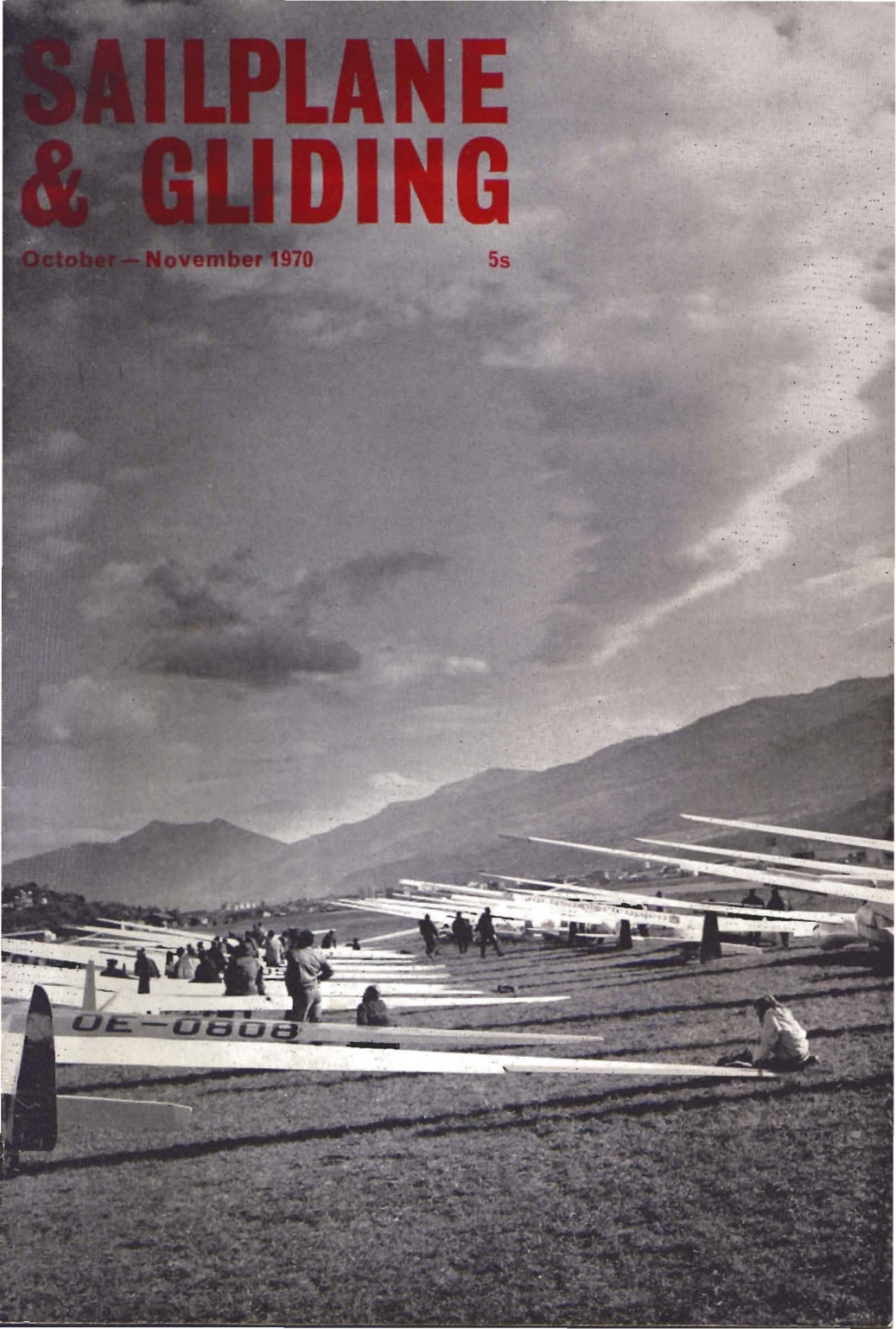
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October – November 1970 5s




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Cover Photograph: Queueing up for the famous Innsbruck wave.

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WORLD GLIDING CHAMPIONSHIPS—Classes & Rules

By ANN WELCH

We go on learning

THERE is no doubt that World Gliding Championships certainly fumble up the *status quo*. This is to be expected in a technical sport rushing headlong towards 1,000-mile goals on a swaying economic tightrope, but it nonetheless produces some headaches.

One of these involves airworthiness. How much responsibility, for example, should organisers take for gliders flown over their maximum permitted all-up weight, and faster than red line? It has always been accepted that repairs and maintenance carried out by crews and others will be done competently, and since this has turned out to be the case no inspection procedures are necessary. C's of A act as a starter on airworthiness, competition-wise, since somebody has had to put his name to a declaration; but they are not very useful, since different countries have different standards for the same aircraft. Organisers have neither the facilities, nor the time, to delve into national airworthiness certificates, nor should they be expected to do so. They can only enforce rules that are enforceable on the spot.

Flying too fast is something that cannot be checked except in some situations after the glider has come apart—so it is valueless to have a rule about overspeeding. All that the organisers, and CIVV, can do is to try to reduce the incentive to fly too fast.

The Start Line provides every encouragement to fly at, or close to red line, and lift encountered on the way provides the reason why red line is exceeded; tail-parachute—only gliders being worse off.

Hans Nietlispach (Switzerland) has suggested that the start line should be discarded. Instead, gliders should photograph an 'artificial' clock. There would be no height limit, except that, if the glider was too high to take an effective photograph, the pilot would be deemed not to have started. It is an interesting proposal with a lot to recommend it, except perhaps for small triangles and deep convection days. It would probably reduce the inadvertent excursions beyond red line to almost nil on days of ordinary thermals.

Flying overweight is another problem. If outside the C of A AUW it could presumably invalidate the insurance cover. It arises because the glider is not designed to carry the heavier pilot and his equipment, or because the pilot has put in excessive ballast in order to go faster. It is possible for the organisers to check the weight at which a pilot flies by rolling the glider over a weighbridge when required, but if ballast is permitted by the rules, all that can be checked is that the flying weight does not exceed the C of A AUW. Since C of A weights vary, and may be tied to different red line speeds—the exceeding of which cannot be checked—the exercise is profitless.

In the Standard Class ballast dischargeable in flight is not permitted. But this rule does not stop pilots filling up their aircraft with loose lead on strong days. Since the Standard Class rule on ballast was intended to keep life simple, the lead stowing antics largely defeated the object, as well as permitting gliders to be flown both overweight and beyond red line. But at least here something can be done within championship rules; if each Standard Class pilot, prior to the start of the championships, was required to declare a weight (not exceeding the C of A AUW) at which he would fly throughout. The organisers would have to supply a conveniently situated weighbridge over which gliders would be rolled daily or for spot checks.

The Open Class:- Perhaps the greatest need for rapid action by CIVV is in the direction of saving the Open Class from becoming a mixture of dinosaurs and Lemmings. At Marfa the performance range had widened to the maximum acceptable. With 30-metre gliders in prospect for 1972 there could be little point in even entering a good production aircraft. There badly needs to be some sort of sub-division, or sub-class, so that countries not prepared to order and pay for some super-prototype can come to World Championships with a prospect of doing other than in finishing in a mass of other Lemmings in full flight towards the bottom of the list.

* * *

[Wally Kahn in his article (see page 347) gives his ideas and suggestions for a four-class system which could also be used in world contests. As this part of Ann's article covered the same ground we have omitted it from her text to avoid duplication.—ED.]

* * *

The Standard Class:- This class is popular and is likely to continue to be so, even if the suggested International 17 Class was introduced (see page 348). The rules, however, are at present worded in a way which does not permit enforcement. At Marfa, for example, almost no gliders complied with the rule requiring airbrakes to be speed limiting in a vertical dive. Since the vertical dive clause is probably no longer essential, it could have been altered if any manufacturers or country had requested this to be done. Since it was unenforceable no-one made the request. As with the flying overweight problem, Championship organisers are not in a position to tangle with national airworthiness authorities. The rule needs to be altered in such a way that whatever is stipulated can be measured and enforced by scrutineers on the spot.

Fortunately, the fixed-hinge flap complication does not come on the scene before 1974, and may not even then, so the present concern is only with airbrakes. Airbrakes are used as an approach control on just about every flight, so the customer wants good brakes. These are used for speed limiting purposes now only in those countries where cloud flying is permitted, and then only rarely. So for World Championship purposes this aspect is not of real concern. It would be possible, therefore, to have a rule which, for example, said: Wing airbrakes which project above, or above and below the wing and which are capable of continuous movement by the pilot shall be fitted. Their frontal area shall not be less than X sq. metres (a low figure, but great enough to prevent only nominal compliance). No drag parachute. This is a rule that can be enforced after visual inspection by scrutineers.

World Championships are essential to the well-being of world gliding, but they must be the servant and not the master. Everyone knows what happens when the tail wags the dog — the unfortunate creature becomes unstable.

THE BRUNT TROPHY

The Brunt Trophy has until this year been awarded for the best gain of height made by a student member of the Cambridge University or Imperial College Gliding Clubs. It is now open to students at any British University Gliding Club. Any eligible pilot who has achieved a respectable gain of height in the year ending 30th September, 1970, should send in a claim to either, The Captain, I.C. Gliding Club, Imperial College Union, Prince Consort Road, London SW7, or A. J. Stone, Emmanuel College, Cambridge.

Claimants may be required to produce: (1) a barograph chart and a calibration chart (a certificate of gain of height signed by a senior official observer will be acceptable), (2) a certificate signed by a senior member of the pilot's University stating that he or she was a registered graduate or undergraduate during the academic year 1969-70. Claims should be received by 30th November, 1970.

A SECOND BRITISH 500 km TRIANGLE

By BERNARD FITCHETT

SUNDAY morning, 21st June, and the usual telephone call to determine the day's 500 km. prospects. "Only blue thermals today", said the weatherman, "with a moderate SSW increasing in the west". He was right about the wind; it stayed around 15-18 knots throughout the day. So, with visibility being good and signs of cumulus already evident we (a Cirrus and I) decided that a go at the triangle Tetbury, Rattlesden, Rearsby was on.

At 10:45, course was set from Rearsby into wind and under a sky which was promising cloud streets along the first leg to Tetbury. Eventually these streets organised themselves parallel to the wind at 190°, and although the best lift was only 3-4 knots and cloudbase 3,500 ft. asl., it was possible to average a remarkable 50 km/h. I decided not to fly below 2,000 ft.

At Aston Down the air teemed with gliders from the Nympsfield comps., and I was led by a friendly Diamant into one of the strongest thermals of the day, a meaty 6 knots to cloudbase at 4,500 ft. Tetbury was reached at 13:35, and aided by a slight tail wind, the next couple of hours saw 160 km. sail past, with the day's high point at 5,800 ft. in cloud near Ampthill. At 15:30, however, it was time to change gear. Slight overdevelopment in this area was quickly giving way to clear skies as the sea air crept in from the nearby coast, greatly impeding progress and making patience a great virtue in handling the weak, distorted thermals. Undoubtedly this was the weakest point of the triangle in the SSW wind.

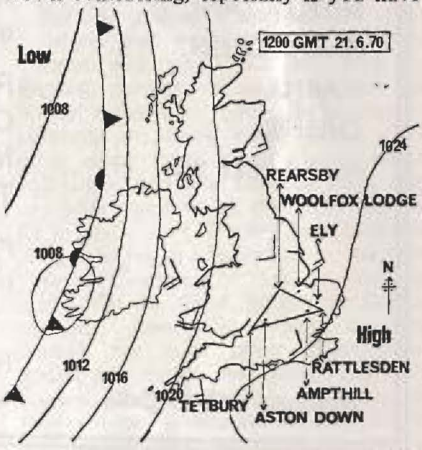
From here onwards I hardly remember breathing! At 16:20 we tip-toed around Rattlesden, eventually arriving at Ely, where the cloud streets were encountered once more; this time they were very widely spaced and deceptive in that, although they appeared to be dying, they were being occasionally replenished with smooth evening thermals. A 6,000 ft. cloudbase made flying at 2,000 ft. distinctly uncomfortable and flying would have finished for the day if a thermal had been missed at that height. This is where a flat glide angle really counts.

To those who have never experienced a final glide after a long goal flight, it is difficult to describe the excitement when it is realised, catastrophies excepted, that the thermal you are now in is going to get you back. The temptation to take too much height usually proves irresistible, this flight being no exception. So, Woolfox Lodge safely 5,500 ft. below, we dived elatedly homewards from beneath the only remaining cloud in the sky, able, at last, to relax, eat an apple and admire the countryside. England really did look very green and pleasant.

Landing at 19:00 hrs. I was aware of the value of an early start for a task such as this, and thanks are due to those gallant pilots who let me go to the front of the aerotow queue, or helped in other ways.

[This flight breaks the UK record at approx. 60.8 km/h., subject to homologation. ED.]

In retrospect, it may have been wiser to attempt a triangle of a Newbury, Llangollen shape in order to take advantage of the stronger winds in the west. Who knows? An initial into-wind leg in cloud street conditions is well worth considering, especially if you have



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provision for water ballast, because it is then possible to take full advantage of those tanks you paid for, immediately you set off in the weak morning lift. Not thinking to carry ballast resulted in my losing a considerable amount of time in the first half of the flight.

On this day, I was almost sure that there would be cloud streets, because the weather situation was almost identical with that of 27th July last year, when 450 km. was managed around the same triangle, but starting much later.

As far as Rearsby is concerned, a depression 300 miles south of Iceland, an anticyclone over Scandinavia and northern Europe, and a slow-moving cold front off the Irish coast seems to provide one answer to the 500 km. triangle, but it is then necessary to have a sailplane of at least Dart performance in order to cope with wind. Don't be discouraged however, as in more classic conditions it is possible in gliders of much lower performance. Trying this task? I guarantee you will wonder why you ever thought 300 km. was difficult!

Depending on your point of view and speaking in the absence of weather information in the south, a more sensible task may have been a goal flight to Scotland from Dorset. Flying northwards, a friend reported much stronger thermals and Barry Goldsbrough claimed the first 300 km. triangle completed in Yorkshire. Is anyone game?

(EDITORIAL NOTE: — Chris Lovell's article in S & G Feb.-Mar., 1970, page 18, covers various other weather situations in which a 500 km. triangle could be attempted.)

SAILPLANES, CHAMPIONS, WORLD CONTESTS AND US

By WALLY KAHN

MUCH has already been said and written about the Super Open ships which performed at Marfa. It is an obvious fact that these Super Open and the coming Jumbos are good for the development of our sport, good for the pilots who fly them, but are way out for ordinary mortals on practically every count. The suggested move to sub-divide the Open Class into Open and Super is a step in the right direction but does not, in my opinion, go far enough.

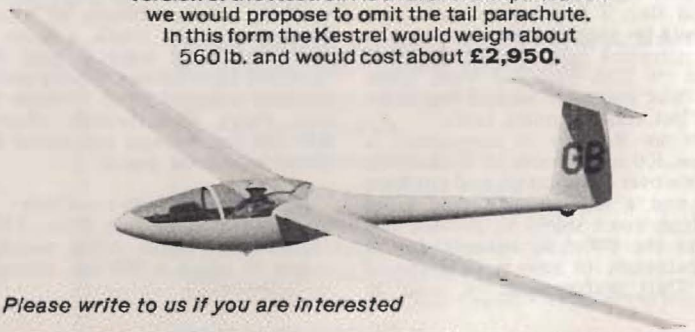
The real problem is that gliding, unlike virtually every other sport, has too many variables. Only one of these, namely the weather factor, disappears at a World Contest when it is common to all competitors.

Normally, the factors which come into play are: local weather conditions, size of country and types of soaring, air traffic and cloud flying restrictions, relative wealth (state control or subsidy) of the local gliding movement and the local pilots and, finally, the different weight and size of pilots.

Because gliding is such an odd sport, I believe that we must create a World Contest structure which will give the greatest number of countries and the largest number of pilots the chance to compete on almost equal terms. This must mean more world classes which will allow pilots to buy the ships they can afford and which they will want to fly in and out of World Championships. At present we are bedevilled by the term "World Champion". Let us conform and adopt the Gold, Silver and Bronze medallist description which is good enough for most other International Sports and which does encourage more classes. The fact that one class is larger than another is immaterial after all, in some sub-sections of certain sports, the

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classes are often unequal in size, yet the winner is still a Gold Medallist and is recognised as such.

If this suggestion were to be accepted, then we could have a class system which would encourage manufacturers to cater for the majority in all countries and provide a much broader base for competitions. In Britain, for instance, we do not have "Texan" or even "Continental" type thermals, and thus a lower wing and span loading than is acceptable in other countries is fairly vital here. Furthermore, because all gliders are either club or syndicate owned, utilisation is important. Pilot weight and size is another factor. There must be a large number of pilots in the world who are too heavy for most of the modern 15-metre ships or cannot fit into some of the Open Class devices. Depth of pocket is yet another consideration, for the higher the new buying price, the higher the cost of C. of A. insurance and repair, to us heavy, large pilots, span, comfort and cost are important, and yet there is very little we can buy to suit us.

My suggestion is that we create four classes. The Standard as now, a new 17-metre unflapped class (designers can stretch their 15 metres fairly simply and without flaps to keep the cost down), 19-metre Open, and finally the over 20-metre Jumbos. In world contests, the 15s and 17s would fly one task but be scored separately, as would the Open and Jumbos.

Whatever the outcome of the current 15-metre class discussion regarding flaps, I am certain that an unflapped 17-metre class would prove to be highly popular in the gliding world. The people who are in favour of flaps in the Standard Class justify their demands by talk of extra performance. Of course every pilot wants better performance, but cost is becoming an increasingly important factor as buying prices escalate. If glider ownership is to be possible for the poorer Nations and average pilots, we must not price them out of our

sport. The unflapped 17-metre will prove to be a superb soaring class for most people, at a price they can afford, and will, in my view, bring more stability to the new and secondhand market.

If something is not done soon, we will be left with the expensive new 15-metre ships possibly with flaps, and at the other end of the scale the very expensive Open machines. If a subdivision is introduced in the Open Class at (say) a maximum of 19 metres and then over 20 metres or more for the Jumbos, then obviously all manufacturers will build their Open machines to the limit of permitted span with flaps, tail parachutes *et al.* Beyond that there will be the Jumbos for the very few. At the present rate of inflation and rising design costs, by 1972 a new 15-metre will cost over £3,000 and the Open class from £4,500. A simple unflapped 17-metre with retracting gear and provision for water ballast might well be built for less than the new 15-metre.

Pilots must realise that more and more the World Championship requirements are dictating the types of gliders being built in the world, which I believe is to the detriment of the whole gliding movement. That is why I am suggesting a new 17-metre class which, in time, might well take the place of the classic one-design idea of yesteryear. The other classes continue their quest for performance and refinement as before, sometimes regardless of cost.

What can be done about all this? I understand that the CIVV decide the policy of World Championship classes. Therefore anyone who agrees with me must write to his National Gliding Organisation, the CIVV representative for his country and even the CIVV Chairman, Herr "Pirat" Gehriger, of Switzerland. The vital meetings are in November 1970 and February 1971. Furthermore, letters to the few manufacturers left in the world would not do any harm. I am personally writing to Lemke-Schneider to ask whether they might build a 17-metre version of the LS-1. A sad note for the one manufacturer who is currently selling a production 17-metre unflapped machine—the Phoebus 17; I am sorry to tell you that I and a number of others I know do not fit! (The Phoebus is now out of production. ED.)

NEW WORLD RECORDS GALORE

SINCE the 4th July, the last non-competition day of the World Championships at Marfa, no fewer than 6 world records have been broken in the USA. Also British pilots have been able to claim various UK records recently. The following list is, of course, subject to homologation. (See also page 435).

INTERNATIONAL GLIDING RECORDS

	Single-Seaters		
Distance (joint claim)	W. A. Scott (USA), 26.7.70, ASW-12	approx.	1160 km.
	B. Greene (USA), 26.7.70, ASW-12	approx.	1160 km.
Goal and Return	W. A. Scott (USA), 3.8.70, ASW-12	approx.	860 km.
100-km. Triangle	K. Holighaus (Germ.) (in USA), 4.7.70, Nimbus ..	approx.	148 km/h.
100-km. Triangle	W. Neubert (Germ.) (in USA), 5.7.70, Kestrel 22 ..	approx.	153 km/h.
	Multi-Seaters		
100-km. Triangle	I. Prue and Caroline Skeith (USA), 26.7.70, Prue 2	approx.	115 km/h.

BRITISH NATIONAL

	Multi-Seaters		
Distance	J. S. Fielden and Mrs. V. Fielden, 14.8.70, Bergfalke 3	approx.	420 km.
Goal Flight	J. S. Fielden and Mrs. V. Fielden, 14.8.70, Bergfalke 3	approx.	420 km.

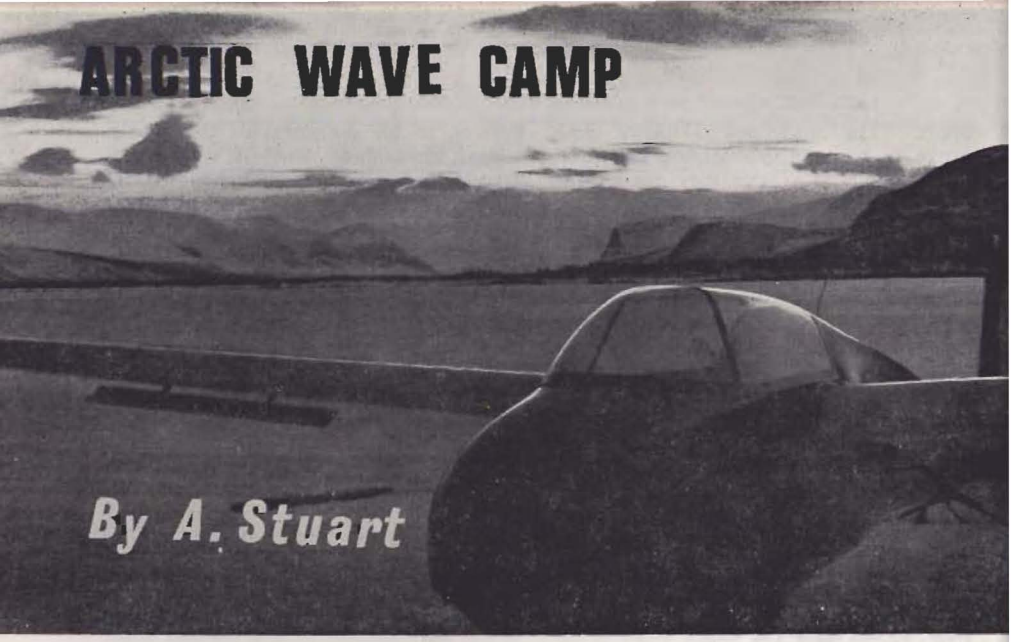
UNITED KINGDOM

(Both British National records above also apply to the UK records)

	Single-Seaters (Women)		
Goal and Return	Angela Smith, 14.8.70, K-6E	approx.	303 km.

Other records were published in the Aug.Sept. issue of S & G, page 311, and Jun.-Jul. issue, pages 222 and 223.

ARCTIC WAVE CAMP



By A. Stuart

IN a recent issue of S & G a correspondent complained about the plight of the tall pilot. I sympathise. At 6ft. 7in. I find the space left for control movements virtually non-existent. But the answer is simple, let him come to Finland and join the Cumulus Flying Club, where he can join as a non-Swedish speaking foreigner, (most of the club members belong to Finland's Swedish speaking majority). This is what I did. They didn't buy their K-6E just for me but they did sit me in the cockpit at the club's winter quarters in Helsinki — while they had a good laugh, they rebuilt it to fit me, and finally they made it easy for me to fly in this fantastic country, and fantastic it really is. For a pilot as bad as me to be able to fly his five hours on his tenth solo flight, and increase his total flying time by 50 per cent. in the process demands huge lazy thermals and endless summer days. Finland has both.

Hazards there are some, landing out is difficult in this land of lakes and forests. There is moreover the special Finnish distraction of landing immediately over the club sauna, which is reserved for ladies in the afternoons. It is also disconcerting to find, when flying below the prescribed ceiling of 4,500 ft., a DC 8 on finals for Helsinki airport, some few hundred feet below you.

On a recent visit to Sweden I stayed with the President of the Kiruna Flying Club, Stig Ericsson. It had taken me nearly twenty hours driving to get car and trailer here from Helsinki. Kiruna which is north of the Arctic Circle is reputedly the largest town in the world, where a single huge mine dump presides over a major piece of wilderness, which for some eccentric Swedish reason has all been included in the town's municipal boundaries. Stig, whose English is as accurate and full of gusto as his flying, remarked to me, as a luckless member of the club brought the brand-new Libelle down without lowering the wheel, "Hardly a landing would you say, perhaps more of an arrival." However, one can afford to make a joke of it as the Libelle was landing on the club's unique airfield, a snow cleared stretch of frozen Pirttivuopio lake. The ice airfield has many advantages, apart from be-

ing kind to skidding glass-fibre, for one thing the landing strip is indefinitely extensible, in this case 50 km.

There are of course disadvantages, the flying season at Pirttivuopio is restricted to two months, April and May, after the winter and before the ice melts. The club tried to get permission to build a summer airstrip on the island in the lake but were unable to obtain this. So in the summer they fly circuits from the municipal airfield and look longingly at the wave forming 50 km. away in the mountains.

During the spring period, however, Pirttivuopio is the Portmoak of Scandinavia, then the Kiruna Club run a two-week wave club, this year 78 pilots flew 350 hours in 14 gliders. The wave around Pirttivuopio is not too fussy about wind direction, although the best wave occurs when the north-west wind rolls over Kebnekaise (Sweden's highest mountain) and down the east-west lake; then spectators get the astonishing sight of seeing tug and glider rising apparently vertically immediately after take-off, the lowest release height recorded to contact wave here is 250 ft. The mountain ranges, to the north and south of the lake, also produce very respectable wave and these in fact were what we used this year. I climbed from 1,500 ft. to 13,136 ft., so my log book now contains a certified Gold C height ready for the improbable day when I can attempt the 300 km. The highest altitude reached from this site is 30,000 ft. and this was accomplished in a north-west wave. This year no one got higher than 16,500 ft., and although ten pilots achieved Gold C height, no Diamond climbs were made, but most pilots regardless of experience managed to contact wave at one stage or other. The only problem with the north and south wave is that rotor cloud tends to hang about along the valley and over the airfield which makes landing a rather dramatic undertaking. On the other hand, however, even on poor days the north and south waves are usually strong enough to allow long lazy beats up and down the valley in zero sink. The standard method of completing Silver C distance is to release at 1,500 ft. at the head of the valley and then fly, without circling, to Kiruna airport which is 50 km. to the east.

Stig would like more foreign pilots to come to their camps, many more gliders can be catered for. When the strip gets too crowded they just clear another one. Tugs are no problem, they are provided locally and by the Helsinki Technical University Group which aero-towed their PIK-12 from Finland. The main problem of course is the distance, and also the spartan like bunk huts, they are well heated but contain no washing facilities, so if you don't mind cleaning your teeth in the snow, this is the place for you.

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FOUR DAYS IN A K-6

By CHRIS WILLS

A high pressure system over the country on 29th July, made me think of trying for my 300 km. Diamond, a goal which has eluded me for longer than I care to remember.

At Lasham there exists a feeling that a triangular flight is the only way in which to claim a honourable Diamond. I therefore decided on Wednesday, 29th July, to reconnoitre Chedworth airfield, the first TP of one of our better known 300 km. triangles, but by the time I had reached South Marston, home of the Swindon club, the weather looked so poor ahead, and it was clamping behind, that I decided to return to Lasham. On the way I heard Brennig James on the radio on his third round of a 100 km. triangle, urging me to stay up as conditions might be really good later. So having reached Lasham at 18:00 hrs. I set off again on the local 100 km. triangle, aided considerably by Brennig's enthusiastic encouragement. He was now on his fourth time round the 100 km. triangle!

I reached 7,000 ft. near each TP and made it easily back to Lasham, landing at 19:30 hrs., having done 248 kms. and I had been airborne for 7 hours.

Thursday, 30th July:—This was to be the day of the big attempt. I got to Lasham by 09:30 hrs., and everything was made ready, but the weather was slow to start. Every few minutes I wrote out a different goal declaration intending to hand in one of them before take-off. At last, at mid-day, the sky started to look promising in the west, and I selected the Frome, Banbury triangle, the only one of my declarations I thought would be possible, and handed it to an observer.

It was the one triangle I liked to do least of all, as due to active firing ranges, restricted areas, and the Lyneham Control Zone, it would be necessary to make detours which would add up to a flight of over 400 km. However, I detoured south to Salisbury and got back on track at Longleat just before the first TP. Here I needed more height—the lions were clearly visible below, but over Longleat house I found strong lift, and the question now was would there be lift in the Keevil valley?

Contrary to the predictions of "Zot" Zotov, who was flying somewhere in the south, there was lift in the valley. This allowed a fast run downwind round the Lyneham Zone and up the second leg towards Banbury. Having photographed Banbury Cross, we now started to descend against the strong SW wind and I began to realise that I would not get home. After a terrific struggle at 700 ft. near Upper Heyford, however, I finally got up again aided by the smoke of a fire and pressed on, catching a glimpse of Blenheim Palace and its romantic beauty. There was more lift near Oxford, but beyond it looked pretty hopeless.

There were enthusiastic welcomes over the radio from Jock, CFI of the RAF Chilterns (Benson) club, and cries of "chicken" and "Kronfeld would never have given up until a potato struck his skid" from "Zot" still airborne in the south.

So I struggled on and on, until eventually I stopped on a great lump of turf on what was once Hampstead Norris airfield. The noise of flints striking the bottom of the K-6 caused me the most anxious moments of any landing I have ever made.

Distance, 265 km. Actual distance because of detours was probably over 320 km. Duration 7 hours.



Chris Wills. Photo: Mike Riddell

Friday, 31st July:—After the previous evening's retrieve, and having also seen my only crewman off to Belgium, I arrived rather late at Lasham. Of course, thermals had started early today, and by the time I was ready and out to the launch point it was mid-day.

I still carried the usual large number of triangle declarations, but as it was late, I was persuaded that the only chance of a Diamond would be in a straight line to Yarmouth, which meant I had to go to Salisbury as Lasham-Yarmouth is not far enough. Bobby Cole had done this trip two days ago, but he had not told me that the last 30 miles were done into wind in dead sea air.

So rather mistakingly I declared Salisbury-Yarmouth, a goal over 350-km. away, trying to do the impossible from a mid-day car launch at Lasham. Assuming that lift would cease at 18:00 hrs. I would need an average speed of 60 mph.; I also had to get there or land on an airfield so that I could come back by train and do my own retrieve!

Conditions were good, however, and after rounding Salisbury I raced to Newbury going fast enough so far. From Newbury to Dunstable lift was below standard and I had to slow down, and it was after 16:00 hrs. before I passed Dunstable, but I considered it still just worth it to go on. So on I went towards the east, flying over endless corn fields; by now there were only a few clouds left, but to the north of track, somewhat later, I saw what looked like a cloud street.

I desperately needed more speed as I still had 90 miles to go. These clouds would be my last chance. They gave good lift and on I went past Cambridge and over Thetford forest, but after this the lift started to die. After getting to Hethel, the Lotus car testing airfield, I found some weak lift and Norwich was in sight, with the last two clouds in the sky between me and Norwich. The first one was reached too late, but the second one gave powerful but broken lift under it and I could make little sense of it; however, it allowed me time to decide what to do next.

