Sailplane and Gliding

3/-

December 1963





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SAILPLANE AND GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

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Cover Photograph: The Matterhorn, taken by Bill Kronfeld during the flight he described in our October issue (page 376). Readers who know the Matterhorn will notice that by an error the picture has been reversed.

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1963 - 1964

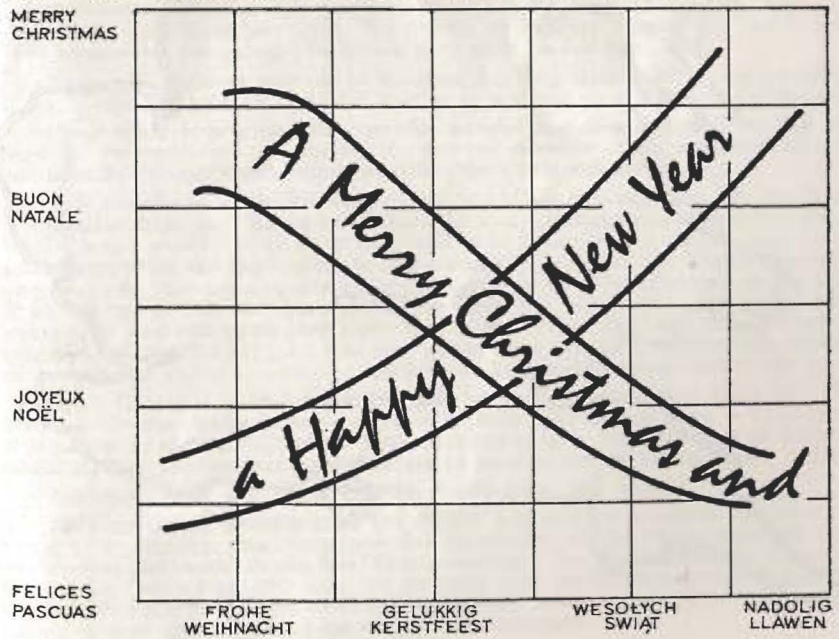
CHRISTMAS AGAIN! The year has whizzed by like a rocket. There has been a steady continuous growth, without too many fireworks. Clubs have expanded and consolidated, more and more have achieved buildings in which something approaching civilised life can be carried on. Numbers of aircraft have increased mightily. The Nationals show a steady increase in the general level of competence of pilots.

The B.G.A. Capstan has started its rounds, and will increasingly show its worth in higher instructional standards and so in safer flying. The B.G.A. Coach, John Everitt, is the modern Flying Dutchman.

The big news is the selection of Great Britain for the 1965 World Championships. 1965 may seem a long way off to some, but not to the increasing numbers of folk who will be drawn in to the task of organising them.

SAILPLANE AND GLIDING has grown to a point where Rika Harwood has had to move into her own room in the B.G.A. offices, with her own staff (if Miss Osborne doesn't mind being called a staff). Visitors will be, as always, welcome.

We can be an argumentative a contentious lot — only in the gliding world could one find people getting quite warm about something called stochastics; and as for Polars, which to the uninitiated sounds a frigid subject indeed, on this matter life-long friends come almost to blows — but not in this Season of Cheer. Good fortune to all our readers and




Scale 1:4,500,000
South Cerney
Lasham

1965 World Gliding Championships

IN October SAILPLANE AND GLIDING gave the bald news that the Commission du Vol Sans Moteur have accepted our offer to hold the 1965 World Gliding Championships at the Royal Air Force Station at South Cerney, Gloucestershire. Likely dates are the last week in May and the first fortnight of June.

Unlike previous Championships held elsewhere, regrettably no Government financial aid is available to us, so we have had to lay down that entry fees will be £250 per team of pilot and three aides. In the circumstances we hope people will forgive us.

Fees for additional people to the four per aircraft will be £40 each; for the training week £20 per person, whether official team members or additional.

Gliders and trailers and cars will be available for hire. Three entries per nation, maximum two in either class, will be permitted; if the required number is not then forthcoming, this will be increased to four per nation, or even five per nation as a last resort.

Radio will be permitted in both classes, since its use lightens the burden both on the telephone system and (important on our overcrowded highways) on the roads.

Preliminary entries will be required by 30th April, 1964; final entries, with £100 deposit, by 30th September 1964. We require preliminary numbers by 1st January 1964 because we cannot start budgeting until we have this figure.

Tasks will as far as possible be the same for both classes, but in our conditions it is probable that separate tasks will have to be declared on at least some of the days.

Cloud-flying is permitted only outside airways and control zones, but this will have to be punctiliously adhered to. Anyone breaking this regulation will be permanently grounded and withdrawn from the Championships.

This introduces a delicate subject, on which we can only ask for the fullest co-operation from our friends everywhere. In past Championships, there has always been a small number of pilots at the "tail" who come from countries new to our sport, simply for the experience. In our country, where our Air Traffic Control is comparatively liberal, we maintain our freedom only by strict adherence to the rules. If we are not to lose our freedom, we must not risk relatively inexperienced pilots losing their way and transgressing our regulations. Please, therefore, may we ask all countries not to enter any pilot who they are not sure has the necessary high standard of navigational ability to ensure he can keep under our airways and out of our zones.

South Cerney is an R.A.F. airfield, not far from Aston Down, where our 1962 National Championships were so successfully held. The nearest town is Cirencester. It is on the edge of the Cotswold Hills, in a particularly beautiful part of England, where thermal and weather conditions are as good as can be found in our country.

Accommodation and meals will be provided on the airfield.

Accommodation (including lecture rooms) will also be available to OSTIV, on terms to be decided, and the engineering assessment of the OSTIV Standard Class entries may be made during the Championships. The Commonwealth Centre is inviting the OSTIV flight test team for the week after the Championships to Lasham, which if they accept will give them full opportunity to carry out comprehensive flight testing of those aircraft passing the engineering assessment.

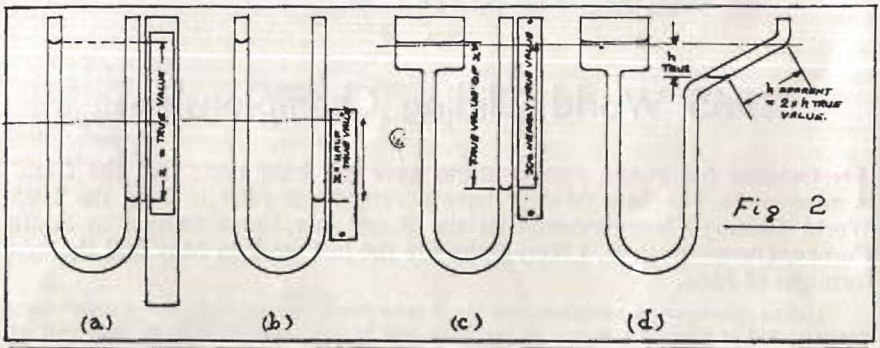


Fig 2

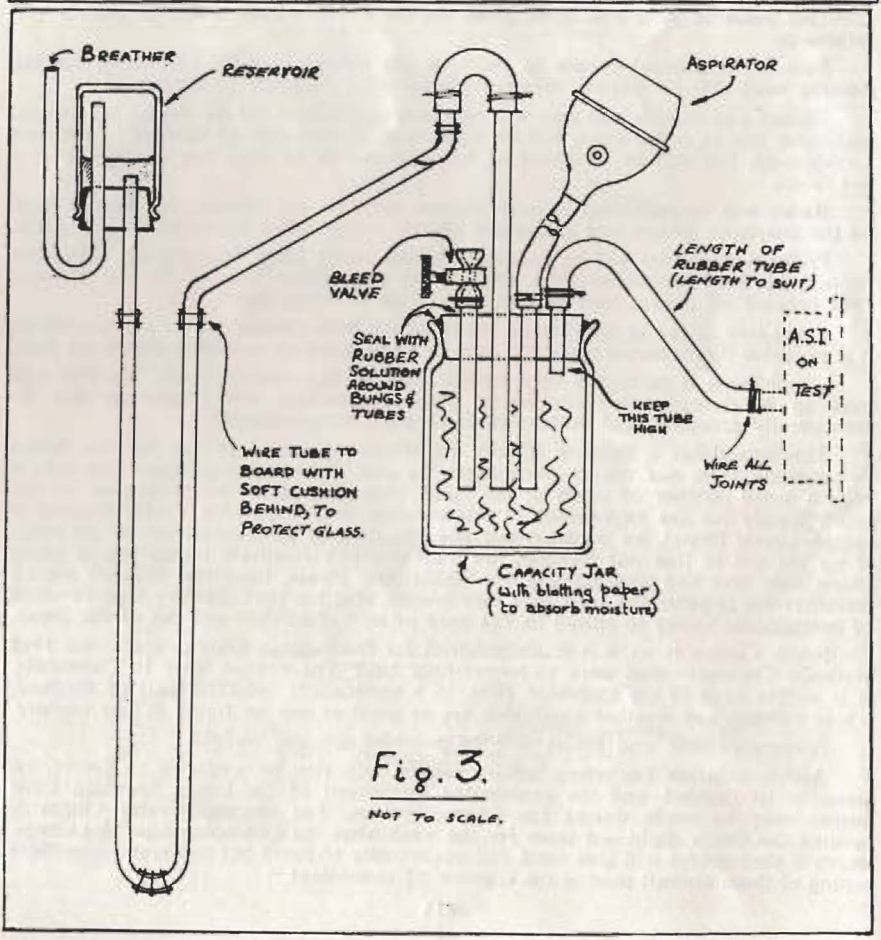


Fig. 3.

NOT TO SCALE.

On Calibrating Airspeed Indicators

by COLIN B. GOLDING

THERE has recently been a good deal of talk about the accuracy of A.S.I.'s, especially at speeds near the placard limits of the aircraft to which they are fitted; but there seems no cheap, simple or quick means of getting them calibrated. This article describes a "Do It Yourself" calibrating instrument which any resourceful club member could make very cheaply.

Principles.—The A.S.I. works on the actuation of linkage caused by a capsule deflected by a difference in air pressure. An open-ended tube directs air to the inside of the capsule which sets up a pressure and causes it to expand. This is called TOTAL PRESSURE, whilst the air surrounding the capsule is said to be at STATIC PRESSURE. These two pressures are provided in the aircraft by the Pitot tube (or Pitot Static Head), and the algebraic difference between the two readings is called the VELOCITY PRESSURE. The air velocity can now be calculated by using the formula "Velocity (in feet per minute) = a constant × $\sqrt{\text{velocity pressure}}$ (in inches water gauge)". The constant for air at N.T.P. (Normal Temperature and Pressure) = 4008.

If a test system, consisting of a manometer, capacity jar and the instrument on test, are all pressurised, the displacement in fluid level in the manometer can be measured as a velocity pressure and converted to read directly in m.p.h. or knots on an adjoining scale (see velocity table, Fig. 1).

Design Considerations.—The simplest form of manometer uses water in a glass tube which is bent in the form of a "U", but to obtain a reading between the meniscus in each leg, the scale must be moved to zero on one leg and the reading taken on the other leg (Fig. 2a). Alternatively, a reading may be taken from one leg only, but since only half of the total movement of fluid will occur in this leg, any error in the reading will effectively be doubled (Fig. 2b).

If one leg of the manometer has a reservoir of relatively large capacity, then the fluid displaced from the measuring leg will only cause the reservoir level to rise a small amount. This way, a direct reading of nearly the whole displacement can be taken without moving the scale (Fig. 2c).

Since the velocity pressures at the lower speeds are very small, a more accurate reading in this region can be obtained by inclining the initial part of the measuring tube (Fig. 2d).

The A.S.I. capsule is very delicate and only has a small capacity for air; therefore a capacity jar must be included in the circuit to prevent damage from sudden gusts of pressure. This jar should also contain some blotting paper or silica-gel to prevent any water entering the A.S.I. A bleed valve should also be included to provide a regulated relief of the air pressure built up on test, and to act as a fine adjustment when taking readings.

VELOCITY TABLE

Speed Reading	*Velocity Pressures*	
	Knots	*m.p.h.*
5	0.016	0.012
10	0.064	0.048
15	0.144	0.108
20	0.256	0.193
25	0.399	0.301
30	0.575	0.434
35	0.783	0.590
40	1.022	0.771
45	1.294	0.976
50	1.597	1.205
60	1.300	1.735
70	3.131	2.362
80	4.090	3.085
90	5.176	3.904
100	6.390	4.820
110	7.732	5.832
120	9.202	6.941
130	10.799	8.146
140	12.524	9.448
150	14.378	10.845
160	16.358	12.339
170	18.467	13.930
180	20.704	15.617

Fig. 1

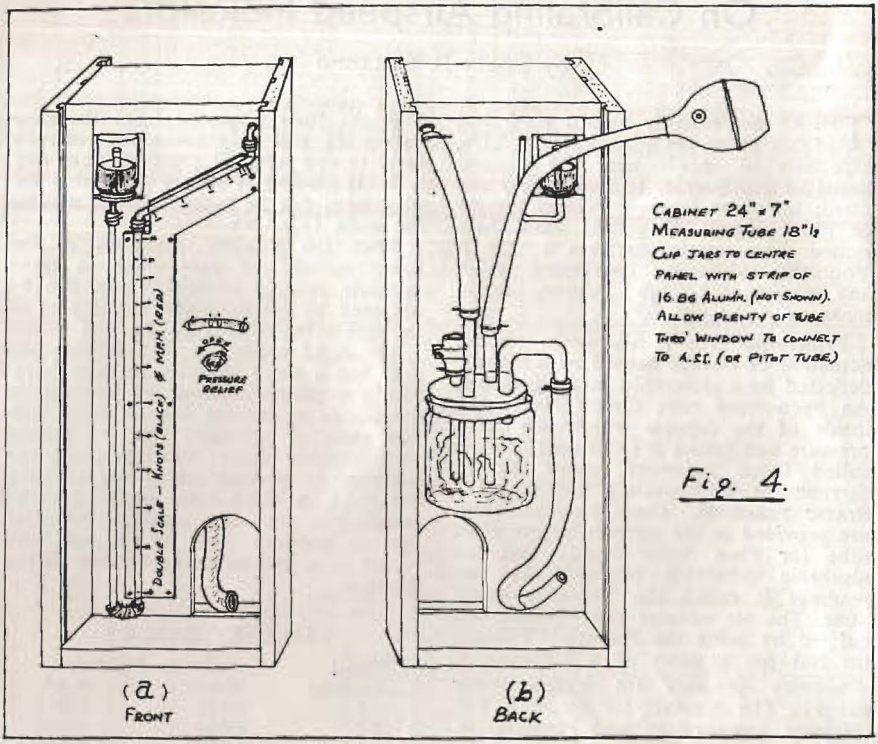


Fig. 4.

Construction.—Figure 3 shows the schematic circuit diagram and Figure 4a and 4b the layout of components of the final calibrating instrument, as made by the author. Individual capabilities and resources must, however, dictate which of the design considerations to use.

The cabinet is simply made from ½ inch deal, and very little skill is required to groove and join, with a 3-ply panel in the middle. Grooves are also provided for sliding panels on the back and front for protection of the manometer. The glass tube, obtained from a chemist, is of Pyrex class 7 mm. outside diameter and 4 mm. bore. The chemist also provided the aspirator, a foot or two of rubber tube, some rubber bungs, which he cut to suit the two jars, and some fluorescin. The latter colours the water green and makes readings easier to take, whilst not staining the glass nor altering the specific gravity of the water. The landlady provided the small jam jars (at no extra charge!).

Great care must be taken to make good seals, and all rubber/glass joints should be cemented with rubber solution or bound with copper wire (or both). A spirit level must be used on the inclined system, but it will also add to the accuracy of any system.

Calibration.—The author had access to laboratory gauges, and calibration was carried out by comparison, resulting in an accuracy of about 1%. A similar accuracy can be obtained by careful measurements of the fluid levels using a good quality engineers' steel rule, preferably marked off in hundredths, and using a magnifying glass. *Do not* calibrate against another A.S.I., since it may have inherent errors of its own. Note also that distilled water should always

be used, both for initial filling and also topping-up.

The scale should be of good quality art card and should be mounted behind the measuring tube and fixed to the centre panel. Calibration should be carried out very carefully, measuring from the bottom of the meniscus in the reservoir to the bottom of the meniscus in the measuring leg (as shown in Fig. 2d as "h true"). All readings should be checked several times, in accordance with Velocity Table (Fig. 1), and when satisfied that the exact measurement has been obtained, carefully mark with Indian Ink on the Scale Card with the appropriate speed value.

Cost

	s.	d.
Wood 4"×½"×5' and 3-ply 2'×2'×3/16"	4	0
Glass tube. Pyrex 7 mm. × 4 m.m. × 5' length	2	8
Rubber tube. 2'		8
Aspirator (off old spray bottle at chemist)	2	0
2 specially cut and bored bungs	4	0
Fluorescin (quite a small pinch)		2
Spirit level	2	6
Water		
Midnight Oil (*x* gallons!)		?
Total	16	0

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Capstan at the Nationals

DOUBT about the Capstan rounding the turning-point on its last competition day at this year's National Championships was cleared up after the meeting when an appeal was allowed. The result was to add 469 points to the score reported in our August issue on page 275, and the Capstan's final position, flying *hors concours* in League 2, was "after 30th", not "after 37th" as at first assumed.

