, mainly a high number of members being posted back to UK; three full Cats, Ben Bennett (deputy CFI and RAFGGA Secretary), Colin Jacques and Geoff Meacham; Ian Smith (parachute chief); our engineering member, Roy Wardle and his Field Treasurer wife, Sandra; and our prize "fixing "man, Harry Worth – our thanks to them all for their sterling efforts for the club.

Our fleet now consists of a K-13, a Blanik, K-8, K-18, Astir CS and a Std Libelle, with an ASW-20 on order for May, 1979. In addition we have an ASW-19, Club Libelle, K-6E and a Motor Falke in private hands. Most of our launches are by winch, the winch having been overhauled by new member Brian Tinsley, and we have occasional aerotow facilities provided by the Morane owned by Chris Sherlock and Alan Sommerville.

Recent achievements deserving congratulations are first solos by Steve Berry, Stew Renfrew and Bob Atkinson, Bronze legs by Sandra Wardle, "Gabby" Drucker, Al Smith, Rick Paradie and Derek Ballard, Silver legs by Al Thompson, Tony Radnor, Chris Jacobs, Mick Wilson, Steve Carter and Harry Worth. Our congratulations also to Norman Adam, one of our special members, on obtaining his Motor Falke licence – our first "in club" training of a power pilot. Our entry in the Dutch "Under 25s" competition at Venlo was Pete Spevak, but the contest was a washout.

The "Brüggen-Laarbruch come and get it cup" changed hands between the two clubs three times in one day recently when Barry Elliot collected it in the morning from Laarbruch, M. Spalding came for it in the early

afternoon and Roy Thompson retrieved it in the evening. Michele Tootell flew her K-6E to Laarbruch, but the pot had gone by the time she got there, so she flew home to Brüggen empty handed!

Our next outing planned is to Vennebeck, a ridge site near Minden, in October and planning for our next year's wave expedition to France is under way.

W.T.

PORTSMOUTH NAVAL

Our thanks to Kestrel GC for being our hosts for their longest day again this year. The weather was superb as was the social evening and barbecue that followed. Sunday was another good day with a "lead" distance by Mac McCullum (12½km), who completed his Silver distance two weeks later. Congratulations also to Eric Young and Nobby Clarke on their Silver distances, Eric's being the first one in the Swallow for ten years.

Our application to the Sailors Funds and Fleet Amenities Funds was successful and we will have a new Blanik in August.

The T-21 had just completed its C of A and the Pirat is back having been repaired and is getting its share of the flying, a considerable number of our solo pilots having reached the conversion stage during its absence.

Welcome to Keith Robinson of Culdrose GC visiting us on a course and our thanks for letting us fly his Prefect. Finally, congratulations to Tony Blofield, our Chairman, on going solo on a JSATG course at the RAFGSA Centre, Biscester.

H.C.

TWO RIVERS (RAF Laarbruch)

Except for 16 A and B certificates, achievements this summer have been few. We are looking forward to our three day mini-comp over the late summer holiday and the arrival of a Twin Astir.

We welcome two new instructors, Eddie Wright and Terry Slater, and Dave Collins and Ken Fyfe are expected back from the UK soon with assistant ratings. We are likely to lose, temporarily, four instructors, CFI, Dave Wood, Geoff Millward, Martin Spalding and Brian Harvey, who will be assisting the Army with gliding in Kenya. Congratulations to Paul Pearson and Geoff Millward on gaining their PPLs.

K.S.

WREKIN (RAF Cosford)

Once again we have had a change around in our Committee due to postings. We say goodbye to our Chairman, Derek Jackson, and our Treasurer, Jim Kirkman, and thank them for their loyal service. Mike Niel and Bill Rowley are now Chairman and deputy Chairman and Janice Midwinter our Treasurer.

Four members, John Richardson, Andy Lee, Andy Batchelor and Steve Burnell, took our syndicate Condor to the 6th International Vintage Glider meeting at Brienne le Chateau in France. They were fortunate to have reasonable weather and managed to clock up about 20hrs.

Andy Batchelor has since been posted to Gütersloh and we thank him for all his work over the last four years. Rod Witter has found us a wave site in the Vale of Clwyd, N. Wales (see BGA News).

Our commiserations to Ron Jackson for the first attempted 50km cross-country of the year which was a very near miss. Dave Gelder covered 83km on our second attempt, but forgot to switch on his barograph. Congratulations to Robbie Robinson on his first Bronze leg.

J.B.R.

WYVERN (RAF Upavon)

A highlight this month was an aerobatic display in one of our K-13s by Major Howard Jarvis, Treasurer of the Army Gliding Association, at Larkhill artillery day.

We welcome Lt-Col Ian Moss from Wrekin GC. He is to be our next Chairman when we unfortunately lose Major Sid Fella, who has been posted. Another loss is Major Bill Hankins, our hard working Treasurer, who is off to Germany.

Congratulations to Lt-Col John Welsh (Chairman of the Army Gliding Association) on coming equal fourth in the Southern Regionals, flying a Cirus 75 in the Open Class.

Three members have formed the "Sunshine Soaring Syndicate" and bought a Std Libelle as our club Cirus is away at competitions for most of the soaring season. We have been joined by a keen group of Army apprentices – they attended a course in July and all but two went solo. The end of the course barbecue was a great success, thanks especially to Paul Lutley and Roy and Eve Gaunt.

Ken Mackley completed his Silver C with a duration at Sutton Bank, Silver height was gained by Steve Welsh and Bronze C by Phil Wood, Dave Jupe and Max Woodhead. Nigel Cemm, Phil Wood and Steve Welsh have Bronze legs; Colin Arch, Chris Bartrum, Andy Creasy, Dave Eacock, Berni Hull, Dan Kelly, Chris King, Paul Redman, Andy Snell, Steve Thomas, Mark Vincent and Nigel Walsh have gone solo with Bill Hawkins re-soloing. Congratulations to them all and to Colin Brock on becoming an assistant Cat.

J.S.

classified section

Advertisements, with remittance, should be sent to Chelron Press Ltd., 8/10 Parkway, London, NW1. Tel 01-267 1285. Rate 20p a word. Minimum £3.00. Box numbers 80p extra.
Replies to box numbers should be sent to the same address. The closing date for classified advertisements for the December-January issue is November 9.

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T-21C. Slingsby's improved T-21 with lowered wing and original fit hinged canopy for winter training comfort. Basic panel. Excellent condition. New C of A. £1750. Grundy, 7 Johnston Street, Bath. Tel 65375, evenings.

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DART 15. Excellent condition, instruments, good wooden trailer. Price £4770. Tel Derby (0332) 792458.

SWALLOW, open trailer, basic instruments, recent respray, 12 months C of A at date of purchase, very good condition, may be viewed at Church Fenton, weekends. £1600. Tel Harrogate 501066, up to 6 pm, other times 862675.

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PIK 20B. Superb condition, full panel including artificial horizon, low hours. Very good trailer and fittings. Ring Weston Super Mare day 23201, evenings 413724.

DART 17R, with trailer, full panel, radio and parachute, excellent condition, £5750. Tel Rugby 813690 or Sedgley 5979 (evenings).

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