In sight, at the other side of a considerable number of houses, was what I thought Norwich airport, Horsham St. Faith. I recollected that Alf Warminger had once said that he flew from there. So putting all my faith in the K-6's glide angle we set course over the houses, watching the situation like a cat, but the air was rising; unknowingly I was flying into a 10 knot sea breeze! This was what had broken up the lift under the last cloud and would have been all that was necessary to get me to Yarmouth and a Diamond. Horsham St. Faith was reached with 480 ft. in hand. I had covered 350 km. in 6¾ hours.

Great hospitality was shown by the Airport Controller, and I was put in touch with Alf Warminger who duly came over to meet me. He invited me to his house in Norwich to stay the night, and I was made to feel most welcome by his wife and family. It felt like a holiday abroad, and there in Norwich harbour were foreign ships, one of which had recently been loaded by Alf, a paper merchant, with paper. I cannot thank them enough.

During the evening we decided what to do. The possibilities were:

1 Go to Lasham by train and fetch the trailer.
2 Have an aerotow retrieve—too expensive.
3 Try and organise a retrieve from the other end by road, or
4 Have an aerotow and try to fly back, at least some of the way.

The forecast sounded reasonable for tomorrow, and Alf kindly offered to tow me to the gliding site at Swanton Morley. A telephone call home decided the issue and the Tiger Moth was laid on.

Saturday, 1st August:—It was mid-day again before I released over Swanton Morley. I had declared Lasham via Devizes still hoping for that elusive Diamond. I set off in good spirits, the conditions were quite good although very hazy, and I kept in touch with Alf over the radio.

In East Anglia the clouds were overdeveloping, and I got rather lost south of track in the poor visibility; a kindly Skylark pilot, however, was able to locate me and soon Cambridge appeared 5,000 ft. below.

With conditions now improving, I was able to go at a steady 65 knots and I was well on the way to Devizes. Wally Kahn,

flying locally at Lasham, told me over the radio that towards Devizes conditions looked really good so I hurried on, but when I came to the Devizes valley about 8 miles west of where I should have been, I found the weather rather poor.

Taking all the height I could, I rounded the TP and made my way to Salisbury Plain. Here the sky became suddenly void of cloud or lift and I had visions of yet another premature end to the flight. However, I still had time on my side and could not believe that I would have to land now. But luck was on my side this time and I was able to continue, and as conditions improved again my only problem was to steer an accurate compass course in the murk so as not to fail to pick up Lasham.

I arrived at Lasham, with height in hand, at 18:00 hrs. Distance 320 km. Duration 6¾ hrs.

I had been in the K-6 cockpit for almost 28 hours in four successive days and had flown nearly 1200 kms. I hope that some pilots find it easier to get their Diamond than this!

SURVEY OF WINCH & AUTO-TOW LAUNCHING

By NORMAN FOX—Cambridge University Gliding Club

LIKE most clubs, we at Cambridge spend considerable time and energy discussing how to improve our launching rates and reduce the cost per launch. This year we decided to find out what other clubs felt about these problems, so a short questionnaire was sent to a random sample of 27 clubs in the U.K. So far 15 clubs have replied, and I should like to thank them wholeheartedly for doing so. It seems worthwhile at this stage to set down some of the more interesting results which are emerging, in the hope of encouraging further discussion of a vital topic.

Winching

We had hoped to find some generally accepted winch design, but were sadly disappointed. A bewildering variety of shapes, types and sizes seem to exist. Fifteen winches were described as follows:—

DIESEL
AEC 7 litre (Converted bus)
Regent 9½ litre (Converted bus)
Leyland 7 litre (Converted bus) (2)
Daimler 8 litre (Converted bus)
Gardner

PETROL
Bedford 3 ton (2)
Jaguar 3½ litre
Oldsmobile V-8
Dodge V-8
BMC 3 litre
Ford V-8 (2)
Rolls Thorneycroft

As a result of careful perusal of these data, we are sadly no nearer a conclusion to the best engine in use, although one school of thought is in favour of a fairly high-speed diesel, such as a Perkins P-6, driving through a fluid flywheel with automatic gearbox. As a first step in making this decision, it would be invaluable to know the desirable torque characteristics of a winch engine, and we should be delighted to hear from anyone possessing quantitative data on this aspect. Apart from this, however, we have obtained a lot of useful information about winching operations. As might be expected, the converted buses were mostly self-propelled (eight in all), while the others required towing to the appropriate point. Most winches used paying-on gear, even when solid wire was employed, but three did not. The extra complication of paying-on gear seems unnecessary, and since some clubs manage without it we shall certainly try and do the same. One club even manages without parachutes on the cable!

Four winches used solid wire, ten stranded cable, and one seemed to thrive on both. Solid wire varied from 11 swg to 13 swg. Suppliers of cable are listed herewith:—

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The average quoted life expectancy of solid wire was about 350 launches, although most clubs were not sure about this, perhaps understandably. Stranded cable, on the other hand, was quoted as having a life of some 3,000 launches and was usually 5 mm diameter (seven strands each having seven wires).

Most clubs used tractors to retrieve cables, and the number of cables laid at one retrieve varied from four (two clubs) to one (five clubs), and some clubs pulling out two cables at one time. Quoted figures for a satisfactory number of launches per hour averages six per cable.

Auto-Towing

Only six replies have been received from clubs using this method of launching. It is interesting to note that clubs seem to use one or the other method, but not both. Whether this is because clubs have carried out detailed cost analyses and have decided on economic grounds, or whether the decision is simply due to a strong body of local opinion, is not disclosed. The equipment is certainly far more standardised than for winching, four clubs using the Ford F-100, one a converted Austin lorry (prime mover) and the other a Jaguar car fitted with a Ford diesel engine. Otherwise petrol is the fuel used, although one of the F-100 cars has been converted to run on Calor gas.

All use solid wire (9 swg to 13 swg), but stranded cable has been used occasionally by one club. Suppliers are the same as for winch cables. The life of the wire depends on the surface conditions, and figures of 200 to 800 launches are quoted. A satisfactory launch rate is given as eight per hour, on average.

Costs

On the above figures, cable seems to cost about 6d. per launch, whether solid or stranded. Fuel is very much an unknown quantity, but an intelligent guess is probably around 1s. 6d. to 2s. per launch, based on four to five launches

per gallon. Fixed costs, depreciation and repairs, will obviously depend on the type of vehicle used, but a reasonable assumption would be £100 for each item yearly. With 4,000 launches yearly this means a cost of 1s. per launch.

Adding these together brings us to a total of somewhere in the region of 3s. 6d. per launch. We intend to carry out a detailed analysis of our costs in this area during the coming year.

Conclusions

It is probably too early to draw any really meaningful conclusions from such a small sample, but nevertheless some interesting thoughts are emerging. For instance, although auto-towing produces eight launches per hour from a single towing vehicle, compared with six from a single winch cable, those clubs towing out two or more cables at a time seem to get six launches per hour from each of them. This means twelve per hour from a two-drum winch. It seems a good principle therefore, always to build multi-drum winches rather than single drum (and without paying-on gear). There is always an exception to every rule, and one club does manage to achieve sixteen or more launches per hour from one winch cable, by using a retrieve winch.

The reasons for low launch rates in practice seem to be the perennial "fumbles" and the slow speed of cable retrieval by tractor. At least one club has partly overcome this problem by using its self-propelled winch to retrieve the cables at a reasonable high speed. Perhaps this is the answer.

Another problem is the inadequate communication between launch and winch points. Has anyone tried using a modulated light beam? It might be more "pilot proof" than radio.

Obviously we have only started to scratch the surface of a most interesting subject. One of the objectives of any gliding club must be to provide a first class launching service at the very minimum cost, and I hope discussion will be generated on this subject. We certainly have much food for thought, and plenty of excuse for propping up the bar on winter evenings.

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THE POLISH COBRAS

IF one takes into account that the Cobra 17 prototype had its maiden flight on the 17th March, 1970, about 10 weeks after the Cobra 15, and that they had to be shipped to Marfa shortly after, even the Poles must have been surprised with the excellent results their pilots brought home.

Makula's Cobra 17 was the only 17-metre glider amongst the leaders — gaining 5th place in the Open Class, while Wrobleswki and Kepka secured 2nd and 3rd places in the Standard Class.

The Cobras are a mixture of wood and glass-fibre. The trapeze-outlined wing is covered with ply/epoxy sheets, and the sandwich type ailerons are mass-balanced and pushrod-controlled.

The wing, Wortmann FX 61-168, FX 60-1261 mod., has been fitted with conventional type airbrakes and there is provision for water ballast in the torsion box. In the case of the Cobra 15, the water ballast cannot be released in flight, while in the 17 the water can be got rid of in less than one minute.

The all-moving T-tail is fitted on a swept-back fin and rudder, is mass-balanced and fitted with a spring trimmer and geared tab. Both versions have been fitted with mechanically operated, retractable undercarriages.

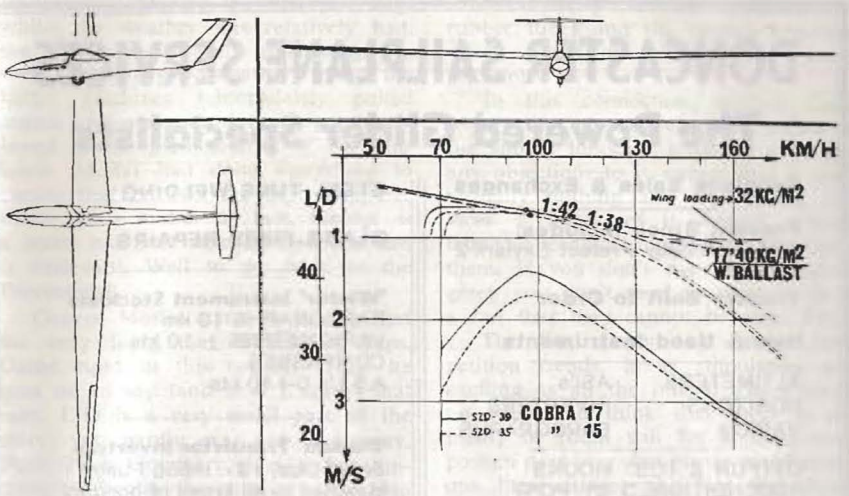
Technical data	**Cobra 15**	**Cobra 17**
Span, metres	15	17
Wing area, sq.m.	11.6	12.3
Aspect ratio	19.4	23.5
Wing loading at AUW 370 kg. for 15m. kg/sq.m.	32	
AUW 385 kg. for 17m. kg/sq.m.		31.4
Empty weight (incl. instrum.) kg	275	295
Max. AUW (with ballast for 17m.)	405	490
Pay load min. kg.	65	65
max. kg.	130	135
Min. sink at 370 kg. at 73 km/h. for 15m. m/sec.	0.68	
for 17m. at 385 kg. at 65 km/h.— m/sec.		0.7
Glide ratio at 97 km/h. for 15m.	1:38	
(with ball.) at 105 km/h. for 17m.		1:39.1



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THE 1970 SYMPOSIUM

By PHILIP WILLS

THE proceedings of the Second Symposium on Competitive Soaring is as formidable and readable a book as the first, almost frightening in the intensity of purpose evinced by its contributors.

Gone are the days when one glided because of the romance and love of the air, and if you won a contest it was an extra bonus. At last it has been said—and by Nick Goodhart of all people. "Let's face it, you are really only a computer sitting there and your job is to sense all the inputs that are available. Some of them tend to be rather more interesting but really not so valuable."

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You send up a thermal snifter to ensure no-one starts until it is quite certain everyone in lead-sleds or whatever, can stay up. This effectually knocks out the blighter who might enter on a low wing-loading aircraft and whisper off before the others on a hairline edge of skill and luck. You never set tasks on doubtful days. You prohibit cloud-flying.

Ditto re-lights — although I accept these should be prohibited for short speed tasks because these are computer jobs anyway, so it is no good trying to pretend otherwise.

You have then got everything set up for the human computer to win. But you would still be better off with the electronic variety, because the human one will still have certainly one, and possibly two, weaknesses. The first is that hard as he tries he may reduce his chances by being interested in something irrelevant such as the sheer joy of life, and the second is that, unlike the computer, he will **want** to win— he might want to win so much that he might cheat. We haven't got to that yet? Lots of pilots were deliberately flying their gliders overweight at Marfa, to get better speed performance, but invalidating their C of A. And nearly all the Standard Class gliders failed to meet the airbrake requirements.

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Philosophy? During the first few days whilst the weather was relatively bad, the daily results were interesting. As soon as strong, good weather arrived, the better machines remorselessly pulled ahead, and everyone, I hope, got pretty bored at the predictability of the outcome. Moffat had done everything to ensure that he was the best computer there. As a matter of fact, George is a pretty nice sort of chap also, but this is irrelevant. Well to get back to the Proceedings...

George Moffat starts by saying that the only thing that matters is ships. Damn right in this context. Then he goes on to say (and how I agree) that max. L/D is a very small part of the story; you hardly ever use it anyway. Next, Nick Goodhart gives a full rundown on Sigma—the ultimate in the ship philosophy, but he makes it sound a pretty grim sort of fun.

Throughout the meeting there is a good deal of discussion about flaps, and all agree they are a Good Thing. With this I heartily agree; the International fuss about them seems to make out they are dangerous, difficult and expensive devices. They are the exact opposites; safer, easier and cheaper than airbrakes. Half-wits have been flying with them for thirty years or more, in fact in the years to come, CIVV might one day prohibit the use of airbrakes in the Standard Class, in favour of compulsory speed-limiting flaps.

The paper by Gene Moore on Variometer Systems is extraordinarely interesting, and continually throughout speakers are saying that a fully effective compensated vario is far the most important of all instruments—and one does not yet exist. Problems arise both with the instruments and the compensator. Did you know—I didn't—that the sensitivity of all thermal-type varios drops around 10% every 3,000 ft. whereas the leaky capsule types are almost unaffected? And diaphragm-type compensators are heir to endless ills, due to accelerations, extra capacity in the multitude of rubber tubes and the capsule chamber itself, restrictors, and other complications.

In this connection, neither Gene Moore, nor anyone else ever refers to the simple innocent blister. I can't see any objections to it, except that it costs virtually nothing and not having any vices I know of it doesn't require immense technical ingenuity to overcome them. If you don't dye your whiskers green you don't need to have so large a fan that they cannot be seen. Pity.

The final paper, on future competition trends, is as stimulating and exciting as all the others. There seems no reason to think that there is not plenty of room still for a third symposium next year. But please could someone there convey the fact that flying sailplanes in competitions is fun even if you don't win, for the world is only tolerable to live in if you believe that beauty and grace and adventure have values of their very special own!

PROCEEDINGS OF THE 1970 SYMPOSIUM ON COMPETITIVE SOARING

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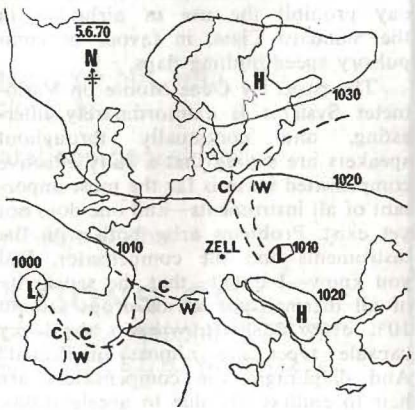
By RICHARD FORTESCUE

JUNE 1970 was a good month for gliding at Zell-am-See in Austria. There were six days with cloudbase at around 10,000 ft.asl., long lines of 4-8 knot thermals and no aggressive cu-nims. Not quite the very best the Alps can give, but good enough for long mountain flights. On June 5th, 26 cross-countries were flown from the site, covering just 10,000 km. in all. Six of these flights cleared the 500 km. mark. By the end of the month this distance had been flown twenty times (a K-6E going 600 km. for good measure), a couple of national two-seater records had been broken on the 300 km. 'milk run'; and a Phoebus had covered almost the whole of the east-west range of the Alps to complete a 480 km. goal flight to Lausanne, in Switzerland. This sort of flying must be hard to equal within two days' trailing range of sites in the UK.

Pilgrims from the Cambridge club at Zell during this month felt, nevertheless, that these conditions had been earned the hard way, for 1969 had not produced a single good cross-country day while we were there. The only consolation had been vertical, a good wave, which, if you had enough oxygen, took you just to 5 km. above release height (only Tony Maitland did have enough!). Horizontally, in spite of being armed with 1:40 gliders we got nowhere. We still have memories of two other occasions, when Zell was hit by wet spells getting on for two weeks on end. June 1970 was really something of a challenge to the site to redeem its 1969 reputation. It did.

Austrian pundits fly 500 km. triangles from Zell, but these tasks need a lot of local knowledge, both of the landable areas and of the sources of Alpine thermals. There seems to be almost as much difference between these 'locals' and the visiting pilots from the Fens (or Germany), as between the Austrian ski-teacher and his "flachländer" pupils. For us (and for a good many Austrians, too) the 500 is flown as a 380 km. out-and-return westward from Zell to St. Anton-am-Arlberg, continued by 140 km. overflight eastward beyond Zell to the grass landing strip at Trieben. This route follows an almost continuous east-west valley system, with no high 'walls' to cross. Thermals are formed at quite close intervals along the sides of the valleys, on good days, and the 'blue gap' problem then usually arises only when a valley has to be crossed, or in the evening. In the vicinity of Zell (2,450 ft.) one is clear above the tops on the north side at about 8,000 ft. This makes it possible to start earlier in the morning than from sites surrounded by very high mountains, while the gliding school at Aigen-in-Ennstal, 40 km. short of Trieben, is very helpful to morale at the other end of the day.* If you dislike breaking your glider (or yourself), it is advisable to know where there are reasonable comfortable landing fields along the route. They do exist within range at all stages except the most westerly, where reasonable and

* Aigen is a military airfield with some restrictions.



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comfortable are quite the wrong words for the only known approximation to a landable field, at Landeck.

On June 5th, lift started at about 09:30 hrs. After Dr. Schubert, who flew a 500 km. triangle by way of practice for Marfa, three Std. Libelles from Germany were towed off. I got away next in the Phoebus, and then, just before 10:00 hrs., Sigfrid Neumann of the Cambridge club was launched in his Diamant. The five of us had all declared Galzig, a ski-lift centre above St. Anton, as turning point, planning to fly on from Zell to Trieben if our times were good enough. At first this seemed unlikely as the forecast weather had included thundery rain and 10-15 knots east wind. In the event there was no sign of either of these obstructive activities. The only doubt-provoking section of the flight arose near the turning point, which was in the middle of a large area of unseasonable snow. Thermals, as one approached this area, were down to 2-3 knots, and one finally had to leave the tops and press out into the blue to glide round Galzig, firing off the camera, just when the comfortable fields were furthest away. A marked disinclination to hang around this turning point longer than was necessary was perhaps inimicable to cool photographic thinking; anyway, both Sigfrid and I shot with cameras still set at the 7ft. focus used for declarations. (Neurosis generated later when we realised our crimes against optics, fortunately turned out unfounded; small apertures and short focal lengths had still produced entirely recognizable pictures of Galzig). After rounding, I arrived back at the side of the valley too low to clear the mountain tops. Looking *upward* at ground when flying, always seems wrong to me and the world seemed a much better place when a sunny basin and ridge produced lift, in text book style, so that the summits re-



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verted to their proper lowly status again. Cloudbase at this end of the run was about 1,000 ft.; according to the barogram, my low point was just on 9,000 ft.

Sigfrid was still some 10 minutes behind me at the turning point, the first 190 km. having taken both of us just about 3 hours. We returned to Zell in a series of swoops between thermals, pulling up sharply each time the lift was felt. Only occasional circling was needed to redress the slow loss of height, or to climb up before the valley crossings. An average speed of 90-100 km/h. got us to Zell around 15:00 hrs. with the Diamant now ahead and conveniently marking each thermal for me. The home airfield was a very tempting site, but the clouds to the east showed lift with no cu-nims, so 500 km. seemed really on at last. By 16:00 hrs. when the thermals were getting more scarce, Sigfrid was already on a 50 km. final glide, though Trieben was still hidden by a kink in the valley system. After a full aerial reconnaissance of the site, he landed at about 16:45 hrs., having flown 520 km. in under 7 hours from release. Despite taking one more thermal to arrive with an even bigger height reserve, I finally had to wait, circling at 600 ft. in the output of a metallurgical chimney before the Diamant was towed clear from the exact centre of the grass strip. The first Libelle arrived a satisfactory half-hour later, the other two later still after a bit of scraping as the lift died. Thanks to aero-tow retrieves supplied by the gliding club at Trieben, Sigfrid and I were back at Zell in time for supper, almost exactly twelve hours after meeting at 07:30 hrs. to push gliders out and agree that it was unlikely to be a really good day. Not knowing of the spate of 500's to come; by supper-time we were feeling that we had done quite well.

This feeling of well-being was somewhat devalued about two weeks later, when eleven more characters flew the same course successfully. One of these devaluers was Tony Maitland, flying the same Diamant. It was a case of third time lucky, as his first attempt had ended with a landing at Innsbruck (minus ASI in a spectacular electric storm and vicious precipitation wind) while the second had finished in a field in the Zillertal after a lost battle with 'down' in a shower. But on June 21st, despite having been lured into a late night at the Alm Bar the evening before, Tony was fitted into the Diamant cockpit in time to take off at about 10:30. He duly landed at Trieben, some 7½ hours after release, at 18:15. (The day lasted better than June 5th, a K-6E landing at Trieben at 19:30 after being airborne about 10 hours).

Tony's post-flight neurosis arose more from the barogram than from the photographs. Perhaps the barograph had had a late night too! anyway, the trace became rather mysterious toward the end of the flight. Official observers at Trieben and Zell were not upset by subsidiary eccentricities however and a properly certified claim for a 520 km. goal flight can be submitted. If the 'Authorities' accept it, just two of Tony's flights at Zell will have transferred him from Silver C to Gold C plus 3 Diamonds.

Another three 500's followed near the end of the month, but this time the UK was not represented. We had reverted to flying just for fun. If anyone needs them, there are plenty of challenges still to be tackled. None of us has yet done even a 300 km. Alpine triangle. Nobody we know about has soared the complete east-west range of the Alps, starting in Austria, skipping Switzerland and landing in France. Before we knew enough to venture far afield, we had some days so good that, with modern gliders, this could be 'on'. Meanwhile, if you are lucky enough to have the opportunity and so long as those rain spells stay away, why not fly over the Alps just for fun?

GLASS-FIBRE GLIDER DEVELOPMENT IN THE SIXTIES

By J. L. SELLARS

WHEN a radical innovation is introduced in a short period of time and in another country, we may be forgiven if we find ourselves knowing more about the end-product than we do about its history. Such is certainly the state of knowledge in this country regarding the glass-fibre glider, which has developed in less than a decade from a single research prototype to a thriving West German export industry.

The first generation glass-fibre gliders, i.e. the Phoebus, Libelle, ASW-12, BS-1, Cirrus and Diamant have all been seen in the U.K., and the second generation, i.e. the ASW-15, Std. Cirrus, Kestrel and LS-1 have been well reported in the gliding magazines, and indeed are currently flying in U.K. Most enthusiasts know that such men as Nagele, Eppler, Hütter, Hänle, Lindner, Stender, Bircher, van Voornveld, Waibel and Holighaus were involved with these sailplanes, but are uncertain of the exact relationships.

After reading the excellent articles written by Anne Ince (see ref. 10 and 11) after her recent tour of West German manufacturers, I set to and amplified the subject with other authorative references collected over the last few years. This, supplemented by information gleaned from my own contacts with the German industry, forms the basis of this "potted history" which I hope will be of interest.

Beginnings at Stuttgart, 1958-62

Whilst there must have been many minds elsewhere working along similar lines, the first practical results emerged from the Akaflieg (Academic Flying Group) attached to the Technical University of Stuttgart. Situated in pine forests outside the great industrial complex of the city itself, the University contains the wind-tunnels in which Eppler and Wortmann developed their famous wing sections.

Credit for the first glass-fibre glider goes to Nagele, Eppler and Lindner, who flew the FS-24 Phoenix in 1958. Later, the team was employed by the aircraft firm of Bölkow and the design evolved into the Phoebus A (15 m.) which flew in 1964, and appeared at the 1965 World Champs. at South Cerney with Lindner as pilot. Rudi Lindner ran the production of the later versions of the Phoebus near the delightful little country town of Laupheim, south of Ulm. Nagele is in the main Bölkow design office at Munich, still reputedly working on gliders, and Eppler recently returned to the University, and airfoil design.

While the above three were developing the Phoebus, another team started up at Stuttgart. This consisted of Eugen Hänle, an expert in highly loaded glass-fibre structures, and Professor Hütter—I believe this to be the same Ullrich Hütter as was active in pre-war German glider design. Hänle and Hütter flew their 15-metre H-30 in 1962, and Hänle formed the Glasflügel company with his wife Ursula in 1964, to produce the machine under the name Libelle (Dragonfly), thus catching up with the Phoebus team after a later start. Glasflügel produces the Libelle series and the 17-metre Kestrel which first flew in 1968.
(Slingsby's are now associated with them)

A Proliferation of Prototypes—1962

In addition to the H-30 of Hütter and Hänle, a spate of glass-fibre prototypes made their maiden flights in 1962.

The Braunschweig Akaflieg produced their 15-metre SB-6 and 7; the latter was the first glass-fibre entrant in a World Championship, Argentina, 1963. None of the Braunschweig machines were ever taken up by a manufacturer, but one of their designers, Björn Stender, was commissioned by wealthy enthusiasts Hans Boetch and Hellmut Lasch of South Africa to produce an 18-metre "super-glider".

The resulting BS-1, incredibly, also flew just before the end of 1962, but young Stender tragically died because of a structural failure while flying the prototype. The design was taken over by Glasflügel and re-engineered around the structural principles and controls of the



A "production line" of designers at Marfa. L. to R.: Klaus Holighaus, Walter Schneider, Stein Friss, Gerhard Waibel and Edgar Kremer.
Photo: Rika Harwood

successful Libelle. The new prototype flew in 1966 and was subsequently developed into the BS-1B. Peter Scott was one of the customers for this rather exotic bird, which now appears to be out of production.

The glass-fibre game now spread into neighbouring Switzerland, where Bircher and van Voornveld, of the Federal Institute of Technology at Zürich, produced their KaBiVo consisting of a glass-fibre fuselage and K-6 wooden wings. Rene Comte persuaded the firm of Flug-und-Fahrzeugwerke (FFA) at Altenrhein on Lake Constance, to take an interest, and the first Diamants were produced with this fuselage and Libelle wings bought from Glasflügel. FFA later produced their own wings for the 16.5 and 18-metre Diamants which first appeared in 1967.

Darmstadt Success Story, 1962-64

Back in Germany at the Darmstadt Akaflieg, Alfred Puck reversed the Swiss philosophy and built a glass-fibre wing for their wooden D-34. In 1962, the resulting D-34D (T-tail) was performance tested against the wooden version, by Hans Zacher, with encouraging results. This led to the construction of the D-45 (V-tail) and the exotic all glass-fibre 18-metre D-36, which flew in 1964.

The majestic T-tailed D-36 sailed through to win the German Nationals with one of its designers, Gerhard Waibel, at the controls. Second place was achieved in the 1965 World Champs., and the success assured Gerhard Waibel and co-designer Klaus Holighaus a place in the German glider industry.

German Industry takes an Interest—1965

Following the interest aroused by the D-36, the firm Alexander Schleicher got hold of Waibel, who produced in the ASW-12 of 1966 a production version of the D-36. Later he completed a new 15-metre design, the ASW-15, which we first saw at the 1968 World Championships in Poland.

Klaus Holighaus joined Schempp-Hirth at Kirchheim-Teck near Stuttgart, manufacturers of the pre-war Minimoa and post-war SHK, and designed the more conservative (than the D-36) Cirrus. Martin Schempp showed me the prototype, which was designed around the SHK control system right down to its V-tail, in November, 1966. This flew early in 1967 and, after a change to a conventional tail, replaced the SHK in production. It won the Open Class, 1968 World Championship. Holighaus, being of restless nature, then built himself the highly exotic 23-metre Nimbus, which flew early in 1969. Also the Std. Cirrus was designed by him. (It was announced at Marfa that Holighaus has taken a 50% share in the Schempp-Hirth factory and that a production version of the Nimbus will shortly be produced. ED.)

Other Efforts

Away from the main German-Swiss development there has been little progress in glass-fibre gliders.

The only significant production efforts have been the French Wassmer Wa-26 Squale, which first flew in 1967, and the Finnish UTU also of 15-metre span.

The UTU was designed by Ahto Anttlia of the Finnish Institute of Technology, and the first prototype was completed in 1962, but broke during loading tests. The second prototype flew in 1964, and the glider is in production by the firm of Oy Fibera Ab at Helsinki.

Some private constructors have made gliders of composite wood and glass-fibre construction. Paul H. Tingskou (a Dane domiciled in Canada) was responsible for the Viking and Dreamboat designs. In the U.S.A., Stephen T. Bowen flew an unnamed 15-metre ship with composite fuselage and wooden wings in 1968, and was reported to be working on glass-fibre wings.

In any aviation history there is the inevitable mystery machine to which only a single reference can be found. In this case it is the Argentinian "Super Albatross"—any offers?

NB. As this article deals basically with the early development of glass-fibre, the second generation of glass-fibre gliders have not been covered in it.

References

1 Ein Schritt zum Kunststoffgruppen-flugzeug. By T. BIRCHER. *Aero Revue*, No. 12, 1962.

2 Einige Beispiele zur Konstruktion und Bau von hochbeanspruchten Segelflugteilen aus Glasfaserkunstoff. By A. PUCK. *Aero Revue*, No. 12, 1962 and No. 1, 1963.

3 Utu—Finnish Fibre-glass Sailplane. *Soaring*, October, 1966.

4 *Jane's All the World's Aircraft*. 1967-68.

5 The High Road to Tomorrow. By H. LASCH. *Soaring*, November, 1966.

6 Diamant Test Report. By D. DELAFIELD. *Soaring*, December, 1966.

7 Flying the Diamant 18. By L. M. RITZI. *Soaring*, April, 1968.

8 The Fibreglass Homebuilt. By P. H. TINGSKOU. *Soaring*?

9 A Case for Composites. By S. T. BOWEN. *Soaring*, 1968.

10 Riding Those Thermals with GRP. By ANNE INCE. *Plastics & Rubber Weekly*, 21st November, 1969.

11 Proving Glass Fibre Laminates. By ANNE INCE. *Engineering Materials and Design*, December, 1969.

A WEEKEND OF RETROSPECT

By DOUG. BIRCH

TWO superbly fine days, complemented by two equally fine days of aviating, formed the basis of a spectacular Flying for Fun Fair at Sywell Aerodome, Northampton on 11th and 12th July.

Promoted under the patronage of the Air League, and financially guaranteed by various affiliated airminded organisations, one of which is the BGA, two days of visual aerial splendour were enjoyed by enthusiastic majority crowds.

The BGA were represented by the Coventry Gliding Club who provided a pictorially illustrated stand where those who were interested could gather information or buy books, ties and various other sundries. Aero-towed air experience flights were also available at £2 per head.

Mike Costin, Laurie Watts, Les Johnson and Sid Gilmore formed the display aerobatic team. Mike, flying his Cirrus impressed everybody with his aerobatic performance, and succeeded in mystifying the gliding enthusiasts present when, in the words of the commentator "The glider will now make smoke" he proceeded to do just this, leaving a spectacular con-trail behind him. The secret, for those who wish to try it themselves, is to fill the ballest tanks with a mixture of water and Fairy Liquid, which when released in flight gives off a good imitation of a VC 10 at 40,000 ft. Mike completed his demonstration with a low-level, downwind high-speed run, executing a tight turn at the end of the field and then landing the Cirrus with the help of the tail-chute.