Incidentally, the dates at the head of the League 2 tables were wrongly given: they were May 25th, 26th, 27th, 31st and June 1st respectively.

ANN WELCH

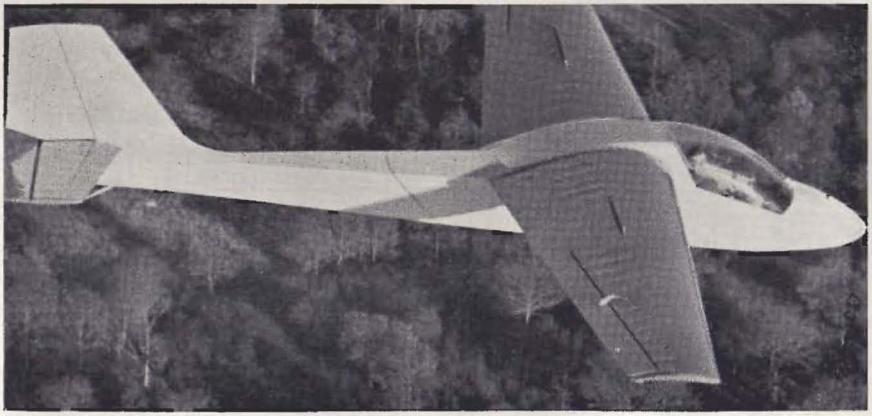
glider flying

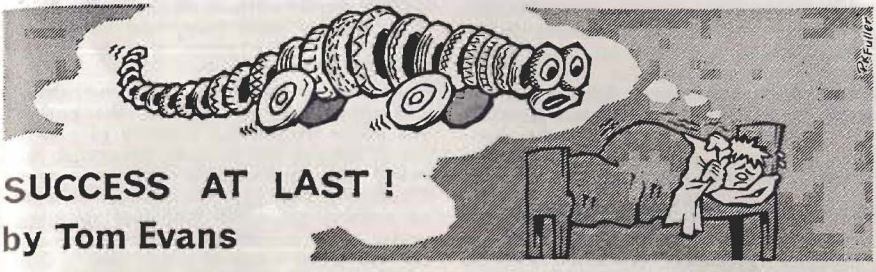
The ideal and authoritative introduction to gliding by the vice-chairman of the BGA

Her book takes the newcomer from the moment when he simply thinks that gliding might be fun right up to the stage when he will be able to soar on his own over the face of the countryside. Carefully written in non-technical language Glider Flying is packed with information —

how to join a club
what to wear
what learning is like
how long it takes
how much it costs
how to control the machine
speed flying
navigation
becoming a private owner
how to aerobatics
how to cope with emergencies

224 pages of text, 8 photographs, 26 drawings. Constable 21s.





SUCCESS AT LAST !

by Tom Evans

AUGUST Bank Holiday! Great, let's take a short gliding holiday and hold a kind of rally in the South! We can fly from Clonmel, and then on to Cork and fly from there. Weather should be good, excellent sites, retrieve crews, possible Gold C distances to the north! Oh boy, gold at last! But we have no trailer for the Ka-7! No problem: Clonmel has offered to loan us their Rhönlerche trailer, and it's on the way up.

With these thoughts in mind we were "all systems go". I raced out to Baldonnel, complete with new station wagon and tow bar, to meet the trailer. Alas, there stood a dejected Martin and no trailer. He had had a puncture in the trailer about 20 miles short of Baldonnel. However, a local garage was on the job (no spare wheel as the trailer had a very small odd-sized undercarriage!). That evening I pressed on out to Naas to collect the trailer, and had some difficulty in connecting it to my limousine (odd-sized coupling!).



However, after bending the tow bar slightly, all was well. Back at Baldonnel we loaded the Ka-7, but not without difficulty (everything seemed to be odd-sized!).

Early Saturday morning saw us again at Baldonnel, spirits high and rarin' to go. Last-minute adjustments, and Ka-7 (on open trailer) and Petrel (closed trailer) were ready for the road. Then the news arrived — the Kite, which some of the boys had taken to Clonmel some days earlier, had been damaged. We agreed that we had better get there smartly.

Irish roads are quite good and we hit a nice steady pace. Bang! Halfway to Clonmel and the Ka-7 trailer tyre was kind of flat. Two of us took the wheel to the nearest garage, while the remaining two, with the Petrel, had a long picnic lunch beside the Ka-7. We pulled out the tube for a quick repair job. Oh no, shreds! (Have you ever tried to purchase an odd-sized tube in Ireland on a Saturday afternoon — as it was then?). We visited six garages and scoured a town before we found one, but of course it had the wrong connection — too short — we wouldn't be able to blow it up. Finally we acquired an extension onto the tube; this took roughly an hour. Back at the first garage, where we had left the wheel, we hastily fitted the tube. Couple of nuts lost from split rim; never mind, we'll get some more (odd-sized nuts!). Well, the tyre was finally blown up and we found our connection extension wasn't necessary at all!

The boys were well relaxed when we got back to the sailplanes! Soon we were in Clonmel, a couple of whiskeys with the Count (that castle of his felt so secure), and the news that the Kite boys had gone on to Cork to await our arrival. So we pressed on, and thought

we would camp just south of Clonmel, and away to Cork early Sunday morning. We had a nice even pace as we drove south, looking for a camp site. Bang, scrape, scrape! What now — another puncture? No, the whole centre had broken out of one of the Ka-7 trailer wheels (that same odd-sized wheel!). We had found our camp site! After a struggle we got the glider onto the verge and bedded down for the night. Fortunately it was fine.

Sunday morning saw us scouring Cahir and Clonmel for an odd-sized



wheel. (Have you ever tried to purchase an odd-sized wheel in Ireland on a Sunday morning?) By Sunday afternoon we were desperate, and an engineering genius from the Clonmel club *thought* he had two larger wheels at home which *might* fit the hubs. This meant a 30-mile drive to Kilkenny to collect same. Thank God, he had the wheels, so we pumped them up and raced back to Clonmel. Just about six miles short of the sailplanes I had a puncture in my station wagon! Quick wheel change, and then we discovered that one of the newly accommodated wheels had a puncture. (Have you ever tried to get two punctures mended in Ireland on a Sunday evening?) Finally we begged the facilities from a local filling station and mended the punctures ourselves.

By 11 p.m. we were back at the Ka-7 trailer, armed with hacksaws. (Stanley had pressed on to Cork with the Petrel. At least he was going to get *some* gliding—he had really shown great esprit-de-corps in remaining with us for so long to help out.) The three of us then set to work with hacksaws as the mud-guards, firmly secured to the trailer with 3-in. tubular steel bars, had to be removed to make room for the larger wheels.

At last we were on the road again; this time back to Clonmel. We parked the trailer outside the hostelry of one of the Clonmel boys, and proceeded to really enjoy a beautiful long cool beer. Chattering and gay voices soon brought us outside again, to find our sailplane under close inspection. It was too much for me when I saw a youth take a firm grasp on the Ka-7 aileron and heave himself up on to the trailer in order to peer in at the fuselage. In no uncertain terms the youth was ordered down, and I learned later that he had written to the Clonmel Club to say that if this was the attitude of gliding club members, he would never join. (Odd-sized youth!)

Eventually, by 2 a.m. Monday morning we had the Ka-7 tucked safely away in the Count's shed. I did not care if I never saw it again.

We'll make Cork yet, we said, and so, by 9 a.m. Monday morning, we were on the road again, this time without the Ka-7. By this time some lads who had come down from the Ulster and Red Hand gliding clubs for the rally had joined us. They had been bringing a Skylark down, but Customs at the border had ordered them to leave it in the North because they hadn't the correct papers for the trailer! They were quite happy about the sailplane, though.

We finally made Cork, and it was a brilliant day. At least we should get a launch or two. Everyone was there, including Stanley and the Petrel, but not gliding yet? Alas, the winch had broken down, clutch completely gone, and a



new fly-wheel needed! (Have you ever tried to get an odd-sized fly-wheel in

Ireland on a Bank Holiday Monday?)

Utterly and completely dejected, we had lunch in Cork and then started on the 160 odd mile drive to Dublin. By 8 p.m. we were in Dublin, and I was just in time to report for work. Is it worth it? Approximately 600 miles, little food, tons of energy, not even a shave, plus all the expense, and we didn't even get airborne! Oh, I'm sorry, I did get airborne — up the wall!

"I'll never glide again."

"What about next Saturday?"

"What time do we start?"

This rather tedious story has an obvious moral. Always carry a spare trailer wheel, never have odd-sized wheels, or, for that matter, odd-sized anything else . . .

In spite of all I have to say, the locals were indeed very good to us throughout our ordeal.

That gold has suddenly turned a dirty silver!

P.S. Whilst retrieving the Ka-7 from Clonmel the following weekend we had a puncture!



1964 Revised Rules for F.A.I. Badges & Records

AS briefly recorded in our last issue, the following has been agreed, with effect from 1st January, 1964.

1. Silver C Distance: to remain at 50 kms., but in a straight line only.
2. Gold and Diamond Distance: in (a) a straight line, (b) a broken line of not more than 2 legs, one pre-declared turning point, no minimum distance imposed for either leg, (c) a pre-declared triangle, (d) goal and return.
3. Diamond Goal. Same as 2, but a landing at the declared goal is compulsory.

Overflying of goals has been dropped, since no one has been able to produce any satisfactory control method, particularly to ensure that the declared point is overflown within a hemisphere of 1,000 metres radius centred on it.

In connection with the above, it will be noted that if a triangle is attempted but failed, even if the 300 km. or 500 km. distance has been exceeded, the task will not have been achieved, since more than two legs will have been flown. This seems somewhat irrational, but the new regulations are so much more satisfactory than those previously proposed, and in the case of the Silver C so much better than the old (the 50 km. triangle was frankly a nuisance), that we can only express our satisfaction at the outcome.

P. A. W.

The 1964 B.G.A. Ball

Saturday, 21st March

FOLLOWING on the success of last year's function the Ball will again take the form of a Dinner and Dance and for the first time it will be held in the New Hall of Imperial College, by kind permission of the Rector.

Tickets will be 35s. each but I am told that drinks will all be cheaper than we have had before and the Dinner of five or six courses promises to be a real Banquet. Seating, we understand, is at tables of six or twelve. Space, I am afraid, will be limited to 300 for the Dinner and so to avoid disappointment early booking is essential. We hope to be able to accept a limited number of dancing only people.

Yvonne Bonham is the Chairman of the Organising Committee and would be very pleased to receive any ideas or criticisms.

Y. C. B.

FRED FUMBLE



EXTRACT FROM "LAWS AND RULES"

"F.6 — Aerobatics are prohibited over congested or urban areas, or within controlled airspace without the consent of the appropriate air traffic control unit."

National Glider Aerobatic Contest

DEREK PIGGOTT, the winner in 1961, was not able to defend his title this year as he was abroad at the time of the contest, which was again held at Dunstable, organized by a committee of the London Gliding Club under the chairmanship of "Chuck" Bentson.

On this occasion competitors had to fly a qualifying sequence of aerobatics, and the five who were adjudged to have performed best were to have given an *ad lib* display limited only by the aircraft C. of A. limitations.

Entries were limited to ten pilots, and nine entries were received, but only seven actually took part, so that all seven were in fact permitted to fly a second time.

Sunday, 22nd September began with a long wait for pilots and visitors alike. Briefing had to be delayed twice for the weather to clear, which it did just on 3 o'clock. The cross-country task, however, which is normally set in conjunction with this event, had to be scrapped, owing to the non-soarable conditions.

The aerobatics' well deserved winner proved to be Doug Bridson, who gave a very polished display in the R.A.F.G.S.A. Olympia 419. Second and third places were gained by two newcomers to the contest, Bill Nicholas, of the West Wales Gliding Association, and Ralph Chesters, of the London Gliding Club.

Once again the Lockheed International Trophy Panel, with "Bill" Bedford in attendance as Gliding Adviser, undertook the judging of the contest, under the chairmanship of Hubert Broad. Their report follows below.

Godfrey Lee presented the winner with the Jack Hanks Trophy and the Emmott prize was divided amongst the first three.

R. H.

JUDGES' REPORT

General Conditions

The weather cleared very quickly after 3 p.m. and by 3.45 p.m. the sky was about as perfect as any sky could be, both for competitors and judges: high broken layers of cloud weakened the glare and provided an excellent background against which to view the aerobatics. The wind was light from the



"The Judges"; from l. to r., Sq.-Ldr. C. K. Turner-Hughes, Wg.-Cdr. H. P. Powell, A.F.C., Capt. H. Broad, M.B.E., A.F.C.

Photo by John Blake

north-east and maintained a steady strength which enabled all competitors to make very accurate landings — particularly on the second and final round.

Previous elimination had reduced the number of competitors to seven, and this made the judging a very much easier job, partly because there were fewer to be judged but also because the standard of all the seven competitors was reasonably comparable. However experienced a judge may be there is always some added difficulty in assessing two good competitors accurately when one of them takes his turn after a series of bad performances and the other takes his after a series of first-class displays. In this, 1963, competition it was most noticeable that very few marks were lost throughout by bad positioning or coming too low.

The importance of positioning in all such exhibitions cannot be overemphasised: an aerobatic display (like justice!) must be seen to be done. On this point it may help competitors to know that all judges, either in their minds or actually on paper in front of them, have a frame within which they hope to see the display: all through each display the position of it is noted and the final impression should be that the display was accurately placed in the frame. It should not have been centred away in one corner of the "frame", or, worse still, actually outside it.

Arrangement of Competition

The competition was organized in two rounds; the first was termed a qualifying round and the second a final round. In the first there were (essentially) five compulsory manœuvres which (where relevant) had to be done both right-handed and left-handed, making 10 manœuvres in all: these included an inside loop, two stall turns, two Chandelles, two complete turns of a steep turn and two spins of 1½ turns each. No other manœuvres were required in the first heat, but up to 10 marks were allotted for accuracy in spot landing. In this heat 45 marks were allotted for accuracy and 45 for artistry and positioning. In the final round competitors were free to do any manœuvres they liked, so long as they observed the minimum height limit of 500 ft. above take-off point. Marking in the final round was as follows:—

Scope	20 marks
Accuracy	25 marks
Artistry & Positioning	25 marks
Originality	25 marks
Spot landing	5 marks

Owing to the restriction of compulsory manœuvres in the qualifying round it was found that a fairly close range of marking existed between the competitors, and this narrow margin of differences tended to be influenced very considerably by the 10 marks (maximum) for spot landing. In the final round, however, with only five marks for spot landing, a very high standard of landing all round, and a much wider range of assessment on free manœuvres, the landing marks did not tend to make much difference to the final assessment.

Individual Performances

DERRICK GODDARD, Lasham (Swallow), was well positioned in the qualifying round but strayed slightly towards the top left corner of the "frame" in the final. His compulsory manœuvres were satisfactory but he failed to develop a more inspiring display when he was doing free manœuvres. His landing marks were 0 out of 10 for qualifying and 3 out of 5 in the final. He was assessed 6th in the competition.

"DOUG" BRIDSON, R.A.F.G.S.A. (Olympia 419), positioned his qualifying display slightly to the right, but his



Godfrey Lee presents "Doug" Bridson with the Jack Hanks Trophy.
Photo by A. E. Slater

positioning in the final round was excellent. He did his qualifying manœuvres very well and, in the final round, went straight into his display with an impressive start and kept the display going in a most polished way. His inverted flying was excellent. He gave the impression throughout of having planned and practised his show very carefully. His landing marks were 8/10 in the qualifying round and 5/5 in the final. He was judged the winner of the competition.

PETER HEARNE, London G.C. (Ka-6), positioned his first round a little to the right but positioned correctly in the final. His qualifying stalled turns gave the impression of being only semi-stalled, but this may have been due to going into them at a slower speed: to make a stalled turn impressive it is essential to go into it at a fair speed and pull well up; a stall from level flight (almost) is uninspiring. His final round gave the impression of being unplanned, with manœuvres following in a somewhat haphazard manner. His landing marks were 10/10 and 5/5 for the two rounds respectively. He was judged 7th.

"LEFTY" KURYLOWICZ, Polish A.F.G.A. (Mucha Standard), started his qualifying round rather far overhead and took some time to recover position. His qualifying stalled turns were very good, but his two spins did not complete the required 1¼ turns each way. He made up for this in the final round by doing 2¼ turns of a spin. His spot landing distances were marked 8/10 and 3/5. He was judged 4th.

GODFREY HARWOOD, Crown Agents G.C. (Swallow), started his qualifying round slightly right of the "frame" and was still marginally right of centre in the final. Both qualifying spins were short of the required 1¼ turns and the stalled turns (like Hearne's) seemed only semi-stalled, probably for the same reason. He used smoke to indicate his manœuvres trail, which is impressive — but it also emphasises any errors so must be treated with discretion by competitors. In the final round his loops were good but variety seemed to be lacking, thus losing marks under scope. His landing marks were 6/10 and 5/5 respectively. He was judged 5th.