Laurie Watts captaining the Bocian with Sid Gilmore as his number two also put on an exciting performance in the art of aerobatics.

As a creator of interest, the BGA Scheibe-Falke definitely held its own. Bill Scull, the National Coach, and Godfrey Harwood, complete with jungle green hat and looking for all the world as if he had stepped straight out of one of Somerset Maughan's classic Malayan stories, were kept busy giving people "the facts" of motor gliding. Bill later demonstrated the versatility of the Falke in flight.

Although, perhaps primarily organised for the power enthusiasts, it would have been a fanatically hard-hearted gliding devotee who could not have appreciated the hard work and dedication which had obviously been lovingly applied to some of the older aircraft on show, qualities which both the power and gliding fraternity have in common.

The power aspect of the show seemed definitely directed toward two days of aviation reminiscence. The Barnstormers, under the able directorship of Charles Boddington, created a favourable hallucination of Sir Alan Cobham's flying circus of pre-war years, whilst Ray Hanna (of Red Arrows' fame) took us back in time when he gave a power-house performance in a Mk. IX Spitfire. The Spitfire is to many, myself included, the most aesthetically pleasing aircraft ever to have been built, and is a sheer pleasure and joy to see in flight.

The "Thirties" atmosphere which prevailed in the air was also much in evidence on the ground, Tin Tommy Helmets (2s. 6d.), old flying suits and helmets, maps and microphones, and for the very rich, a bent propellor at £9 10s. were amongst the military miscellanea offered for sale.

With the very obvious popularity of this event, which looks as if it may become an annual on the aviation calendar, it seems that much more can be done to promote gliding to the general public and the aviation world. In this particular case, Coventry GC did an excellent job, but I believe an amalgamation of ideas from various clubs within a reasonable proximity of Sywell (or whichever airfield the display takes place from) could be pooled together, the best chosen and implemented under the guidance of a selected committee. A good static display, covering all aspects of gliding, complete with knowledgeable attendants could perhaps be a start?

Finally, mention must be made of the hardworking ATC cadets who bore the brunt of programme selling, car park attending and general stewarding, all in stifling heat, and wearing best blue.

For the statistically minded 105 aircraft arrived at Sywell, and on the Saturday over 500 aircraft movements took place; this is more than on an average day at Heathrow!

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We regret to report that Charles Boddington, who had organised the entire Sywell display, was killed on 15th September in a Tiger Moth accident while flying in Ireland for the production of a film. ED.

BGA NEWS

Inge Deen

Inge Deen has asked to be released from the post of General Secretary to the British Gliding Association to take up a position in St. Thomas's Hospital. This new job is something she has been interested in for a long time and we have accepted her request with the utmost regret.

She has carried out the heavy duties of looking after the administration of BGA affairs for four years with the greatest efficiency and with an exemplary patience, cheerfulness and friendliness under the pressures that have been inevitable with the changes in organisation and the expansion of the business.

My predecessor as Chairman, Peter Scott, has remarked on the immense debt of gratitude that he owed Inge for her help during the transitional period in the creation of the new structure of the BGA. For my own part, Inge has made it very easy for me to pick up the reins and has done most of the hard work of looking after the Association's affairs. Her departure from the General Secretaryship will be a great loss to the Association and to all of us, not least the staff of the BGA office.

On behalf of the Association, I should like to thank you, Inge, for all that you have done. I am sure that all your many friends in gliding will join me in wishing you the very best in your new career and for your future health and happiness.

K. G. WILKINSON, *Chairman BGA*

BGA Office Hours

The BGA office hours have been changed recently and the office is now open from 09.00—17.00 hrs. Monday to Friday.

Glider Log Books

Clubs and Private owners must realise that the log book of a glider is an important document. If it is not kept up-to-date the C of A of the glider legally, can become invalid.

More important still: when the time comes for the renewal of the C of A for the glider, unless the log book and C of A are produced for the Inspector to examine, he cannot apply for the renewal since he has to sign a certificate to the effect that he has examined the log book, signed it, and is satisfied that all the work that has been recorded in the book has been signed for by an approved person. No Inspector is going to risk his approval by signing this certificate unless he really has seen, and signed the log book.

If a log book has been lost or destroyed by accident, it can be replaced by the owner buying a new log book and copying out from the records in the BGA office all the past entries. This is a long and tedious job.

Log books should be kept with the gliders so that entries can be made at once for any work done on the machine.

R. C. STAFFORD ALLEN, CTO, BGA

Extraordinary General Meeting

The Association's EGM will be held on Friday, 16th October at 1900 hrs. Venue for this is Imperial College, Aeronautics Department, Room 266, Roderick Hill Building, Prince Consort Road, S.W.7.

Silver, Gold and Diamond Claims

Clubs are reminded that the blue claim forms have been obsolete for several years, the correct green forms are obtainable from the BGA office on request.

FAI Bronze Medal

We are pleased to announce that Ann Welch has been awarded the FAI Bronze Medal for her services to FAI.

Churchill Award, 1970

The above award has been presented to Alan Middleton for his project: Investigation of lee wave conditions over Deeside.

Emmott Award

Two £25 awards will be made each year for the remaining residue in this fund to the highest placed pilot in each of the two Nationals who is competing in Nationals of any sort for the first time. The award for the 1970 Sport-Standard Class Nationals has been made to Stephen White (Wycombe Air Park), and that for the Open Class Nationals to Mike Costin (Coventry G.C.).

Whitbread Bursary Award

The following pilots have received £10 each for gaining their Bronze C before their 19th birthday: J. Beck (Clevelands); G. R. Wallis (Coventry); R. Zamo (Trent Valley); R. E. Perry (Albatross); I. Tough and R. Breen (RAFGSA Bicester); J. Marshland (Humber).

Annual Awards Claims

For the period 1st October 1969 to 30th September, 1970, must be in before 31st October, 1970.

Alex Orde Award

We notice that one or two women pilots have completed their Silver C this year but have not claimed the Alex Orde Award. To refresh your memories this is: £10 to women pilots completing the FAI Silver C badge between the 1st January and 31st December, 1970.

The award must be claimed by the applicant at the same time as the application for the badge is made.

Dates for 1971 Nationals

Open Class, 29th May—6th June. To be organised by the RAFGSA at RAF Newton, near Nottingham.

Sport-Standard Class, 12th-20th June. To be organised by the Coventry Club at Husbands Bosworth.

. . . and Regionals

This is the promised 'snippet' of news arising from the Meeting of the Executive Committee on 15th July, 1970. (No Meeting was held in August).

It was reported that some dissatisfaction had been expressed up and down the country about overlapping dates selected for Regional competitions. On the recommendation of the Flying Committee it was decided that for 1971 no competition organised outside the following dates would be recognised for Rating purposes — unless the club concerned could give valid reasons for asking for a dispensation from this rule.

Clubs will be invited to select a period during which to run their 1971 Regionals. They are:—

26th June	—	4th July
10th July	—	18th July
24th July	—	1st August
7th August	—	15th August
21st August	—	29th August
4th September	—	12th September

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MARFA—15th June—4th July

By Rika Harwood

Monday, 15th June

"Welcome to Marfa. Most of this meeting will be taken up with getting you well started in the practice period." With these words Bill Ivans, Contest Director, opened the first briefing for the 1970 World Championships. He introduced Lloyd Licher, SSA Secretary; Fritz Kahl, responsible for local arrangements; Ed Butts and John Ryan, tasksetters.

The importance of correct turning point (TP) photography was stressed and pilots were advised to get plenty of practice in during the week. The "Prescribed area distance", their name for Cat's Cradle, new to World Championships, was announced. English was the only official language to be used, but the assembly could ask for clarification if in doubt. For today's flying ten tugs would be available—no task was set.

Dave Owens, one of three meteorologists, explained in great detail how to read the visual weather information, following this by the forecast and outlook.

John Ryan advised pilots on landing areas—a subject he covered bit by bit during the practice week, hoping that by the time the contest started everyone would know just where to land out and, more important, where not to land out.

With a final reminder to study the TP photos displayed along the wall, Ed Butts concluded briefing by asking crews to record mileage in retrieve cars so that petrol rebates could be claimed.

Some pilots took the opportunity to have a launch, while others worked on their gliders or did other jobs which are a necessary part of any large contest.

Tuesday, 16th June

An optional out-and-return to Sierra Blanca, 350 km., for the Open Class and a 250 km. out-and-return to Van Horn for the Standard were set. This would give the start and finish line observers a chance to check their set-up and the pilots to practise starts and take TP photos with two cameras. Launching available from noon.

Again briefing was in great detail with special emphasis on start line procedures, TP and landing out details. These were also given in writing to reduce misunderstandings.

After 17:00 hrs., an aeroplane, call sign "Marfa Air", would be aloft for relaying messages between unconnected pilots and crews. The forecast was for weak at first, but moderate to good thermals by mid-afternoon, with a chance of over-development later and scattered thunderstorms.

* * *

In all, 70 pilots took off, and the bulk of them went via both TP's in order to see as much as they could of the area; also to take note of possible landing spots. By about 18:00 hrs. the majority had landed back at base, either just ahead or behind the local thunderstorm, which had made its appearance for the

second day running. Conditions on course had been much better than expected and the scorers produced some good speeds; but this was more an indication of good conditions than a comparison of performance.

A number of pilots had vario or total energy troubles, George Moffat laconically referred to having to fly with his instrument panel on his lap to locate the trouble, but in general everyone had done about 3-5 hours practice flying.

* * *

There were still various teams outstanding. The Peruvians had cancelled, because of the recent earthquake in Peru. The Yugoslav pilot was reported ill and couldn't come, and the Rhodesian and Indian teams had not turned up. Dick Schreder, who was to fly his flapped HP-15 *hors concours,* could not get his glider ready in time, so at the start of the contest there were 39 Open and 40 Standard Class entries.

Wednesday, 17th June

By now it was noticeable that there was still a great deal of unpreparedness at the site. The lack of tables and chairs was beginning to be felt, also the absence of notice boards and signs was a nuisance; but especially the catering left a lot to be desired.

Already many people were complaining about the poor food, and many made alternative arrangements—spending a lot of extra money in the process. Those who could not afford to do this were quite taken aback when they were asked to pay for their second glass of iced water or coffee . . . at breakfast! Luckily, a few days later most were allowed their second drink free.

* * *

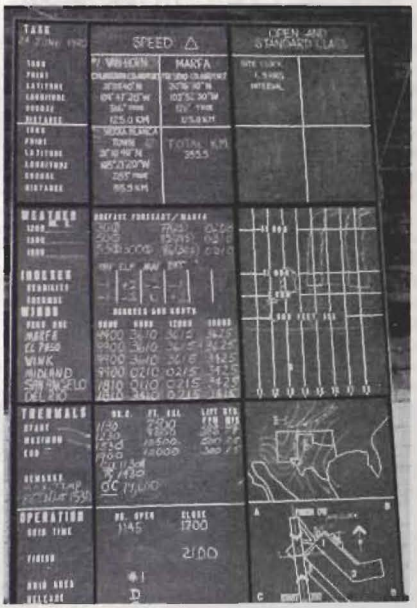
Today's speed tasks would help to get further practice in start line procedures, landing out, TP photos, etc.—both Classes out-and-return, 263 km. for the Open and 236 km. for the Standard Class.

The scattered thunderstorms on yesterday's forecast had turned out to be one monster in the Marfa area—sitting there all afternoon. A satellite picture indicated that this was the only significant storm within 500 miles of Marfa. This morning's map showed little difference, again thunderstorms were expected after 15:30 hrs. Moderate lift but, if anything, slightly better than yesterday.

The majority of pilots flew and the start line was kept very busy. The task proved to be very easy with excellent, almost "Texan" conditions, George Moffat only using two thermals out and three back, and clocking up 124 km/h. Walter Neubert in his Kestrel 22 was, however, an easy winner at 132 km/h. This turned out to be the best speed of the whole contest, and I believe the fastest ever done in a competition. In the Open Class 25 pilots finished, 15 at over 100 km/h. and all this certainly gave them a lot to think about. The best speed in the Standard Class (25 finished) was returned by A. J. Smith at 111 km/h. Another big storm sat in the locality, producing many duststorms and making final glides most interesting! Urs Bloch (Switzerland) landed in very rough ground, damaging both nose and wings on his ASW-15, this required a two-day repair.

Thursday, 18th June

A full grid system and launching pro-



The daily task and weather information board. Photo: H. Howitt



Keeping busy during the practice week. Photo: Ann Welch

cedure was to be used so that any snags could be removed. Although yesterday had been an improvement on crossing the start line, John Ryan still had to take pilots "back to school" and discuss some of the points again.

Task, Open Class—371 km. triangle. Standard Class, 263 km. out-and-return. Open Class first.

Yesterday's temperature had shot up another 4°F beyond that forecast (94°F) —hence the much better conditions than expected. Today's temperature would be higher still at 100°F. The temperature never reached 100°F, with the best thermals at Marfa around 17:00 hrs. up to 14,000 ft. amsl. Much poorer lift, with blue thermals, was forecast from Fort Stockton to McCamey (Open Class route).

Launching started at 13:15; intervals of only just over 30 seconds made the operation go very smoothly. The expected cumulus clouds were much later than anticipated and large gaggles built up in the start gate area. Time was getting on, however, and pilots went on their way—albeit slowly. The task (Open Class) proved to be very difficult, with large gaps after Fort Stockton. George Moffat was down to 600 ft. and below 1,500 ft. agl. for an hour, also Wally Scott (first back) had a good old scrape for about 45 min. They decided to call it a day and returned to base. In all, only eight pilots battled on to the 2nd TP, but none of these made it back, the furthest being Walter Neubert with 355.5 km. The Standard Class had a slightly better time and 28 pilots completed, but because many had to deviate off course the speeds were well down on those of yesterday. Many pilots remarked on the extremely rough thermals and turbulent air which made flying rather unpleasant.

Harro Wödl's D-36 suffered minor wing damage when he made a crosswind landing on the highway and swung off the road into a fence. Michael Mercier broke an aileron on his ASW-12 on landing back at base, but both repairs were finished next morning.

Today, being election day in Britain, the British team held a party at their motel swimming pool in Alpine. The evening proved a great success with many teams coming along to join in the fun.

The Marfa Newsletter, published by the SSA with Lloyd Licher in charge, and so ably edited by Ann Welch of Britain, proved to be a great asset throughout the Championships. With their small band of helpers, including Lloyd's wife, Rosemarie, they slaved away all hours of the day and night, as well as getting the scores typed and duplicated on time every day—Lloyd finding time to do a thousand and one other jobs, apart from his SSA work, such as making doors for the gents' toilets!

The scorers' office—a most amicable, friendly place, was equipped with two small computers fully programmed for

every possible task. This made the actual working out of the scores most efficient, competent and quick. Unfortunately, the public display of unofficial scores was inadequate, but after complaints, this was eventually provided in an acceptable way during the contest.

Friday, 19th June

As crossing the start line was mandatory—no start, no score—it was understandable that great emphasis was put on this aspect, although there had been an improvement already. Another full grid launching would be used today with 4 instead of 5 gliders abreast like yesterday.

The previous day's forecast had been too optimistic, and today the Met. man could not predict a time when convection would occur as the present airmass was stable. Even the best lift would be weak —the dew point had moved further west. It was expected, however, to move eastwards again, and by Monday the weather should be good (laughter).

By 13:15 it still had not improved sufficiently to send both Classes on the 250-km. out-and-return to Van Horn and have them back on time for tonight's party, so the task was cancelled. Next day the following self-explanatory letter appeared in the Newsletter.

"Dear Ann,

I have a problem! Some of the pilots' reports do not agree with the morning forecasts. On Friday morning I forecast lift of 400 ft/min., and by late afternoon some pilots found 1,000 ft/min. If pilots would report lift as it is forecast I would sleep much better." (Signed) "A miserable Met man."

A superb barbecue party for pilots, team managers and officials was held at Kay and Bill Meriwheather's ranch in the foothills of the Davis Mountains—a perfect setting for their lovely home. The party's climax came when Rolf Hossinger (as a birthday treat) was thrown into the swimming pool by our hostess. Rolf, to show no ill-feeling, pulled in Kay and Bill to join him under loud clapping from the onlookers. An equally successful party was held at Marfa's swimming pool for all crews and enjoyed by all who attended.

Saturday, 20th June

Most of the shopowners in Marfa had each adopted a team. Their shopwindows were gaily decorated with the adopted country's National insignia together with photographs of the pilots. Their hospitality was tremendous. So far as I know, each team was invited at least once, if not more often, to their homes for a meal and to meet other local citizens. No doubt this was greatly appreciated by all the guests. A reception at Sul Ross College was also greatly enjoyed by the large number of people who attended.

Pierro Morelli, Italian team manager, experienced a different sort of hospitality when he was bitten by a Recluse spider —in bed! This resulted in a large wound which became painful after 24 hours and needed expert treatment.

The Opening Ceremony scheduled for tomorrow at 10 a.m., would be informal ("Wear team uniforms, if you wish") and be kept short.

At this last pre-contest briefing the room was packed. During the week every contest procedure had had a thorough coverage; the Newsletter had published all the important ones and

Marfa still life! Photo: Ann Welch



pilots would start their "final exams" on Monday—the first contest day.

* * *

Task, both Classes:—250 km. out-and-return Van Horn; on grid 13:00 hrs.

Dave Owens started off by saying "Yesterday, the weather went just as forecast—till 10 a.m. that is" (laughter).

Today's surface chart showed a Low in Oklahoma, while the front SE of New Mexico had moved well to the west of Marfa. Thunderstorms lying in a line from Carlsbad to Sierra Blanca were expected during the afternoon, some of these storms could be severe with gusts of up to 50 knots. This line could well reach Marfa after sunset. Lift in the task area would be moderate to good.

At 13:20 launching commenced and took 22 min. for each Class. Very few cu could be seen at first, but soon cu-nim development was visible on track—much nearer than anticipated. In fact, many pilots turned back short of Van Horn where large storms were brewing up quickly and forcing some pilots to land.

In the Open Class, 11 pilots got back with Walter Neubert once more putting up the fastest speed at 117.6 km/h. while in the Standard Class, of the 9 who completed, Reichmann averaged 100 km/h.

Thus, four practice tasks had been flown. The weather had been mixed with more than our fair share of thunderstorms. Except for the 17th June, it could not be classed as typical "Texan".

Little damage had been done and the gliders were as ready as they ever would be. Henry Stouffs had spent nearly all week fettling his instruments!

Comparisons as to performance was like crystal ball gazing—the only point perhaps noted by all was that both the Kestrel 22 and LS-1 had put up much faster speeds on every occasion and would be worth watching closely. (At the end of the practice John Delafield was lying 2nd and George Burton 7th.)

Sunday, 21st June

We had been told that the Opening "Ceremony" would be informal—it was, very, lasting 23 minutes!

Most teams, on this last free day, made excursions to local places of interest. A relaxing day for nearly all except the Dutch team, who had quite an adventure extracting themselves and cars from floods when they were caught by huge thunderstorms on their visit to the Rio Grande.

* * *

Day 1—22nd June

The bombshell had fallen—or rather, there it was for all to see on the briefing board. "Prescribed area distance". Both Classes.

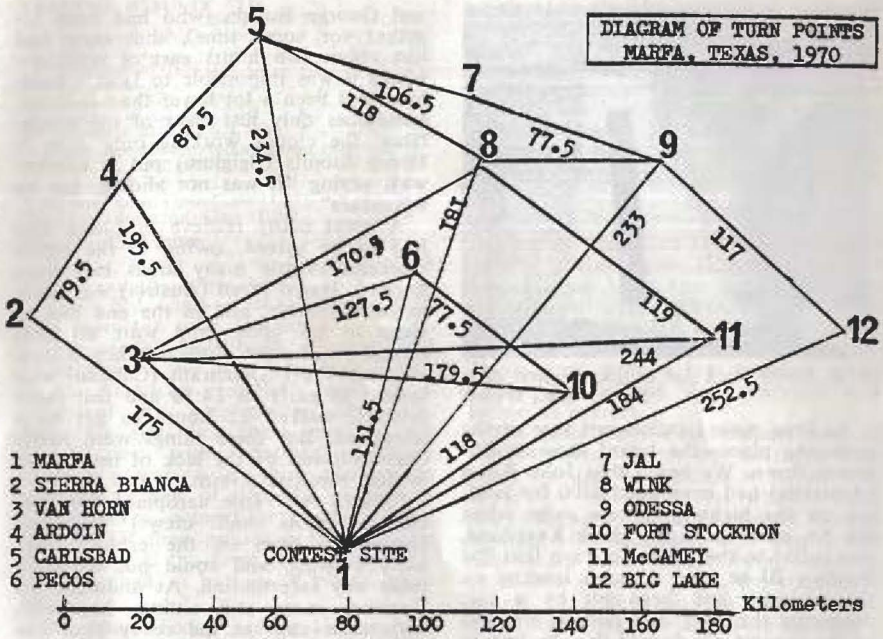
For the majority of pilots this was just a task they had read about in the rules—they had never yet flown one. By the look on their faces they were not looking forward to it either. "Lottery task" one pilot said in disgust. Of course, it could play havoc with the scores straightaway. But now the briefing . . .

Ed Butts asked for close attention (whistle blown 3 times—throughout the comps. briefing for quiet). "There have been reports of cloud flying", he said, "This will bring immediate disqualification on anyone reported. We will monitor this and use an aircraft for the purpose. Cloud flying is prohibited; it is a violation of our Federal regulations." He asked in addition for radio discipline as radio talk would also be monitored. Then, "Task today: Prescribed area distance, covered in rule 8.3.10 para. B". On the information sheets was a diagram of 12 TPs and for today those selected, giving compass course from Marfa, were:—

No.	Turning Point		kms
2	Sierra Blanca	306°	175
4	Ardoin	330°	195.5
5	Carlsbad	350°	234.5
8	Wink	021°	181
9	Odessa	036°	233
12	Big Lake	066°	252.5

All distances are from (1) Marfa, 5,000 ft. amsl., which is also a TP. On grid 11:45. Open Class first (launch order by lot). Designated start.

WEATHER: A grey overcast sky with low cloud greeted us early this morning, and Dave Owens told the assembly what to expect in the task area. The weather stations had all reported considerable alto-cu, and therefore, not too promising—lift would be weak with the first workable 2 knot thermals expected around 12:30 up to 7,200 ft. (all heights amsl; all times local) with early overdevelop-



ment from 14:00 hrs. Best conditions around 16:00 hrs. (average 4 knots) except in areas of overdevelopment. Cloudbase 9,200 ft. Thunderstorms were possible anywhere in the area, but the larger ones would most likely be in the El Paso region. Maximum temperature 80°F. Winds east through southeast 15 knots, decreasing with height.

Obviously with this weather picture there had not been much choice in task selection.

* * *

Launching started at 11:55 and took 50 min. including a short wait between the Classes.

Apart from 3 cable breaks (the first ones to happen) all went smoothly. No-one hung around and presently all were out of sight. No relights were needed.

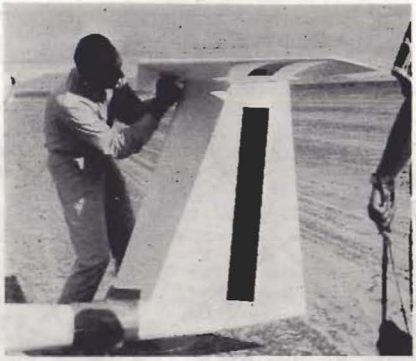
The airfield devoid of gliders and trailers took on the usual deserted look—hopefully for many hours to come. Now and again the odd radio message was picked up which indicated that flying was hard work.

A couple of hours later we learned that in the Van Horn area about 125 km. out, at least 15 gliders were scraping at 1,000 ft. agl. and conditions were "dreadful". Soon after this the first landing reports came in from that area.

Those left at the site pricked up their ears when the American team manager was asked on the loudspeaker to go to the launching point. We soon knew why. At 16:00 hrs., a trailer with Rudy Allemann on board came belting down the ramp for a relight. "Bomber" Jackson (SA) was also back both having landed short of Van Horn. They were flung in the air quickly. Who was next?

Like wildfire, the whisper of the next bit of news went round—A. J. Smith, defending Standard Class Champion had just arrived at 17:43. What a disappointing start for the USA. The chance to win the Standard Class almost certainly gone. But undeterred "A.J." took off again, to see what could be retrieved of his loss today.

In the meantime, news had trickled through that all the Germans and Poles had safely passed Van Horn's trouble spot and were now well on their way to Ardoin and Carlsbad.



A. J. Smith back for relight on first day. Photo: Ann Welch

As time passed excitement rose at the gathering place—the board showing distances flown. We heard that John Rowe (Australia) had been fined $100 for landing on the highway. Worse came when the SA team manager, Hugh Keartland, was called to the phone to learn that Pat Beatty's BJ-4B after a good landing on the highway had been hit by a car, damaging the wing and putting him out of the contest. On top of this, he had to appear in court and was fined $150. So now the BJ-4s were out of a winning position too, this was extremely sad for Pat who had worked so hard for many years on his brainchild.

By 19:00 hrs. a good many pilots had landed—but there were still enough pilots outstanding to assume that the good distances were still to come—we knew that the 300 km. had been passed—even 400 rumour had it.

The board with distances, however, proved rather unreliable when pilots returned before their names were up. On enquiring why we were told that the scorers were not obliged to put them up immediately! This of course left a good many people wondering if their pilots had done as well as they thought, because no name did not mean no landing.

Among the latest landings was that by one of the Poles 10 km. from Marfa at 21:00 hrs., Makula, with his Cobra 17 had overflown all the bigger ships and was the only pilot to have gone more than 500 km. A fantastic performance in these difficult conditions. We later heard from George Moffat, Andy Gough and George Burton (who had been together for some time), that they had lost about two hours east of Ardoin—where it was impossible to land. Cloudbase had been a lot lower than forecast, sometimes only just clear of the mountains; the clouds working only 1 in 5. Henry Stouffs (Belgium) put it another way, saying "It was not gliding, but an adventure".

A great many retrieve problems also had to be solved; owing to the heavy weekend storms many areas had been flooded. Harro Wödl (Austria) was stuck in one of these, and in the end had to sleep in his glider and wait till next morning to be got out—and then it took all day. Willy Deleurant (Canada) who landed as early as 14:30 and lost radio contact, walked 12 hours to get to a telephone. But these things were partly overshadowed by the lack of news from Walter Neubert (Germ.).

"Marfa Air" (the aeroplane for connecting pilots and crews) had unfortunately been on the ground since early evening, and could not therefore relay any information. At midnight the Germans were still sitting, hopefully, with their cars at the ready near the telephone—but when by next morning still no news was received, 7 tow planes went to search for him. At 10:15 during next day's briefing we were informed that all was well, and both pilot and machine had been located (applause).

According to many pilots, one of the main disadvantages of today's task had been the great distances between the TPs, thus making it difficult to change one's choice from one TP to another, as doing this would lose many hard-gained kms.

The three Polish pilots with their Cobras had taken the lead, while the American pilots had a completely unexpected poor start—but such is gliding; and they all took it in their stride—tomorrow was another day.

LEADING RESULTS OPEN

		Sailplane	TPs	kms.	Pts.
1	Makula (Pol.)	Cobra 17	4,5	507.5	1000
2	Hossinger (Arg.)	Cirrus	4,5	493.5	972
3	Neubert (Germ.)	Kestr. 22	2,4,5	484	954
4	Labar (France)	ASW-12	2,4,5,6	469	924
5	Grosse (Germ.)	ASW-12	4,5,9	466	919
11	Delafield (GB)	ASW-12	4,2	319.5	630
15	Burton (GB)	Kestr. 19	4,2,	310.5	612
8	flights over 400 km. (point spread 972-790)				
8	,, ,, 300 km. (,, ,,			768-596)	
10	,, ,, 200 km. (,, ,,			577-399)	

LEADING RESULTS STD.

		Sailplane	TPs	kms.	Pts.
1	Wroblewski (Pol.)	Cobra 15	4,5	491	1000
2	Kepka (Pol.)	Cobra 15	4,5	490	998
3	Johannessen (Nor.)	Std. Cir.	4,5	448.5	913
4	Greaves (GB)	Std. Lib.	5	424.5	865
5	Cameron (NZ)	Std. Lib.	4,5	410.5	836
6	Reichmann(Germ.)	LS-1	4,5	404	823
24	Gough (GB)	Std. Cir.	4	274.5	559

6 flights over 400 km. (point spread 1000-823)
12 ,, ,, 300 km. (,, ,, 689-614)
14 ,, ,, 200 km. (,, ,, 604-413)

Total kms. flown Open Class 11,257
Total kms. flown Std. Class 11,239

Day 2—23rd June

TASK: Open Class—Out-and-return 016° Pecos (6), total 263 km.

TASK: Std. Class—Out-and-return 316° Van Horn (3), total 250 km.

"Site clock": both tasks, 65 min. Grid 12:30. Open Class first. (The "site clock" is an American invention used as a safeguard on photographic evidence. Near the start line there was a large round disc with crossbar arranged in such a way as to show changes in specified periods of time. Its purpose is to prevent a competitor photographing the 1st TP then returning to cross the start line and fly direct to the 2nd TP). See site clock at bottom of photo, page 372.

WEATHER: Today a drier airmass was expected with better thermal (5 knot) conditions. Local winds would be more south, or at least southeasterly 15-20 knots. Overdevelopment and thunderstorms after 15:30 would, however, again be a feature; developing in a line from Wink (8) to Van Horn (3) and another less vigorous one from Midland (near 9) to McCamey (11).

* * *

Four pilots, Wödl (Austria), Defosse (Belg.), Deleurant (Canada) and Neubert (Germ.) had not returned in time for today's briefing. One of the German team members, in the absence of his team manager on the search, tried to get the task cancelled. When the team manager came back, however, he withdrew the unofficial complaint. The rules, of course, assume that all competitors will be back in time for briefing. To prevent a reoccurrence of this kind of event, "Marfa Air" was subsequently always airborne until darkness, and in the 2nd Cat's Cradle until well after dark.

Neubert got back just after 15:00 hrs. and took off at 15:41. Unfortunately, at that time the site was surrounded by cu-nims, so that he never had a chance to get going and this lost him the championships. Another disappointed pilot was Hans Nietlispach (Switzld.), who had turned the wrong airfield at Carlsbad yesterday (very close together, and with similar names) and instead of his 390 km. flown, only got credited with 206 km., which meant a drop from 7th to 27th place.

* * *

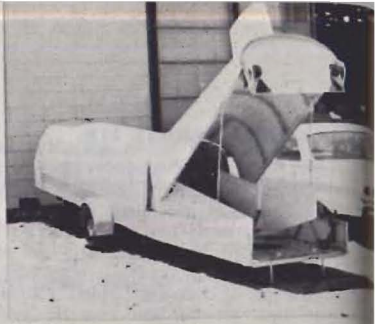
Take-off started at 12:34 with the first cu-nims visible in the distance. The start line became busy the moment it was opened, but most pilots crossed again later. Only a few left it until after 14:00 hrs., one of the last being Reichmann. There were quite a few negative starts called, but in the end everyone was passed as correct.

The early Open Class starters were at first somewhat better off, as there were fewer cu-nims to contend with, but this advantage was soon lost when several large clag areas had to be crossed. George Moffat, who had been well ahead, lost nearly an hour before being able to cross one of these gaps, the others, of course, catching up on him. Many diversions round cu-nims were necessary, while a number of pilots fell by the wayside, in fact, only 15 made it back. George Burton felt that it had been a task with lots of luck in it, he had deviated about 50 km. to go round a clag area and was glad to get back.