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RALPH CHESTERS, London G.C. (Skylark 2), positioned himself very well both in the qualifying and the final rounds. His qualifying spins were more than required in one direction and less than required in the other: they added up, however, to the required average of 1¼ each way. In the final round his aileron turn going vertically upwards and vertically downwards was impressive and his half-rolls were excellent, although he would have improved his scope if he had varied some of the half-rolls for other manœuvres. His landing marks were 0/10 and 3/5. He was judged 3rd.

BILL NICHOLAS, West Wales G.A. (Swallow), positioned himself well in both rounds and, also in both, did a well compressed and co-ordinated display. His qualifying spins were accurately done—exactly 1¼ each way. In the final round he did good chandelles and very good stalled turns with a well developed climb preceding the stall, a definite stall, and a balanced dive away making the whole manœuvre symmetrical. He found sufficient height (by compressing his manœuvres) to include 3-way loops. His landing marks were 2/10 and 3/5. He was judged 2nd in the competition.



"I kept telling glider guiders coming to Odessa for soaring badges and record attempts," started Al Parker, "if they see me out on the field 8 a.m., running about cross-eyed and not wanting to talk to anybody except my crew, that'll be the day.

"26th August, 1963, was a good cross-country day," continued Al, "but studying the weather maps for years, I figured 27th August should be a better one.

"27th August, I was on the airfield early, cross-eyed, rushing madly about in accord with my predictions. I was on tow at 10.25 a.m., behind my L-19 tow-plane, leaving runway 16 of Ector County Airport, Odessa, Texas.

"Taking off in a left hand pattern, my tow-pilot noticed a hawk circling to our right and turned immediately toward it. I released south of the hawk and started circling to the right, but remembered the need for a notch on the barograph trace, did a diving turn to the left, then joined the hawk. From just below release I climbed from 4,800 ft. to 5,400 ft. m.s.l. Considering this altitude to be the top of this thermal, and the fact that I was well above the hawk, made me decide to set off down wind to the north-east. Headed toward a dry buffalo wallow on Buzz Hurt's ranch and found the expected thermal waiting there for me and lifted me to 5,300 ft. m.s.l. Worked another weak lift in the direction of the dry salt lake—what we call 'Turn-point No. 1', being one of our favourite speed-triangle turn points. The lift was there all right and carried me to 6,000 ft. I left with 75 m.p.h. I.A.S. in the direction of another hawk, who guided me to 7,000 ft. and obligingly reversed his turns to the less efficient left to help me to the top." With 80 m.p.h. Al by-passed the city of Lamesa.

"Climbed gradually higher and higher under the new cumulus-marked thermals," continued Al Parker with increasing excitement. "N.W. of Lamesa I missed the birth of a thermal and went down to about 1,000 ft. above the ground, but luck was on my side and I found lift and used it.

"There is a heavily irrigated area north of Odessa, about 200 miles long in a northerly direction and about 100 miles wide," explained Al. "My original plan was to keep to the east of that, but I gave up trying to avoid the area and flew for the rest of the flight straight north. Passed west of Lubbock's municipal airport at 8,000 ft. and on across a very wet irrigated area to an excellent thermal N.E. of Tulia and made my best climb till now to 11,000 ft.

"At the same time I crossed over to

the State of Kansas with the most amazing performance beyond imagination", continued Al with the sparkling eye and enthusiasm of a true soaring pilot. "The Sisu N-1100Z would gain back in one 360° chandelle the altitude lost at 120 m.p.h. I.A.S. between cumuluses, which were about 20 miles apart. 'Man,' I say, 'this is f-a-n-t-a-s-t-i-c.' This breath-taking performance went to my head and I almost flew into the ground near Sitka, Kansas, but luck did not desert me and from 1,200 ft. I climbed back in a real hurry to 10,500 ft.

"As the day grew old, the lift began to be scarce and weak. Turned N.N.E. to the last cumulus N.E. of Greensburg, Kansas. In their smooth weak lift I gradually rose to 9,500 ft. and started my final glide at 57 m.p.h. toward my goal, Great Bend, Kansas, airport, which was out of sight in the haze at this time."

With a slowed-down pace, like one who does not really want to end such a wonderful experience of a lifetime, Al Parker continued his story: "Believing that I could not possibly reach my goal without further lifts, I set out at max. L/D speed, 71 m.p.h., and after a while Great Bend airport emerged from the haze, though the field was slowly creeping up in front. Increased my speed, and at 6.25 p.m. arrived with 2,600 ft. to spare above the airfield, doing 120 m.p.h. I.A.S.

"I was very happy when my friend Ben Green with his German-built ship recaptured the World Goal from the Russians, but I'm much happier that, starting out from Texas with a Texan-built Sisu, a TEXAN did the job, making it an all-American record.

"If the Sisu could be described, I would say," concluded Al Parker, "it thermals like a 1-26 and goes like hell. Mr. Len Niemi has produced an unbelievably fantastic sailplane."



Photo by S. A. Aldott

Alvin Parker flying his Sisu.

Pilots' Rating Scheme

THE Flying Committee have received a great many suggestions for the improvement of the Rating System, which is admittedly unfair in some respects, and are offering a new scheme to Council in November for adoption. The Pilots' Rating List is still under review and will be published at the beginning of the year.

JOHN FURLONG

Chairman, Flying Committee

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Glider Radio Specification

by R. BRETT-KNOWLES
B.G.A. Radio Co-ordinator

DURING the winter season many pilots will want to fit VHF radio to their gliders and may need guidance in selecting a suitable set. This specification is issued by the B.G.A. to enable pilots to choose a set which will not become obsolete next year, or contravene any Ministry of Aviation requirements. A set privately built to these specifications should prove entirely satisfactory and pass the A.R.B. without difficulty.

Manufacturers intending to supply pilots with sets should comply with this specification as well as Ministry of Aviation specifications.

TRANSMITTER

Power

Minimum 1 watt output unmodulated carrier.

Modulation

Never to exceed 90% irrespective of microphone input. Not less than 60% with normal speaking voice.

Stability

0.005% from all causes over a temperature range of +55°C to −20°C.

Spurious Emissions

To Ministry of Aviation Specifications (60 db below fundamental power or 10 μW, whichever is the greater).

A.F. Bandwidth

300 to 3,000 c/s.

A.F. Distortion

Not more than 20%.

RECEIVER

Sensitivity

Maximum 2 μV at 50 Ω to give 50 mW at 10 db signal to noise ratio.

R.F. Bandwidth

3 db or less over range ± 15 Kc/s off tune.

40 db or more down at ± 50 Kc/s off tune.

60 db or more down at ± 100 Kc/s and above off tune.

Spurious Emissions

To Ministry of Aviation Specification (not greater than 10 μW).

A.G.C. (Automatic Gain Control)

Should reduce gain above 10 μV input.

Noise Limiter

Desirable.

A.F. Output

Adequate to feed 250 mW to loudspeaker.

COMMON

Supply

Preferably 12v D.C.

Fuse and reverse polarity protection diode mandatory. Maximum current consumption 2 amps on send.

Installation

Set should not be accessible to pilot. Press-to-talk switch and on-off switch to be remote and accessible to pilot. No on-off switch on set itself.

Tests

Preferably test facilities for receiver, transmitter and supply voltage should be built into the set.

Aerial matching should be adjustable by screwdriver without need for dismantling and transmitter test (above) should enable aerial matching to be performed.

Aerial Impedance

50 Ω coaxial recommended, but a wide departure from nominal plus reactance may be encounted in installations. Aerial matching circuit should be able to cope with incorrect termination.

Those ten feet.—"There is a growing urge to own gliders which handle like fighters rather than bombers. But . . . those of us who are stuck with great big gliders took heart the other day when the famed aerodynamicist Godfrey Lee of Handley Page proved that the extra ten feet improve any basic design by about 15 per cent."—Mike Bird in the *Royal Aero Gazette*. .

A New Standard Class Sailplane
Slingsby Type 51

AT the International Gliding Competitions of 1954 Slingsby Sailplanes first demonstrated a new 15-metre design, the Slingsby Skylark 2. This aircraft embodied many features that had not previously been incorporated in a standard production sailplane.

The Skylark 2, many of which were built and sent to various parts of the world, was the forerunner of the famous series of Skylark sailplanes. The success of the new aircraft encouraged the designers to develop it into an 18-metre type. The "3" and "4" series machines which resulted have had unprecedented success throughout the world.

The 15-metre Skylark 2 continued in production until 1960, when it was withdrawn, as it was considered to be falling short of the standard then being set by other 15-metre designs. Due to their concentration on 18-metre aircraft, Slingsby Sailplanes have, since 1960, not been represented in the market for Standard Class aircraft.

The Skylark 2 largely inspired the Standard Class formula and, to some extent, can claim to be the forerunner of the existing highly successful 15-metre types.

The New 15-metre Design

In view of development over the last few years in Standard Class sailplanes, and as a result of experience gained in the development of open class machines, Slingsby's have now decided to introduce a new 15-metre design.

The initial research and design work for this type has been going on for a considerable period. The designers believe that the preliminary work has been more thoroughly done than in any other previous sailplane. Combinations of characteristics making up well over a hundred individual sailplane designs were compared for performance and other characteristics by means of calculations carried out on an electronic computor. It is believed that this is the first time that manufacturers have used an instrument of this nature in the design work for a sailplane. From the figures obtained by this method, a final configuration for the machine was selected which has formed the basis for the new design. The final version of the machine has been further checked by wind-tunnel tests.

In addition to the aerodynamic research for this aircraft, a programme of structural tests has been undertaken, so that new constructional features and production methods can be incorporated.

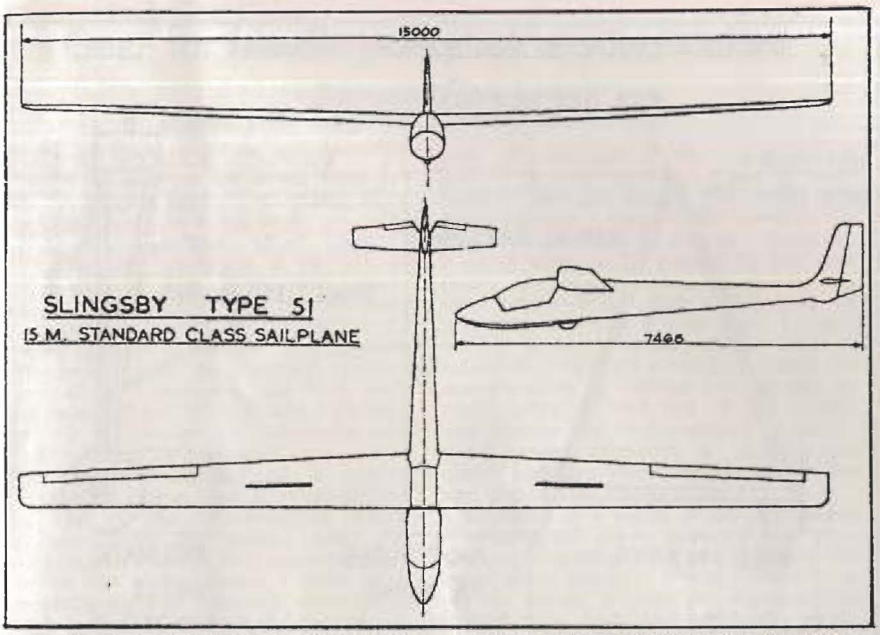
The object of the designers in creating the Type 51 has been to create a machine which incorporates the latest aerodynamic refinements in design, while still being an aircraft that is comfortable and pleasant to fly. The fuselage has low, clean lines, but still allows the pilot to sit in a natural seating position where he has good visibility through a large aerodynamic-shaped canopy. Extremely reclining seatings were considered in the early stages of design, but were rejected on the ground of reduced pilot efficiency. Considerable saving in fuselage depth has been obtained by running all flying controls along the side of the cockpit instead of under the pilot's seat.

The wing has an aspect ratio of 18, and is of low taper ratio with a straight leading edge. The constructional methods allow a very clean profile to be obtained, and all external excrescences have been avoided by running the flying controls entirely inside the profile.

The tailplane is of the all-moving type, and tail-unit areas have been kept to a minimum by the use of a long rear

To all Gliding Friends from Rika and Godfrey Harwood

A Merry Christmas and a Happy New Year



fuselage. The overall length of this component is the same as one wing.

The ailerons and elevator are operated by open circuit push-rod controls. These are unaffected by variations in temperature. Throughout the control system, all moving parts are mounted on either "sealed-for-life" aircraft bearings or P.T.F.E. plastic bearings. This means that the control system will not require lubrication in the life of the aircraft. The only components requiring lubrication on the aircraft are the tow release and the landing wheel.

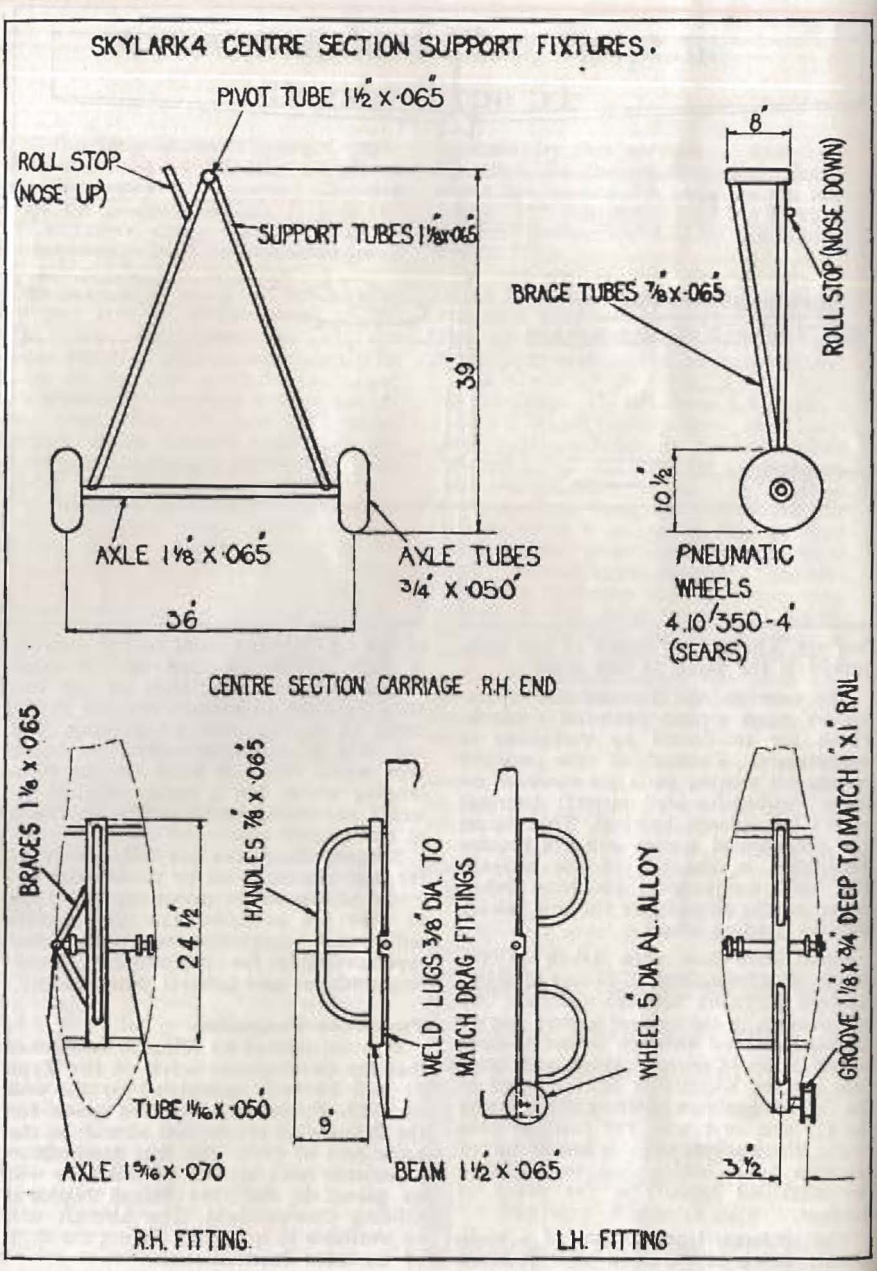
Great care has been taken in the design of components to ensure straightforward servicing and maintenance. All components in the control system can be readily removed through adequate-sized access holes. Control cables and push rods can be withdrawn and replaced in the components without cutting away the ply skin or fabric. The fuselage nose round the cockpit area is made up of separate units which can be replaced (by unskilled labour) in the event of damage.

The undercarriage consists of a main wheel, which is mounted well forward of the c.g.-forward point on the aircraft. A light rubber-mounted skid is positioned along the underside of the forward fuselage to prevent damage in the event of nosing over on landing. The tail skid is rubber-mounted. A band-type wheel brake is fitted on the main landing wheel, but a highly efficient internal expanding brake is also available at small extra cost.

Slingsby Sailplanes are fully aware of the high standards set by present-day 15-metre sailplanes. In presenting the Type 51 they are confident that the aircraft will stand comparison with any other type available for performance, handling qualities and general practicability.