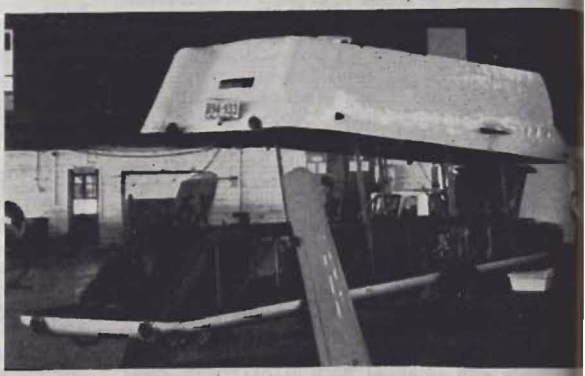
This shelter housed the official observers. Four similar shelters were available for the use of all teams. Photo: Ann Welch








ETERNA-MATIC

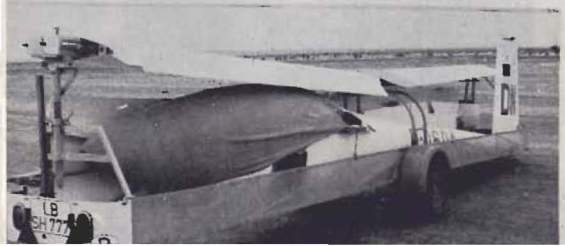



MB-X532


Wassmer 26 CM squale
Championnats du Monde
MARFA Texas


ÜNOS
IS LOADING TO USA






BRITISH TEAM

The Standard Class had a much easier time, their route being almost free of storms. Strong lift of 6-8 knots was reported by many, and apart from a fairly large dead area around the TP where a lot of scraping had to be done, it had not been difficult. On the way back, however, they had to final glide through a large storm. Lightning flashes, hail and a downpour nearly put the finish line organisation out of action, but luckily most pilots landed either just ahead of or behind the storm. Only Tim Mouatt-Biggs (SA) failed to get back.

Although pilots had been back since just after 16:00 hrs., no unofficial speeds or landing places were displayed until after 20:15 hrs!

Leading Results Open	Sailplane	km/h.
1 Wiitanen (Finland)	Phoeb. 17	79.1
2=Makula (Poland)	Cobra 17	77.6
2=Labar (France)	ASW-12	77.6
4 Burton (GB)	Kestr. 19	76.2
5 Scott (USA)	ASW-12	75.2
6 Delafield (GB)	ASW-12	75

Bottom speed score 62 km/h., 783 points.

Leading Results Std.	Sailplane	km/h.
1 Reichmann (Germ.)	LS-1	104.3
2 Mix (Canada)	Std. Cir.	101.8
3 Piludu (Italy)	Std. Lib.	100.4
4 Clifford(SA)	ASW-15	100.2
5 Cameron (NZ)	Std. Lib.	97.1
8 Gough (GB)	Std. Cir.	93.9
24 Greaves (GB)	Std. Lib.	80.8

Bottom speed score 61.3 km/h., 588 points.
Total kms. flown Open Class 7,819
Total kms. flown Std. Class 9,678.5

Day 3—24th June

TASK: Both Classes—355.5 km. Triangle: 316° Van Horn (3), 125 km.; 283° Sierra Blanca (2), 55.5 km.; 126° Marfa (1), 175 km.

Site clock: 65 min. Grid 11:45. Standard Class first.

WEATHER: "Today I would rather not talk about yesterday. I think everything developed earlier, larger and closer than was forecast. However, to save my face, I can claim that the maximum temperature was correct (laughter) and the time of sunset was correct" (more laughter). Slightly drier air was in this area, with Marfa lying in the middle of a trough. Thermal strength would be quite good (average 5 knots) and better in the 2nd TP area where cloudbase would also be higher. Again thunderstorms would develop in the afternoon.

Ed Butts then took over from Dave Owens, saying that too many pilots were making 180° turns in the gate to start line area, which practice was highly dangerous. This was partly why there had been so many negative starts, as the observers missed pilots while, in the interest of safety, they were watching the culprits. Zero scores would be the punishment for any more offenders.

Launching commenced at 11:50 into a sky already filled with cumulus. The start line again had its hands (eyes) full, and pilots were repeatedly asked to keep to 30 sec. intervals through the gate. By the time the Open Class got launched cu-nims were building up. (The start line is only opened 10 min. after last launch from grid.) This time at least 18 negative starts were recorded (only a couple in the Standard Class), which made for some agitated replies on the radio. (Apparently, there is a slow pressure drop in the vicinity of storms, which is followed by a jump equivalent of up to 100-300 ft. as the descending cold air falls.)

Pts.	Leading Results 2 days Open Class	
1000	Makula	1982
982	Labar	1906
982	Mercier	1710
964	Grosse	1702
951	Delafield	1578
948	Burton	1576

Pts.	Leading Results 2 days Standard Class	
1000	Wroblewski	1875
976	Reichmann	1823
962	Kepka	1793
960	Cameron	1767
931	Johannessen	1671
900	Greaves	1639
774		

There were several relights, and pilots had difficulty in getting going. By now, 12:30 hrs. we were surrounded by heavy showers, and it was not long before it rained at base. These showers had brought several pilots down in the vicinity. Quick retrieves brought Wally Scott (USA) and Menahem Bar (Israel) back, but they could not be launched until the rain had stopped. Around 16:00 hrs., and in between showers, the take-off line looked like a mini-grid. Several gliders had 4 or 5 launches—one 10, and

Opposite page: Trailers of all shapes and sizes. Photos: H. Howitt and A. E. Slater

3 never left the site. By the time they were crossing the start line, the first finishers were coming in.

Of course, the local thunder and showers had not been forecast, but once away from base conditions improved considerably. Walter Neubert had the misfortune to get his vario and ASI tubes full of water immediately after leaving, but as the weather was only dicey near base and good on course he managed without them. Moffat found the first leg difficult as he was flying below 3,500 ft. agl. For the first time pilots felt that conditions away from Marfa were almost "Texan", with rough, strong thermals; John Firth (Canada) being airsick on several occasions.

The usual thunderstorm was awaiting the home-comers, and one or two of these literally just made it—no doubt frightening some of the will I, won't I arrivals. Had the launching been brought forward many more Open Class pilots would have finished; as it was both Makula and Carlos Perez (Chile) were 3 km. short of the finish line, with 7 others well over the 300 km. mark. The Standard Class, although with slower speeds, did well with 31 finishers; the Open Class, however, had only 17.

George Moffat had quickly made good his relatively poor first day and was now only 155 points behind the leader. In the British team spirits were also high with George and John occupying 3rd and 4th overall places.

Leading Results Open	Sailplane	km/h.	Pts.
1 Moffat (USA)	Nimbus	106.4	1000
2=Neubert (Germany)	Kestr. 22	105.9	995
2=Jinks (Australia)	Diam. 16	105.9	995
4 Burton (GB)	Kestr. 19	100.1	941
5 Zoli (Italy)	Kestrel	98.5	926
8 Delafield (GB)	ASW-12	94.3	887

Bottom speed score 63.5 km/h., 614 points

Leading Results 3 days Open Class	
Grosse	2611
Makula	2537
Burton	2517
Delafield	2465
Moffat	2456

Leading Results Std.	Sailplane	km/h.	Pts.
1 Waibel (Germany)	ASW-15	96.9	1000
2 Stouffs (Belgium)	LS-1c	96.6	998
3 Smith (USA)	LS-1	94.7	977
4 Nietlispach (Switz.)	Std. Lib.	94.2	972
5 Reichmann (Germany)	LS-1	93.9	969
21 Gough (GB)	Std. Cir.	85.6	884
34 Greaves (GB)	Std. Lib.	320.5 km.	361

Bottom speed score 67.8 km/h., 699 points
Total kms. flown Open Class 10,049
Total kms. flown Std. Class 12,668

Leading Results 3 days Standard Class	
Reichmann	2792
Wroblewski	2757
Cameron	2694
Kepka	2674
Johannessen	2580



The terrain was often pretty inhospitable. Photo: Ann Welch



Andy Gough (GB) was presented with this flowertop of a yucca tree, after he nearly damaged his glider on one.
Photo: H. Howitt

Day 4—25th June

TASK: Both Classes—Repeat of yesterday's 355.5 km. Triangle. Grid 11:30. Open Class first.

WEATHER: Today's thunderstorms would be about 100 miles east of Marfa. The air would be somewhat drier with convection starting around 11:00 hrs. Thunderstorms were possible anytime after 13:30 hrs., but would occur primarily in the mountains. With the drier air, clouds would be few and far between on a line from Valentine to Sierra Blanca. Best thermal conditions at site were forecast at 15:30 hrs. (5 knots) Cloudbase 11,000 ft. Stronger conditions and higher cloudbases could be expected to the west. Wind NE, 15 knots.

* * *

The leaders in both classes had changed from the Poles to the Germans. There was very little to choose between any of the sailplanes as yet—the scores being quite close. Wally Scott and Harro Wödl could now be disregarded as potential winners and also "Bomber" Jackson with the BJ-4A had not been able to settle down after Pat Beatty's misfortune. No doubt they would keep fighting to the end, but, as astronaut Neil Armstrong said later that week, "the absence of bad luck" had so far eluded them. In the Standard Class, A. J. Smith was at last finding his feet, and he and Wally Scott were having a little competition of their own to see how many places they could move up each day!

The hangar began slowly to be decorated with notice boards and signs. thanks to a very willing volunteer sign-writer whose profession as stockbroker might have deceived anyone by the professional standard of work he produced.

George Moffat was absent from briefing this morning; he had a slight fever probably due to a cold or 'flu. Sore throats and stiff necks were quite a common complaint—this was I am told due to drinking too much iced water and sitting in draughts to keep cool. Luckily, the German team doctor was willing to help all those with complaints, and he treated all but 5 teams, who had their own doctors, for minor ailments.

* * *

Launching began at 11:40 hrs. with a 10 min. wait for the Std. Class. Jaap van Steinfoorn (Holland) was first across the start at 12:15:30 followed by Wally Scott 30 sec. later. According to Wally he had no intention of starting the task yet, but finding an 8-knot thermal after the start, and conditions being very good already, he changed his mind and went on. The first TP was reached in just over an hour (125 km.). After that he found some blue thermals and straggly cu's on the second leg, which were very rough but produced 6-8 knots; while half way back on the last leg this increased to 8-10 knots. He crossed the finish line at 15:10 hrs.—hardly anybody believed that he could have been round already! The sky still looking extremely good, he decided to have another go, and at 15:40 he crossed the start line for the second time. Wally failed to improve his time, but only by a few minutes. He returned a speed of well over 110 km/h. The first round was 122.9 km/h.

The weather had been vastly better than forecast, the thunderstorms had not materialised, and this was the sort of weather everyone had heard so much about. At last they had a chance to have a taste of it. In the Standard Class the only one to land out was Henry Stouffs on the first leg. He took off for his second go at 14:59, but only managed 79.8 km/h.. the slowest of the day! We

heard later that his instruments had gone wrong.

George Moffat, who had been using oxygen to make him feel more alert, was an easy winner with 127.8 km/h., and Wally Scott, who had been convinced that his early start would not give anywhere near a good enough speed, was second with 122.9 km/h. The task was completed by everyone—obviously it had been underset and a 500 km. triangle would have been more interesting; but I don't think that after the pattern of thunderstorms we had been having, any tasksetter would have stuck his neck out!

Leading Results Open	Sailplane	km/h.
1 Moffat (USA)	Nimbus	127.8
2 Scott (USA)	ASW-12	122.9
3 Neubert (Germany)	Kestr. 22	120.4
4 Burton (GB)	Kestr. 19	120.2
5=Grosse (Germany)	ASW-12	119.7
5=Mercier (France)	ASW-12	119.7
7 Delafield (GB)	ASW-12	116.3

4 flights over 120 km/h. (see above)
15 flights over 110 km/h. (point spread 936-867)
12 flights over 100 km/h. (point spread 846-783)
Bottom speed score 89.6 km/h., 701 points

Leading Results Std.	Sailplane	km/h.
1 Reichmann (Germany)	LS-1	118.6
2 Waibel (Germany)	ASW-15	110.9
3 Perotti (Italy)	Std. Lib.	109.5
4 Mix (Canada)	Std. Cir.	108.8
5 Van Bree (Holland)	ASW-15	108.0
29 Gough (GB)	Std. Cir.	98.4
35 Greaves (GB)	Std. Lib.	95.3

20 flights over 100 km/h. (point spread 1000-845)
15 flights over 95 km/h. (point spread 841-804)
Bottom speed score 79.8 km/h., 673 points
Total kms. flown Open Class 13,153.5
Total kms. flown Std. Class 14.220

Day 5—26th June

TASK: Open Class—Out-and-return 330° Ardoin (4), total distance 391 km.
Site clock: 2 hrs.

TASK: Standard Class—Out-and-return 016° Pecos (6), total distance 263 km.
Site clock: 65 min. Grid 11:45. Standard Class first.

WEATHER: There was still a trough in the Marfa area with thunderstorms just to the east and south of it. The surface chart showed a cold front across northern New Mexico and a low pressure trough from southwest Oklahoma to 50 km. south of Alpine.

Dry thermals, 2 knots, up to 8,000 ft. would start around 12:30 hrs. By mid-afternoon scattered cu up to 12,000 ft. with 5 knot thermals in the Marfa area were forecast with better lift to the west and rather weaker lift in the Pecos valley. Winds would be from the northeast 18-25 knots, and cu-nim development as usual in the afternoon.

* * *

There were several photographic problems on yesterday's task—and pilots were warned to be more careful. Also the crossing of the start line left much to be desired. Attention was also drawn to the terrain for today's Open Class task, especially from Van Horn to Ardoin there were very few landing places.

Pts.	Leading Results 4 days Open Class	
1000	Grosse	3547
962	Burton	3458
942	Moffat	3456
941	Mercier	3387
936	Delafield	3374
936	Makula	3362
909		

Pts.	Leading Results 4 days Standard Class	
1000	Reichmann	3792
935	Wroblewski	3585
923	Cameron	3564
917	Kepka	3500
910	Mix	3424
829	Johannessen	3402
804		

A team managers' meeting was called for 15:00 hrs., but Markus Ritzi, Swiss team manager, requested that the meeting should be held before today's flying took place to try and solve the problem of the start line. In all, 46 negative starts had been called; he felt that the system was, therefore, not working properly. (Applause.) The meeting was arranged for 10:00 hrs. and satisfactorily concluded

George Burton was now, through consistent flying, in second place with George Moffat breathing down his neck in third. John Delafield too was holding his own well. In the Standard Class, Reichmann had established a 235 point lead. But the scores were still very close and no doubt there could still be plenty of interchange.

Although the times taken and the large number of finishers in the Open Class do not indicate this, the flying was very tough with some of the terrain they had to fly over pretty ghastly. Many pilots took to team flying so that one



Moffat's view of the Nimbus wingtip at a turning point. On another occasion a crisis arose when he had difficulty in getting the Nimbus out of an involuntary spin. Later, the cause of the trouble was found to be malfunction of a water ballast jettison valve, which left one wing heavier than the other. Yet this had not been noticed in level flight. Photo: George Moffat

could mark the thermal while the other found the next one. The first 30 kms. out were perhaps the easiest, as there was a fair amount of scattered cu. But then large blue areas with very rough thermals and a belt of alto-cu made the flying rather tricky. Some wave activity, however, helped many pilots to stay high.

George Moffat and Wally Scott were first back at 17:20 hrs., they had met at the TP and flown the return leg together. During the afternoon a local thunderstorm brewed up, but most pilots arrived after it had cleared. Pilots looked rather exhausted and, if this is the right word, deflated! Menaham Bar was delayed when his wheel on the Sisu collapsed on take-off. He was amongst the six pilots who did not complete the course.

The Standard Class managed much better, and apart from the weaker thermals in the irrigated Pecos valley, they all completed the task on average in 2 hr. 30 min. Many were back early enough to allow them to have another go—six bettered their speed, and five of these finished up in the first ten for the day! They were: van Bree (Holland); Cameron (NZ); Nietlispach (Switzld.); Smith (USA) and Wroblewski (Poland). The sixth was Howland (Australia) 15th place.

	Leading Results Open	**Sailplane**	**km/h.**	**Pts.**
1	Moffat (USA)	Nimbus	102.6	1000
2	Scott (USA)	ASW-12	96.6	942
3	Ax (Sweden)	Phoeb. 17	91.7	894
4	Neubert (Germany)	Kestr. 22	91.0	887
5	Grosse (Germany)	ASW-12	90.0	877
7	Burton (GB)	Kestr. 19	87.2	850
12	Delafield (GB)	ASW-12	85.3	831

Bottom speed score 59.7 km/h., 582 points

	Leading Results Std.	**Sailplane**	**km/h.**	**Pts.**
1	Reichmann (Germany)	LS-1	113.9	1000
2	Perotti (Italy)	Std. Lib.	113.4	996
3	Smith (USA)	LS-1	111.9	982
4	Wroblewski (Poland)	Cobra 15	110.7	972
5	Allemann (USA)	Std. Lib.	108.4	952
24	Gough (GB)	Std. Cir.	98.5	865
33	Greaves (GB)	Std. Lib.	92.5	812

Bottom speed score 78 km/h., 685 points
Total kms. flown Open Class 14,058
Total kms. flown Std. Class 12,887

Leading Results 5 days	
Open Class	
Moffat	4456
Grosse	4424
Burton	4308
Mercier	4236
Makula	4206
Delafield	4205

Leading Results 5 days	
Standard Class	
Reichmann	4792
Wroblewski	4557
Cameron	4505
Kepka	4392
Mix	4321
Johannessen	4294

Day 6—27th June

TASK: Both Classes—Repeat Prescribed area distance as on day 1 (see page 376). Grid 11:45. Open Class first.

WEATHER: During the morning a layer of middle and high cloud lingered over the site. By noon the first weak thermals had started. Basically the weather would be similar to yesterday, but the surface chart looked different, at least on the board. There would be more thunderstorm activity today in the Van Horn, Sierra Blanca, El Paso areas, but it would be confined to the southern half of the task area. Scattered cu, weak waves west of the mountains with east winds 15-20 knots; afternoon thermals 7 knots in the western half and 5 knots in the eastern half of the task area were forecast.

* * *

Ed Butts started briefing with, "One way to eliminate your start line problem is to eliminate the gate". He invited the Swiss and German team managers to fly in a Cessna so that they could check for themselves the height finding and checking system.

So far there had been only 1 distance and 4 speed tasks. In particular, the British team manager felt that the ratio of distance to speed should be higher. At a previous team managers' meeting views were asked whether a free distance, if set, should be on a good or poor forecast day. The great majority (of pilots) had voted for such task on a good forecast day. However, the task selected for today according to Ed Butts, "Was best considering the weather forecast".



Neil Armstrong helps with the launching. Photo: H. Howitt

Today there would also be more than one aircraft acting as "Marfa Air" to help connect pilots and crews.

Fritz Kahl read out a telegram in which President Nixon sent his best wishes to all competitors and had asked Astronaut Neil Armstrong to be his personal representative. While pilots were waiting for take-off, this famous man arrived and tried to meet as many of them as time allowed. The large crowds surrounding him showed that the President of the USA could not possibly have selected a more popular person.

* * *

After 5 days, George Moffat had managed to climb from 21st place to 1st (on the 1st he had been 434 points behind the winner). Some people felt that the Moffat/Nimbus combination could only be beaten on a distance task, as on speed tasks both the Nimbus and Kestrel 22 with their superior performance were difficult to match. And so at 12:15 hrs. launching began to start off what promised to be another exciting day.

With the pilots and crews gone, Neil Armstrong visited the various offices in the hangar—stopped on the way by numerous autograph hunters, which he signed willingly and very patiently. In the afternoon he was able to have a few hours soaring himself in his syndicate owned Std. Libelle, named Eagle 2. (He has a Gold C and two Diamonds).

By now the sky looked pretty good and there had been no relights. The only one delayed was Petterson of Sweden who had taken off with his brakes open, had been ditched at the end of the runway, and was impatiently waiting to be retrieved!

The official opening of the OSTIV Congress was due to take place at 15:00 hrs and those who could leave the site went over to Alpine to attend.

Unlike the first day when everyone had set off downwind, today some pilots set off in a northeasterly direction towards Odessa (9). This was crosswind, but the chance of thunderstorms forecast for the Sierra Blanca (2) area would be absent, especially in the early part of the



L. to R.: Eugen Hänle, proprietor of Glasflügel. Neil Armstrong in his syndicate-owned Std. Libelle and Rika Harwood. Photo: Dr. G. Stedtfeld

day. Instead of thunderstorms, however, pilots found the leg to Sierra Blanca straightforward with excellent conditions. In fact, there were no storms at all and during the best part of the day lift of 8 to 9 knots was found with an occasional 10 knot thrown in for good measure.

Alan Cameron (NZ) thought that it would have been a very good race day rather than a "cat's cradle"; on the other hand, Walter Neubert felt that with the weather encountered the conditions were fantastic for the task (he was the only one to do over 800 km). Ivan Evans (NZ) died a thousand deaths on the leg from Sierra Blanca to Wink (8), he had to use very weak thermals with nothing underneath but oil fields!

The 13 pilots who had selected to go to Odessa or Big Lake (12) did not find it quite so easy, average thermal strength in that area was only 2-2.5 knots to begin with. On reflection some thought that they would have done better to go to Sierra Blanca first, although their decision was made on the forecast.

A. J. Smith had been low very early on (on his way to Odessa) and spent 40 anxious minutes recovering from 500 ft. agl. Several others, including George Burton and John Delafield, told of difficulties along this stretch. Like many teams they pair flew most of the day. Towards the end of the day, and in very weak lift, John, however, got ahead of George making an extra 91 km. on him.

George, in the meantime, landed in a very inaccessible field in the Toya area. But "Marfa Air" came up trumps and guided the retrieve car (without trailer) for 5 trackless miles to his landing place. After he had been picked up, they retraced their way along the car tyre marks, but in the end they had to hire a truck to get the glider out. If "Marfa Air" had not come to their rescue they would not have made it back until next day—as it was they arrived at 4 a.m., in time for Ralph Jones, our repair man, to replace the under-carriage doors which had been damaged in the landing. Ralph had

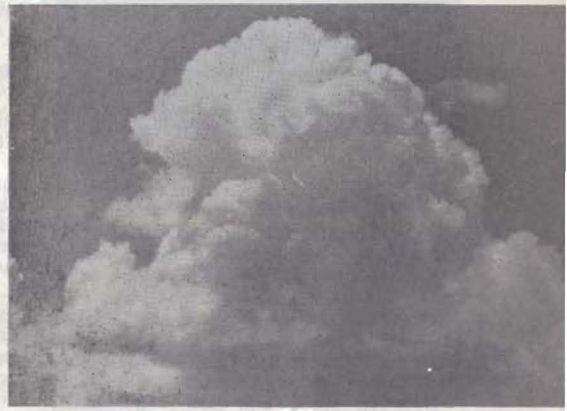




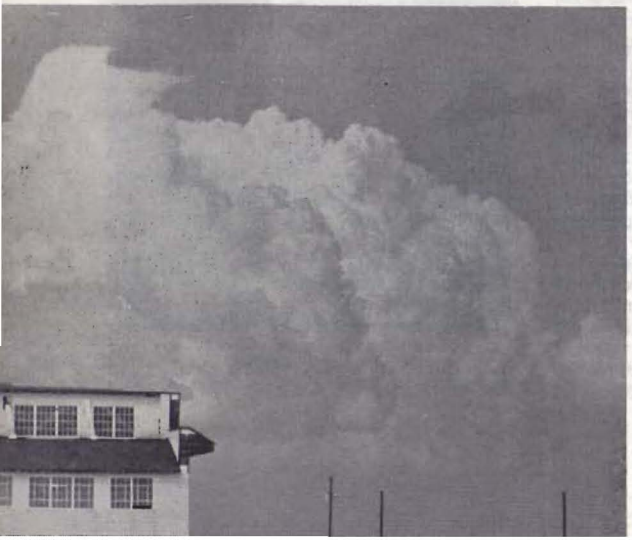




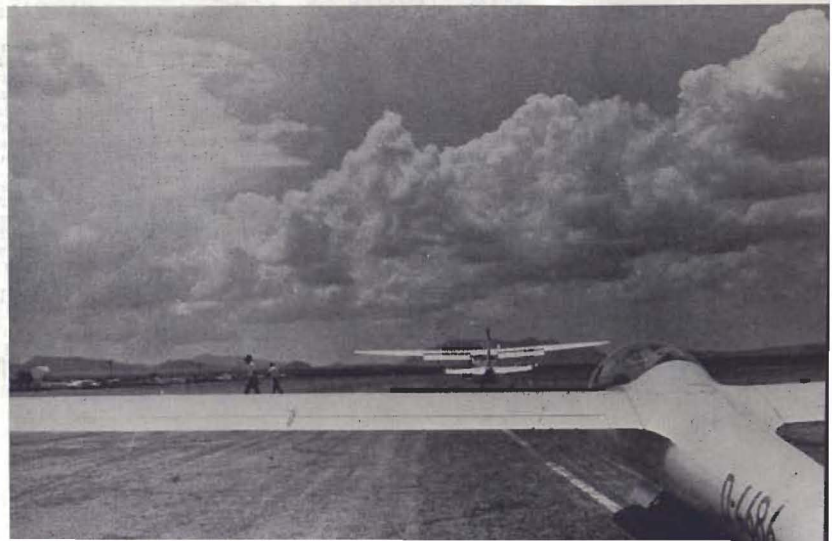
MARFA SKIES



Photos: A. E. Slater
Ann Welch
Rika Harwood









Somebody issued this poster after Helmut Reichmann had won three successive Speed tasks. Photo: A. E. Slater

worked throughout the night on wing damage to Con Greave's glider which had hit a post on the highway on landing.

Ironically, the British, who had favoured a distance task, did not do too well, both George and John having scored their lowest placing so far.

Between 18:00 and 20:00 hrs. many pilots turned Marfa—a few landing back at base. Among those who turned was Helmut Reichmann. He succeeded in getting back to the Van Horn area where at 21:10 he made a final climb to 5,100 ft. agl. As it was almost dark, he decided to land with 1,200 ft. to spare on an airfield 8 km. short of Sierra Blanca. Being the only one in the Standard Class to exceed 700 km. he won the day for the third time in succession.

Reparon (Holland) slope-soared his ASW-15 along the 30 km. stretch of the Sierra Diablo mountains after sunset, and after that he still managed a further 50 km. to land at Ardoin at 21:30.

Hans Nietlispach's crew had great difficulty in locating him, and when they did they heard that he had been bitten by an overzealous dog. It was bad enough for the doctor to advise him not to fly next day.

Sunday—28th June

This morning's briefing was delayed until 11:45 hrs., due to drizzling rain—"typical British weather" having set in.

Markus Ritzi took the opportunity at briefing to state that he and the German team manager had been given every facility to test the start line system, it was only fair to say that the system worked well (applause).

After the usual "Church" notices, Bill Ivans said that Neil Armstrong would like to say a few words (applause). After passing on President Nixon's good wishes to everyone, he commented on why he liked soaring. "It has 3 good ingredients:—

1 Fine machines.
2 Challenge to head work, and
3 The element of luck. I don't ask for

Leading Results Open	Sailplane	TPs	kms.	Pts.
1 Neubert (Germany)	Kestr. 22	2,4,5,1,2	804.5	1000
2=Wödl (Austria)	D-36	4,5,2,1,2	798	992
2=Schubert (Austria)	Kestrel	4,5,2,1,2	798	992
2=Webb (Canada)	Kestrel	4,5,8,2	798	992
5 Moffat (USA)	Nimbus	9,12,8,2	777.5	966
17 Delafield (GB)	ASW-12	9,12,8	709.5	882
27 Burton (GB)	Kestr. 19	9,12,8	618.5	769

Leading Results Std.	Sailplane	TPs	kms.	Pts.
1 Reichmann (Germany)	LS-1	2,4,5,1	743.5	1000
2 Zegels (Belgium)	Std. Lib.	4,5,2,1	696	936
3 Smith (USA)	LS-1	9,8,12	691.5	930
4 Van Bree Holland)	ASW-15	5,4,2,1	687.5	925
5 Lyon (Chile)	Phoeb. A	2,4,1,2	650.5	875
25 Gough (GB)	Std. Cir.	8,5,4	559	752
28 Greaves (GB)	Std. Lib.	9,12	552	742

Leading Results 6 days Open Class	
Moffat	5422
Grosse	5262
Makula	5153
Delafield	5087
Mercier	5084
Burton	5077

Leading Results 6 days Standard Class	
Reichmann	5792
Wroblewski	5420
Cameron	5339
Kepka	5225
Mix	5159
Waibel	5101

Open Class
6 flights over 750 km. (point spread 992-947)
12 flights over 700 km. (point spread 913-872)
5 flights over 650 km. (point spread 865-814)
Bottom distance score 402 km., 500 points

4 flights over 650 km. (see above)
10 flights over 600 km. (point spread 868-813)
Bottom distance score 468.5 km., 630 points
Total kms. flown Open Class 25,142
Total kms. flown Std. Class 23,387

good luck, but for the absence of bad luck.

In Apollo 11 we had these same 3 ingredients, but we had one advantage over you here at Marfa—we could see our turn point all the way." He then offered his congratulations to the eventual winners of this contest, "and to the others who will end up down the list, where I do, you have me as a friend". He concluded his speech expressing the hope that on future visits to different countries he would see something of gliding and be able to meet pilots on their own ground (applause).

The weather never cleared enough for a task to be set . . . but pilots were quite happy to have a rest day after 6 days flying—little did they know that they would not take to the air again until Wednesday! The enforced rest gave everyone the chance to attend OSTIV lectures, go shopping and do all the sightseeing they wanted.

Day 7—1st July

TASK: Both Classes—Out-and-return 016° Pecos (6), total distance 263 km.
Site clock: 65 min. Grid 12:00 hrs. Standard Class first.

WEATHER: A High centred over Memphis was slowly building westwards pushing the middle-level moisture north and west of Marfa. With a forecast of strato-cu changing to weak cu by noon and at best fairly weak lift (3 knots) cloudbase 4,000 ft. agl., the conditions were not too promising. Wind SE 15-20 knots. Possible thunderstorms in the mountains after 15:00 hrs.

After three days of low cloud and plenty of rain, this morning still looked very moist and a layer of cirrus covered the site. The briefing room, however, was back to its normal activity with pilots keen to return to business.

* * *

For the first time during the contest pilots took off without ballast or else reduced it considerably. Launching began at 12:40 hrs., and between 13:50 and 14:15 hrs. nearly all pilots had crossed the start line—there were no negative starts!

Lift, during this period, was rather better than anticipated over Marfa, but in the nearby Davis mountains it was in accordance with the forecast and cloudbase was only 1,000 ft. over the mountain tops. Walter Neubert found it necessary to ditch 40 litre of water from the 80 litre he had on board, showering an unsuspecting glider below him with it. Although many diversions were made and great caution was necessary near the TP, on the whole the weather turned out much better than forecast and—considering that many flew as light as possible—reasonable speeds were obtained. Only Neubert, however, still with 40 litre ballast exceeded 100 km/h.

Moffat and Reichmann both went round with plenty of safety margin, as completing at a reasonable speed was more important than winning the day at this stage of the contest.

In the Standard Class Dick Reparon won easily with 94.8 km/h., and all but one pilot in the Open and two in the Standard Class completed the task.