Production Programme

It is anticipated by Slingsby Sailplanes that the development work on the Type 51 will be fully completed by the end of 1963. Promises have been given for the delivery of production aircraft in the early part of 1964. The first competition experience with aircraft of this type will be gained in the 1964 British National Gliding Competitions. The aircraft will be available in quantities before the time of the next Internationals.


SKYLARK4 CENTRE SECTION SUPPORT FIXTURES.
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ROLL STOP (NOSE UP)
SUPPORT TUBES 1⅛" x .065"
39"
AXLE 1⅛" x .065"
AXLE TUBES ¾" x .050"
36"
8"
BRACE TUBES ⅞" x .065"
ROLL STOP (NOSE DOWN)
10½"
PNEUMATIC WHEELS 4.10/350-4" (SEARS)
CENTRE SECTION CARRIAGE R.H. END
BRACES 1⅛" x .065"
24½"
TUBE 1⅛" x .050"
AXLE 1⅝" x .070"
HANDLES ⅞" x .065"
WELD LUGS ⅜" DIA. TO MATCH DRAG FITTINGS
9"
BEAM 1½" x .065"
WHEEL 5" DIA. AL. ALLOY
GROOVE 1⅛" x ¾" DEEP TO MATCH 1" x 1" RAIL
3½"
R.H. FITTING.
L.H. FITTING

Gear for handling Skylark centre-section

by RICHARD H. JOHNSON
(*Extract from a letter to* SAILPLANE AND GLIDING)

I like my Skylark 4 very much . . . I intend to keep it for some time yet and am looking forward to many more wonderful hours of flying in it.

The only significant effort involved in rigging and derigging a Skylark is that associated with lifting the centre-section on to and off of the fuselage. By making a relatively simple bit of ground support equipment, the Skylark centre-section can be handled without heavy effort. I designed and built such equipment for my Skylark, and I thought some of the readers of SAILPLANE AND GLIDING might be interested.

It consists essentially of a welded steel tubing fitting that attaches to the root end of the centre-section which first exits from the trailer. After the centre-section root is slid approximately two feet out of the trailer, a 39-in. high two-wheel dolly is attached *via* a pivot axle to a mating piece on the root attach fitting. This dolly then takes the entire load of one end of the centre-section and it is only necessary then to man (and/or woman) handle the other end. For this end I have made another fitting that allows it to roll in a track on a wheel when in the trailer. To this root fitting are welded two large handles of steel tubing which give a firm grip on the wing root and a safe place for any helpful hands to assist, should they be available. The dolly pivot axle allows the centre-section to remain trailing-edge-up while going in and out of the trailer, and permits the centre-section to be rotated to approximately 8° nose-up for easier handling when outside the trailer and placing on the fuselage.

Enclosed is a sketch of the gear which I constructed. It is admittedly a poor working drawing, but one can get the basic ideas from it. I will forward the vellum master to you for reproduction should you find that anybody wants copies.

The Nightmare

by LUCY CHUBB

Reprinted from Bristol Gliding Club's bulletin "Severn Skies".

As I was flying down the ridge one dark and dismal day,
I saw a queer old glider, going by me on its way.
The wings were all in tatters, its fuselage in holes,
The pilot's face was grey as death, his eyes glowed red as coals.
I thought "That man looks rough — a night out on the tiles, I'd say,
And Doug. would never give that crate of his a C. of A."
It turned and flew alongside, and the man called out to me,
Above the creaks and groans of that old wreck that I could see.
A bony hand did point at me, he said, "Beware, beware,
If you don't want to end like me, take heed of the Rules of the Air —
Especially the ones on ridge-bashing, or else a ghost you'll be,
Haunting this same old stretch of ridge through all Eternity."
And now he was flying collision course—"Quick! which way do you turn?" called he.
O help! I had forgotten! Left? Right? Which could it be?
Then there was a grinding, crunching crash and his laughter filled my head —
And I found it was a nightmare, and I'd fallen out of bed.

MORAL

Take heed — you'd never
Want to bash the ridge for ever.

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The Red Barrel

ON Saturday, 21st September, 1963, a delightful ceremony took place at the Lasham Gliding Centre. Although the day was dull and it rained, members remained dry outside though were "wetted" inside.

With the very generous help of Messrs. Watney Mann Ltd., we were able to buy the first Slingsby T-49 which came off the production line. It was christened in the front of the hangar by Sir Bryan Bonsor, Bt., a Director of Messrs. Watney Mann Ltd., and Chairman of the Watney Brewery in Alton. After a speech of welcome and thanks by David Carrow, Chairman of the Lasham Gliding Society, Sir Bryan christened the T-49 "Red Barrel" and poured a glass of this wonderful liquid over the nose of the glider. All members present then drank the health of the firm, Sir Bryan and the "Red Barrel" in Red Barrel. It is doubtful whether our hangar has seen such signs of revelry before — though we hope it will not be the last time.

As David Carrow said, "Red Barrel" will be our T-49 flagship and she has now been joined by two others, "Moomin" and "A. N. Other" (as yet unamed). These wonderful gliders are replacing our T-21's and a number of pupils have already soloed on these T-49's — one of the first to do so was Justin Wills, the youngest son of the Chairman of the B.G.A.



The cry at Lasham now is: "I am going to taste the joys of Red Barrel," and even our wives don't know exactly what we mean!

W. A. H. K.



A completely undistorted view through the canopy of Sir Brian and Lady Bonsor. Photos by Graham of Basingstoke.

ATLANTIC G—L—I—D—E PROJECT

by A. E. SLATER

THE gliding world was startled on September 11th to hear of a scheme for gliding—or soaring—across the Atlantic from St. John's, Newfoundland, to Shannon Airport, proposed by Wing-Commander C. J. Donovan. News of the project appeared in the *Daily Telegraph* that morning, and immediately the Press and the B.B.C. were on to him; he appeared on television, and next morning's papers had a lot more to say.

But from none of these sources could one get full details of the project; so I wrote to Wg.-Cdr. Donovan on the strength of having known him in the early days of the London Gliding Club, when he obtained No. 84 A Certificate, flew his C test on 4th April, 1931, and took a share in a Scud I. Since then, among other activities, he has flown fighters during the war, been a pilot in the B.E.A. for 10 years and then in independent air lines, and amassed 6,200 hours in 70 types of aircraft.

Wg.-Cdr. Donovan, in reply, kindly invited me to lunch at his club. Here I heard all about it, and he afterwards lent me a typed statement giving details of the project. It appears that the sudden publicity on 11th September was not premeditated, but was simply due to the fact that, when he had been discussing it with friends the previous day, Air Cmdre. E. M. Donaldson of the *Telegraph* was present and was noticed to be writing things down in a notebook.

The idea of gliding the Atlantic was hatched about four years ago, and two years ago the *Daily Mail* offered to back the scheme with £10,000 if other backers could be found too; but nobody would pay the 300 gns. fee demanded by an aerodynamicist for working out the design of a suitable machine and assessing its cost. Wg. Cdr. Donovan found others who were willing to back the scheme if they could be persuaded that it was feasible. He also had an offer from the R.A.F. to provide a Canberra to tow him to 50,000 ft.

Gliders

by LARRY KETTELKAMP

At last—the ideal book for the boy or girl who's keen on gliders. Beautifully illustrated throughout in two-colour line, it tells who invented gliders, how they developed, how they work, and how to build models. The perfect gift — just in time for Christmas, too!

(See review in this issue)

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WHEATON of EXETER

FORE STREET - EXETER - DEVON

Write for a copy of our catalogue of books for boys and girls: 2½ post free.

In February this year his principal backer wrote to Slingsby Sailplanes asking if they could build a glider to the required specification; Fred Slingsby was away in South Africa, but a representative of the firm replied that they could, and that, some years ago, they made a design study for a stratosphere sailplane. (This was, in fact, at the request of the organisers of the Bishop Wave Project in California.) The letter recommended that Donovan should get in touch with C. E. Wallington, which he did when "Wally" had returned from Argentina.

Meteorology

Wg. Cdr. Donovan's purpose in wanting to use the jet stream is to get across the Atlantic in reasonable time, the distance being 1,760 nautical miles. His

reason for starting at 50,000 ft. is that, according to his written paper, the average height of the jet stream is 40,000 to 45,000 ft. (I said I thought it was 30,000 to 35,000 ft.). He wants to be towed to that height because if he soared up to it "using thermals" he would be "unduly fatigued" before starting the crossing, and anyway he assumed that the present world's height record represents the greatest height to which thermals rise. (I didn't have time to explain that the record was set up in waves and the limit was set by the need for pressurisation, which wouldn't matter as he intends to be pressurised.)

As to lift in the jet stream, Donovan's first idea was to use up-draughts associated with "cobblestone" turbulence on the edge of a jet stream. Wallington told him that there could be lift in a jet-stream, but of a different kind, and mentioned 5 ft./sec. as having been found. This must have been a reference to one of two recent OSTIV papers on up-currents in jet streams.

One paper, published in the Swiss *Aero Revue* for April, 1960 (p. 255), is a summary by Dr. Joachim Kuettner of three papers read to OSTIV at Leszno, Poland, in 1958. In this, Fig. 6 shows the results of two traverses by a B-29 just above and below the core of a jet stream which was moving at between 180 and 200 knots at 29,500 ft., along a straight track from W.S.W. to E.N.E. passing just N. of New York. A cross-section of the jet shows the 180-knot contour to enclose an area about 90 nautical miles wide and 3,000 ft. thick, sloping upwards from N. to S. (see diagram).

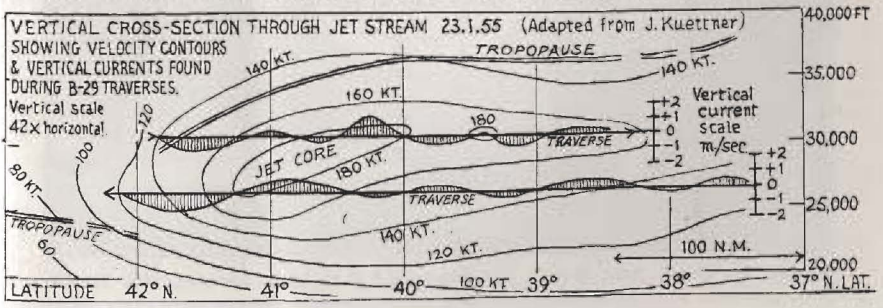
An aeroplane traverse across the jet at 26,500 ft. passed through alternate belts of up and down current, each about 35 n.m. wide; at the centres of the up-current belts the strength was respectively 0.6, 0.7, 0.5 and, finally, 0.1 m/sec. (3.3 ft./sec.) just below the northern part of the core. Another traverse, at 31,000 ft., likewise shows alternating ups and downs, though partly out of phase with the lower ones; two of the ups are narrow and weak, one is of 0.6 m/s, and a remarkable one of 1.4 m/sec. (4.6 ft./sec.) is recorded inside the southern, upper portion of the 180 knot contour. These traverses were made just N.E. of Pittsburg. Kuettner points out that the measuring techniques would not show smaller-scale variations, so stronger, narrower upcurrents might exist here and there.

A cirrus cloud sheet is common on the southern side of a jet stream, breaking up into parallel bands near the core. Kuettner concludes that these cloud bands are associated with upcurrent belts which, like them, run for long distances parallel to the jet core. This, of course, would be a most useful clue to their position.

Kuettner also quotes an example of a cyclonically curved double jet in which a traversing B-47 was suddenly lifted 2,000 ft.; its maximum rate of climb was 7.5 m/sec. (25 ft./sec.).

The other OSTIV paper, by Elmar R. Reiter of Innsbruck, appears in the Swiss *Aero Revue* for Oct., 1961. In this, up-currents are deduced from wind and temperature data, and calculations show 0.6 m/sec. (2 ft./sec.) "in some instances". In the lee of mountains the jet can be thrown into waves, resulting in vertical currents of 1 to 2 m/sec.

As to jet speeds, a paper read at the Congress on Jet Streams and Mountain Waves, held at Turin in 1959, gave the



maximum (not average) to be normally expected as 250 to 300 knots over the Western Atlantic and a little over 200 knots over Europe at heights between 30,000 and 40,000 ft., and stated that winds of jet-stream intensity can occur up to at least 45,000 ft.

Wg. Cdr. Donovan thinks that, in case of losing the jet-stream, he might use cumulo-nimbus clouds for the rest of the journey; this idea is not in the printed version but he mentioned it to the Press and to me. But it would slow down the overall speed a lot. He did not suggest other possibilities, such as using cu-nims all the way, or the trade-wind cumulus further south, or soaring behind the stern of the Queen Mary; but, anyway, all these are open to the objection that the crossing would take several days.

Specification

Twenty-four items make up Wg. Cdr. Donovan's "technical requirements" for the glider. Shortly, they are:

Air speed 100 kts.; sink 1 ft./sec.; gliding ratio 1 in 80; capable of being towed at 300 kts.

Pressurised cockpit; pressure suit with emergency oxygen equipment; parachute; food and water in "very limited amount".

Blind-flying panel, including two aerial direction finders; compass; 1 VHF Omni Range; 12-channel VHF; all radio transistorised to work off batteries; instruments driven by batteries and external venturi tubes; full de-icing equipment and canopy de-icer; landing and navigation lights; automatic pilot; Instrument Landing System; buoyancy tanks in wings and fuselage; jettisonable landing wheel; jettisonable hood; transistorised tape-recorder, and film camera (colour film) in each wing root; distress flares and smoke flares. In a Press interview Wg. Cdr. Donovan suggested a Delta-wing glider of about 200 ft. span might be needed to carry all this.

Regarding the first three figures, I managed to convince him that they were incompatible; if you sink at 1 ft./sec. with a gliding angle of 1 in 80, your forward speed must be 80 ft./sec., which is 47 knots, not 100. He was surprised that none of the experts who had seen the specification had noticed this. Furthermore, both the sink and forward speed at sea level are doubled at 36,000 ft.



Write to: Dept. SG., Irving Air Chute of G.B. Ltd., Letchworth, Herts.

where the atmosphere is only a quarter as dense. He wanted the 100 knots added to the jet stream to get across in reasonable time, and the 1 in 80 to extend the point-of-no-return to two hours out over the Atlantic, and for reaching a weather ship in an emergency, there being always a ship within 500 miles. The 1 ft./sec. sink must have been an arbitrary guess at the supposed "cobblestone" upcurrent strength.

I gave him a copy of SAILPLANE & GLIDING for June, 1960, containing the article "New Approaches to Soaring" in which Dr. August Raspet discussed possible means of improving the gliding angle beyond the present limit of about 1 in 40. Gigantic sailplanes of high aspect ratio would only make a small improvement, Raspet said, but he suggested some more drastic methods. One was to collect solar energy which falls on the wings at the rate of 0.2 h.p. per square foot; allowing for loss of efficiency in its conversion, it could drive a propeller and improve the gliding angle of a conventional sailplane to 1 in 93.5; or it could be used for suction to produce full laminar flow, improving the gliding angle to 1 in 50 at low speed or doubling it at high speed (100 m.p.h.). But there is enough energy in turbulence to maintain a sailplane in level flight; the problem is to convert it, and it would help if the sailplane could be made to hold a fixed longitudinal attitude by moving its c.g. back to the neutral point. Here, of course, is a chance to use "cobblestone" turbulence.

But, of course, any attempts to use these methods would involve research and development, costing much money and time.

All in all, it cannot be asserted that an Atlantic crossing in the jet stream is impossible. But it is unlikely that present design methods could bring any sailplane's sink much below 4 ft./sec. at jet-stream height, and the question of how often upcurrents of the required strength and horizontal extent exist cannot yet be answered. Mr. Wallington has suggested to Wg. Cdr. Donovan that he should go to California and make his first jet-stream trials from there, with a whole continent below to land on.

"in the foggy foggy dew"

by WALD STACK

BY no stretch of the imagination can I possibly claim any distinction as the result of this flight; what indeed I can, is the largest and the most eminent retrieving crew ever.

Four illustrious instructors led by Derrick Goddard, who only an hour earlier was my tug pilot, followed by a pretty, young and completely disinterested mother with her three cherub-faced, bouncing and oblivious-of-the-occasion babies, their most helpful father, a local debutante and a throng of Lashamites of various denominations, overflowing the third van.

They swarmed out of their vehicles. The Skylark was galloped to the edge of the field, torn apart and stowed in the bowels of the waiting trailer, in what appeared to have been only a few seconds.

The multi-handed human octopus looked at itself with astonishment. I stood at the side of the road terrified.

Have they got all the bits?

Are there any stampeded bodies left in the trailer?

Instructors or not, I am responsible for the thing until it is safely back at Lasham!

As we drove back and into a thick fog, Derrick at the controls and the debutante by my side, it dawned on me that, at long last, I have a line-shoot.

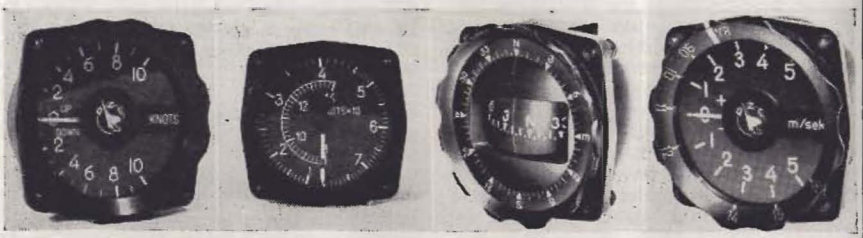
Here it is.

One late November Sunday began to unwind itself with agonizing accuracy of its forecast.

Cold, damp, miserable. The hangar barely visible from the clubhouse. Ghost-like, half-awakened figures emerging from the gloom to breakfast in

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silence, pretending not to know each other, some dreaming perhaps that the spring might come again, the others that it probably never will.

And yet a merciful ray of the sun fell through a misty window and played in the spilled tea on the table, its light reflecting hope in all faces.

We may fly today after all.

As we walked towards the hangar, our hopes soared.

How often glorious weather forecasts have ended in a disaster?

By the law of averages, opposites and other still undefined laws of gliding, it is quite reasonable to assume that today's forecast is wrong and some flying will be possible.

Visibility rapidly improved. Banks of fog, varying in density, were slowly moving from the south, and between, low woolly clouds like wet dogs with dripping tails drifted across the airfield. Through the ever-increasing gaps between the low stratus, clearly visible a high layer with blue patches as big as a baby's bottom.

Life was good.

At last the trees in the south were clearly visible.

By noon a T-21 was flying timid circuits, nibbling at the occasional low cloud.

After lunch visibility to the south was unlimited, but the north remained very dull.

Anne, who went up in the Auster on the first aero-tow, came waving her camera, obviously with some unusual cloud shots for her collection.

Three interminably long aero-tows took off, as I sat in the cockpit waiting, wiping, blowing, breathing, closing and opening the canopy to prevent it clouding during the take-off.

As the Auster was taxiing towards the aero-tow point, a bank of low cloud drifted from the south, shrouding the horizon almost completely.

Derrick decided that we must wait.

I plunged into a state of a diluted nervous breakdown.

Ten minutes later we were climbing quickly to the south in perfectly clear air. As we turned east, I noticed that part of the airfield was covered by

what I took to be the same low cloud, which delayed my take-off, slowly drifting north.

We climbed as high as it was possible and I cast off at 2,500 ft. when we reached the end of an aerial cul-de-sac. It is remarkable how deceptive the distance and the cloud formation can become in certain atmospheric conditions, due to the lack of scale.

I turned west and the view was breathtaking. On the right, a white mountain falling almost vertically to the ground; on the left, a vast crescent of landscape stretching for miles with excellent visibility. I could see the Auster rapidly descending towards the southern tip of the runway clearly visible with its white cross and disappearing under the cloud.

I was vaguely aware that things were not exactly as they should be, but easily persuaded myself that the runway was less visible due to the relative position of the glider, the cloud and the airfield and not to some evil freak of the elements.

With a clear conscience I decided to explore my mountain — its precarious gorges, woolly crevasses and peaks leaning and overhanging with incredible defiance of the laws of gravity, but never falling.

As I sheared a fluffy peak in a screaming turn, I noticed the Auster hurriedly climbing again towards me. When it came close enough I saw Derrick waving his arm vigorously and then diving away.

Sudddenly I felt rather lonely; something was wrong.

Altimeter 1,500 ft.; vario, lo and behold — zero sink.

I looked down.

The southern tip of the runway with its white cross has now disappeared.

The Auster in a large sweep went in, and I thought that if it is at all possible to land from that side, the cloud base must be very low indeed.

I turned and flew by the side of the white wall towards the wooded area east of the airfield, hoping to find a clear entry leading to the field. Watching the familiar landmarks on the perimeter of the airfield, still in the perfectly clear air, I suddenly flew into the side of the cloud.

A steep turn and we were out again.

I could see now very clearly that the cloud, like a gigantic milky bubble, was sitting firmly on the ground. It may be interesting to note that, being so close to the airfield, with clearly defined landmarks on the far perimeter, to aim at one of them and fly in was almost irresistible.

Perhaps on the other side of the fog curtain one would find the air as clear as on this side.

In circumstances like these, one is reluctant to assume the worst and is likely to take a miscalculated risk.

A dozen suitable fields passed under as I turned once again. One with a farm house an obvious choice.

It was very much later that I realised how generous Derrick was, by climbing again to warn me. By the time he descended to land, the situation greatly deteriorated and he had to aim and fly on a compass course. Landing on the main runway in the extremely bad visibility was a fine feat of airmanship. But this is his own story, which he may wish to tell you himself.

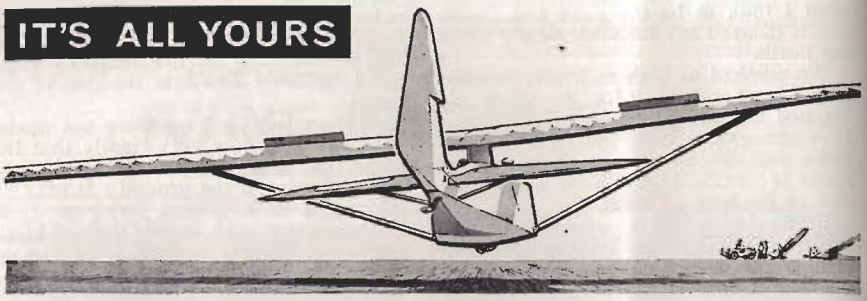
There was a somewhat uneasy feeling at the aero-tow point as they heard the Auster approaching to land and then fly away, and a little later the screaming turns of the Skylark almost overhead.

At the inevitable "inquest", many a pundit expressed a learned opinion as to the probability of what happened. Some said that a freak wind moved back the fog which had passed over the airfield a few minutes before, and the others, that by convectional displacement the cold air flooded the airfield and condensed quickly into a thick fog.

There may be even a third and more simple explanation of this phenomenon, and perhaps a moral to my story.

Things that might have been better expressed.—"Mike Bird has relinquished his editorship of the Gazette. On behalf of the whole Club we thank him."—*London Gliding Club Gazette.*

IT'S ALL YOURS



VARESE

THE O.S.T.I.V. International Instructors' Course at Varese, organized by Boris Cijan, was interesting and useful in a number of ways, but as in most multilingual meetings required hard work and patience to extract the ivory from the elephant. Broadly, there were three projects: a comparative assessment of 7 two-seater gliders, a training course for instructors in the evaluation of handling characteristics, and discussions on the training methods of different countries.

The assessment of the gliders was carried out by H. Zacher and M. Rade, of Germany, and D. Piggott and L. Welch, of Britain, and their reports will be produced as an official O.S.T.I.V. paper. The 7 gliders were the British Slingsby Capstan and Peak 100, the German Ka-7 and Bergfalke, the Polish Bocian, and —new and old — the Italian EC-40 Eventuale and the Canguro. Unfortunately the new Polish Kormoran was not ready in time, and the expected Blanik could not come. This was disappointing, as it was hoped to be able to compare the British gliders with as many up-to-date foreign ones as possible. Of the aircraft present the Capstan was agreed to have the best controls, view, and handling for a trainer. It was also agreed that side-by-side seating was better for all aspects of training than tandem. There was only one vote for tandem seating for elementary training, and no votes at all for advanced and cross-country training.

The course of evaluation flying, run by Hans Zacher, was useful to show instructors how to accurately sort out and understand the handling of any aircraft they fly. It is not, of course, necessary that all instructors should be able to do this, but certainly senior C.F.I.'s should possess this knowledge.

The discussion of different methods and ideas, both at full meetings and between the representative instructors themselves, produced several points of considerable interest, which I hope to write about in the next issues, starting this time with some thoughts on stalling and spinning.

Varese airfield, managed by Plinio Rovesti, is a 600-metre strip by the edge of the lake and about four miles from the soaring slope of Campo di Fiori (3,000 ft.). Since it is in one of the windless parts of Europe, the take-off point is always conveniently the same. All launches are by aero-tow.

At present there is no living accommodation on the airfield, and the delegates spent a great deal of time travelling backwards and forwards seven miles to the Ignis factory to eat—almost the same amount of time it seemed that it took Ignis themselves to change a tree-covered lawn into a tarmac heliport! By next June, however, the new clubhouse will be finished. This fine modern building, which will have bedrooms, bar and restaurant, could turn Varese into a most congenial international meeting-place. The cost of staying there is likely to be about 24s. a day all in, and there will be swimming and boating as well as flying. Gliding people will be welcome, whether they go for a holiday with their own glider, or are just passing through on business or other pleasure.

ANN WELCH



Varese airfield looking towards Lake Maggiore and the Alps

Photo by Ann Welch

HOW NOT TO TEACH STALLING

THERE is probably more variation of method in the teaching of stalls and spins than any other training exercise. And not only more variation, but less clear thinking on what is the purpose of the lesson. Ideas and practice range from giving the pupil quantities of full-blooded spins, right through to dismissing the whole thing with a couple of passes at the pre-stall buffet. First, at the risk of being too obvious, let us be clear as to the reasons why this exercise is included at all. It is because all gliders become to a greater or lesser extent uncontrollable if flown too slowly, and it is not difficult, for the inexperienced pilot, particularly to fly too slowly inadvertently. Therefore he must be taught two quite separate things:

(1) to recognize all the symptoms of flying too slowly, and
(2) to recover quickly from stalled flight.

All too often these lessons are run together, so that in the end the pupil knows little about the recognition, or effect on his glider, of slow flight, is still unfamiliar with the symptoms of the approaching stall, and, when the aircraft does cease to fly controllably, is not very effective in reverting the sit-

uation to normal in the shortest possible time.

One of the reasons that this exercise is so often taught wrongly is that it is given in the same mentality as most of the other lessons — how to DO something, to turn, to land, etc. The lesson, commonly known as stalling and spinning, is not, however, one which should be taught in a positive sense. The instructor is not teaching the pupil to DO stalls, but not to do them. Therefore, he must make sure that his teaching approach first of all gets over to the pupil that stalling is something that can happen to him, and rarely something which he does deliberately. The lesson should be directed into thoroughly exploring all the circumstances that lead up to the stall, the feel, the sound, the visual aspect, the effect of each separate control on the semi-stalled aircraft, the pre-stall buffet, the buffet range, the increased sink rate, the effect of wind gradient in prejudicing effective acceleration from slow flight, the effect of airbrakes, and of turning and yawing. This cannot be done in the few seconds leading up to the average demonstration stall. It needs to be taught often and progressively throughout the whole of the early training, so that the pupil thoroughly understands the effect on his glider of flying too slowly under a wide variety of circumstances. This is lesson 1. Lesson 2 is to teach, equally thoroughly, how to recover the aircraft from stalled flight with the minimum loss of height. Recovery from stalled flight should not be regarded in the same light as aerobatics — always happening at a height which allows margin for recovery. Obviously the lesson will be given with adequate height, but the pupil must be taught the importance of losing as little as possible in coming out. Again he should be taught the effect of each control on the recovery, how to stop the incipient spin, the full spin recovery drill, and the difference between a spin and a spiral dive. In the air he should be given progressive training and practice in recovery from the stalled state. At least some of these lessons should be given separately from the TEACHING of the approach to the stall, so that the pupil is not having to concentrate on too many important points at once, as he often has to at present.

The next point is how far should spinning be taken in early training? Are full spins necessary, or even desirable? This is a problem of great importance since it affects the design of new aircraft. If it is necessary to teach full spins, then the two-seater must spin. As the design of aircraft progresses, their handling and flying characteristics are and can be improved; in other words, they become safer aircraft. To deliberately build in the ability to spin fully is equally deliberately to make a less safe aircraft. However, not all gliders yet have non-spin characteristics, and so if the pupil is not taught full spins, will he be at a disadvantage when he later, but while still inexperienced, flies an aircraft which will spin fully? The answer, I am sure, is that he will not be at a disadvantage provided that he has

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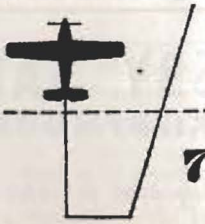
been taught thoroughly the symptoms of the approaching stall, the exploration of the stall itself, the effective means of rapid recovery. As an inexperienced pilot he should not allow his aircraft to develop a full spin, in the same way that he should not do very steep turns or loops, etc. If he does so by mistake, it will be because he has either failed to recognize the symptoms early enough, or taken action too late, or incorrectly. In other words, his instructor has failed to teach him properly.

Full spins really belong to the field of aerobatics, and the stage at which these are brought in depends on many things such as what equipment is available, but much more on whether the pilot wants to do them, or even is psychologically suitable.

At Varese it was noticeable that countries which had the more advanced training methods were inclined to this view. The French method, explained by M. de Lassageas, which is probably one of the most mature and best analysed in the world, teaches very thoroughly the exploration of the stall, but not full spins until the more advanced flying stages. They consider that the logical thing is to teach the pilot how to AVOID stalling, or at any rate not letting the stall develop. They feel also that in the early stages it is important not to do anything which might undermine the confidence of the new pilot in himself as a person, or in his glider, and that full spins too early can do this.

There are, of course, instructors in this country who do not believe in subjecting early pupils to full spins, and instead teach them much more about the stall and how to avoid it. Unfortunately there are too many other instructors who just DO stalls, and sometimes spins, as a sort of magic ritual before the pupil goes solo, and then wonders why he gets caught out when on his own. Perhaps they were never taught any real understanding of the stall when they were pupils themselves. ANN WELCH

Closing in.—More than two-thirds of United States airspace above 24,000 ft. is now under area positive control. — *The Aeroplane and Commercial Aviation News.*



THE KRONFELD CLUB

AT the Club's eighth Annual General Meeting held on 23rd October both the Chairman and Secretary spoke of the plans for expansion when the renovations are completed next year. A drive to increase the membership and utilisation of the club other than on Wednesday evenings, with the aim that the club shall be open eventually five days a week, is being organized.

Frank Kinder outlined the plans he had drawn up for the Committee. The new bar will be through the present bar, in the boiler room which is being acquired. The present bar is to become a lounge and the two rooms will run into each other. The Lecture Room will remain very much as at present, but with improved natural lighting, ventilation and seating. There will also be better toilet and cloaks facilities.

The Club will be closed for a month in the new year, when it is hoped to break the back of the work. Contractors will be coming in to re-lay the floors, put in new windows and widen some of the present ones. We are, however, counting on a lot of the decorating work being done by members, so if you will be able to help in the evenings please let Cliff Tippett know. During the period the club is closed Wednesday lectures will continue at The National Playing Fields Association at 71 Eccleston Square.

Mike Gee, Auditor, reported a satisfactory financial year with a small surplus, previous losses having now been made up.

Yvonne Bonham reported on the excellent response to the Appeal and the fact that the fund now stood at just under the £2,000 minimum required. Anything contributed over and above this will reduce the amount needed to be borrowed from the Bank for the actual purchase of the lease.

The Club's Officers and Committee were elected *en bloc* as follows: Hugh Trotter, Hon. Chairman; Clifford Tippett, Hon. Secretary; Yvonne Bonham, Hon. Treasurer; Wine Committee, Ron Willbie (Chairman) and Eddy Pollard; Lecture Organiser, Rosamund Hervey; Committee Secretary, Jill Walker; Eric Clothier, Group Members. There are vacancies on the committee for a Membership Secretary and News Letter Editor. We should be very pleased to hear from anyone prepared to fill either of these vacancies.

The meeting also resolved that all subscriptions be doubled to help cover the foreseen increased expenditure.

Group Captain Norman Ryder, Deputy Secretary General of the Royal Aero Club, was Guest of Honour at the Club's most successful Dinner-Dance held at the Eccleston Hotel. Eighty-eight members and their guests were present. The speakers, all of whom were excellent, were Group Captain Ryder, Michael Bird, John Furlong and Hugh Trotter.

The following Wednesday attractions are worth a special mention. On 27th November Peter Scott will come to tell us how he became National Champion 1963. This talk will be in the National Playing Fields Association at 71 Eccleston Square as the Aviation Art Exhibition still continues. Incidentally, if you have not visited the exhibition yet, it really is worth getting along to, and many of the exhibits are offered for sale. It is open until 30th November daily from 6 p.m. to 10 p.m., Saturday from 3 p.m. to 6 p.m.

On 23rd January Lt.-Cdr. John Sproule will be back again to do some more aeronautical reminiscing.

Looking on into 1964, make a note of 29th January, when there will be a BRAINS TRUST to discuss questions arising out of British entries in World

Gliding Championships. The Brains having all attended many international meetings are Tony Deane-Drummond, Frank Irving and Ann Welch with Wally Kahn to keep order. Questions, written on slips of paper, will be drawn out of a hat and should be handed to Wally beforehand. The 5th February promises to be another fascinating evening when Air Commodore A. H. Wheeler, Trustee of the R.O. Shuttleworth (Aviation) Collection, will be coming along to speak, show slides and exhibit a film.

On 18th December we have our Grand Christmas Party when all are welcome.

Y. C. B.

Art Exhibition Prizewinners

Class 1 : Oils

Gliders. 1st, Margaret Kahn. 2nd, Ann Welch.

Powered aircraft. 1st, J. Palmer. 2nd, R. Willbie. Highly commended, D. Eeles.

Class 2 : Water colour, Poster, Goache

1st, A. Achard. 2nd, V. H. Veevers. Highly commended, T. Wykes.