Leading Results Open		Sailplane	km/h.	Pts.
1	Neubert (Germany)	Kestr. 22	102.2	1000
2	Schubert (Austria)	Kestrel	99.9	997
3	Scott (USA)	ASW-12	96.3	943
4	Mercier (France)	ASW-12	96.1	940
5	Grosse (Germany)	ASW-12	95.4	934
7	Burton GB)	Kestr. 19	92.7	907
10	Delafield (GB)	ASW-12	84.8	830

Bottom speed score 61.6 km/h., 603 points

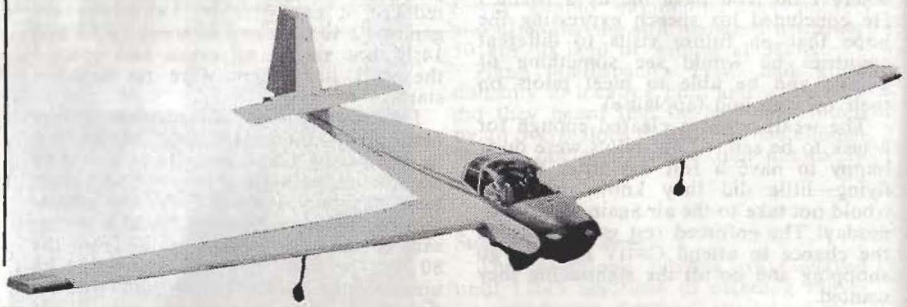
Leading Results 7 days	
Open Class	
Moffat	6323
Grosse	6196
Mercier	6024
Burton	5984
Makula	5983
Delafield	5976

Leading Results Std.		Sailplane	km/h.	Pts.
1	Reparon (Holland)	ASW-15	94.8	1000
2	Wroblewski (Poland)	Cobra 15	90.5	955
3	Johannessen (Norway)	Std. Cir.	89.0	939
4	Bloch (Switzerland)	ASW-15	88.7	936
5	Reichmann (Germany)	LS-1	88.2	931
15	Greaves (GB)	Std. Lib.	83.9	885
38	Gough (GB)	Std. Cir.	73.4	749

Bottom speed score 73.4 km/h.. 749 points
Total kms. flown Open Class 9,706
Total kms. flown Std. Class 10,406.5

Leading Results 7 days	
Standard Class	
Reichmann	6723
Wroblewski	6375
Cameron	6206
Kepka	6102
Mix	6042
Waibel	5970

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Day 8—2nd July

With only today and tomorrow to go the leading results, Moffat and Grosse in first and second place, and Reichmann with a 348 point lead; pilots were fighting hard to make third place. In the Open Class the difference was only 48 points from the third to sixth place, while in the Standard Class there was a little more breathing space with 236 points separation!

TASK: Open Class—527.5 km. Triangle: 306° Sierra Blanca (2), 175 km.; 097° Ft. Stockton (10), 234.5 km.; 231° Marfa (1), 118 km.

TASK: Standard Class—Out-and-return 038° Odessa (9), total distance 466 km. Grid 11:15. Standard Class first.

WEATHER: A clear but hazy sky with the right "feel" about it had taken the place of the rather miserable mornings of the last four days.

A high was still building over SW Texas and thermals were expected to reach 7-8,000 ft. agl. over most of the task area with 1/8th cu and 50% dry thermals. Best conditions from 15:30 to 17:30 hrs. (average 3.5 knots) up to about 20:00 hrs.

* * *

The sky looked perhaps a little better than it really was, and near Mt. Livermore pilots found conditions somewhat tricky. Hans-Werner Grosse was held up for some time in that area, and Wally Scott reported that there were too many big holes on course, which made him detour quite a bit. Apparently the promised blue thermals were not working at all well and several pilots reported that for some odd reason the plains were working better than the mountains.

Walter Neubert (13:24 start) came up with George Moffat (13:20 start) at the first TP; they also turned the 2nd TP at the same time; but thereafter on the last leg, Neubert diverted over the Davis mountains and ran into difficulties causing him to ditch his water ballast. This lost him about 20 min. and by this time, of course, Moffat was well and truly home. Michael Mercier made sure of keeping his 3rd place overall by being only 0.1 km/h. slower than George Moffat. He felt that his early start (12:52) had helped, as on the way back the later starters all had lost time trying to get enough height to get in. Among the later starters were George Burton and John Delafield (13:33 for both), they had been pair flying and were frequently heard on the radio; towards the end of the day they were seen scraping over the Davis mountains before they could make their final dash towards the finish line at 20:00 hrs. It so happened that Makula likewise ran into difficulties, and all three were 15th equal for the day scoring a rather low 800 points—but nevertheless, keeping their overall places.

David Innes (Guernsey) found today, and indeed throughout the week, that his Libelle 301 was rather outclassed and that he could not hope to keep up with the "lead sleds". Today when he joined an eagle in a thermal the bird objected and tried to attack him. He was one of the 11 pilots who did not make it back to base.

The Standard Class speeds were somewhat slower, but both Andy Gough and Con Greaves had a good run and managed to improve their overall positions by three places each. Henry Stouffs, who had recently recovered from hepatitis, had a recurrence while flying and had to land at the turning point. Unfortunately, he was unable to fly next day. (We do hope that by now he has fully recovered. ED.)

All but 5 pilots completed the task.



John Firth's (Canada) HP-11 under "treatment" in the Infirmary!
Photo: Ann Welch

Leading Results Open	Sailplane	km/h.	Pts.
1 Moffat (USA)	Nimbus	104.5	1000
2 Mercier (France)	ASW-12	104.4	999
3 Scott (USA)	ASW-12	103.7	992
4 Neubert (Germany)	Kestr. 22	97.0	928
5 Grosse (Germany)	ASW-12	93.9	899
15=Burton (GB)	Kest 19	83.6	800
15=Delafield (GB)	ASW-12	83.6	800
15=Makula (Poland)	Cobra 17	83.6	800

Bottom speed score 70.9 km/h., 678 points

Leading Results 8 days Open Class	
Moffat	7323
Grosse	7095
Mercier	7023
Burton	6784
Makula	6783
Delafield	6776

Leading Results Std.	Sailplane	km/h.	Pts.
1 Reichmann (Germany)	LS-1	97.2	1000
2 Nietlispach (Switzerland)	Std. Lib.	96.5	993
3 Smith (USA)	LS-1	96.3	991
4 Kepka (Holland)	Cobra 15	95.6	984
5 Gombert (France)	Wa-26	92.8	955
6 Gough (GB)	Std. Cir.	92.5	952
9 Greaves (GB)	Std. Lib.	88.6	912

Bottom speed score 70.4 km/h., 725 points
Total kms. flown Open Class 18,392.5
Total kms. flown Std. Class 17,755

Leading Results 8 days Standard Class	
Reichmann	7723
Wroblewski	7234
Kepka	7086
Cameron	6985
Mix	6946
Smith	6889

Day 9—3rd July

TASK: Open Class—450 km. Triangle: 306° Sierra Blanca (2), 175 km.; 034° Ardoin (4), 79.5 km.; 150° Marfa (1), 195.5 km.

TASK: Standard Class—384 km. Triangle: 316° Van Horn (3), 125 km.; 073° Pecos (6), 127.5 km.; 196° Marfa (1), 131.5 km. Grid 11:45. Open Class first.

WEATHER: Conditions would be basically similar to yesterday, with slightly more chance of thunderstorm development, mainly in the mountains. Winds ESE 10-12 knots. Weak lift from 11:00 hrs. was forecast with cloudbase rising to 12,000 ft. by 15:00 hrs. and average thermal strength up to 5 knots.

* * *

The last day for the "final exams" had arrived, and the two leading best pupils now had to show that they could pass *cum laudi*. Of course, with a lead of 228 and 489 points Open and Standard respectively, this was not going to be too difficult provided George Moffat and Helmut Reichman made a reasonable time.

For the last time the tug pilots carried out their job of launching, which they had done so efficiently day in day out during the whole period, and credit is due to them, they helped to provide one of the best features of the championships.

The weather was rather better than anticipated, and soon after the start line opened pilots were on their way—their last chance to improve their score! Although caution was needed here and there, no real problems were encountered.

Many local residents had turned out to come and watch the finish today.

Amongst the first back was George Moffat—almost too high, but he opened his tail chute well before crossing the line and the new World Champion Open Class was home. Helmut Reichmann followed shortly after and with "good finish, Weltmeister" John Ryan expressed the congratulations of many. Speeds were very close in the Standard Class which everyone completed, Johannessen of Norway being the day's winner. Helmut's score was 940 points for 16th place. Michel Mercier was the only one who created some anxious moments for the French team, all the other top ranking pilots being back, but in due course he too turned up, and although somewhat slower than the others, he was able to retain his position. Three pilots failed to complete the task in the Open Class.

And so after a combined total of 253,152.00 kms. the contest was over. George Moffat had climbed from 434 points down on the first day to a lead of 287 points at the finish, while Helmut Reichmann, Silver C pilot with only 250 hrs. at the start of the champs., is the youngest (28) World Champion to go down in the gliding history books. Winning outright on five days was certainly no fluke, in fact, his lowest score was 823 points for sixth place on the first day!

The complete results were published in S & G, Aug.-Sept. issue, pp. 298-299.

* * *

Thunderstorms played a large role at Marfa almost every day; they were either forecast but did not always happen, or *vice versa*, they happened when not fore-

cast. Of course, this did not help the task setting with the result that some of the tasks were underset and, apart from the cat's cradle days, most were completed on average in 3 to 4 hours, which for an area like Texas is not very long. The flying, however, was often demanding and tiring, as some of the terrain the competitors had to fly over was rather forbidding, and it is a tribute to all pilots that so little damage was done to any of the gliders.

The flying organisation worked very well, but Marfa as a site was not very conducive to create a base for a World Championships. It was felt by many that the absence of a place to congregate on the airfield left a large gap which was accentuated, because accommodation was spread over a fairly wide area. It is hoped that in future, World Championships accommodation on the site for everyone (or very near to it) is made a requirement, and that attention is paid to the need for satisfactory arrangements for the non-flying experts, who after all, contribute to the essentials which turns a Pilots Meet into a World Championships.

Leading Results Open	Sailplane	km/h.	Pts.
1 Moffat (USA)	Nimbus	107.8	1000
2 Scott (USA)	ASW-12	105.0	974
3=Burton (GB)	Kestr. 19	103.8	962
3=Neubert (Germany)	Kestr. 22	103.8	962
5 Labar (France)	ASW-12	102.7	953
8 Delafield (GB)	ASW-12	96.7	986

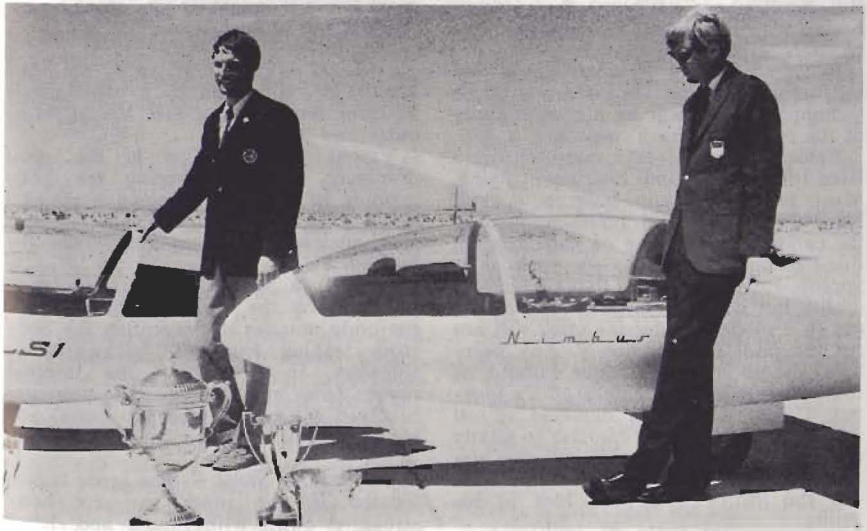
Bottom speed score 68.6 km/h., 636 points

Leading Results Std.	Sailplane	km/h.	Pts.
1 Johannessen (Norway)	Std. Cir.	92.4	1000
2 Kepka (Poland)	Cobra 15	92.2	998
3 Wroblewski (Poland)	Cobra 15	91.9	994
4=Mix (Canada)	Std. Cir.	91.3	988
4=Allemann (USA)	Std. Lib.	91.3	988
8 Gough (GB)	Std. Cir.	88.4	956
15 Greaves (GB)	Std. Lib.	87.5	947

Bottom score 58.4 km/h., 632 points
Total kms. flown Open Class 16,358
Total kms. flown Std. Class 14,976

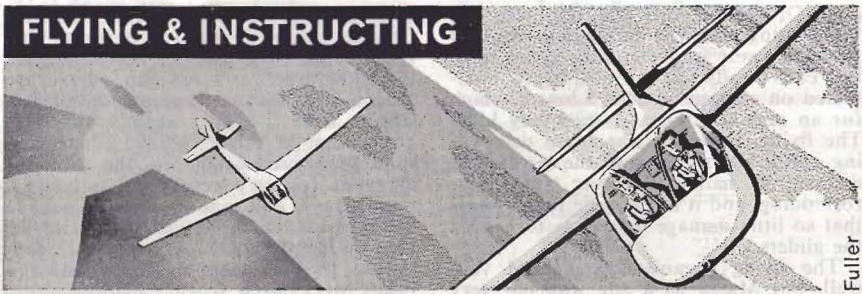
Final LeadingResults Open Class	
1 Moffat (USA)	8323
2 Grosse (Germany)	8036
3 Mercier (France)	7811
4 Burton (GB)	7746
5 Makula (Poland)	7687
6 Neubert (Germany)	7682
7 Delafield (GB)	7672
8 Labar (France)	7616
9 Scott (USA)	7352
10 Wiitanen (Finland)	7332

Standard Class	
1 Reichmann (Germany)	8663
2 Wroblewski (Poland)	8228
3 Kepka (Poland)	8084
4 Mix (Canada)	7934
5 Cameron (NZ)	7912
6 Waibel (Germany)	7815
7 Smith (USA)	7808
8 Johannessen (Norway)	7768
9 Petroczy (Hungary)	7729
10 Reparon (Holland)	7700



The two new World Champions. Photo: Dr. G. Stedtfeld

FLYING & INSTRUCTING


Fuller

WHETHER instrument flying should be taught formally, or whether a glider pilot should enjoy the adventure of teaching himself, is a question that will probably never be resolved. Formal instruction is fraught with the difficulties of prising two-seaters from the treadmill, getting the instruments working and hosts of other problems, not the least of which is finding a suitably qualified instructor. It would seem, therefore, that the spirit of adventure will, in the foreseeable future, remain triumphant. And why not indeed? (Reactionary cries of, "Poor old Neaves, he's going senile"). Providing we go about it in the right way, and the following notes compiled by Bill Scull show us how, there is no reason why instrument flying should not be quite happily undertaken.

Pilots so cleared by their CFI's and instructors wishing to improve their technique will benefit by a careful study of the National Coach's words.

Before doing so, let's consider simulated (under the hood) instrument flying. Most two-seaters can have a cockpit blacked out by metal polish applied to the canopy and the use of partitions. In side-by-side aircraft, a visor such as is approved by the BoT for flying schools is useful, but with the large areas of perspex in a modern glider the visor will not cut the pilot off completely. Any peepholes should be made opaque without, of course, obscuring the safety pilot's lookout. Unless a pilot is deprived of all external references the exercise is totally useless, and dangerous, as it will give him an overrated opinion of his prowess and the instructor a false idea of his ability.

If neither an instructor nor a suitable cloud can be found, there is no reason why a safety pilot shouldn't be employed. However, CFI's must ensure that he knows about taking over from unusual positions, and that both pilots are in no doubt about who is PI. The safety pilot must do the launch, approach and landing.

* * *

INSTRUMENT FLIGHT TRAINING

The aim is to teach the use and interpretation of blind flying instruments. This will be achieved by actual flight (under the hood) and, weather permitting, by flight in cloud. Current soaring practice and the ability to circle accurately at steady speeds is necessary before instrument flying is taught or attempted.

1 Synopsis of Instruction

The Physiological Aspect:—

GENERAL — One's balance on the ground is maintained by a combination of three senses. These are: Visual, Muscular and Vestibular.

VISUAL SENSE — This is the most dominant, the eyes seeing the body position in relation to known horizontal and vertical features of the earth's surface, such as the ground, buildings, the horizon etc.

MUSCULAR SENSE — This is the interpretation by the brain of the work of the body muscles in preventing the body from leaning forwards, backwards or sideways, in restraining the internal organs from movement (or the pressures involved when the organs do move) and by the effect on nerve endings of body joints.

VESTIBULAR SENSE — The sense organs located in the inner ear are bony structures filled with liquid, and detect the direction from which gravity is acting

and also angular movements of the head, such as turning or tilting forwards or sideways, or a combination of all three.

EFFECT OF FLIGHT ON VISUAL SENSE — Visual sense is essential for flight, and whilst external references used are not available, the flight instruments are used to provide the necessary visual sense. This visual sense is not affected by acceleration forces, but erroneous impressions from the other senses may lead one to not believe one's eyes. Severe turbulence may lead to "eyeball bounce" which degrades the visual sense.

EFFECT OF FLIGHT ON MUSCULAR SENSE — Acceleration in flight will place loadings on the body, muscles and internal organs, which the brain will interpret as attitude changes unless cross-checked visually. For example, slip and skid can be interpreted as a banked attitude whilst vertical downcurrents will give decreased body loading, resulting in a strong urge to move the control column back sharply to increase body loading to normal. A vertical upcurrent will give the opposite effect, therefore over-controlling must be guarded against. Similarly, when coming out of a turn, the increased loading to which the body has become accustomed in the turn must be reduced and the effect anticipated, otherwise the aircraft will roll out of the turn nose-high, this can also be due to the trim setting required in the turn (i.e. nose-up).

EFFECT OF FLIGHT ON VESTIBULAR SENSE — Acceleration will cause a relative movement between the liquid contained in the organs and the walls of the organs themselves. This relative movement is transmitted to the brain for attitude interpretation. Slow accelerations may not cause any relative movement and therefore gentle banks, turns, dives or climbs may go undetected. A sustained acceleration will eventually cause the relative movement to cease, giving the impression of the acceleration having ceased. Similarly, a quick return to level flight will cause a rapid relative movement to develop, giving a strong impression that the levelling out process has been overdone, causing a strong tendency to return to the original condition. The impressions given by the vestibular sense can be very powerful and at all times the instruments must be relied upon to give attitude information. Straightening out after a prolonged turn can give the effect of turning the opposite way.

2 The Instruments

Description, limits, errors, and pilot's serviceability checks:—

ARTIFICIAL HORIZON:—

1 *Description* — The artificial horizon consists of a horizon bar which is kept parallel to the Earth's (or true) horizon by a gyroscope and a superimposed image aircraft which is fixed with wings parallel to the aircraft's wings. Movement of the aircraft nose in relation to the true horizon will be reproduced on a small scale by movement of the image aircraft in relation to the artificial horizon bar. Banking the aircraft in relation to the true horizon is reproduced as a bank of the image aircraft as seen against the horizon bar. A pointer moving over a graduated scale indicates the angle of bank achieved.
2 *Limits* — These vary between makes, but should allow a minimum bank of 99 degrees and a minimum pitch of 55 degrees before "toppling". Unless fitted with a quick erecting device an artificial horizon may take 10-15 minutes to erect, during which time the horizon bar will sweep over the dial, gradually settling to the bottom of the dial and slowly rising to the proper place.
3 *Errors* — These again vary between types, but most are liable to both acceleration and turning errors. Acceleration may cause an apparent slight bank and an apparent pitch-up, and may exist for twice the period of acceleration. The deceleration error is opposite to the acceleration error. Turning error may cause an apparent pitch and bank change during a correctly executed turn, and may show residual bank on completion of a turn, even though the aircraft is actually level. It is necessary, therefore, to cross refer the artificial horizon indications to other instruments, e.g. ASI.

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4 *Pilot's Serviceability Checks* — The gyroscope maintaining the position of the horizon bar is normally driven at speeds from 12,000 rpm upwards depending on type. The time to speed up the rotor sufficiently is about four minutes, and before this time the instrument, even apparently properly erected, will be sluggish, but the instrument should normally erect within 20 or 30 seconds. Should the voltage be low (either the DC input to the inverter or the AC output) then the gyro may erect but will remain sluggish. In the case of excessively low voltage it may fail to erect at all. A normal check can be made by turning the glider through 90°, during which the horizon bar should retain its attitude except for turning or acceleration errors.

MAGNETIC COMPASS:—

1 *Description* — All magnetic compasses rely on the property of a magnet to align itself in the Earth's magnetic field with its north seeking end towards north. The presentation of the information may be by:—

(a) a needle pointing towards north (or south), its angular deflection from the aircraft's heading being measured against a calibrated scale (verge ring), and viewed from directly above (Cook type);

(b) a scale fixed directly to the magnet, the aircraft heading being read directly off the dial where it coincides with the fore and aft axis of the aircraft (E2 type).

2 *Errors* — All magnetic compasses are subject to northerly and southerly turning errors, and to acceleration and deceleration errors. Northerly and southerly turning errors (in the northern hemisphere) result in the compass behaving in a sluggish manner in the northerly quadrant and in a very sensitive manner in the southerly quadrant. An acceleration in the northern hemisphere in either the easterly or westerly quadrant will result in the compass showing an apparent turn towards north, whilst a deceleration will show an apparent turn towards south.

Certain types of glider compass, notably the Cook, are designed to eliminate these errors:—

(a) by constraining the pivotting magnet assembly to eliminate "dip";

(b) by mounting the compass so that its axis can remain vertical while the aircraft is turning.

When it is required to straighten up onto a heading it will pay initially to reduce the rate of turn, bearing in mind the turning errors. The glider should be straightened up and a course held until the compass settles, after which a gentle turn for the final correction to heading can be made.

The effects of acceleration and deceleration errors are minimised by maintaining a heading by reference to the turn indicator until the glider has settled at its new speed.

3 *Pilot's Serviceability Checks* — The magnetic compass must be checked to ensure that no bubbles of air are present in liquid filled compasses, that the compass is indicating the approximate heading by reference to known heading (runway direction, wind direction etc.).

AIRSPEED INDICATOR (ASI):—

1 *Description* — The ASI measures the difference between the static pressure of the air surrounding the glider and the pressure of air on the forward facing parts of the glider—the total pressure.

The static pressure is fed into the instrument from a tube with closed end, with small holes pierced radially, or from a vent placed in a position where the truest indication of static pressure can be obtained. Total pressure is fed to the instrument normally from an open-ended tube (pitot) placed, in gliders, in the nose and in powered aircraft in front or below the leading edge of the wing, to be as clear of the disturbed air from the aircraft as possible.

2 *Errors* — Instrument error is caused by slight differences in construction and is measured against a master calibrator. If the error is large in a particular aircraft, the error may be displayed on a correction card in the cockpit. This error is not normally, however, taken into account.

Pressure or Position error (PE) is

caused by the effect of movement of the aircraft on the static pressure adjacent to the aircraft, and varied in amount depending on the position of the static vent or tube and the speed of the aircraft. The PE for a particular type of aircraft is found by experiment and is shown in tabulated or graph form in Pilot's Notes and/or Flight Manuals.

Blockages or leaks, in either the static or total pressure tubes or lines, will cause errors of indeterminate magnitude. Static bungs and/or pitot head covers should always be fitted when the aircraft stands on the ground, and pitot head heaters if available used under rain, cloudy or icing conditions in flight. The pot pitot used in gliders is to prevent blockage due to melting ice etc.

Effect of height. The ASI shows only indicated airspeed (IAS). Pressure error correction (PEC) must be applied to provide rectified airspeed (RAS) which should then be the same as the true airspeed (TAS) when the aircraft is flown under International Standard Atmospheric (ISA) conditions, i.e. at sea level at a pressure of 1013.2 mbs+15°C temperature. As height is gained, air density is reduced and the ASI begins to underread by approx. 1.75% of the RAS for every 1,000 ft. gained. Most navigation computers have scales on which, using air temperatures and height, TAS can be calculated.

3 *Pilot's Serviceability Checks* — Check that there are no obstructions on the pitot or static vents, that the glass is unbroken, and the needle reads zero.

ALTIMETER:—

1 *Description* — The altimeter is in effect a barometer which measures the pressure of the air at the height the aircraft is flying, the pressure being indicated by the movement of a needle around a dial which is calibrated in height. The needle may be set to zero on the ground to show height above the airfield.

2 *Errors* — A serviceable altimeter will indicate height, accurate to within a tolerance of ±30 ft. at altitudes up to 10,000 ft. and ±130 ft. above. It does, however, suffer from "stiction", which makes it unreliable as a reference when close to the ground.

When flying from an area of high barometric pressure to one of lower pressure, the effect on the altimeter is as if the aircraft had climbed, i.e. the needle would indicate a gain of height. If the needle is held to show a constant height, the aircraft will actually descend; so the aircraft will be lower than the indicated height. The amount of the error is approx. 300 ft. change in height for every 10 mbs change in pressure.

An altimeter will read higher in cold air and lower in warm air than it will be at the temperature for which it has been calibrated. Most navigational computers have a scale on which outside temperature can be set to calculate true height.

Many gliders do not have the altimeter connected to an external static source, but if it is, and the static tube or vent becomes blocked by ice or other obstructions, the pressure will remain constant in the instrument and it will continue to register the height at which the blockage occurred.

3 *Pilot's Serviceability Checks* — Apart from the obvious, such as a damaged sticking needle, the altimeter may be considered serviceable if it reads zero when the sub-scale is set to the aerodrome atmospheric pressure, or aerodrome elevation within ±30-45 ft. when set to mean sea level pressure.

VARIOMETER:—

1 *Description*—The variometer measures a rate of change of pressure being calibrated to show as feet, metres per second or knots.

2 *Errors* — Susceptible to changes of airspeed unless suitably compensated by a "total energy" device. May give erroneous readings if over or under compensated by a total energy device.

3 *Pilot's Serviceability Checks* — The instrument should read zero when the aircraft is on the ground. It may be checked on the ground by pinching the tube from the capacity; the pointer should indicate a climb and then slowly return to zero over a period of at least 5 seconds on releasing the tube.

TURN INDICATOR:—

1 *Description* — This instrument measures the precessing force on a gyroscope when the aircraft is turned. The rate of turn is indicated against a scale marked zero to 4. In unmodified instruments a rate 1 turn is a change of heading through 3° every 1 second. In gliders the instrument should be corrected to make rate 1 equivalent to approx. 6° per second.

2 *Errors* — A movement in pitch at the same time as yaw in a turn will impose an additional precessing force causing the instrument to overread and the needle may go on to the stop. This is particularly noticeable in recovering from loops, spins or unusual attitudes, when a small amount of yaw, combined with the pitching force, may be sufficient to displace the needle to its limit.

Low voltage will cause the rotor of the gyro to run slow, and the instrument will be sluggish and underread.

3 *Pilot's Serviceability Checks* — If the battery supply is adequate, the instrument should take approx. two minutes to run up to speed. Pressing the corner of the instrument panel should cause the needle to deviate slightly, and during ground handling if the glider is turned, turning should be clearly shown.

SLIP INDICATOR:—

1 *Description* — The slip indicator may be either the top needle of the combined turn and slip indicator or a ball contained in a curved tube below the turn indicator which may then be pivoted at the bottom. The pointer type is operated by a pendulous weight.

In straight and level flight and in a correctly balanced turn the slip indicator will be central. In straight flight with the wings banked, the slip indicator will deflect towards the lower wing. In an unbalanced turn, in which the rate of turn is insufficient for the angle of bank applied, the indicator will move inwards, and if the rate of turn is too high, outwards.

2 *Pilot's Serviceability Checks* — With the wings held level the indicator should be in the middle; with a wing lowered to the ground the indicator will move towards that wing.

* * *

Part 2 of this article dealing with in-flight instruction will be published in our next issue.

WESTERN REGIONALS—13th-21st June

From notes By MIKE CLEAVER

DENNIS Corrick, the Bristol Club's chairman, welcomed everybody to Nympsfield and wished them a good week's flying. The Contest director, Mike Harper, started briefing with a summary of the rules and local flying regulations. In particular, he drew attention to the fact that the site is surrounded by valleys which produce lots of sink for the unwary, therefore all circuits should be upwind of the field. "We don't want to put our little black suits on for any of you," he said.

Tasks for the week were set by Ron Sandford and Mike Harper, whilst Tom Bradbury was in charge of the weather.

SATURDAY, 13th:—Owing to deteriorating conditions the original task a 130 km. out-and-return was shortened to Honeybourne and back, a total distance of 106 km.

Tom's forecast of an 8 knot easterly wind and only 2 knot thermals rising to 4,000 ft. coupled with poor visibility was proved correct. Of the 25 starters only Alf Warminger and Tony Watson got back. Alf in his Phoebus 17 averaged 33 km/h., but Tony flying a K-6E beat him on handicap but lost this advantage through making a photographic error. As only 4 pilots covered the required distance the day was devalued to 178 points.

Best radio message—from lost pilot, "Where should the sun be at this time of day?". Four other pilots, "In the sky".

SUNDAY, 14th:—Out-and-return Wincanton Racecourse, total distance 147 km.

Tom's charts showed banks of strato-cu to the east of the site, which were expected to roll in over us during the evening and burn off next morning. Good thermals with an 18 knot NE wind were forecast.

The majority of pilots completed the task, and everyone scored despite the headwind component on the return leg. Brian Davis, K-6E, was first sighted scratching 4 miles out below the power wires across the valley; at the same time he was heard over the radio asking his crew to pray—their prayers were answered and Brian got home. Jim Webster also made base after having to struggle 15 miles out. Roger Barrett, Dart 17R, won the day closely followed by Tony Watson.

MONDAY, 15th:—134 km. Triangle, Moreton-in-the-Marsh, Malvern, Nympsfield.

The strato-cu forecast by Tom yesterday had completely burnt off by 14:00 hrs., but the 3-4 knot blue thermals for today were being cut off by a sharp inversion at 3,500 ft.

The second TP, a ringed fort at the top of the Malvern hills, produced some interesting photographs; both John Thorne and Phil Goodwin took their photos from below the hill on the far side. Of the 10 pilots who completed the task Frank Pozerskis, Cirrus, was fastest at 46.73 km/h. The finish line observers had a grand time spotting gliders 8 miles out. And "Smokey Joe" (J. L. Smoker) down to 500 ft. at Moreton Valence took everybody by surprise, himself as well, when he just made the finish line at min. sink and nought feet. Three others were not so lucky, and had to land out in full view of the finish line. Frank Pozerskis received a photographic penalty, which made Tony Watson the winner of the day.

THURSDAY, 18th:—No tasks could be set on the previous two days, and today's very weak conditions would probably result in another no contest. As the weather at Husbands Bosworth was more promising, the task would be flown from Husbands Bosworth, and all trailers and pilots set off in order to arrive before 15:00 hrs. However, at Nympsfield thunderstorms and restricted visibility prevented the tugs from taking off and hurried alternative towing arrangements had to be made. Husbands Bosworth put their tugs at our disposal and we would like to record our thanks for their assistance and hospitality.

First launch was at 15:20 hrs. and 8 gliders completed the 72 km Goal race from Husbands Bosworth to Dunstable. Again Tony Watson won the day at 56.17 km/h. Unfortunately, the last few launches were made into a clear blue sky, and thus some pilots were unable to get away, with the result that the day had to be devalued. John Thorne damaged his SHK landing just short of Dunstable and flew an Olympia 403 for the rest of the contest. Best radio message "Bunny your tail is showing—put your wheel up".