Class 3 : Line, Ink, Pastel, etc.

1st, N. Hoad. 2nd, T. Shreeve.

BEST FIRST ENTRY, R. Molesworth.

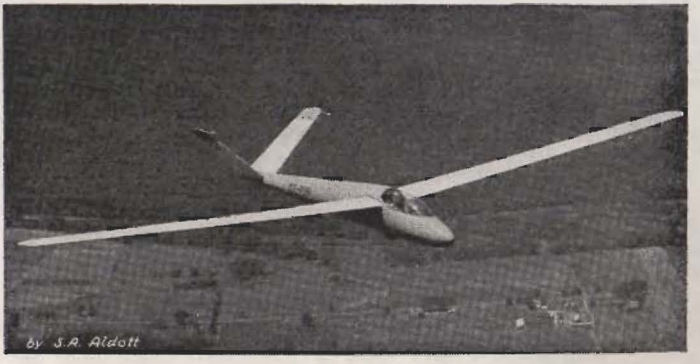
Overall Winner.

J. Palmer (Challenge Trophy).

Diary of Lectures and Film Shows Wednesdays at 8 p.m.

Nov. 27.* Peter Scott.
Dec. 4. Summer Expedition to Aosta by the I.C. Gliding Club Members, with slides.
„ 11. Flying in the Cape by John Hugo, with slides.
„ 18. CHRISTMAS PARTY.
„ 25. CLUB CLOSED.
Jan. 1.* The R.A.F. Story Film series period 1924-1935.
„ 8.* The Dunstable Regionals by Ron Watson, with slides.
„ 15.* The Sea Breeze Front by John Simpson, with film.
„ 22.* More Aeronautical Reminiccences by Lt.-Cdr. John Sproule.
„ 29. Brains Trust (see above).
Feb. 5. Re-building and Flying Historic Aeroplanes by Air Commodore A. H. Wheeler, C.B.E.

Those marked with an * will be at 71 Eccleston Square.



THE STANDARD AUSTRIA 'S'

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World record in goal-flight over 456 miles in U.S.A. on Aug. 7, 1963 by Ben Greene

SCHEMPP-HIRTH, KG., 7312 KIRCHHEIM-TECK, W. GERMANY

Grampian Wave Flight

by JOHN V. HARRIS

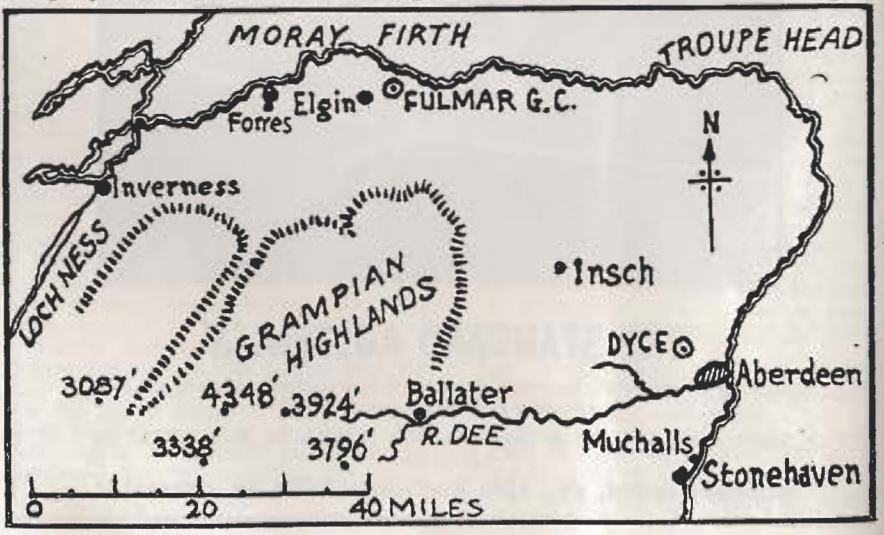
THE Fulmar Gliding Club is situated on the Morayshire coast near Elgin. With its attendant thermal damper, the sea breeze, and with the Grampians looming to the south and the craggy Inverness peaks to the west, the cross-country outlook seems gloomy. The redeeming feature of the site is its lee wave. When the met. man provides the right stability configuration, wave is provided in abundance in any reasonable wind from north through west to south-east.

On Sunday, 21st July, wave was apparent in the early morning sky, and the forecast fresh south-westerly caused me to dispense with breakfast and head for the site.

By 10.40 I was aero-towed off in the Skylark 2B. I released at 2,300 ft. over Elgin and was soon climbing at 600 ft. per minute. At 10,000 ft. I set course for Dyce (Aberdeen Airport). The medium cloud was formed into wave systems stretching in endless broken lines towards Aberdeen. Streets of thermals, triggered off by the Grampian wind shadows, trickled up to the stable layer which occurred at about 2,500 ft. From above, the puffy lines of thermal criss-crossing the hard lines of wave cloud made a picture which would delight the most staid of glider pilots.

Over the Aberdeenshire town of Insch, strong lift was felt. A glance at the topo showed that there were some very high peaks upwind of this position. I decided to investigate and soon found myself at 16,500 ft. feeling the effects of anoxia and hunger! What a pity the oxygen set had been taken out for servicing! At this time, I counted three waves upwind and six waves extending downwind over the Aberdeen Club's new site at Litterty and out to sea over Troupe Head.

I again set course, tracking along the line of the wave. Even at 70 kts. I was sometimes climbing. I arrived over Dyce at 12,000 ft. and had never felt less like landing, so I headed south-west, crossing the sink to the next wave system. Far inland, the first lenticulars were building up, so I felt that a closer look was in order. Tracking west and following the Dee, I found strong lift under a lenticular but it dissipated when I was at about 12,000 ft. I pressed on to Ballater but the wave was weakening and the stratus ahead of a warm front was closing in



underneath. Ever mindful of the inhospitable mountains, I flew back to the Granite City using a combination of D.R., the odd glimpse and inspired guess work! A descent on the turn and slip was made in a southerly direction. I broke cloud south of Aberdeen and continued on to Muchalls near Stonehaven.

I landed after five-and-a-half hours and two bars of chocolate. One of the first helpers on the scene was Archie Baird of the Aberdeen Club, who was out on an afternoon drive as a change from gliding! Many thanks to him and his family for their help and for giving me the lion's share of their picnic tea. The fact that gliders are rare in this part of the country was made evident by the number of well-wishers who enquired about my engine failure!

Compared with the achievements of the pundits, this flight was a baby. However, it has opened up new possibilities of wave flights in an area where soaring has been the prerogative of the Golden Eagle.

Jim—A cautionary Tale

by K. R. BROWN

Reprinted from Bristol Gliding Club's bulletin "Severn Skies"

Editor's note:— Any resemblance between "Jim" and any member is wholly to be deplored.

When being launched Jim's great desire
Was bags of speed while on the wire,
Which gave him, as he thought. more height
And so prolonged his time of flight.

He also had a nasty trick
Of pulling hard back on the stick;
And though this sorely strained the winch
And stressed the wings, none of these things
Disturbed him for he never thought
Of structural loads as pilots ought.

One day when strapped into the seat
Of the finest glider in the fleet
He scanned the sky with thorough care
For any sign of rising air;
And there, some miles north-west of Stroud
He saw a line of lentil cloud.

His kind instructor said, "Don't try
To reach that wave; it's much too high.
Just do a circuit nicely planned —
Up, then round and down and land."

But though Jim heard, he did not heed
This wise instructor's words. Indeed
He thought his chance had come this time
For a silver or a golden climb.

But first he needed all the height
The winch would give him, then he might
Glide it out somewhere below
The bank of cloud and have a go.

So when he gave "all out" and found
The sailplane rising from the ground,
He raised the nose and wagged the wings
To get more speed—one of those things
You must not do until you're high
For cables break and winches die.

But Jim could scarce suppress a smile
To see the speed go round the dial,
And though it is against the law
He raised the nose a little more.

* * *

Now stressmen always will maintain
There is a limit to the strain
That plywood, spruce and glue will take.
Beyond this point the things will break.

And so it was, for with a crack
The wings gave way and folded back.
And unsupported, Jim, dismayed,
Returned to earth, his climb unmade.

* * *

The entry on the log-sheet read:—
"Jim — 14.12 — 10 seconds dead."

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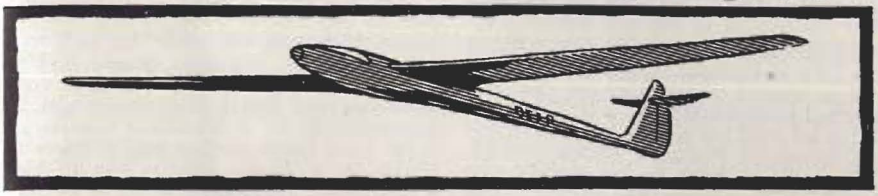
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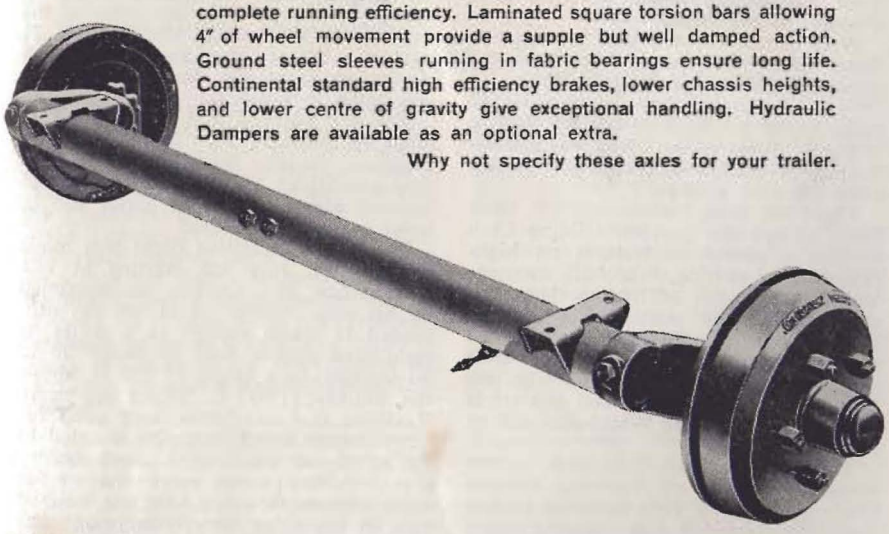
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Thirty Years Ago

First British Thermal Flights

by A. E. SLATER

ON 1st July, 1963, fell the thirtieth anniversary of the first British soaring flights in pure thermals — i.e. without the help of cumulus clouds; and on July 3rd a similar anniversary of the first thermal cross-country by a British pilot.

Up till 1930 the gliding world accepted the dictum of Professor Walter Georgii, who wrote in 1923, in the world's first text-book on soaring meteorology, that thermal soaring would not be possible "in our latitudes" because (a) thermals rarely exceed 1 metre per sec.; (b) gliders are not nimble enough nor pilots skilful enough to turn tight circles in such narrow upcurrents; and (c) perpetual wind fluctuations would interfere with attempts to use them.

Wolf Hirth was the first to disprove these ideas, when he took part in the American national contest at Elmira in 1930. On October 2nd he covered 33 miles under a cloudless sky by circling in places where either a bird was already circling or another sailplane was getting extra lift over a slope.

Then, just after Christmas, 1932, Wolf Hirth visited the London Gliding Club to give a course of lectures on high-performance soaring, especially thermals and the technique of finding them and climbing in tight circles. Yet for the next six months nobody in the club, to my knowledge, threw a single circle, with the exception of Eric Collins who, on January 8th, 1933, performed one circle in a Kassel 20 at the Whipsnade end of the Downs.

The B.G.A. Council decided, at the instigation of its ex-chairman, Gordon England, that the 1933 national contest should be combined with a gliding school and should last a whole month. The site chosen was a stretch of bare downs at Huish, south of Marlborough, with a south-facing escarpment 300 to 400 feet high in its steepest part.

The "school" consisted of Eric Collins as pilot, with his wife to do the paper-work.

Two machines of B.A.C. VII type were lent to the "school", one by the South-down Club and the other by its constructor, A. T. Isaacs of Rugby. This two-seater design was not built for efficiency and had a fixed two-wheeled undercarriage of conventional aeroplane type; yet it made the first British thermal flights. L. P. Moore, who is now an Air Commodore and is again active in British gliding, described the flights at the time in THE SAILPLANE, and his article is reproduced in part below.

by L. P. MOORE

USING a 1,000-foot cable, towing heights of between 600 and 700 feet above the hill-top were the order of the day, giving an average duration of 2½ minutes. Flights were maintained with clockwork regularity, landing with car and cable in position.

The first thermal flights of note were made on Saturday, July 1st (1933) about mid-day. Sunday produced under identical conditions slightly more improved thermal flights, climbs of about 100 ft. being made after release.

The first outstanding flight was made on Monday, July 3rd, starting at 1.21 p.m., when Mr. Collins, accompanied by his wife, casting off at 600 ft., proceeded to climb rapidly in a series of right-hand circles, each of about 20 to 30 seconds, to a height of 950 ft. above the hill-top (1,800 ft. above sea-level). Realising that conditions were good for performance flying, the pilot decided to set off down wind on a cross-country flight. Although this entailed flying for some considerable time over the leeward face of the ridge, very little height was lost, and after a few minutes of straight flying another thermal current was found and exploited with about three or four turns.

With further height, another down wind run gave contact with a third and more powerful thermal current, in which the sailplane gained all lost height. Being

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well away from any slope-wind influence, all reliance was placed on finding further "thermals". However, after a vain search, height was rapidly lost, and a good landing made in a small field near All Cannings, Devizes.

On Tuesday afternoon, July 4th, Collins again climbed on a tow to 600 ft. on a solo test flight. Without hesitation he again circled in powerful thermal currents in a cross-wind north-westerly direction, attaining a height of 2,150 ft. above the hill-top, and returning to the starting-point after a flight of about half-an-hour.

A. E. SLATER RESUMES

Jack Dewsbery, of the London Club who came along some weekends and helped the school by flying the other machine, also circled in thermal lift, and so did A. H. Reffell of the Southdown Club in his Tern. But these two had no variometer, unlike Collins, who had the latest one produced by David Dent, at that time the only inventor of variometers in the country.

When Collins got back to Dunstable the heat wave was still on, and his first thermal flight there was done without a variometer on a Poppenhausen, a two-seater version of the Hols der Teufel, slow and lightly built; starting in weak slope lift with thermal reinforcement, he caught a good one and thereafter wandered about the countryside with his passenger from one thermal to another and was up for 1 hr. 50 mins. This was on August 2nd, and in another thermal flight on the 8th in a Professor, he made up for the absence of a variometer by using bodily sensations.

On the 19th, thermals took Collins to 2,450 ft. and Humphries to 1,550 ft., and on the 20th Dewsbery circled a Wren up to 3,000 ft. in a single thermal without a variometer. On the 23rd Collins set up a British distance record of 20 miles from Dunstable to South Mimms.

Finally, from August 29th onward, Philip Wills turned up at Dunstable every day for a week and taught himself thermal soaring in his Scud 2.

And that's how it all began.

World Records

The following are homologated:—

FREE DISTANCE: Karl Bezler in Ka-6 from Dettingen-Teck (Germany) to Saint Nazaire (France), on 2nd June, 1963, 875.987 kms. (544.31 miles).

GOAL FLIGHT: Benjamin Wayne Greene in Standard Austria, from Marfa Airport (Texas) to Boise City Airport (Oklahoma) on the 7th August, 1963, distance 737.03 kms. (457.96 miles).

Benjamin Greene's goal record was beaten on 27th August by Alvin H. Parker with 490 miles (see page 426).

500-KM. TRIANGLE: Robert R. Clifford in Ka-6, Kimberley-Brandfort-Makwassie Junc.-Kimberley (South Africa) on 4th Jan., 1963. 71.39 k.p.h. (44.36 m.p.h.). Record instituted on 1st Jan.

MULTI-SEATER GOAL FLIGHT: Franciszek Kepka and Edward Kopato in Bocian, Strzegow to Sejny (Poland) on 8th Aug., 1962. 636.6 km. (395.6 miles).

Paul Bikle has exceeded the distance record with 896 km. (555.7 miles) in a Prue Standard but without barograph.

On 28th July Jan Wroblewski, Polish champion, flew 678.9 km. out-and-return (421.8 miles) Leszno-Olsztyn-Leszno.

B.G.A. News

B.G.A. Annual General Meeting

The A.G.M. of the Association will be held on Saturday, 21st March, 1964, either at Imperial College or Duke of York's Headquarters. Details to be announced later.

Glider Carnets

The Automobile Association have just confirmed that they are no longer willing to include de-rigged gliders on trailer carnets. *Please Note* you may run into endless trouble if you try and continue this useful practice. The alternatives are: to use the Royal Automobile Club —but we are at the moment seeking confirmation that they are willing to help us in this way—or the full-blown Royal Aero Club aircraft carnet. This latter, of course, is really intended to cover aircraft arriving by air and land; Customs officials tend to look at it sideways. We are doing what we can to find a solution to this problem and hope to have a workable answer by the spring.