FRIDAY, 19th: 207 km. Triangle—Didcot, Stratford, Nympsfield.

Today brought a magnificent forecast of light easterly winds and good thermals to 10,000 ft.—a 300 km. day! Mike and Ron duly set a 300 km. triangle, but a low inversion did not break until 13:00 hrs. and, therefore, the above task was selected instead.

Take-off started at 13:30 hrs., and it seemed that we had hardly finished launching when Tony Watson rounded the second TP. He completed the task before the first relight took off, and his 73.45 km/h. almost equalled the U.K. record. Three pilots reached 10,000 ft. and seven pilots completed the task.

SATURDAY, 20th: — Out-and-return — Pitsford Reservoir, distance 240 km.

A frontal system had come in from across the Atlantic during the night and was slowing down over Ireland, giving 18 knot SSW winds lessening toward evening. Good thermals until cut off by the approaching high cover were forecast. Jim Webster pulled out of the contest to try a 300 km. goal flight to Great Yarmouth, but landed at Wells-next-the-Sea. Two non-competing club pilots also set off to Yarmouth, with one getting there and the other 12 miles short.

All 24 pilots reached the TP, but only

9 crossed the finish line. Anne Burns, Cirrus, was fastest with 56.9 km/h., but Tony Burton's 52.9 km/h. was enough to win him the day on handicap. John Williamson visited us with the Std. Libelle and flew a 100 km. triangle for fun. Peter James and Terry McGee both landed a few miles short of the finish line.

SUNDAY, 21st:—109 km. Triangle—Lechlade, Winchcombe, Nympsfield.

SW winds 15 knots and a promise of good thermals was the forecast for the last day. There were only 23 starters, as Howard Johns and Phil Goodwin had to withdraw because of retrieve problems. John Williamson and Dennis Corrick, however, flew the task *hors concours* and both completed as well as 16 of the competitors. Frank Pozerskis was back early enough to do the task for the second time and managed to beat John Williamson's best time by 14 seconds. Frank collected the 1,000 points at 64 km/h. and just failed to beat Anne Burns by 1 point for second place overall.

At the prizegiving, John Williamson presented the Sir Egbert Cadbury Trophy to Tony Watson the winner. Anne Burns, on behalf of the competitors, presented gifts to Mike Harper and Tom Bradbury.

Final Results (- Did not fly. * Penalty deduction)

No.	Pilot	Hcap %	Sailplane	1 175	2 1000	3 1000	4 535	5 1000	6 1000	7 1000	Total Pts.
1	Watson, A. J.	96	K-6E	160	930	1000	535	1000	1000	688	5313
2	Burns, Anne	84	Cirrus	10	731	921	384	801	945	757*	4549
3	Pozerskis, P.	84	Cirrus	77	865	894*	457	327	928	1000	4548
4	Warminger, A. H.	82	Phoebus 17	175	827	271	471	800	735	788	4067
5	Barrett, R. Q.	90	Dart 17R	-	1000	-	0	-	807		3610
	Hull, E.			0	-	727	-	132	-	844	
6	Haynes, K. W.	84	SHK,	37	247	893	114	772	780	548	3391
7	Tull, V. F. G.	80	Diamant 18	5	717	712	54	765	883	95	3231
8	Emmett, M. R.	96	K-6E	7	825	497	479	311	446	489	3054
9	James, P. W.	98	Skylark 4	61	676	768	—	315	476	714	3010
10	Smoker, J. L.	98	Skylark 4	80	314	700	0	720	417	560	2791
11	Thorne, J. S.	84	SHK	46	321	869	265				
		100	Olympia 403					239	278	740	2758
12	McGee, T. N.	90	Dart 17R	6	615	362	0	720	446	518	2667
13	Bellew, J.	96	K-6E	32*	-	766*	-	0*	-	657	2440
	Marlow, T.			-	189	-	348	-	448	-	
14	Hill, M. B.	100	K-6CR	0	-	559	-	293	-	239	2345
	Winning, E. J.			-	596	-	348	-	310	-	
15	Toulson, D. M.	96	K-6E	0	-	266	-	363	-	191	2192
	Davies, B. W.			-	590	-	0	-	782	-	
16	Terrett, R.	96	K-6E	22	-	222	-	367*	-	231*	2019
	Harding, R.			-	285	-	479	-	413	-	
17	Stewart, S. A.	96	K-6E	27	-	36	-	120	-	304	2002
	Smith, G. E. M.			-	637	-	111	-	767	-	
18	Pope, M. H. B.	90	Dart 17R	4	355	485	0	356*	339	289	1828
19	Vennard, D. A.	96	K-6E	0	590	266	0	291*	375	236*	1758
20	Webster, J.	100	K-6CR	60	754	301	124	95	-	282*	1616
21	Roberts, D.	106	Olympia 460	0	-	256	0	-	350	-	1520
	Gibbons, J.			-	290	-	-	375	-	249	
22	Goodwin, P.	90	Dart 17R	0	178	328	262	194*	342	-	1304
23	Andren, C. E.	96	K-6E	0	361	41	0	128	240	226	996
24	Elliott, E. G.	98	Skylark 4	0	100	42	23	83	390	282*	920
25	Johns, H.	108	Skylark 2	46	224	-	-	115	302	-	687

GLIDING CERTIFICATES

DIAMOND DISTANCE

No.	Name	Club	1970
1/21	J. Delafield	In South Africa	6.1

DIAMOND HEIGHT

3/106	K. Rylands	Midland	2.5
3/107	R. F. Tindall	Yorkshire	2.4
3/108	D. W. Lilburn	Yorkshire	11.7
3/109	R. Jones	Lasham	10.6
3/110	N. Gaunt	Yorkshire	11.7
3/111	F. H. Knipe	Yorkshire	2.5

DIAMOND GOAL

2/316	D. H. Scarfe	Phoenix	18.6
2/317	J. D. Benoist	Bicester	25.6
2/318	D. W Evans	Cambridge	25.6
2/319	D. W. Braham	Cambridge	25.6
2/320	P. L. Sears	Cambridge	25.6
2/321	C. R. Spink	Bicester	25.6
2/322	R. E. Davis	W. Wales	25.5
2/323	P. W. Gardner	Surrey & Hants	5.6
2/324	G. P. Berry	Eagle	18.6
2/325	P. G. Garnett	Surrey & Hants	21.6
2/326	R. M. Ward	Phoenix	18.6
2/327	J. D. J. Glossop	Bicester	11.7

GOLD C COMPLETE

254	G. E. King	Surrey & Hants	11.6
255	D. H. Scarfe	Phoenix	18.6
256	J. D. Benoist	Bicester	25.6
257	D. W. Braham	Cambridge	25.6
258	F. H Knipe	Yorkshire	2.6
259	W. E Malpas	France	2.6
260	J. B. Hearn	U.S.A.	30.5

GOLD C HEIGHT

G. E. King	Surrey & Hants	11.6
J. H. Tucker	Southdown	24.7
I. H. Agutter	Southdown	7.7
M. E. Carter	Yorkshire	30.7
A. T. Kenworthy	Yorkshire	11.7
R. R. Corker	Northumbria	9.6
A. K. Bull	Midland	25.7

GOLD C DISTANCE

D. H. Scarfe	Phoenix	18.6
J. D. Benoist	Bicester	25.6
D. W. Evans	Cambridge	25.6
D. W. Braham	Cambridge	25.6
P. S. Sears	Cambridge	25.6
C. R. Spink	Bicester	25.6
P. W. Gardner	Surrey & Hants	5.6
G. P. Berry	Eagle	18.6
P. S. Garnett	Surrey & Hants	2.6
R. M. Ward	Phoenix	18.6
F. H. Knipe	Yorkshire	2.6
W. E. Malpas	In France	2.6
J. B. Hearn	In U.S.A.	30.5
T. C. Harrington	Bicester	1.8
R. T. Cole	Surrey & Hants	30.7
A. J. Wagenaar	Thames Valley	14.8

SILVER C

No.	Name	Club	1970
2645	M. Elsom	Bannerdown	8.6
2646	R. D. Young	Moonrakers	20.6
2647	A. J. Hopson	Cotswold	20.6
2648	G. V. Matthews	Phoenix	10.6
2649	J. M. McKenna	Portsmouth Naval	27.5
2650	R. S. Davis	Thames Valley	19.6
2651	M. Wilmot	Leicester	2.6
2652	P. G. Ellison	Burton & Derby	21.6
2653	A. F. V. Pooley	Bicester	20.6
2654	D. T. Howard	Cotswold	2.6
2655	C. E. Timothy	Essex	21.6
2656	D. Manser	Kent	19.6
2657	V. Fielding	Coventry	21.6
2658	D. A. Stagg	Essex	21.6
2659	B. R Moore	Surrey & Hants	8.6
2660	B. T. Stableford	Chilterns	20.6
2661	J. W. Baker	Wrekin	3.5
2662	D. R. Jones	Bicester	20.6
2663	R. F. Jemloms	Bath & Wilts	20.6
2664	H. B. Walrond	London	18.6
2665	K. W. Winfield	Thames Valley	21.6
2666	D. M. Abbey	Coventry	20.6
2667	B. B. Crocker	Ouse	25.6
2668	H. W. Meacham	Chilterns	2.6
2669	T. W. Carpenter	Bannerdown	25.6
2670	J. E. F. Hall	643 GS	20.6
2671	H. Walker	Doncaster	2.6
2672	A. E. C. Bawden	Phoenix	20.6
2673	V. W. Fillingham	Trent Valley	25.6
2674	B. Morgan	Derby & Lancs.	2.6
2675	P. G. Smith	Eagle	9.6
2676	G. Milward	Chilterns	1.7
2677	A. C. Pond	N.1 GS	1.7
2678	J. B. Pickup	Bicester	28.6
2679	J. W. Fisher	Lincoln	2.6
2680	K. B. Steadman	Anglia	1.7
2681	E. J. Rice	Handley Page	1.7
2682	F. K. Russell	London	11.7
2683	J. Williams	In W. Germany	26.5
2684	B. G. Nicholls	Four Counties	16.6
2685	D. Lidbury	Oxford	11.7
2686	B. Docker	Surrey & Hants	21.6
2687	Margaret Harris	Kent	21.6
2688	C. Davison	Imperial College	28.6
2689	B. Griffin	Midland	9.7
2690	K. E. Harsent	Wrekin	21.6
2691	J. C. Large	Coventry	8.7
2692	K. C. Brett	Burton & Derby	11.7
2693	E. Chwistek	Cotswold	5.6
2694	M. G. Shaw	Derby & Langs	11.7
2695	G. W. Stiddig	Bicester	11.7
2696	R. Sharman	643 GS	5.7
2697	D. R. Redman	Cambridge	11.7
2698	P. A. Blacklin	Derby & Lancs.	11.7
2699	P. J. E. Vernon	Chilterns	11.7

SOUTHERN REGIONALS 11th - 18th July

By CHRIS WILLS

AS the sun rose on Saturday, the 11th July, the Dorset countryside seemed more beautiful than usual with its clear, fish-filled streams, thatched cottages and patchwork of fields. It was so clear that a mast 28 miles away was clearly visible from the club site at Compton Abbas. There before us could be seen the ancient town of Shaftesbury with its ghosts of Druids, King Alfred (800 AD), and many others, sparkling in the sun. Such was the scene that greeted the 18 competitors on the first day of the contest.

The task set was a race to Lasham via Shillingford Bridge, total distance 152 km.

The forecast gave fair conditions over south England with better conditions inland, particularly to the NE. Wind NW 20-25 knots.

Those pilots who flew along track, after a struggle over the first 40 km., found good, regular, dry thermals and arrived at Lasham with respectable times. Not trusting the cloudless sky I flew well left off track to good cumuli in the Keevil valley, but the detour was not worth it. T. Greenwood, Cirrus, won with 52.9 km/h., and all but 5 pilots finished the task.

MONDAY, 13th JULY:—Although a task had been set on Sunday, not enough pilots went past the required minimum distance to make it a contest day.

Task: Stockbridge, Newbury, Lasham, total distance 114 km.

Launching commenced at noon and good dry thermals up to 4,300 ft. were encountered immediately after leaving. The trouble started when pilots, confident in these good conditions, ran into dead air at Newbury where high cloud associated with a front from the NW reached the TP ahead of them, and the majority of pilots had to land in this area. Only 6 pilots finished with Ray Foot in his Skylark 3 being fastest at 65.8 km/h.

TUESDAY, 14th JULY:—As the weather was unsuitable for a task some parachute drops were made, and Sergeant Boot of the Thames Valley Parachute club demonstrated how a glider parachute would open from a bale-out at only 700 ft.!

WEDNESDAY, 15th JULY:—With a very poor met. forecast the only possible task was set—free distance. The problem facing the pilots was simply whether to go east or west, depending on which tasksetter you asked. The east was downwind, but clouds were likely to spread out, while going west meant less overclouding, but one would have to cope with a slight crosswind while an approaching front would cause trouble later in the day.

Ray Foot, who had left the site as quickly as possible in a westward direction, was soon heard on the radio to be landing, which made the others hang around the site for quite some time before they departed. By the time Ben Watson, Skylark 4, left, however, the sky began to clear in the west and he was able to continue his flight into Devon.

Later, when down to 800 ft. over Salcombe peninsula, he contacted a wave which took him back to 4,000 ft.; this enabled him to reach Plymouth where he landed on a golf course, 164.6 kms. from base. My own arrival at Dartmouth is unforgettable. After slope soaring over a warship at 800 ft. (anchored on one side of the estuary) I landed downwind



Winner Ray Foot. Photo: Mike Riddell

on the Naval helicopter base (133 km.), and after being taken to the Wardroom of the Britannia Naval College, I was royally entertained by the Officers, every one of whom had either done gliding or was about to do so. They even put a Landrover at my disposal to take me back to the glider when my crew had arrived.

To the east, the battles were hard. The sky clouded over and there were few thermals. To the south, the Bournemouth Control Zone was ever ready to ensnare the unwary; in fact, several pilots were penalised for landing inside the zone.

The third best distance of the day was returned by T. Greenwood, who managed 88 kms. The day was devalued to 275 points.

THURSDAY, 17th JULY:—At last the weather was more promising and a flat 200 km. triangle, Windwhistle Golf Course, Stockbridge, Compton Abbas, was set.

Good regular lift with small cu was encountered by most pilots. Only in the Stockbridge area conditions were slightly tricky, but nearly everyone got home with speeds between 48.7 and 31.6 km/h.. Ray Foot being the winner and taking the overall lead.

SATURDAY, 19th JULY:—Yesterday's task had to be cancelled before anyone took off, but a clearance allowed some local soaring in the late afternoon.

Owing to the thermals starting later than expected, a 200 km. triangle was changed to a 130 km. out-and-return to Ramsbury.

Today's weather was the most complex we had so far encountered. Peter Treadaway thought that the conditions changed at least five times during his flight. The time of start turned out to be very important, and for those who managed this the few good thermals gave them a chance to leave the site. But it was a battle the whole way, and the strong wind drifted pilots miles off track and no-one was able to complete the course. Again Ray Foot won with 124 km. and only 6 pilots did more than 100 km. The day was devalued to 620 points.

Bad weather stopped play on the last day. Even with the very indifferent weather we had managed 5 contest days, but the hard work put in by everyone helped much to make the whole contest very successful.

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Final Results

No.	Pilot(s)	Hcap % Sailplane	1 1000	2 1000	3 275	4 1000	5 620	Total Pts.
1	Foot, R. A.	100 Skylark 3	971	1000	0	1000	620	3591
2	Greenwood, T.	84 Cirrus	1000	974	95	596	391	3056
3	Marsh, C. J.	96 K-6E	892	765	61	506	543	2767
4	Wills, C.	96 K-6E	539	399	204	993	498	2633
5	Malpas, W. E.	90 Dart 17R	597	801	2	647	401	2448
6	Treadaway, P.	110 K-13	467	521	6	698	600	2292
7	Riddell, D. M. R.	96 Foka	654	917	16	652	0	2239
8	Watson, B. B. C.	98 Skylark 4	640	450	275	-	-	1933
	Watson, Patricia		-	-	-	403	165	
9	Stoddart, R. C.	98 Dart 15	258	450	0	472	555	1735
10	Hurd, V. J.	86 ASW-15	554	745	0	266	0	1565
11	Stafford Allen, R. C.	114 T-49	791	531	0	186	0	1508
12	Ballard, L.,	96 K-6E	345	-	9	-	121	1375
	Duffin, E. R.		-	428	-	472	-	
13	Latimer, B. H.	100 Skylark 3	0	-	0	-	0	1050
	Kape, J. D.		-	544	-	506	-	
14	Upson, G. M.	96 K-6CR	0	-	0	-	0	1037
	Brown, K. R.		-	445	-	592	-	
15	Torode, H. A.	100 Skylark 3B	503	-	32	-	0	584
	West, D.		-	0	-	48	-	
16	Marriott, S. H. C.	84 SHK	0	0		476	-	476
	Thorne, J. V.		-	-	-	-	0	
17	King, P. G.	86 ASW-15	0	383	44	18	0	445
18	Sutton, M. B.	96 K-6E	29	-	0	-	0	390
	Leech, H. D. V.		-	194	-	167	-	

A REMARKABLE CHAMPS

By GERRY BURGESS

THANKS to solid financial assistance from so many supporters of British Gliding, our four team pilots duly achieved an extra two weeks of practice at Odessa, and thus arrived at Marfa fully fettled and with some useful Texan soaring experience behind them. The story of the three weeks of Marfa is covered fairly fully elsewhere in this issue — although it has to be admitted that space does not permit *complete* coverage of all that happened on and off Marfa Presdio County Airport. The story of the British cultural expedition to the Mexican border town of Juarez, for instance, and the results of British Team consumer researches into the serviceability of disposable paper underwear during hot climate retrieves will, like the story of "Leszno by Moonlight", have to be held over for the time being.

Suffice to say that the British Team thoroughly enjoyed their trip to Marfa, despite some serious shortcomings on the non-flying side of the Marfa Organisation. Our many months of preparations were rewarded by a fourth and a seventh in a World Championships which were

probably the fairest test ever of pilots and machines. (Spare a thought, however, for Neubert of West Germany in his 22-metre Kestrel who missed almost a complete day's flying, possibly as a result of "Marfa Air" landing early on the first contest day, and yet managed to end up in sixth place by the end of the contest).

These Championships were remarkable for the consistent flying of the two Class winners, Moffat and Reichman, who each scored 1,000 points on no less than five days out of the nine contest days and finished the contest with a substantial lead over their nearest rivals: both were worthy winners indeed.

The Championships were probably also remarkable for the fact that the living accommodation was 16 miles from the contest site with the consequence that there was little social activity at the airfield — teams were too anxious to get back to the showers at the end of a hot day — and little opportunity for social contact at Alpine, where the teams were accommodated.

Most remarkable of all however was the general agreement amongst competitors that to compete in the Open Class in 1972 with any hope of winning is going to be a very expensive business. It is to be hoped that CIVV will give *urgent* consideration to this problem and come up with a quick answer on the future form of World Championships. Whether it should be a handicapping system or a four class (15m, 17m, 19m, Open) championships will no doubt be the subject of much debate this winter. In fairness to manufacturers and potential purchasers, however, the sooner we have an answer, the better.

Scoring systems for World Championships also merit some attention. There was far too little spread of points in speed tasks in the system adopted for Marfa compared with the spread of points obtained in a typical distance task.

Flying apart, the most interesting side of the Marfa visit was the splendid hospitality shown to us by the local Texans at Odessa, Marfa and Alpine. In particular there was the tremendous help we had from Al Parker — culminating in a memorable meal for the whole team the night before we left for London — and the hospitality of the Stradley-Gage Ranch at Alpine.

We were also very fortunate to have such competent American crewmen with our team as Bill Engelke, Einar Enevoldson, Butch Pannage and Chris Crowl, together with their retrieving cars, including the one provided by Joe Lincoln. We are extremely grateful for all the assistance we received from them and hope they enjoyed their sojourn with the British.

Throughout the period of preparation for Marfa my job as team manager was made relatively easy as a result of the splendid assistance received from the Royal Air Force and the willingness and competence with which individual team members undertook various tasks. The team was particularly encouraged by the response from so many people to the various appeals for funds; it had originally seemed an impossible task to raise enough money to send a full team to Marfa, but in the event we may even have ended up with a small surplus which will be available for the next World Championships.

Our thanks again to all concerned.

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FINAL RESULTS OPEN CLASS - Doncaster. 22nd - 31st August. (Figures behind brackets are handicapped scores and shown for rating purposes only)

No.	Pilot	H'Cap %	Sailplane	Day 1 718	Day 2 876	Day 3 1000	Day 4 823	Day 5 1000	Day 6 915	Day 7 1000	Total Pts.	Total H'Cap	
1	Cardiff J.	74	ASW-12	246(8)272	876(1)1000	742(2)651	328(16=)305	1000(1)979	915(1)1000	1000(1)1000	5107	5207	2
2	Burton G. E.	78	Kestrel	144(21)177	718(2)875	1000(1)1000	823(1)945	996(2)987	657(3)766	708(2)768	5046	5518	1
3	Smith M. J.	90	Dart 17R	357(3)526	367(14)539	462(9)692	659(6)778	979(3)1000	427(9)598	438(11=)549	3689	4682	3
4	Fitchett B.	84	Cirrus	301(6)406	458(10)615	649(3)778	187(22=)217	486(11=)456	696(2)881	685(4)833	3462	4186	4
5	Costin M. C.	84	Cirrus	152(20)215	593(4)790	479(8)595	752(2)886	407(15=)386	418(10)536	438(11=)516	3239	3924	6
6	Pazerskis P.	84	Cirrus	246(8=)334	614(3)814	369(14)477	562(8=)615	678(5)630	469(7)598	300(26=)248	3238	3716	8
7	Warminger A. H	82	Phoebus 17	214(14)287	290(23)383	562(5)644	733(4)855	466(13)424	496(5)615	438(11=)438	3199	3646	10
8	Jones R.	88	Std. Cirrus	246(8)363	52(31)95	536(7)737	750(3)898	629(7)619	648(4)868	336(21)292	3197	3872	7
9	Ince D. H. G.	88	LS-1	718(1)1000	0 0	579(4)785	562(8=)650	270(27)276	341(12)469	651(5)850	3121	4030	5
10	Paddick G R.	84	SHK	305(5)411	342(18)464	168(31)112	624(7)679	619(8=)577	218(26=)288	689(3)836	2965	3367	13
11	Orme H.	96	K-6E	270(7)449	513(8)804	188(19=)330	355(14)472	821(14)884	281(15)438	315(23=)305	2743	3682	9
12	Woods L.	84	SHK	193(16)268	590(5)785	287(16)389	694(5)803	241(29)233	254(16=)332	315(23=)258	2574	3068	15
13	Zealley T. S.	96	K-6E	0 0	574(6=)894	248(18)544	367(13)487	645(6)700	445(8)669	260(31=)258	2539	3552	11
14	Hanson D. F.	80	BS-1	0 0	425(11)535	540(6)580	8(28)20	407(15=)361	484(6)584	556(9)634	2420	2687	20
15	Stevenson J. N.	98	Skylork 4	218(13)382	574(6=)913	398(10)764	328(16=)453	252(28)302	161(28)275	438(11=)438	2369	3527	12
16	Saundby R. P.	96	K-6E	320(4)521	299(22)482	281(17)584	109(25=)177	619(8=)676	254(16=)399	438(11=)438	2320	3277	14
17	Burton A. J.	90	Dart 17R	143(22)229	419(12)610	188(19=)324	0 0	486(11=)495	254(16=)368	600(7)817	2090	2843	17
18	Plane R. S.	100	K-6CR	159(18)301	364(15)610	163(28)166	558(10)753	287(24=)347	254(16=)421	260(31=)271	2045	2869	16
19	Benoist J.	90	Dart 17R	379(2)559	211(26)322	188(19=)302	371(12)453	391(17)403	57(30=)102	423(19)373	2020	2516	23
20	Gill C. J.	96	K-6E	155(19)277	330(20)530	185(27)180	179(24)261	619(8=)676	57(30=)120	438(11=)479	1963	2523	22
21	Tull V. F. G.	100	Skylork 3F	196(15)358	507(9)833	28(32)34	351(15)492	280(26)340	239(24)399	347(20)353	1948	2809	18
22	Wishart R.	88	Std. Libelle	93(27)153	238(24)350	392(12)574	109(25=)148	349(20)350	254(16=)354	504(10)676	1939	2605	21
23	Riddell J. C.	82	Phoebus 17	71(29)100	223(25)298	394(11)467	12(27)25	329(22)304	254(16=)323	639(6)752	1922	2269	27
24	St. Pierre A.	84	SHK	174(17)244	189(28)265	375(13)484	304(18)340	463(14)435	57(30=)89	296(30)244	1858	2101	29
25	Wilkinson K. G.	86	ASW-15	242(11)344	394(13)544	DNF	DNF	297(23)294	347(11)460	571(8)729	1851	2371	26
26	Robertson D. J.	90	Dart 17R	124(25)205	336(19)497	188(19=)294	523(11)625	91(32)110	287(14)407	300(26=)271	1849	2409	24
27	Ellis C. A. P.	100	Skylark 3	103(26)215	354(17)596	188(19=)445	254(20=)369	287(24=)347	221(25)372	438(11=)438	1845	2782	19
28	Maltby H. W.	96	K-6E	140(23)253	180(29)307	138(29)136	300(19)404	365(18=)410	254(16=)399	300(26=)292	1677	2201	28
29	Tarr J.	112	Sky	65(30)201	358(16)691	0 0	254(20=)433	225(30)325	182(28)368	325(22)380	1409	2398	25
30	Lyndon R. J.	96	K-6E	0 29	55(30)123	188(19=)188	187(22=)266	365(18=)410	254(16=)399	300(26=)292	1349	1707	31
31	Smith R. J.	86	ASW-15	227(12)325	46(32)80	184(26)184	0 0	16(33)32	298(13)400	438(11=)466	1209	1487	32
32	Hart S. N.	102	Olympia 463	140(23)282	318(21)553	188(19=)216	4(29)59	212(31)272	0 27	315(23=)332	1177	1741	30
33	Dimock H. R.	80	Diamant 18	0 0	195(27)251	317(15)349	0 0	302(21)267	218(26=)266	DNF	1032	1133	33

TASKS:- Day 1, Alternative Out-and-Return 146.5, 137, 144.5 kms.: Day 2, Out-and-Return 159 kms.: Day 3, 145.5 kms. Triangle: Day 4, 109 kms. Triangle: Day 5, Alternaitve Out-and-Return 151.5, 159.5, 165 kms.: Day 6, 168.5 kms. Triangle: Day 7, 75.5 kms. Goal Race.

NOTE TO ALL COMPETITORS: Prizegivng will take place on Saturday, 10th October at a Dinner-Dance at the Doncaster Acorn Hotel (7.30 for 8 p.m.) Tickets 37s. 6d. each from Don Westerside, Black Boy House, High Sunderland, Halifax. (Dress Optional.)

Final Results - Wycombe Regionals. 8th-16th August.

No.	Pilot(s)	H'cap %	Sailplane	1 1000	2 1000	3 100	4 1000	5 1000	Total Pts.
1	Smith, Angela		96 K-6E	817	1000	0	621	774	3212
2	Grenet, P.		96 K-6E	274	767	0	1000	911	2952
3	Keogh, B.		96 K-6E	823	734	0	340	925	2822
4	Milne, A. B.		86 ASW-15	435	-	0	-	849	2520
	Milne, A. R.			-	745	-	491	-	
5	Smith, G. K.		98 Skylark 4	808	419	0	503	665	2395
6	Sheppard, F. J,		96 K-6E	778	559	0	903	82	2322
7	Krzystek, T.		98 Pirat	332	346	0	716	727	2121
8	Przewloski, J. K.		90 Dart 17R	1000	16	11	612	471	2110
9	Buckley, Philippa		98 Skylark 4	224	-	0	382	-	2024
	Burne, A. G.			-	803	-	-	615	
10	Stenhouse, E.		98 Skylark 4	758	408	-	373	-	2016
	Scarborough G.			-	-	0	-	477	
11	Fairman, M. C.		96 K-6E	114	576	0	524	794	2008
12	Wagenaar, A. J.		100 Skylark 3	363	376	0	610	506	1855
13	Stenton, J.		90 Dart 17	455	214	0	342	805	1816
14	Cousins, R.		90 Dart 17R	238	178	0	808	540	1764
15	Burgess P. G.		98 Dart 15	401	-	0	773	-	1650
	Rouse, J.			-	358	-	-	118	
16	Stafford Allen, R. C.		114 T-49	270	444	0	261	668	1643
17	White, S. A.		96 K-6E	-	-	100	-	1000	1100
18	Davie, P.		96 K-6E	34	-	0	-	477	996
	Wyman, B.			-	297	-	188	-	
19	Tull, V. F. G.		80 Diam. 18	786	120	53	DNF	DNF	959
20	Strugnell, J. C.		100 Skylark 3	285	-	0	-	387	946
	Wathen, A. E.			-	50	-	224	-	

Tasks: Day 1, 126.8 km. Triangle; Day 2, 166 km. Out-and-return; Day 3, 101.5 km. Triangle; Day 4, 303 km. Out-and-return; Day 5, 166.9 km. Triangle.

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MARFA MISCELLANY

By A. E. SLATER

WHY Marfa? The story goes that its founder named it after his Russian girl friend. But it seems an odd name—or is it? The Russian gliding centre at Koktebel in the Crimea is often called after its nearest town, which appears on Western European maps as "Theodosia"—evidently a Greek name; but the Russians know it as "Feodosia". So there is the clue: Marfa is simply Russian for Martha.

Those "Marfa Lights"

An unsolved mystery, first observed in 1880, is that of the Marfa Lights, which appear among the mountains to the south of the airfield. They move and change in brightness or colour. Pat Ryan saw them distinctly one night when driving me into Marfa. The *Marfa Journal* mentioned them and said that two members of the scoring staff, Ann Enevoldson and Evelyn Eccleston, wanted volunteers to go out with them in a Jeep and investigate, as they suspected it was a "will o' the wisp" phenomenon caused by spontaneous ignition of methane gas.

The possibility of these lights being due to electrical discharges is suggested by an article on an apparently similar phenomenon known as "Andes Lights" or "Andes Glow", published in *Weather* for August, 1970, pp. 350-360. In it. R. Markson and R. Nelson, of New York State University, explain that the ionosphere at 60 km. has an electric potential of about 280 kilovolts compared with the ground, mainly fed into it by thunderstorms. So the electric field near the ground is normally about 120 volts per metre (diminishing with height). But over high ground there are fewer metres between it and the ionosphere, so the field is stronger, and it is particularly strong in calm weather under an inversion, because vertical mixing is suppressed—and stronger still around sharp peaks, where the resistance breaks down and "lights" appear (they are of the same nature as "St. Elmo's fire").

Now, Marfa is already at 5,000 ft. and the neighbouring mountains have irregular tops. Furthermore, our researchers, who made their investigations not on the Andes but on the Mexican mountains Ixtacihuatl and Popocatepetl (nearer Marfa), found that they had to keep away from their recording instruments because the nearness of a human body upsets the electric potential. Is this why the Marfa Lights disappear when they see someone coming?

Instant Thunderstorm

Not quite instant, but pretty quick, perhaps because Marfa is a mile nearer the ionosphere, as explained above.

One morning, the only clouds in the sky were a strip of cumulus and one of alto-cumulus over the mountains to the south. As we set out for Alpine, the two strips amalgamated. A few miles later we were alongside a single small thunderstorm "cell" flinging lightning at a single mountain-top. On our return less than an hour later, the storm covered most of the sky; pebble-sized hail battered our car roof and covered the road. At the airfield, tugs and gliders were being rushed into the hangar to escape violent dust squalls. Next morning's sky showed queer-shaped lumps of cirrus, evidently the remains of yesterday's "anvils".

Sometimes, in a cumulus sky, one cloud would suddenly swell and sprout an anvil "under" one's very eyes. But Texan cumulus can be two or three times as high as England's, so they will be two or three times as big as they look. A good clue to their real height is their whiteness; compared with English cumulus, they are what the photographers call a "cold" white, tinged faintly with blue, because of so much intervening blue air between the observer and the cloud. English cumulus are warmer.

Pilot or Sailplane

The World Championship results at Marfa seem to rub in the lesson that, as soaring history "progresses", pilot skill appears to count for less and less, and sailplane performance for more and more. This phenomenon must be the result of so many pilots approaching perfection in soaring technique.

The 22-metre machines might both have headed the list if Walter Neubert had not landed too far from civilization

on the first day. And five of the six ASW-12 machines were bunched near the top, being placed 2nd, 3rd, 7th, 8th and 9th out of 39 entries. The Standard Class pilots, however, seem to be less far advanced along the course of history: take the winning LS-1, of which type there were six. They were not bunched, but were widely distributed throughout the list, their placings being 1st, 7th, 18th, 27th, 28th and 37th.

The introduction of two Classes has already made impossible the original object of the Championships—to discover who is the best sailplane pilot in the world. So the enthusiasts for introducing still more Classes can get on with it to their hearts' content. But newspapers will be less and less inclined to find room for the increasing number of words needed to describe all these Class distinctions.

Language Problems

English was the only official language. This seemed reasonable, as it was assumed that nearly all the teams understood it. So they thought, but some of them found themselves foxed by Texan. One speaker was asked to go more slowly, but he did this by making longer pauses between groups of words, while speaking each group as fast as before. Brain mechanisms for dealing with language show much individual variety: this one evidently stored words in groups rather than singly.

Question and Answer

Once I had the idea that S & G might offer a prize for the best answers to the usual silly questions—"How can you control them without an engine?"; "But what happens if the wind drops?"; and so on. But a question was asked at Marfa which stumped everybody to whom I repeated it.

A competitor landed out; a local character came up, got into conversation, and then asked, "But what do you *do* while you're up there?"

Eventually a clue occurred to me in the story of the retired countryman who was asked what he did all day, and replied: "Whiles I sits and thinks; whiles I just sits."

So there you have it:

"What do you *do* while you're up there?"

"If I'm in a glider I sits and thinks; if I'm in an aeroplane I just sits."

KITTIWAKE PETREL

By ANN PROCTER

KITTIWAKE, the minimum cost tug, first flew in May 1967, and progress on the building and testing was reported in S&G accordingly. What has happened to her since?

She was found great fun to fly, and fairly good at tugging, then there was a lull of some 18 months while one member of the group departed due to illness.

During 1969, however, over 100 different pilots enjoyed trying her paces, at sites all over the country. A spell with the Cambridge Club, after slight mods. to the fine-pitch propeller, put into operation her tugging capabilities with all sorts of gliders, and she was approved for towing by the ARB.

In January this year her nose-leg made a dent in a muddy puddle on landing, and in due course she was sold to Terry McMullin of the London Club, who, while making repairs to the bottom, elected to put in a different engine, to improve towing performance still further. The 125 hp over the nominal 100 should make such a vast improvement that towing out of even Dunstable will be VTOL.

Meanwhile it was pretty obvious that most people wanted a two-seater for glider towing; the single-seater might be very economic for the single task of towing, but useless for dual exercises, delivering spare bods hither and thither, or taking Aunt Agatha to admire the view—maximum utilisation is the cry!

The two-seater all-metal Petrel has 70% of its work completed. The family

resemblance to Kittiwake is obvious. it has a fatter fuselage with its side-by-side seating, and slightly modified Kittiwake wings are attached to the wing stubs which protrude from the fuselage.

The Petrel will be fitted with a Rolls Royce 0-240 engine. The main undercarriage is still with the fuselage, not on the outer wings; this makes such a difference to storing and maintaining (let alone building) in a garage or other confined space rather than a hangar. The nose-wheel is fitted on a conventional oleo strut.

She can park outside in most weathers, and hangar damage is less likely than with a wooden aircraft. Metal construction is certainly the best an aeroplane can offer against British weather and ham-fistedness.

Once the prototype has flown, plans will be available for other builders, as are Kittiwake's. At present we are shepherding two apprentice organisations building Petrels as part of their training, and the Navy apprentices at Arbroath are near completing a Kittiwake for towing.

Progress has been very slow over the last six months because the money has run out, a common enough problem. If anyone would like to join us in this interesting and worthwhile project Petrel could be finished, test flown and certificated by the end of the year. It is substantially being built by George Miles's firm at Ford. Once it has flown we can get on with arrangements for the production. The present group comprises: Roy and Ann Procter, Roger White-Smith, Lionel and Barbara Alexander; Paul Minton will no doubt rejoin us in January after his year away in Australia. We enjoy consultant and practical help from many gliding types, particulary Ralph Hooper and George Whitfield—our accountant is Mike Gee.

BOOK REVIEW

Hot Air Ballooning. By CHRISTINE TURNBULL. Published by *Speed and Sports Publications Ltd.*, London W3. 122 pp., 30s.

THERE are at this moment twenty-four pilots licensed to fly balloons in Britain; half of them also fly gliders. Twenty-four may not seem many until you compare it with the number there were in 1963 (when Anthony Smith's *Throw Out Two Hands* was published)—just two. Christine Turnbull's new book explains why there has been something of a ballooning renaissance in Britain and also, although this was perhaps not her intention, why the numbers involved are still so small. Her first chapter is titled "Hanging About", which sums up the sport neatly. She could have added ". . . usually at dawn", and then the horrid truth would have begun to emerge: when you are training light winds are as necessary to balloonists as lift is to glider pilots—and, perversely, the calmest conditions are usually pre-breakfast time. Admittedly when the moment of lift-off does eventually come, and you are no longer as terrified of the king-size bunsen burner above your head as you were on your first few flights, there is nothing quite so delightful as floating on a breath of wind as the sun slowly climbs and throws into relief every nook and gully that has been filled with early morning mist.

The amount of paperwork you have to get through before you can fly a hot-air balloon solo is surprising to non-practitioners and it is explained in detail by Christine Turnbull. *Hot Air Ballooning* is a useful and practical book for everyone who is thinking of taking up the sport: here you will find advice on buying a balloon, preparing for your first flight, check flights, invitation events and competitions. Also a glossary which includes the following definition: "Term used by pilot who has come in to his landing far too fast and the balloon bounces up into

the air again before finally coming to rest". The term described is listed as "Vigorous Landing". In the interests of accuracy I have to report having heard other phrases used by passengers who have just realized why they had to wear crash helmets, who have been enveloped by rasping steel wires and whose spinal cords are still reverberating! Still, they can always comfort themselves with Christine's definition of a "Good Landing" in a balloon: "Any landing you can walk away from".

R.Q.B.

CORRESPONDENCE

BOOMERANGS!

Dear Sir,

I wish to start a society called the Society for the Promotion and Avoidance of Boomerangs, which will have as its objectives, the technical advancement of boomerangs, and the promotion of boomerang throwing as a serious sport.

All interested please contact me at Cherry Orchard, Marlow Common, Bucks, England.

DR. D. BRENNIG JAMES

LANDING OUT

Dear Sir,

Is it not about time that something fairly fierce was done about pilots who land in standing corn? At a competition in which I flew not so very long ago, at the initial briefing pilots were told, "If you land in corn you need not bring your glider back. You will be disqualified and sent home".

It is never necessary to land in standing corn. I would suggest that it is time that the Flying Committee considered penalties for this sort of behaviour. If it happens during competitions, a pilot could be disqualified for the remainder of the competition, and a second offence could be followed by the withdrawal of his competitor's licence, subject, of course, to appeal.

If something is not done about this soon, we are going to find that the farming fraternity will take action against us, and this would make cross-country flying more or less impossible. I have always found that farmers are most kind and hospitable, provided that efforts are made not to do any damage, but it only needs a few inconsiderate pilots to ruin the image of the majority.

Harpenden, Herts.

R. C. STAFFORD ALLEN

THE WOEFUL STATE OF BRITISH GLIDING DEVELOPMENT

Dear Sir,

British gliders were once as good as any in the world, but currently the lead has been taken over by Germany. We must, therefore, seriously consider what we can do to get back in the technological race. I put forward the following proposals for discussion in future issues of S & G.

The BGA should encourage the new generation of glider pilots to take an active interest in glider development.

The policy of all our eggs in one basket should be altered.

Development of sailplanes is an expensive activity, so means to circumvent this problem should be considered. In Germany, academic flying groups have been responsible for some very successful designs. Often in universities or technical colleges the provision of factory space and basic materials is all that is required, since there are already ample supplies of ideas, enthusiasm, manpower and brains freely available.

More specifically one can visualise four lines of progress.

First, the development of a good size side-by-side auxilary powered two-seater rather like the SF-25 or ASK-16. Secondly, a cheap Standard Class glass-fibre

sailplane similar to the LS-1, ASW-15, Std. Cirrus etc. Thirdly, a light engine should be developed for motor gliders. Since this country produces the best engines for racing cars this should be easy. Fourthly, a series of main spars, incorporating varying amounts of carbon fibre, should be built and tested. This spar should then be used in production gliders which previously used a glass-fibre spar.

The BGA should set up a research fund with independent trustees. Contributions should be sought from the aviation industry and similar bodies on the grounds that the research penny will go very much further in the sort of amateur research setting one can visualise, and that much of the technological innovation which could be achieved would be likely to have a fall-out into the larger spheres of aviation.

A healthy gliding movement needs a healthy home gliding industry and *vice versa*. I believe quite a small effort, intelligently applied, will help British gliding catch up with the rest of the world. Our record in sailing and motor racing is excellent; why are our achievements in gliding so dismal?

BRENNIG JAMES

MOTOR GLIDER CONTESTS

Dear Sir,

It was most interesting to read Peter Ross's account in the Aug.-Sept. S & G of the 1970 German Motor glider championships. His point that these machines can fly successful tasks in conditions that would be impossible for normal gliders is perhaps especially valid for British weather.

With great respect for the contest organisers I would like to suggest, however, that their rules do not comply with the spirit of sporting gliding under which most of us have been raised. Peter implies that under the 1970 German rules, there were circumstances in which it was advantageous to *use* the engine EVEN WHEN FURTHER (IF WEAK) LIFT WAS AVAILABLE. If, so, I believe the rule-making body should look again and penalise much more heavily the use of the engine, so that it is only used to prevent an imminent field landing. We are all in our sport to achieve the most enjoyable soaring, and the motor glider is a useful vehicle for increasing soaring time when other machines are sitting waiting in fields or launch points. But it is a very bad precedent to set when pilots are tasked with deciding under what conditions it is better to use the engine in order to benefit from loosely written rules. The next step might be "free" increments of fuel or engine-on time. Heaven forbid! Surely we wish the two movements to come closer together, not grow apart. I count myself as a frustrated motor glider enthusiast. Frustrated, because manufacturers do not seem to be producing the high-performance machines that I would like to fly. There is no reason, with the present state of the art, why a Cirrus-performance self-launching machine should not be flying very shortly.

There is nothing I should like better than to fly such a machine in the 1971 Motor Glider Championships. But, please, under rules that make me have a good old-fashioned sweaty scratch in a weak low-level thermal before I reluctantly have to start the motor to prevent a field landing.

Boscombe Down, Wilts. I. W. STRACHAN

PETER ROSS COMMENTS:—I entirely agree with the above remarks, but would point out that the rules used at Burg Feuerstein were very much in the experimental stage, and the organisers expected to have to revise them in the light of the first year's experience. There is no doubt that a greater penalty is required when the motor is used, that differences in engine-on performance between individual motor gliders should be taken into account, and that wherever possible tasks should be set which are possible of completion without the use of the engine.

The points system worked much better in the single-seater class where the performance allowed much less engine to be used.

Space in my article did not permit mention of a new system which links the shutter of a camera to a third needle on the barograph to allow a photograph to be taken of the "landing field". The motor is then started and another photo taken from a greater altitude to allow the field to be positively identified.

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PETER JEFFERS BERT PAGE PETER ROSS

RIBBLE ESTUARY THERMALS

Dear Sir,

I would like to add to the current discussion about thermal structures the results of some elementary observations.

My place of work is on the Ribble Estuary, on the edge of thermal activities. A large proportion of cumulus clouds in the area is absolutely virgin, and the condensation level is quite low — more often than not, e.g. 2,500 ft. There are, thus, many opportunities to see something of the shape of growing thermals, as often there is only just enough condensation formed to make a skeleton of cloud.

These skeletons have quite frequently the unmistakable shape of a bubble, with tendrils curving outwards, down and back underneath. I have never yet seen them going back up the middle, so cannot claim to have seen the shape of a vortex ring, but I cannot see how such a shape could be associated with a plume structure.

Since the comments from Brennig James, about vortex rings being impossible in wind strengths above 5 kts, I have also observed the wind whenever the bubble skeletons are visible and they seem to be quite unaffected by winds of up to at least 15 kts. I would expect wind shear to break up such thermals, but surely a bubble would just be carried along bodily in the general air mass in the absence of shear.

Preston, Lancs. JOHN GIBSON

MAPS AND RULERS

Dear Sir,

While I hesitate to make public my ignorance, perhaps others might also have missed the obvious. I have only just made this astounding discovery!

On an ordinary $\frac{1}{2}$ million, or $\frac{1}{4}$ million map (or any scale that is a 'round' number), a centimetre rule can be used directly to measure kilometres. On the $\frac{1}{2}$ million, 1 cm. corresponds to 5 kms., on the $\frac{1}{4}$ million, 1cm. corresponds to 2.5 kms.

Alford, Lincs. K. A. HARRISON

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CORRESPONDENCE

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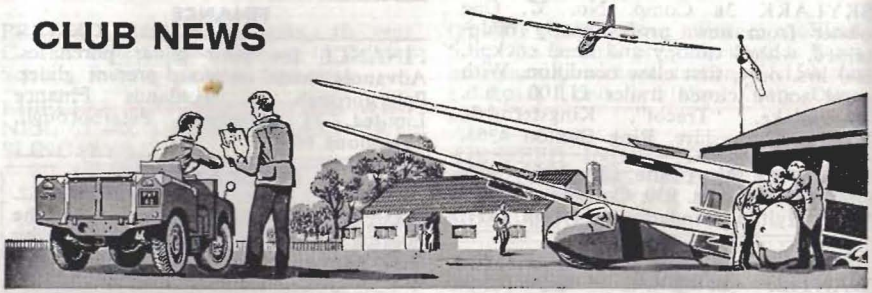
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CLUB NEWS



IT is some time since I asked for the co-operation of club correspondents; may we please remind you that all copy should have name and address, and if possible telephone number so that queries can be dealt with promptly.

Copy and photographs for the December-January issue should reach me by 14th October, and news for the February-March, 1971 issue by 2nd December, typed double spaced on foolscap. Please send to me at 11 Great Spilmans, Dulwich, London S.E.22. Tel. 01-693 3033.

YVONNE BONHAM (Mrs)
Club News Editor

15th August

BATH & WILTSHIRE

GORDON Mealing has taken on the duties as CFI for the third time. As a founder member he did his first stint at Keevil, then in 1967 he took over when Owen Harris left and this time Ron Lynch, owing to pressure of work, was forced to step down.

During the early part of the season our Chairman, Vince Griffith, flew the Olympia 463 to over 13,000 ft. for Gold C height, and Geoff Humphries claimed Gold C distance and Diamond for his goal flight to Great Yarmouth. Since then we have had many smaller successes as well as a few snags. The Bocian was out of action for several months while awaiting a new landing wheel from Poland and the Skylark 3F needed a lengthy repair after landing in corn. Luckily the latter machine was ready in time for our club safari at Camphill where the wave was gorgeous but not Golden — it stopped at 7,500 ft.

Our fees have had to be increased recently, aerotows are now 25s. and an ordinary launch is 6s. 6d. Nevertheless membership is still around the 100 mark and enthusiasm runs high. After all, we know we could be a lot worse off.

R.J.C.

BRISTOL & GLOUCESTERSHIRE

A NEW syndicate of 12 members has been formed to fly a Tutor, their total experience is 4,500 hours! At the other end of the scale, Ron Sandford and partners take delivery of a Std. Cirrus in October.

The Regionals, held in June, were a great success although we were very short of helpers on the ground. Tony Robins who had a trailer accident has now fully recovered.

No sooner had we acquired our second Swallow when the first one went out of action and for the next six months we shall be back to where we started. Numerous badge flights have been made including several Gold C heights and goal flights. The K-6E (No. 125) managed three 300 kms. in one month. Jim Webster after succeeding to get his Gold height fell 32 km. short of his Gold distance after having been in the air for about 8 hrs. mostly in blue thermals and never higher than 4,000 ft.

We have been visited by groups from Swindon and Thames Valley, and extend a warm welcome to other visitors, especially by air.

CAMBRIDGE UNIVERSITY

DESPITE our long absence from these pages, members have been both busy and successful and our primary training site at Duxford is a great success.

Cross-countries by club members reached their peak in June when the most successful month in the club's history produced a total of 4,100 cross-country kilometres from three sites, Cambridge, Long Mynd and Zell-am-See (Austria). (See page 362 for the Austrian visit). Tony Maitland, by the way, is the first Cambridge pilot to gain all three Diamonds.

Competition at Cambridge is hotting up as the ranks of solo pilots increase, progress only being marred by repairs to our venerable T-21.

Finally our links with the Mynd have been even more firmly cemented by the marriage of our instructor Peter Newns to Valerie Kirkwood ex-Midland club member.

V.N.

COTSWOLD

GOOD weather over the Cotswolds has seen a great deal of weekend and Thursday evening soaring over the past few weeks. Expeditions to Compton Abbas and Lasham by intrepid members have been enjoyable, and Malcolm Gay collected the "wave champagne" by being the first airborne visitor to drop in at the South Wales Club's site at Usk. This they promptly avenged by paying a return visit to Aston Down and thereby collecting the Cotswold Boot.

A recent Air Day at Little Rissington saw a Cotswold syndicate Dart on show together with a small book stall and some club members answering a never-ending stream of ". . . please can we come and glide at your Club . . ." queries. The Club also had a stand at the Tetbury Carnival and it is understood that the Dart is none the worse off for the smears of candy floss round the perspex.

Sale of our faithful T-21 is being negotiated and plans for acquiring another K-7 are under way. The new canopy on our second K-7 is now completed and so 100 per cent visibility is guaranteed even in the worst conditions.

A CISAVIA group is now established within the Club at Aston Down, and we welcome them and the Skylark 2 which they have brought with them. We are hopeful for an "Indian Summer" so its not too late to come and have some good soaring with us.

G.H.

COVENTRY

FIRSTLY, our congratulations to our oldest and most recent solo pilot, Bill Smith, a retired civil servant from Barby near Rugby, who went solo, just five weeks short of his 70th birthday, in the Swallow. He started gliding in October, 1968, as he wanted an active and interesting hobby during his retirement. It is obviously never too late to learn.

Ron Davidson, has just purchased a Slingsby Petrel from Dunstable, and has already completed two legs of his Silver C in it. Together with the Petrel, Lou Glover's Viking and Derek Ashman's Kirby Kite, the launch point looks like a pre-1940 soaring convention. Ron did his flight on one of the best days we have had at Husbands Bosworth this summer, and although the visibility was not too good, a great many cross-country miles were flown. On one week day three Silver heights were gained, one of which was a course member on his fifth solo flight. Tony Covington has recently completed a 300 km. triangle and Brian Rush did Silver duration in the club Skylark, well done all.

In the middle of July, we participated in the Air League's 'Flying for Fun' Rally (see page 368).

With the kind permission of Rollasons and Mr. Norman Jones, we have been lent a Condor for a week or two on trial. Our launch rate has instantly increased and all the tug pilots are queueing to fly it.

V.M.

DEVON & SOMERSET

BOB Rowe recently landed on Ham Hill, after a Silver height climb in a thunder cloud. As I happen to live there he made sure of sustenance, derigging help, etc. What meticulous planning! Several pilots have gone solo and I managed my Silver duration with a flight of nearly six hours.

The Tiger Moth is now safely housed in our new hangar which saves time and expense of having to fly to and from Dunkeswell. This has been opportune as there have been several occasions when a winch launch will not quite reach the first thermal.

Our erstwhile CFI, John Fielden, gave his usual polished aerobatic display at the Exeter Air Day, and his practice beforehand was also much enjoyed.

Members who attended the World Aerobatic Championships at Hullavington are still raving about the gravity-defying antics of the pilots, and it will obviously be necessary to re-iterate the limitations imposed on glider aerobatics in order to keep our fleet intact.

A.E.R.H.

DONCASTER & DISTRICT

SO much work has gone into the preparation of our site for the Nationals that no one has written any Club notes for the last two issues of S&G.

Our exploration of the local wave system is going well with regular climbs to 8,000 ft. and a record site height of 13,000 ft. Our Gold C distance aspirants are now declaring Chester-le-Street and back in wave. No one's done it yet but it does look possible and its good for business as far as the tug is concerned.

Back to more mundane thermals, Jack Sharples managed to do all three Silver C legs in one flight and then of course had to decide which two to claim.

Richard Walker now qualifies for the slowest time to Camphill and back. 60 miles in 5 hours 15 mins.

See page 409 for the results of the Open Class Nationals.

J.A.S.

DERBYSHIRE & LANCS

IN the last few weeks a maior change has taken place at Camphill. We now have our new toilets and showers in use and the ladies have a bathroom complete with suite as well. People are now appearing in the bar clean. We cannot even recognise each other these days now we have all gone soft. A public toilet is also being finished by the public car park for the benefit of our paying visitors.

On the flying side we have had a lot of ridge and wave flying lately. Many Silver heights and duration flights have been claimed. Andy Melville got his Gold height and Brian Morgan, Peter Blacklin, John Collins and Malcolm Shaw went away to successfully claim their Silver distances.

Our new winch, we bought from Worcester, introduced itself in a most interesting way. It broke the cable twice trying to launch the K-13. The third attempt was a bit better. Ken Blake, in the Swallow, after tearing along the ground for the best part of half-a-mile, managed to take-off and climb to almost 250 ft. before he had to pull the release. His only comment on landing was "Do they really send people solo in these things?" With a Libelle on order I suppose he can afford to say that. The experts soon got to work on the gearbox and our little winch, we have affectionately called the "bacon slicer", is now working like a dream.

P.H.

Reginald Victor Wright

Every member at Camphill was shocked by the news of Victor Wright's fatal accident at Sutton Bank on 20th July. Heartfelt sympathy from all members went out to his wife Rita and daughter Diane; their loss is great, for he was a devoted husband and father.

He had been gliding for many years, first at Sutton Bank where he gained his Silver C. and then at Camphill where recently he became a flying instructor; a post to which he was well suited as he was a natural teacher, showing endless patience and understanding especially with young people.

Gliding to Vic was a great fulfillment and gave him many happy days of pleasure. He will be remembered for his genuine interest in others and his willingness to keep his wonderful sense of humour and friendly happy nature.

W.H.

DUMFRIES & DISTRICT

SINCE moving back to our summer site at Long Fell in June, we have completed over 33 hours flying, which compares well with the total of 40 hours for the whole of 1969. We have found that the hill at Long Fell works in winds over 5 knots from north-west to south, and as soon as the Olympia 460 is back

from its refurbishing we hope that the east face of the hill can be explored.

Several members have been able to claim Bronze and Silver C durations, flying the T-31 and Prefect: Also the T-21 has totted up many hours of flying.

Donald Graham, apart from going solo this summer, has also won the £20 Mini Draw Raffle prize. This raffle held in conjunction with four other local clubs will have another draw in September, the prize — Mini Minor.

Our T-21 will be fitted with a canopy which will ensure that winter flying will be rather more comfortable than hitherto. Recent visitors from Staffordshire and Doncaster have had flights of over an hour in our T-31 and have been made very welcome.

In addition to our normal club possessions we also own what must be the only upholstered, air-conditioned, double-glazed loo on any site, as we have acquired an old telephone kiosk which will be available to all visitors who wish to make a "call".

D.J.

ESSEX GLIDING CLUB

SPRING Bank Holiday gave us a chance to show our worth to the general public with an aerobatic exhibition by instructors, Ludwig Esser and Eric Neve, in a flying display organised by the RAFA at North Weald. Eric had trouble bringing his K-6 back to earth having "caught a corker" when involved in a series of loops, finishing with almost as much height as he started with! Our static exhibition was a great success bringing in a crop of new associate members and enquiries.

Our new K-13 has materialized at last having had the dubious distinction of landing out on its delivery flight. But its arrival, together with our K-7 has allowed us to re-start our Group Training Scheme, last year the scheme was abruptly terminated with the demise of our old K-13.

Bill Scull ran an instructors' course recently, and gave us a chance to examine the Scheibe Falke as well as meet some pundits from several other clubs, both experiences resulting in some interesting discussions. The week was rounded off by a very successful barbecue organised by our Ladies Committee. Our thanks to John Critch for his part as chief cook, complete with hat and apron. One of our pilots, Ken Durno, passed the instructors' course and was immediately roped into the Group Training Scheme. He also completed his Silver by doing his height and five hours in the Weihe, the last hour being in the scratchiest of conditions.

Unfortunately after several years our CFI, Owen Harris, has had to stand down due to pressure of work, but we are very glad to hear that he will continue to instruct with us. His position has been filled by the Deputy CFI Graham Martin.

B.M.H.

IMPERIAL COLLEGE

IT would appear that the most difficult job at present is keeping track of the number of Bronze and Silver legs, since there seems to be a new one every week. So far we have completed five Bronze and two Silver C's.

The K-8 hardly stays on the ground, and is proving to be a very useful club machine. The Skylark too, is doing its share of flying, and our cross-country pilots are enjoying themselves, judging by the flights they have made. Several people have had an attempt at a fast triangle, but as yet there is only one serious claim for the Trophy. The Skylark flew in the Dorset Regionals, where both pilots and crew learnt a lot about competition flying, and had a very good time.

We read with envy of wave flights and are turning our thoughts in anticipation to chilly winter expeditions. Meanwhile back at Lasham, some poor souls are still striving for their five hours! Good luck to one and all.

C.E.H.

KENT

THANKS to the hard work of our devoted band of instructors, the last two months have continued to see a large number of solo conversions, including three attractive young ladies—Janice Excell, Lesley Wilson and Heather Balchin. Congratulations to all of them.

Seven of our early solo pilots went on to get their C last month and two of them their Bronze as well. Peter Stafford Allen managed his Silver height and

duration at the ridge at Wye after having gone solo early this year. Gerry Murtagh, came on a week's course with an A and B, when he left he had gained his C, Bronze, Silver C height and duration. That's what I call a good holiday!

Several interesting flights to and from Redhill have been made. Margaret Harris after landing there for her Silver distance and height was relaunched and flew back to Challock. Other cross-countries included some to Guildford and Lasham. The local cine club at Canterbury completed their film on our club with a series of flights in two T-21's, one flown by CFI Roy Hubble, carrying the camera man doing manoeuvres round t'other, which held an instructor and his pupil. The following weekend, the local Hospital Broadcasting Service came and recorded a programme on Gliding. This winter should produce some amusing recorded moments when these programmes are shown.

L.J.M.

LAKES

GOOD weather has not been particularly good for the Lakes. We prefer blustering westerlies to stir up our hills or strong north and east winds to produce wave. The sea has successfully damped the majority of thermal tendencies up to now this season.

Training goes on however, and three more members have recently soloed. A further two solos and a Skylark conversion were achieved during our first three summer courses. These were extremely successful, participants being well satisfied with food and experience. The fourth course has made a start with 20-minute air experience flights over our gritty little slag-bank. in our T-53B.

Yours truly has scraped a PPL, and hopes soon to drive the tug on those frustrating occasions when "things" are happening a few miles inland, and not a tug-pilot in sight. Trouble is, who launches the temporary tug-pilot?

We flew a local Round-table organisation one evening recently, following a lecture given earlier in the year. Despite an initial reluctance to step aboard, we were flying till dusk, and still owe flights to some of the unlucky ones.

Wisdom from the cockpit from a very young lady passenger who said to her even younger cousin "No, you can't fly because there's no more straps, and you would catch your head an awful crack if you fell out".

R.R.H.

LONDON

THE most outstanding flight of recent weeks was by John Cardiff, who failed by a whisker to complete a record-breaking 500 km. triangle via Shobdon and Worksop in the ASW-12. This was by far the longest distance achieved from Dunstable since the Club was formed.

Coming down the scale a bit, Rob Harding made a gallant attempt at 300 km. on a day when nobody else even bothered to leave the site, and managed to struggle most of the way round. Brian Davies has also been a victim of several failures on 300 km. attempts, while Ralph Chesters, on a visit to Zell-am-See, managed to get a Gold C height while he was there. Your scribe, based at Truckee, USA, completed a flight of 329 miles after almost nine hours in the Dart. This was over country which bore no resemblance to Bedfordshire, and I'm glad to say the rattlers didn't get a bite!

After seven years as staff instructor with the Club, Mike Till has decided to give professional instructing a rest and has taken up full employment with the car industry. Mike has always been a very keen instructor, and his presence on the field in this capacity will be missed. He expects to remain an active Club member however, and no doubt will take the opportunity to fly the K-6E. which he has rarely been able to do in the past.

Recent arrivals on the site are two SHK's, one owned by Simon Redman, a fugitive from the Cambridge Club, the other bought by a syndicate of four.

The huge bulk of the Short Nimbus has been blotting out the sun in recent weeks, the outcome of months of hard work by a group of enthusiasts headed by Peter Fletcher. It should act as a visible deterrent to straying Luton traffic!

Carol Foster (23), daughter of a former World Champion and a life-long club member, is to marry Bobby Clifford of South Africa, who flew in this year's World Championships, finishing 11th in the Standard Class.

M.P.G.

MIDLAND

As usual in June, the club was host to the Cambridge Club for two weeks and as usual they picked the best two weeks of weather conditions. Wave, ridge and thermals were used and three pilots reached the East coast to claim their Diamond goal. Peter O'Donald did an 84 mile triangle, and in July, John Brenner just failed to complete an out-and-return by landing on the Mynd two miles short of the airfield; Brian Griffin attained his Silver distance in a difficult crosswind flight.

On the 11th and 12th July wave was active and we bungeed several club members to 10,000 ft., including a visiting Hungarian who reached 12,500 ft. ASL. During this weekend Roger Clarkson gained his Silver height and two weeks later would have got his Gold height had there been a barograph in the glider. On that day there were ten Gold heights claimed. Rhoda Partridge, riding her Broomstick, reached 13,500 ft. ASL. Bob Buerki and Doris O'Donald soloed recently when the weather conditions were suitable, and one wonders whether they will be the last to be sent solo in our Swallows, as soon we take delivery of our third K-13 which will be used as a standby and for first solos.

Thanks to John Ricketts and Robin Bull the club has become a little more luxurious as they have completed the shower units.

We were all very sorry to hear of the death of Colonel Benson who had been a club member for nearly 20 years. He joined the Midland Club soon after retiring from the Army while in his early fifties, and was mainly responsible for organising the Mynd Easter Rallies. Although he gave up gliding some three years ago, he still came to the club at odd weekends and always to the AGM's, and therefore kept a close watch on how the club was progressing. He will be sadly missed by all of us at the club and by those who used to compete in our Easter Rally.