Easter Rally at Long Mynd

The Midland Gliding Club will hold its usual Rally from Good Friday to Easter Tuesday, 27th to 31st March. It will be a Qualifying Competition. Regulations are available from 1st December from Peter O'Donald, 3 Fron Ogwen, Tregarth, Bangor, Caernarvonshire.

Eastern Regionals at Swanton Morley

It is hoped, subject to official permission being given, to hold a gliding competition again next Easter at R.A.F. Swanton Morley, from 27th March to 1st April, 1964.

The entry list will be limited to approximately 15 aircraft, and accordingly those wishing to participate should now apply for an application form and details from F/O P. D. Kevan, Officers' Mess, R.A.F. Marham, Norfolk.

The Wings of Pegasus

by

Brig. George Chatterton

The story of the Glider Pilot Regiment, extremely well-written by the Regiment's founder.

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The Nature of Accidents

by D. Brennig James

IF you perform experiments on people in the laboratory to determine the relationship between performance and stress, you get a curve like A (Fig. 1). Further practice leads to a new curve B. Note that the scores are now higher and the ability to tolerate stress is greater; however, under conditions of low stress the per ormance may be worse. Gliding accidents due to mechanical failure we can ignore; accidents where the general

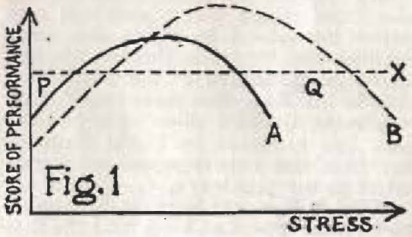


Fig.1

level of performance required (line X) is too high relative to the pilot's curve can fairly be blamed on faulty instruction or administration.

There remain accidents in situations P and Q which can be termed under-motivation and over-motivation failures respectively.

Gliding requires the use of a heterogeneous collection of skills and is far from being a laboratory environment; nevertheless there is a fair measure of agreement between case history material and what theory predicts.

"An experienced pilot takes off without checking that his canopy is properly secured, with the result that it blows off during flight."

"An inexperienced pupil goes to the top of a winch launch with dive-brakes open, then spins in."

The first case is an under-motivation failure; the anxiety occasioned by the first mistake impaired the ability to solve the second problem (which would ordinarily have been well within the pilot's ability to solve).

The practical conclusion of this study is that the institution of strict flying discipline is likely to reduce the amount of under-motivation failures but may possibly increase the number of over-motivation failures, so that disciplinary measures must be intelligently applied.

Turning from the general to the particular, it seems that the individual often fails in a way which is characteristic for him personally. I know that my mistakes when playing chess and when gliding have a marked similarity in their characteristics; and knowing these characteristics, I know when to expect to make mistakes and can take steps to prevent them occurring. This is probably true in principle for most people, and the control of anxiety and attention is an ability which most experienced competition pilots possess.

An interesting allied phenomenon is the "crack-up". Imagine you are performing a series of repeated difficult tasks, i.e. you are in situation X in Fig. 2.

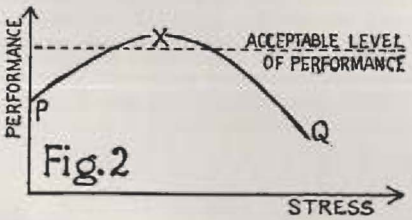


Fig.2

It is apparent that any lapse in attention will lead to a drift along the curve towards P with a deterioration in performance. On the other hand, once you make one mistake you tend to worry over it, your anxiety accumulates and you drift towards Q. So, having made one mistake, unless you make an effort to relax you may make a series of mistakes each worse than the last.

This cracking-up is a well-known phenomenon in sports involving skill and anxiety, such as tennis, golf or cricket. (One supposes that at the far end of the curve one eventually loses one's temper!)

The conclusions one can draw are these.

For the instructor, a deeper understanding of how accidents come about might suggest more effective means of prevention.

For the individual, an understanding of the specific circumstances where his performance tends to break down when performing some skilled activity cheaper and safer than gliding may give some insight into how he is likely to fail in the air and how he can prevent these failures by some measure of self-control.

Addendum

The first action in the mental activity of pilotage must involve some sort of decoding; for example, information about the three-dimensional shape of the environment is coded in perspective. To do this, at some stage or another current information and past (i.e. remembered)

Gliding

A new Air Cadet weekend Gliding School will shortly form at R.A.F. Bruntingthorpe (Near Lutterworth) to provide gliding training to A.T.C./C.C.F. cadets. Vacancies exist for instructing staff. Posts are honorary (but certain out of pocket and travelling expenses are paid) and should appeal to ex-Service pilots with or without gliding experience and to civilian gliding enthusiasts. Further details may be obtained from Headquarters Air Cadets (Trg. Oc.) R.A.F. White Waltham, Maidenhead, Berks.

information must be combined at a surface.

This surface is the grey matter which is a practically indecipherable feltwork of cells. Underneath this is the white matter which is largely made up of tracts which consist of large bundles of fibres (several million at a time) which all run parallel so that two-dimensional information can be carried from place to place without any spatial distortion (the analogy to fibre optics is strong). Along individual fibres information is coded in frequency-modulated pulses.

Throughout all this structure runs the reticular formation which is a network of cells and fibres which switches it on and off and controls its gain in rather a crude way, rather as filament heater circuits might be used to control a valve-type computor. Thus the reticular formation largely controls whether you are asleep or awake — you become acutely conscious of its activity when you drive a car very tired; you doze away, then a reticular formation spike kicks you out of it. Clearly what is called "stress" on the graph might well be referred to as the level of reticular formation activity.

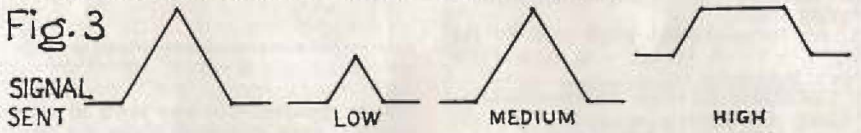
Let us now consider the relation between reticular formation activity and information transfer within the brain: firstly information in time along a single conductor and secondly information in space along a bundle of fibres.

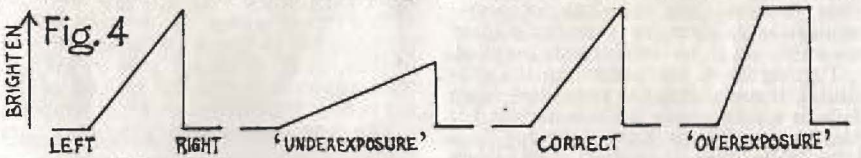
In the former case the diagram shows the signal sent then the signal received at three levels of gain. The situation resembles under and over modulation of a transmitter; clearly there is an optimum level near the middle with a fall-off in fidelity to either side (Fig. 3).

In the second case, along a bundle let us consider an image which grades from dark on left to white on right whose section could be expressed as a graph of gradation in Fig. 4.

It will be seen that here again there is a middle optimum with degradation on either side; as in photography, the exposure must be correct. It will be seen therefore that on both counts one can advance hypotheses that account for an optimum level of "stress" for mental activity.

Since accidents are mistakes, there is clearly an optimum level for stress to keep them to a minimum.





Glide without a Glider — A mechanic at Troitzko-Pechersk Airport, G. Ochepkov, unintentionally opened the door of an Mi-4 helicopter and fell out at an altitude of 1,060 ft. He was a former air force wireless operator and had performed 17 parachute jumps. He threw open his quilted jacket and clutched at the flaps, then took up a horizontal position face downwards. In the woods he saw a little glade and "glided" on to it. The glade was covered with snow two metres deep which softened the blow. But the blow was strong enough, and Ochepkov lost consciousness. He recovered consciousness when the helicopter landed, and himself climbed into the machine.— *Extract from a letter by E. Meos, of Tartu, U.S.S.R., published in "Flight".*



MOST of us soaring pilots accepted the designers' reasoning that if we want to have sailplanes with high performances, we must sacrifice comfort of cockpit for lesser sink and longer glide.

The Schweizers' 2-32 design changed this concept. They discovered marketing possibilities of a high-performance multi-seater sailplane for the consumption of the large number of power-plane and airline pilots in the U.S.A., providing the sailplane in question would possess the qualities they are accustomed to in their attractive and comfortable aircraft. They wanted also to satisfy week-end pilots who wish to take up their family or friends in a safe and inviting sailplane. And not forgetting the aspirations of those seeking records. These ideas were crystallised into the prototype of the 2-32.

There is no doubt about it, the 2-32 is striking. Her lines are clean, graceful and well-proportioned. Only the square horizontal tail, and to a lesser degree the large landing wheel, disturbed my eye, looking for perfection. A new, larger and tapered all-flying elevator system has already replaced the original one, and there is provision to lift the wheel into the fuselage manually.

After I had taken some photographs of her with Bernie Carris, chief instructor of the Schweizer Soaring School, in the back-bench type seat and Dita in the front easy chair, my turn came to find out whether she flies as well as she looks. At 63 m.p.h. I.A.S. I lifted her off, and the immediate silence which followed was amazing. Stick travel is light and positive in any direction—most unusual, in my experience, for a large ship like the 2-32.

There is only one instrument panel in front, which can accommodate any number of instruments needed, leaving enough room for radio, oxygen, map and food-carrying cases, etc.

Ease of handling of the aileron and elevator is well-proportioned, in amount of travel, to the responsive rudder. The pilot feels "at home" at once at the controls. After I released, complete silence proved the clean aerodynamic quality of the 2-32. Conversation in normal tone was possible. The outsize bubble canopy gives undistorted, nearly all-round visibility. For the first time I realised how much more flying pleasure can be derived from unrestricted head movement and a clear-vision panoramic view.

The spoiler-airbrake is efficient enough to make landings in smaller fields possible.

With the development of the 2-32 a new class of soaring has been created by the Schweizer Brothers. This "2½ place" high-performance sailplane offers more in comfort, style, handling qualities and unparalleled visibility to soaring enthusiasts than any other two-seater I know of.

The Schweizers are planning to produce 25 yearly at the price of approximately $8,000. The exact performance figures are not known yet, but the L/D will be over 30:1. First deliveries of production models will start in spring 1964. Among the first to receive one will be the Chicago Glider Club, of which I am a member.

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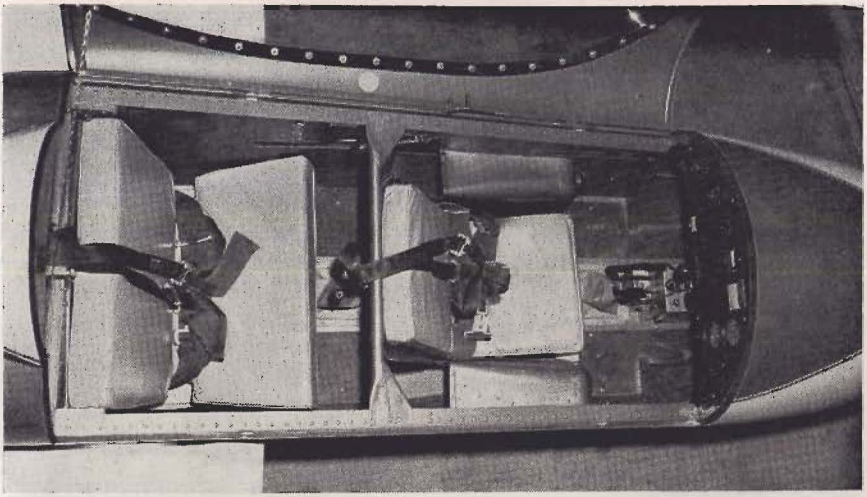
There is room for two passengers of modest proportions in the back seat of the 2-32. Otherwise it is flown as a dual control two-seater (see previous page and opposite page).

FROM THE MAKER'S DESCRIPTION

THE 2-32 sailplane is the result of more than three years of design and development and is based upon the results of various surveys and upon our experience with the 2-25. The result of this is that the 2-32 is a two-place, high-performance sailplane, designed for two-place companionship soaring, advanced training and with sufficient performance for award flights, competition flying and record attempts.

The 2-32 prototype first flew in July 1962. We already have 150 hours of flying in it, and a good number of soaring pilots have flown it. We feel that the 2-32 will be the world's top two-place, high-performance production sailplane.

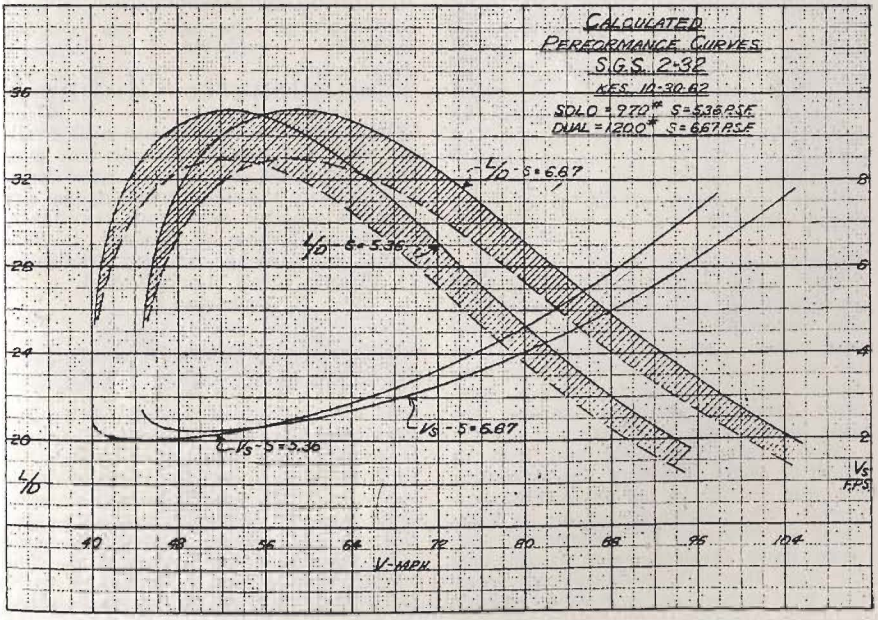
The ship is of the usual rugged Schweizer design and is all-metal, except for the covering of the rudder and



ailerons. The cockpit is roomy with a free-blown canopy, and the rear seat will permit carrying two 150-lb. persons. Effective, limiting-speed dive-brakes and a hydraulic wheel-brake are some of the special features of this ship.

Kit

Since price is always a factor, we are planning to offer this ship as a kit. However, this kit will be more complete than our standard 1-26 and 2-22 kits, but not as complete as our "uncovered" kit. In



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other words, we are estimating that it would be about 70 per cent complete and approximately as follows:

The wings would be complete except for installation of tips, dive-brakes and ailerons; bottom fuselage shell would be complete with rear deck and nose section to be completed. Fuselage controls and cockpit installation to be added. Canopy and all control surfaces to be assembled from parts and sub-assemblies.

Since additional time is needed to develop the kit, write the manual and get approval by F.A.A., we do not expect to have this available until we have delivered approximately 20 to 25 completed sailplanes.

Performance

The performance curves given here are calculated performance. The shaded area represents the probable performance variation due to smoothness. There are two sets of curves, one for solo conditions and the other for normal, two-place condition. As you can see, the wing loadings are moderate.

With this performance and with its excellent flight handling characteristics, the ship should be an outstanding performer. When flown two-place, its high-speed performance is outstanding; and, when flown single-place, it is practical for light thermals. Although no provision has been made, it is quite possible that ballast tanks could be added to improve further the high-speed performance. Dive-brakes and wheel-brake make short field landings easy to do.

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THE following copies are still available and this list cancels any previous list published. Please send your order clearly indicating which copies are required together with your remittance, 4s. per copy, plus 4d. postage, to Sailplane and Gliding, Artillery Mansions, 75 Victoria Street, London, W.1.

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GLIDING REVISITED



by John Barrows

IT was a sunny July day when I arrived at Lasham. I had unearthed my old C badge and placed it carefully in my lapel for the long-overdue return to gliding—ten years after my last launch in the Tutor at the Southdown Club's old site at Friston, near Beachy Head.

As I entered the airfield it seemed a far cry back to hasty circuits in the Cadet and the Tutor, when one scurried out over the clifftop, took an apprehensive look down at the white-crested Channel waves, and hurried back inland with the Cosim showing 6 or 8 f.p.s. down to land in a field shared with a Jersey dairy herd which the farmer insisted on grazing there . . .

Skylarks weaved graceful arabesques under puffy cumulus dotting the Hampshire sky. Austers bounced off the turf one after another towing more hot ships skywards, while an Eagle, a Swallow and no less than *three* T-21's were being winched and car-towed from the western end of the main runway.

I felt sadly out of date. Even my C badge, I soon discovered, was an anachronism. Twice as big as the neat new insignia, it stuck out like a sore



half-crown coveted by Wally for the Clubhouse Appeal Fund. Surreptitiously I stowed it away out of sight and made for the launch point, wondering whether by some miracle I'd get a chance to fly.

A T-21 came on to the approach, obviously destined to land well up the field, so of course I hurried out to retrieve it. Let me at once admit that this was no grand philanthropic gesture — my baser instincts reminded me that at a gliding club it is imperative for circuit-bashers to ingratiate themselves if they want to get airborne.