P.M.S.

NORTHUMBRIA

WAVE has continued to be very much in evidence over the past two months. Perhaps we are now learning how to take advantage of something that occurs on many more days than we ever suspected. The most notable flights were those of Alan Brown in the Vasama, and Andy Johnson-Laird in the Jaskolka who together climbed to over 11,000 ft. Unfortunately the gain of height was 400 ft. below that required for Gold C.

On our "members only" course several pilots graduated from the Tutor to the Jaskolka and their places were filled by new solo pilots. Unfortunately on the last day of the course the club's Tutor came to a premature end when a ground run was terminated by the hangar. Within eight days a Tutor replacement and a T-31 were flying from Hedley. We now have two enthusiastic queues, one of ex-Tutor pilots and near soloists for the front seat, and another of instructors eager to sample the "joys" of backseat driving.

The Tramps Dance and Barbecue at the end of June was a great social and financial success. One group of revellers took the tramp title literally and arrived in tattered clothing on a tractor and muck-spreader!

J.R.G.

OXFORD

PETER Brookes flew a speedy Silver distance in the Skylark 3F to Whitminster, beyond Stroud, in 75 minutes following attempts at the task last year while working in South Africa. He has now joined our ever-increasing instructors' list after successfully completing five hours training on the Scheibe Falke at Lasham.

More recently David Lidbury completed his Silver C by flying distance and duration simultaneously in the Skylark 2B. In his inimitable style Graham Smith has related in great detail and enthusiasm, the story of his first competition at the Wycombe Regionals (see results elsewhere). We wish him every success on his new appointment in Scotland and eagerly await to hear about his wave flying experiences!

From the Mynd we heartily welcome Mike and Jane Randle including their own *ab-initio* — Allison, who recently soloed on two legs at the launch point. Their names on the instructors' rota make it a round dozen for the first time in our history.

C.J.T.

OUSE (York)

WE had our big Open Day and flying display. And it rained! The first wet day for two months. Just our luck. After all the hard work put in it was heart-breaking. But, despite the rain, the superb flying programme went off as planned. We had a Vulcan, and the famous Lancaster, and a fine display of aerobatics by both gliders and powered craft. Our VIP guests thoroughly enjoyed themselves, and the Lady Mayoress of York is planning to come back one Sunday afternoon to have a flight in our Capstan.

In the last two months we have logged a high rate of launches, over 150 on some weekends. Soaring has been extensive — inevitably so when two-thirds of our county-wide membership is now composed of solo pilots. On the 21st June Pat Garnett flew in from Lasham for his Diamond goal. We congratulated him, enjoyed his company, took him to our "local", and saw him off (and Sarah and the children) with the trailer, in the moonlight, at midnight. We hope for more visitors from Lasham — our kettle is always on the boil!

Our own club pilots have flown many cross-countries recently and a number of badge flights were claimed.

A.H.S.

PERKINS

DISASTER hit us this year in the form of the Bocian hitting the fence on the second day of our planned three week gliding and soaring holiday. Fortunately no one was hurt but the Bocian suffered enough damage to ground it for the remainder of our holiday, thus disappointing the majority of our members. However, when our Bocian returns to us after repairs we trust the remainder of the season will be trouble free.

On the brighter side, Bill Fisher and Mike Pruden of Farm Aviation came over to give us some aerotows in the CITABRIA. The aircraft used was N5766F in which Mike Pruden from Nottingham won this year's King's Cup Air Race. This aircraft fitted with a 150 hp Lycoming engine, gave us a magnificent performance in the capable hands of Mike.

SCOTTISH GLIDING UNION

SUMMER is the "off" season for the Portmoak Diamond miners, but thermals grow very well in Scotland too if carefully nursed. Tony Shelton (now sadly departed to Libya!) showed the way in late July by a fine flight to Newcastle, also Tom Docherty on a Diamond goal-and-return attempt reached Turriff (North Aberdeenshire) and part of the way back for over 150 km. The Sassenachs seem to know how to use wave alright however. A pilot from Dishforth (St. Pierre) got close enough to make radio contact with Portmoak from Dunbar before setting off for home!

Portmoak continues to improve its land utilisation, and we are beginning to find the corners of our 200 acres very useful in all sorts of winds, which once upon a time would have meant restricted flying or no flying at all.

The adventurous types have cast their search for new thrills in another crop of expeditions to the North, principally to Feshie Bridge and Connell (a particularly dramatic setting between mountains and sea, just North of Oban).

Another highland club, Aboyne, was visited by Tom Docherty with the Super Cub to do some aero-towing (into 9,600 ft. wave) from their delightful site.

A Skylark 2, with one of those magic thermal-seeking single numbers (in this case 5) has arrived at Portmoak in the hands of George Green and Jim Montgomery. These stalwarts have already put in a phenomenal amount of flying in this particularly fine example of a nice aircraft. Another eagerly awaited arrival is the Motorfalke syndicate's machine. Bill Burns and David Cook have already visited the Scheibe works to try one out for size, and have returned duly impressed, full of enthusiasm.

Meanwhile, back at the farm, we brace ourselves for the early winter wave and the host of welcome visitors coming to collect their heights and their hangovers.

P.P.

SOUTHDOWN

THE Southdown Club is hoping to hold an Open Day at Firle sometime in October (date to be settled) to com-

memorate the 1930 meeting at Firle. We do not intend to send formal invitations but would be glad if anyone interested would get in touch with Miss Madge Dugdale, 3 Faraday Mansions, Queens Club Gardens, London, W.14, or with me at 17 Spiers Way, Horley, Surrey.

DR. KATHLEEN MITCHELL.

SOUTH WALES

BY the time this gets into print our September wave safari will have taken place. Wave is still our main preoccupation especially now that we have had several wave flights straight off the winch which is 82 ft. asl. The most dramatic flight was made by the Skylark 3F ably steered by Adrian Thomas from 750 ft. into a slot over the site. When the slot closed up, attention was focussed around our directional aerial where the drama of guiding him back to the site was successfully concluded.

On the training side, we have had seven A and B certificates and two Swallow C flights, Rosalie Bryan-Jones (daughter of our chairman) on a particularly difficult day, and Leslie Chirnside, who went to 2,400 ft. at 19.30 on his second Swallow flight.

Silver legs have been flown almost every Sunday, including several cross-countries, but the really big wave flights have so far eluded us. Perhaps we will have better luck in the winter from our hill, 4 miles from our site, near Usk.

I.H.S.

STAFFORDSHIRE

PROVIDING that the necessary grants, loans and other vast sums of money required to finance the project are made available to us, it is now virtually certain that the club will move to a hill site at Morridge near Leek.

The proposed new site is about 10 miles from our present one at Meir, but is geographically very different. It is 1,500 ft. amsl with a west-facing ridge some four miles in length, but curving to give a south-westerly ridge at its southern extremity. There is also an east facing ridge and a south facing bowl.

As some doubt had been expressed as to whether the ridges would work, an expedition was arranged to establish the position. It was therefore with relief that about 20 club members saw Laurie Birch and Frank Hemmings soar in a south-westerly wind of 12 to 15 knots at a height of 700 to 800 ft., on a day when even the most pessimistic members could not attribute one iota of lift to thermal activity. The two pilots landed safely back on the site after an approach free from curl-over and other hazards. This demonstration did much to improve the enthusiasm for the new site, but it is hoped to carry out further exploratory flights before the club actually moves there.

As we are buying the freehold to the land, we shall be in a position to develop both the social and flying side of the club on a scale which has hitherto been impossible, due to our uncertain tenure at Meir.

A.J.D.

SURREY & HAMPSHIRE

WITHOUT doubt, the best flight from Lasham since May 1959 was a 500 km. trip by Alan Purnell. On the 14th August he had a car launch at 10.30 set off west to his TP at Merryfield in Somerset and then flew to Yarmouth for his 500 km. Diamond. Despite an indifferent forecast he completed the task in 7 hours, and although conditions were difficult near the TP thermals were 7-10 knots along the second leg with cloudbase rising to 7,000 ft. asl in a west wind of 14-18 knots. The only other 500 km. flight from Lasham was Nick Goodhart's flight to Portmoak in the 1959 Nationals.

A few other long flights have been done, but only two 300 km. triangles have been done so far in club gliders. Godfrey Harwood, Pat Garnett and Bobby Cole all gained their goal Diamonds, and Geoff King shot off north on the same day as Pat Garnett to try for 500 but had to land after 412 km. Also Chris Lovell had to break off a 500 km. triangle attempt landing back at Lasham after 7 hr. 40 min. and 410 km.

Early June saw a most spectacular amount of cunims around Lasham, 10,000 ft. was exceeded no less than 16 times, resulting in 4 Gold heights and 1 Diamond. Ralph Jones, on a visit, climbed to 20,500 ft. after Harry Howitt towed him around the sky at 600 ft.

until he ran into a thermal. Tom Bradbury, meteorologist, tested the met. by taking the club Phoebus to 15,000 ft. on 9th June and to 16,500 ft. the following day. The remarkable thing was that for the most part cloudbases were 5,500 ft. or more — rare with cunims in Britain, some pilots reported lift of 20-25 knots.

C.L.

WORCESTER

THE Annual Task week with the Cotswold Club has been and gone. It was a successful week, particularly for the Costwold Club who won the event. Also competing were a K-6CR from the Norfolk Club and a Skylark 4 from Swindon.

As a result of the Task Week our Club Ladder has got off to a good start. Points that week qualifying for a rung on the Ladder. Spurring us on to greater efforts our CFI has initiated a permanent triangle for potential pundits and he also sets a weekend task determined by the weather prospects. Inspired by this, more cross-country flights are now being made, and at last we are becoming cross-country minded. The Pirat syndicate are setting a hot pace having already attempted various triangles. Many other successful flights have also been recorded resulting in a number of Silver legs being claimed.

At the end of the scale we have an enthusiastic band of *ab-initio*, early solo pilots who are flying regularly at weekends, in addition they are also flying on four mid-week evenings. This has had its surprise bonus when, on at least one evening, wave life was encountered and soared successfully by the syndicate Capstan. Watch out Portmoak!

R.B. and J.M.

YORKSHIRE

BARRY Goldsbrough has completed the first ever 300 km. triangle from Sutton Bank flying his Dart to Camphill, Lincoln and back to Sutton Bank. Now we know that it *can* be done!

The annual battle for our height "pot" is hotting up. Richard Tindall still stands supreme with 18,600 ft., but every time a westerly blows pilots are trying to improve on this by contacting the wave which follows in its wake.

Sue Goldsbrough and Bob Addis have both flown their Silver distance, and George Parkin has at last managed to get a flight in the Swallow. Our courses still continue unabated, together with a steady stream of visitors from clubs up and down the country.

We can offer some of the best facilities in UK; a splendid clubhouse with first class catering, well stocked bar, large car park and caravan space. Sleeping accommodation with h and c and all mod. cons. but most important of all we now have four runways to all points of the compass with winch and aerotow facilities.

Our diplomatic relations with the Yorkshire farming fraternity were further enhanced by an aerobatic display over the Northallerton Agricultural Show and was considered to be the highlight of the afternoon. Both the Blanik and the Piper flown by David Hill and Ralph Stothard took part.

Owing to bad weather the Northern Regionals lost three days flying, however, some good flights were made on the remaining days and club member Mike Carter collected his Gold C height on one of these. Jack Tarr flying a Slingsby Sky won the event.

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Club Director, Joe Bentley, is to be congratulated on coming up with the idea for a Non Pundit Rally the first time anything like this has been tackled by the club. The response has been quite staggering and we hope to report on this in the next issue.

We are happy to report that our CFI, Henry Doktor is making rapid progress after his recent illness and will be back on duty shortly. John Allerton, his deputy, has done a wonderful job during Henry's absence in keeping everything running smoothly.

'IANTO'

SERVICE NEWS

CHILTERNS

THE excellent weather conditions over the last couple of months have produced such a long string of badges and qualifying legs from our members that only a few can be mentioned here.

Brian "Stompy" Stableford started the rush with his Silver distance followed later in June by his height thus completing his Silver C in a total of only 56 launches from his first solo. Pete Vernon was another pilot who in his case completed Silver C in three successive days flying.

During July several club members enjoyed an expedition to Compton Abbas, they took a K-6 and K-8 along. Several Silver durations were made on Chinnor ridge, Geoff Milward completing his Silver C—being very low most of the time.

The rundown at Benson has resulted in some losses in membership, the first to go was our instructor Ian Bishop followed by Mel Purvis who is now in South Wales, we hope that he will manage to carry on with his gliding once he is settled in.

Con Greaves is leaving us in September and we like to thank him for all he has done for the club and hope that his tour in Germany will be enjoyable. We shall also say goodbye to our Station Commander, Group Captain Godwin, who has been a great help in many ways, not least of which has been tugging us in the Chipmunk, and occasionally finding time to fly the K-8.

G. & P.A.M.

PHOENIX (RAF Bruggen)

WE extend a warm welcome to our third CFI this year "Abbo" Maunton, to suffer the slings and arrows of outrageous misfortune and lead Phoenix to even greater glory! Pete Laverick has taken over the "hot seat" and become club Treasurer.

The pilots who represented Phoenix at the RAF Germany competitions kept the flag proudly flying. Don Scarfe, flying the K-8 took 4th place. Mike Ward and Don Scarfe gained a Gold distance and Diamond goal each. One of our youngest members, Geoff Matthews, completed his Silver C — rumour has it that he was so overcome by the bevy of beauty which surrounded him after his first field landing that he phoned in the wrong map reference. Last but certainly not least our wizard of the winches, Jim Bawden, covered himself with glory by gaining his second Bronze leg and completed his Silver C while at Gütersloh.

During the Wildenrath Air Show a strange bat-like object appeared, swooping over the crowd and generally creating mayhem. Everyone was fascinated by the aerobatics executed by Brian Connelly in his "Flying Wing". The gliding display was brought to a close by a series of manoeuvres performed by Mike Ward in the Swallow. A fitting finale to his tour of duty in Germany.

S.E.

RAF GERMANY

THE British Forces Championship in Germany were held at RAF Gütersloh from 7th-12th June. Seventeen pilots and aircraft were entered including ones from Eagle (Detmold), Phoenix (Brüggen) and Two Rivers Gliding Club (Laarbruch).

Generally, weather conditions remained constant throughout the contest. Cloudbase tended to be around 4,500—5,000 ft. whilst winds were light and variable, except for a day or two, towards the end of the contest, when dry thermals to 6,000 ft. with 15 knot easterly winds were prevalent. The contest produced 8 contest days.

During this period 95 cross-countries were made, covering a total of about 10,000 km. and 430 hrs, were flown from 502 launches. Numerous Silver C legs and three 300 km. goal flights were flown while Lemmy Tanner and Alan Somerville attempted 500 km. flights. Deteriorating weather, however, forced them to land after 490 km.

Relatively inexperienced pilots gained valuable flying experience and the more advanced achieved some worthwhile contest flying. Alan Somerville was the overall winner of the contest closely followed by Pete Lane, both of them flying Std. Libelles.

from notes by L.E.M.T.

STRAITS (Singapore)

OUR main contribution this time is the small but significant number of achievements up until mid-August. Starting with nine A and B certificates, five C, seven Bronze legs, and two complete Bronze C we are justly proud.

During recent months we have had visits from three instructors who have been in our area taking part in various exercises. Whilst here Al Fox, Mike Johnson and Angus Paterson spent a lot of their off-duty hours at the club giving a helping hand with instructing. Many thanks to you all.

Sunday, 2nd August, produced a good soaring day for the club with over 14 hours flying time between the T-31, T-21 and Swallow. It was also the first time that the club achieved 100 launches in one day.

By the time this goes to print Dave Alty, who was until recently CFI at RNAS Culdrose, will have taken over as CFI here at RNAS Sembawang.

Congratulations to John Homewood on completing his Silver and gaining his Gold C and Diamond for goal whilst on holiday in California.

J.C.L.



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

AUSTRALIA

DESIGN COMPETITION.—The Committee responsible for *Australian Gliding* announces a sailplane design competition. Entries from any part of the world will be welcome; the only requirement is that the entrant should subscribe to *Australian Gliding*. (Subscription details may be obtained from the address of the magazine, Box 1650M G.P.O., Adelaide, 5001, S.A., Australia.)

Further details of the competition are being published in *Australian Gliding* in the near future. At this time it is possible to state only that the intention is to elicit the design of a cross-country sailplane with a span of 13 metres, which can be constructed by gliding clubs and intelligent amateur groups. Cash prizes will be awarded and there are good prospects for the future development of the winning design, whatever its nationality.

The judging panel will include several distinguished aeronautical engineers, pilots and sailplane designers.

Bordertown-Keith G.C.

Our Club is situated 2 miles west of Bordertown (South Australia), approximately halfway between Adelaide and Melbourne. Conditions here are reasonably good, and last summer heights up to 14,500 ft. were achieved.

The 500-km. distance has also been achieved from here nine times in the last three years. There have been 6 triangles, 2 goals, and an out-and-return flight of 418 miles (Australian record) flown by Geoff Tremain in our Boomerang 6. The flight took 8 hrs. 50 mins.

Our membership is 55, and our fleet numbers 4, including our pride and joy, a Cirrus. We launch mainly by winch, with occasional aero-tows. Our Club is 6 years old.

KEITH WILLIS

FRANCE

CROSS-CHANNEL TO ENGLAND.—For the first time the English Channel was crossed from France to England on 4th June by a sailplane in free flight—a Phoebus C flown by Xavier Canler, who covered 193 km. (120 miles) from Valenciennes to Ashford (Kent) in 1 hour 50 mins.

Xavier Canler writes in the July *Aviasport* that cumulus had begun in the late morning, but he was unable to turn up at Valenciennes airfield till afternoon, and released from tow at 14.45 at 500 metres, in a 20-knot wind from between 60° and 80° (ENE). He quickly climbed to 1500 m. (4,920 ft.) and set off for the coast. On the way, the cumulus disappeared but thermals remained good at 3 m./sec. average. Near Bethune he rose to 1900 m. (6,230 ft.)—an unusually high ceiling for this part of France. Visibility in the drier air became less good, but he reached the coast at Audreselles, 5 km. from Cap Grisnez. However, his last thermal, from 3 or 4 km. inland, had given him only 1400 m. (4,560 ft.). He had previously decided on 1500 m. as the minimum for crossing with a safety margin.

So Xavier decided to look for a landing place, and flew out over the sea while losing height. But, after some strong turbulence over the coast, he was surprised to come into smooth air with a sink of only 0.7 m/s. at 100 km/hr. He was at 1250 m. (4,100 ft.), and a quick calculation convinced him that he could just make England on a heading of 340° to allow for the NE wind, flying at 90 km/hr. for best gliding angle.

But the English coast was invisible through the haze. Where was it? He was at 900 m., with his sink varying between 0.80 and 1.50 m/s., when a dark line came into view—but it revealed itself as a supertanker. At last, when down to 700 m., he saw the actual coast, but ran into increased sink. The wind now was NNE, and to avoid Dover's cliffs he turned left for Folkestone with a following wind. Calm gave way to turbulence as he crossed the coast at Hythe at 450 m. (1,180 ft.), having covered 45 km. of sea (28 miles) in 20 minutes. There was nothing but houses, trees and gardens below, but luckily he had enough height to put down on Ashford aerodrome. The time was 16.40.

EDITORIAL NOTE:—On the same day Hans-Werner Grosse flew over 1,000 km. from Lübeck, Germany, to Angers, France, and from Dunstable the race to the Long Mynd was won by John Williamson at over 115 km/h. For weather chart, see last issue, page 207.

Mountain Rally

At this annual event, held at Vinon from 1st to 11th July, a task was flown on every one of the 11 days, and 37,000 km. were flown by 21 competitors—5 in the Open Class and 16 in the Standard. Foreign visitors were Humphry

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Dimock from Britain with a Libelle, Peter from Germany, both in the Standard, and Sander from Germany in the Open. Both winners were French: Cartry, in the Standard, won on every single day. The longest task was a 302 km. triangle via La Baume and Pont du Roy.

LEADING TOTAL SCORES:

OPEN

1 Geydet	Phoebus C	9402
2 Delvigne	Phoebus C	8344
3 Chenevoy	Phoebus C	7475
4 Sander	Libelle	6830
5 Weiss	Cirrus	6242

STANDARD

1 Cartry	Libelle Std.	10240
2 Peter	LS-1	9190
3 Taverhier	Edelweiss	8775
4 Abeille	Edelweiss	7716
5 Hannhart	Squale	5171

Dimock finished 10th with 3406.

Aviasport

ITALY

"VENI VIDI E FUI CONQUISATO—VARESE". — Squeezed between marshes of Lake Varese and a main road to Gavirate, surrounded by trees on both main approaches, lies Aeroporto Paulo Contri—all 600×900 feet of it with another 500 feet of overshoot area. Picturesque restaurant, clubhouse and five hangars neatly tucked in under a slope are hardly visible from the road running on the roofs' level, but once you have found it you are enchanted and surprised—

Enchanted with beauty of setting, elegance of buildings and magnitude of view on a jigsaw line of white-capped mountain peaks dominated by Monte Rosa, slightly pinkish in the morning sun—

Surprised by the brisk, orderly activity and magnificent display of the most modern sailplanes like Kestrel, Phoebus, Cirrus, SHK, not counting CVV8, Muchas, Bocian, M-100 and M-200, a couple of K-13s and an old veteran Skylark 4.

On weekends, up to 30 of them are lined up in colourful single file on a far side of the field, leaving about 3 wingspans of space for the 3 waiting in line abreast for take-off. The east-west runway, 50×900 feet, is reserved for Stinson L-5 tugs, which after dropping cables land in the opposite direction to take-off, often missing one another by a wing span. It calls for a high standard of precision in flying and organisation. Two jeeps efficiently retrieve gliders after landing, so as to keep the take-off and landing path clear. There is no space or time to waste—there one can learn a thing or two about turnover . . . Three Stinsons are milling round taking gliders to the nearest mountain—Campo dei Fiori, 1100 metres high, from where they fly along the mountain chains as far as 540 and 610 km. out and return. One has to raise a hat to those Alpine experts for their skill in flying and the amount of knowledge of meteorolgical phenomena in the Alps, They really should have "doctors' degrees" for it . . .

With all my life-long flying experience, I was like a frightened baby when I flew for the first time with an instructor in the Alps. When we left Campo dei Fiori and, after crossing a valley, reached the next ridge much below the crest, and for some time were tickling its slope with our wing, trying to get some height, with nowhere to land below, I was worriedly glancing at Campo dei Fiori separating us from safety and thinking: unless they start digging a tunnel at once we will never get home . . .

But we did.

"LEFTY" KURILOWICZ

National Championships

TWENTY Open and 8 Standard Class gliders took part in the National Championships held at Rieti from the 3rd-12th August. After 7 contest days, the Open Class was won by Della Chiese flying a 19m. FK-3, followed by M. Cattaneo in an SHK.

The Standard Class winner was L. Brigliadori followed by Pronzati.

PORTUGAL

OUR first National Gilding week was held from 6th-12th June. Chaves Aeroclub hosted pilots from clubs all over the country. The decision to found a gliding centre in the northern area was the result of the first meeting of the National Gliding Committee.

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Taking its experience of 1969 into account when one week of Gliding for the benefit of the public was laid on, Chaves volunteered to organise this week as well as part of the expenses. The Air Force and Civil Aviation Administration contributed too, while members of the C.A. Administration working in the N.G. Committee took care of the technical operations. A good news service kept the public informed through one broadcasting station. Refresher courses prepared pilots for licence renewal tests. Orographic and thermal lift was poor, probably because it was not the best time of the year for gliding in Chaves; but 1,400m. was reached in wave. Predominant light winds were from W and SW. Three gliders flew 50.30 hrs. from 139 aero tows, the tugs, PA18 and Auster D5 put up 23.20 hrs. The rather high percentage 46.3% tug/glider is explained by the fact that most of the flights were training and demonstration.

I tried to fly back to Lisbon but very poor weather conditions made it very difficult. One other Silver C was completed with a distance flown by H. Piló from Evora to Beja.

E. F. MARLIN.

POLAND

NATIONAL CHAMPIONSHIPS.—These were held at Leszno from 17th to 30th May; 40 Polish pilots and 2 visitors took part. Types flown were 35 Foka 4 or 5, 6 Zefir, 2 with a handicap of 0.95, and a Cobra 17 flown by Makula with a handicap of 0.90. Tasks were:

May 18th.—308 km. Triangle; 35 completed. Muszcynski won on handicap at 77.05 km/h., Makula's speed was 81.17.

May 19th.—207 km. Triangle; Kluk won at 72.02 km/h.; Makula's Cobra and a Zefir went faster.

May 21st.—184 km. Out-and-return; a premature cold front spoilt it.

May 23rd.—Double Triangle of 104 km.; nimbo-stratus made this the most difficult of the tasks; Kluk won on distance—189 km.

May 24th.—Double Triangle, 204 km. "Classic" Polish thermals, 3-4 m/s., up to 1,900 m.; 37 went round twice. Muszcynski won at 78 km/h.; Makula went faster.

May 25th.—534 km. Triangle; dry thermals, rising at 5-7 m/s to 1900 m. on second leg. By 15.20 hrs., 22 had reached the 2nd turning-point. None finished the course; Kepka and Witek made 508 km., Makula 513 km., and Popiel 511.

After this there was no more flying; the weather is said to have deteriorated.

LEADING TOTAL SCORES

1	H. Muszcynski	Foka	5832
2	S. Kluk	Foka	5764
3	F. Kepka	Foka	5658
4	E. Popiotek	Foka	5618
5	J. Wroblewski	Foka	5592
6	J. Wasilewski	Foka	5582
7	J. Ziobro	Foka	5560
8	J. Pieczewski	Foka	5516
9	E. Makula	Cobra	5480

Volo a Vela

We understand from another source that the reason for the cancellation of further flying was that two pilots were killed in a collision, and that a high official thereupon forbade any more flying; he was not conversant with aviation customs, or he would not have flouted the old tradition that, after a fatality, flying must go on, as the most fitting tribute to the memory of the deceased.—ED.

SOUTH AFRICA

OUR Cathcart Gliding Club, established the hard way, without the usual nucleus of experienced European glider pilots—in fact, without anyone with any experience at all, took well over a year of operations before finding that, in all innocence, we had sited our strip within a mile of two ridges which provide reliable lift in the two prevailing winds! The first half-dozen soloists have recently flown their five-hour stints.

A Memorable Five Hours

Came 7th June and a blustering north wind, too strong for training or pleasure flying, and CFI Tony Nort decided to send the writer, who had been lagging behind the school, to do his five hours on that so-predictable ridge.

The winch-drum did a few slow rotations to get the K-13 airborne, and was then braked to a stop, while our "bird" kited up to an easy 2,700 ft. on wind power only. Cable was then released in some turbulence at 150 kph. It soon became apparent that at least the upper wind speeds had been underestimated. Upon assuming the usual penetration speed of ±100 kph. towards the ridge, it took a minute or so to assess that a fairly fast rearward drift was taking place. Not until 130-140 showed on the ASI was forward movement over the ground seen to be positive. This raised some doubt in the mind about the feasability of a landing; but experience reassured that winds usually eased by mid-afternoon, when the 5 hours would be completed.

1,000 ft. were lost in penetrating to the ridge, which was then found to be far from its usual benign self—turbulence everywhere (at 140 kph) and the top apparently being whipped off it by the velocity-pressure of the upper air. It's an ill wind . . . however, and a comfortable procedure was evalued of penetrating through the ridge lift at 140 kph., then easing off to 120 and drifting back through it, without turning. This see-sawing achieved a height of 6,000 ft. agl, at which point lift faded.

Now, however, another ominous factor intruded. Dust, whipped up from the drought-parched hinterland, began to thicken over the landscape. (In the event, the dust storm at midday was said to have been the worst in memory.) Landmarks faded one by one, and, at 6,000 ft., there appeared to be at least another 1,000 ft. of the dust layer above. With the sun a mere lighter patch in the haze, and no horizon, "our" north ridge was the only remaining visible reference point, and it too was slowly fading. With only vario, ASI and altimeter, a faint unease began to be felt. However, by descending slowly to 4,000 ft. it was found possible to keep the crest of the 1,500 ft. ridge in view, albeit dimly!

So for two hours, crabbing slowly back and forth along the 3-mile ridge while headed almost directly into wind, balancing airspeed against wind velocity, until it gradually became apparent that a lesser airspeed was required and that visibility was gradually improving. Then, at a "funnel" caused by two converging spurs, an interesting exercise, of remaining as near stationary as made no difference, in relation to the ground, while climbing back to 6,000 ft., and balancing there for nearly 20 minutes, on top of this area of lift. Speed needed —just over 100 kph., and visibility even further improved. So now to try for some wave, contacted by a few other club members from time to time, further upwind. Penetrating fast into the wind, twice, and losing 3,000 ft. in each attempt, followed by a hurried swoop back to the ridge, seemed to show that the wave was, today, either non-existent or unattainable. Some more hovering, at 90-100 now, and presto! time up and the strip clearly visible again.

A hover-type landing, planned during the preceeding hour or so—to put the K-13 directly into the hands of ground crew, who were to be seen spreading out along the strip to grab and restrain—worked according to plan down to 700 ft., when turbulence persuaded reliance on the known advantages of speed, and we chickened off into a skidding circuit at 120 kph., rounding off without brakes at an approximate 30 kph. ground speed and more or less, if untidily, into the hands of the members on the ground, who were organised to the point of the only two 200-lb.-plus members being at either wingtip, others catch-as-catch-can! A quick manhandling into the hangar before their glider might be subjected to further indignity.

A. STAFFORD ARNOLD

UNITED STATES

KLAUS HOLIGHAUS and Walter Neubert, of Germany, both broke the 100 km. triangle World Single-seater Record at Marfa on the 4th and 5th July, the 4th being the closing day of the World Championships. With speeds of 148 and 153 km/h. in the Nimbus and Kestrel 22 respectively.

On the 26th July, Wally Scott and Ben Greene broke the World Distance Record, each flying an ASW-12. They had both declared a goal 1140 km. away at Thedford, Nebraska. Starting from Odessa they landed together at 20:10 hrs. at Columbus, Nebraska, a distance of 1160 km. A cold front to the northwest had cut them off from their goal; they had been flying on their own for most of the day, but for the last 160 km., they joined forces and they pair flew to their landing place. The flights took a little over 9 hours, giving an average speed of 129 km/h.

Also on the 26th June, the well-known designer, Irving Prue, claimed the 100 km. Multi-seater World Record. Flying the Prue 2 with his passenger Caroline Skeith, he averaged 115 km/h., starting from Table Mountain, nr. Wrightwood, Calif.

Wally Scott is also claiming the world goal-and-return record with a flight he carried out on the 3rd August, from Odessa to Perry Lefors Field at Pampa and back, a total distance of 860 km.

News has also reached us that the first American Standard Class Nationals, held at Harris Hill from 21st-31st July, have been won by George Moffat in a Std. Cirrus. There were eight contest days and 43 pilots had entered.

The Open Class Nationals, held at El Mirage from 11th-21st August, were won by Ross Briegleb in a Diamant 18 after nine contest days. His brother Kenny came 11th and father Gus 32nd in a field of 55. Ross is instructor, tow pilot and manager there.

Harro Wödl, World Open Class Champion of 1968, who flew in the US Nationals last year and again in the World Champs. this year, has joined the Great Western Soaring School at Pearl-blossom, Calif., as instructor in cross-country and contest flying.

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