Approaching the glider, I was suddenly metamorphosed back to Friston with its broad horizons of sea and Downs, for there, unquestionably, was Ray, my old C.F.I., shoving the brute over the grass while holding a post-mortem on the flight with his pupil . . . and somehow it was difficult to imagine him doing anything else.

A few swapped reminiscences and the appearance of Don—an Olympia pundit in those other times—and the matter was clinched. I'd learn to fly again—and this time progress far enough to be permitted to *stroke* the Oly, even if I never got to flying her.

Rip Van Winkle I may have been, but I quickly realised that the new gliding world in which I had awoken contained some substantial improvements upon the old. Inside *an hour* I was aboard a T-21, gingerly trying to fly a circuit, of which I managed the downwind leg if little else. Another followed, and then my new-found gliding *guru* observed casually: "I see the Eagle's doing nothing for the moment—like a flight in her?"

This was like a childhood Christmas morning—it might have taken a couple of week-ends to get this much flying at Friston! I donned a parachute for the



first time, climbed in, was duly bewildered by what seemed a vast array of instruments, and a few minutes later was actually flying the monster after a

fashion. By comparison with the Tutor of ancient memory it felt like piloting a Vulcan.

Thus I was re-infected with the most insidious bug of them all. For the next three week-ends the airfield was my home and I continued to be favoured of the gods—22 launches in the six days, and on the next visit my (*sic*) second first solo.

Its predecessor more than a decade ago had been interesting. Winched to 800 feet in the Cadet, I had released the cable and suddenly realised I was way out over a cold and unfriendly-looking sea, the last link with terra firma gone. Chronic "stallitis" at once set in, and in deadly fear of plummeting into the deep, I flew the entire circuit at about 45 knots. In the Cadet this required one's thought processes to work with the speed of an electronic computer.

The first solo of the second coming—this time in a T-21 with ballast—was much worse, although in some ways the reverse of its forerunner. At 900 feet, drunk with power, I essayed some 360-degree turns, a figure-of-eight, and a couple of stalls. Splendid! How well I was flying! Still, only about 600 feet left and the wrong end of the airfield—better get back. This was easier said than accomplished, for we no sooner embarked upon the downwind leg than



we ran into a mammoth patch of sink.

I gazed mesmerised at the Cosim, which leered back the information that we were steadily sinking at about 15 f.p.s., and when I finally managed to tear my head from the office, faced the painful realisation that we were now about 150 feet with the launch point a good thousand yards away, and directly opposite the most heavily obstructed part of the airfield.

We turned in, nevertheless, for the excellent reason that there was nowhere else to go, and somehow brought off a landing in a microscopic clearing between a lot of concrete bunkers, buildings and other hazards. Unquestionably, we had bungled, and our only redemption was a deep-seated sense of shame, intensified by the instructor's cheery gambit: "Ha! I was just coming over to pick up the pieces." And so back to the T-21 (dual, of course).

My past, too, had not been without its murkier moments. Ray recalled one of them—as well he might—over tea at Lasham. It had been a windy day at Friston, and I had hung around the Tutor with a spaniel's pleading eyes hoping to be allowed to try for my C on the obviously soarable cliff, despite a grand total of only about 50 launches. Finally sickening of my mute appeals, the C.F.I. got rid of me by letting me take a launch.



In great excitement, I found enough lift on the ridge to keep me aloft at about 600 feet, but it was in a narrow band and I kept fumbling out of it, losing 100 feet or so, and then desperately clawing my way back as the green ball popped up again. In the event I managed completely to forget my take-off time (if indeed I had ever noted it). To satisfy my taskmasters and win the coveted three gulls. I knew I must stay about half an hour, but I had no clue whether I had been up two minutes or twenty. Well then, why not press on for another half an hour and make sure? This would have been fine, but for the small complication that cloud was beginning to clamp all along the cliff.

I was very young—it is my only excuse. Determining to get that C at all costs, I stuck it out until I was inhabiting the only cloudless quarter-mile left along the whole stretch of cliff, and the hangar and landing field had long since been lost to sight. I felt very small, lost and alone, rather like Piglet at tricky moments in the Winnie-the-Pooh stories. But not for long.

The white T-21 abruptly materialised from the cloud slightly below me with



my instructor up (I could almost feel his moustache bristling). His voice could be heard from the Tutor cockpit, bellowing something, but the words were luckily blown into incomprehensibility by the wind. Their purport, however, was quite plain from the motion of his arms which, like the sails of a windmill run amok, first gesticulated furiously at me, and then at the ground.

I decided that it would be politic to take the hint, and as the T-21 disappeared again into the murk, I lined up on a mark on the cliff roughly opposite the hangar and flew in, every wisp of cloud which enveloped us convincing me that the Last Judgment was close at hand.

Happily we emerged right way up and in a more or less satisfactory position to turn in and land. I did so, to be told that I had in fact been airborne 49 minutes. As I remember, the C.F.I. said comparatively little. Perhaps, faced with my success, his heart was too full . . .

* * *

In my new gliding career I fancy I broke about even, scaring my instructors



pretty nearly as often as they scared me. Oddly enough, the arena for these gladiatorial contests always seemed to be the Eagle. First there was the early aero-tow, hazarded (literally so far as I was concerned) in unstable conditions, with plenty of rough and broken thermals about. The take-off was all right, but we no sooner cleared the airfield boundary than the tug seemed to go berserk, shooting skywards and then plummeting down again like a high-speed lift, while I fumbled feverishly with the controls in response to Derrick's impassive advice from the back seat.

Things went from bad to worse, and when the Eagle also started to wallow heavily from side to side like a string of Thames barges, panic gripped. We wound up, or so it seemed, flying virtually alongside the tug with the towrope bowed in at least a half-circle below us.

"Now he'll *have* to take over," I thought with relief. But as if in answer came a quiet chuckle from behind and "Hmm—interesting; you'd better sort it out." Definitely one up to the instructors!

But I unwittingly evened the score soon afterwards. Early one evening I cunningly noticed two important pheno-



mena: 1, the Eagle was sitting at the aero-tow point doing nothing; and 2, Ted was just finishing his supper. Obviouly a piece of quick gamesmanship was indicated, for did I not need my spin checks for conversion to the Swallow?

I inveigled the poor fellow to the Eagle, and even found a tug pilot. The first spin was all right, but in recovering from the second I must have shoved the stick hard forward. Horror-stricken, I stared fascinated at the A.S.I. needle swinging rapidly to over 100 knots, and —like an idiot—hauled the stick back abruptly.

To one unused to "g" the effect was interesting. Of course, I had not taken supper, but Ted has just waded through a large and fatty fry-up. His observations are unprintable here, despite our more enlightened times and the protection of the new Obscene Publications Act.

* * *

After many tribulations, having converted to the Swallow and managed a few soaring flights, I felt justified in purchasing a new (unobtrusive) C badge,

but the Lasham bar was inclined to give one an inferiority complex. All that lapel jewellery!

Sometimes one would get a nostalgic reminder of the "pioneering" days, such as the occasion when I diffidently inquired about flying Tea-Tray, the ancient Army Club Tutor, only to be sternly



admonished: "Silver C only!" (How, then, had I survived in the old days?)

But if you want to fly, Lasham is my idea of Elysium. Almost a year to the day since first taking the controls again I found myself soaring 4,000 feet above the Bristol Channel in the Skylark before landing at No. 621 Cadet Gliding School to complete my Silver C.

The officers and cadets were more than hospitable, providing everything from a crew for the sailplane to mandarins and cream and congratulations.

One cadet will live long in my memory, for surely he was the first publicly to recognise my jealously-guarded dreams of future punditry. After an admiring examination of the Skylark (which showed a proper sense of the priorities), he turned his glance to my newly-acquired thermalling headgear—a white cap with a snappy green-lined peak—and observed: "I say, sir—I *do* like your hat."

And only a week or two before, I had bought a drink for Philip! At last, I felt, I had arrived . . .

1964 National Championships

THE 1964 National Gliding Championships will be held at the Lasham Gliding Centre from Saturday, 17th May to Sunday, 24th May, 1964, inclusive. Unlike previous years, the contest will start on Whit-Saturday, as the Whitsun week-end is rather early in 1964. The opening day will be a full competition day and thus the usual opening ceremony will be short, sharp and fairly informal.

Lasham offers hospitality to any competitors who wish to fly there during the practice week. A letter will shortly be sent to all clubs in the country asking for helpers to run the Championships. Apart from the fact that running the largest gliding contest held anywhere in the world requires a large number of people, it is suggested that helping during the National Championships is very valuable training for members of clubs who intend to run Regional Contests during 1964 and 1965.

W. A. H. K.

Accommodation for 1964 Nationals

There will be accommodation in private houses offered to entire crews or helpers near Lasham from about 15s. 6d. a head a night. Anyone interested should write to Mamie Bruce-Gardyne, Stokers Farm, Mattingley, near Basingstoke, Hants.

O.S.T.I.V. and Polar Curves

I have suggested to O.S.T.I.V. that they should take a hand in making honest women of Polar Curves.

The proposal is that they should devise and promulgate approved methods and procedures for obtaining Polars, and then agree for a fee to give their official ratification to curves submitted to them, with supporting documentation.

At the same time they should, of course, ask for any novel methods which may be invented to be submitted to them, and if these are also approved they will become internationally acceptable.

PHILIP WILLS

Royal Naval G.S.A. Competitions

19th-23rd and 26th-30th August

by JOHN STANLEY

WELL, we've done it at last! The Royal Naval Gliding and Soaring Association has held a competition. At our Annual General Meeting last year it was decided that we had grown sufficiently in stature to try to do this thing and, after a little bit of to-ing and fro-ing on where they should be held, we decided that for simplicity, as we are still quite a small concern, and the R.N.A.S. Yeovilton was not available, we should ask Lasham if they would accommodate us. They did and, although the weather could have been better, they did us royally. Again, through a slight fumble, we could not obtain sufficient entries to make the competition a qualifier for the B.G.A. Rating List, but the lesson has been learnt: that is, to give more than ample notice of competition.

On the opening day we mustered eight gliders, and on the ten planned days of the competition we achieved five tasks.

Day 1: 19th August

In a strongish westerly wind the met. looked reasonably favourable and a task to Hatings (Pebsham) with a turning point at Petworth was set. But the rains came and the task had to be cancelled. However, it brightened up later in the day and free distance was set. But only Alan Yates and Ray Foot managed to get away; X was set at 10 and only Ray Foot exceeded this distance, and therefore, under the Rules, it was a No Contest Day.

Day 2: 20th August

Once again a reasonably brisk westerly, and Free Distance was set. It was a day when the thunder clouds were forming but, with all due deference to those who went the distance, it was not over-easy to connect. Those that did managed to cover good distances into Kent. X was set at 10 again, and Demetrie Zotov won the day by going almost as far as he could west to Herne Bay. Bill Bailey landed at Dymchurch, and Dave Holding, after collecting his Gold C height to complete his Gold C with one Diamond, steered between the Gatwick and London Control Zones and, hoping to stretch his flight into the wastes of East Anglia, turned north across the Thames but was brought to earth at Upminster (on the District Line) by a rainstorm.

Days 3 and 4 were washouts

Day 5: 23rd August

The wind was again brisk, convection was forecast, and a race to Shoreham via South Harting was set. Ray Foot got there — the only one. Demetrie Zotov nearly did, but spent a long time trying to get through the gap made by the River Adur in the South Downs; but the sea breeze was belting through it too fast for him, and he had to land about two miles north of the goal. The numbers in the competition being small, the three competitors who exceeded X made it a Contest Day and, with another five days to go, we reckoned we might be in business.

Day 7: 27th August

With an element of north in the strongish westerly wind, a task of Free Distance after turning at Cocking was set. As on 20th August, those that connected with a good big cloud went the distances, but again it proved difficult to connect. It was a successful day, though, in that Demetrie Zotov, after making the turning-point, soared the sea breeze front to somewhere near Dover and then glid it out to Ramsgate to win the day. Alan Yates went to Glynde and two others passed X, making it yet another Contest Day. In fact, with our numbers it only needed two to pass X to make a Contest Day, but, of course, the more who did, the higher the marking.

Day 8: 28th August

Today did not look too good, but Wally gave us about three hours decent soaring. Because of these limits, the task set was a race to Reading and return. Dave Holding won the day by completing the course in 1 hour 8 minutes, followed by Demetrie Zotov in 1 hour 20 minutes. One other completed the task

(in a much longer time), and another rounded the turning point but just failed to get back; but again, a Contest Day.

Day 9: 29th August

The day dawned bright and clear and the met. was marvellous. The wind was light and easterly, and at Lasham, as far as the eye could see, it looked a gliding paradise!

X was 20 (at last) and a Free Distance task after going to Nympsfield was set. The Bristol Gliding Club kindly observed the turning-point for us. Nigel Stevenson won the day with 131 miles, landing at a place called Watford. When his crew heard where from Control, they nearly passed out, thinking it was Watford near London; they were somewhere just north of Northampton at the time. They changed to utter smugness when they found it was Watford near Rugby — only eight miles from where they were ringing up! Demetrie Zotov went to Rhayder in the middle of South Wales, hoping to hop over successive mountain ranges in the easterly wind and then soar the sea breeze when he reached the coast! Unfortunately the wind just wasn't strong enough to lift him by the time he got to where he did. He was only three miles short of Nigel Stevenson's distance! Poor Anita landed at Uffington on the way to Nympsfield; her crew rang from quite near and then proceeded to the other Uffington somewhere near Leicester. No comment (even from Anita—bless her), but lesson learnt!

Friday, 30th, was unflyable, and as we had had five days out of our planned ten, and although Lasham was very happy we should continue over the week-end, we decided to stop.

The pilots are, of course, very grateful to their crews and those who came to help, and we should like to thank Lasham for helping us out and putting up with us. Special thanks are due to Gordon Sharp and Les Creed who had made themselves available during the two weeks for us to provide the tows, to Derrick for providing the best possible tasks in the weather we had, to Wally for forecasting and to Pieta for clerking. We were hampered by the control zones and airways near to Lasham in the generally westerly winds, but I can say quite confidently that there was no infringement of airways when the heights were gained. On the six days we flew, 1,368 miles were flown in 69 hours, and we had a most enjoyable time.

We were not able to meet the full requirements for "qualifying" by lack of two entries alone, but we have heard the B.G.A. Council has been most gracious in allowing the contest days to be counted as "zero days" for the Rating.

RESULTS

Place	*Pilot and Club*	*Sailplane*	*No.*	*Day 2*	*5*	*7*	*8*	*9*	*Total*
1	F/O. D. Zotov (Army)	Skylark 3	190	1000	462	370	657	972	3461
2	Lt. J. N. Stevenson (R.N.G.S.A.)	Skylark 3	68	36		0		1000	
	Lt.-Cdr. J. H. Stanley (R.N.G.S.A.)				0		605		1641
3	C.P.O. D. Holding (Heron R.N.)	Skylark 4	228	603	0	0	940	90	1633
4	A. Yates (Bannerdown R.A.F.)	Olympia 403	90			158		36	
	Mstr. Sigln. N. L. Bailey (Bannerdown R.A.F.)			930	18		319		1461
5	R. Foot (Heron R.N.)	Skylark 3	150	47	656	0	0	270	973
6	C.P.O. D. Marpole (Fulmar R.N.)	Skylark 2	207	273	0	0	0	18	291
7	Mrs. A. Schmidt (Surrey)	Olympia 463	181	0	0	0	0	162	162
8	Lt. J. Eatwell (Heron R.N.)	Olympia 2	208	92	—	—	—	—	92

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Batteries Once Again

by R. BRETT-KNOWLES

B.G.A. Co-ordinator, Instrument Development

SEVERAL instances have recently occurred of extensive damage in gliders due to spilling of battery acid during derigging.



Pilots are advised to install unspillable types to avoid this hazard. One suitable type would appear to be Exide 3-MFB-7 which is a 6 volt 6 AH unit. For a J-8 horizon and transistor inverter, two of these batteries would be suitable for 8 hours flying, but for a larger horizon or with radio as well, four connected in series parallel are advised.

[In this case, the makers write, the charging should always be carried out with batteries in series only.]

Illustrated is the 3-MFB-7 Accumulator: nominal voltage 6V; nominal capacity 6 AH (at 20-hour rate); dimensions $3\frac{1}{8}$" x $3\frac{1}{8}$" x 4" high; weight 2 lb. 14 oz.; charge rate $\frac{1}{2}$ amp.; retail cost £2 10s. dry plus 2s. for charging.

I am carrying out trials of this battery and will report more fully when they are completed.

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GLIDING CERTIFICATES

NOTE.—With the increasing numbers of Silver C certificates, from now on we are arranging them in two columns to the page to save space.

DIAMOND FOR GOAL FLIGHT

No.	*Name*	*Club*	*Date*
2/156	D. R. Lowe	Surrey Gliding Club	27.7.63
2/157	R. E. F. Smith	Surrey Gliding Club	27.7.63
2/158	P. M. Vaughan	Lasham Gliding Society	26.7.63

GOLD C CERTIFICATES

No.	*Name*	*Club*	*Date*
110	P. M. Vaughan	Lasham Gliding Society	26.7.63

GOLD C DISTANCE LEGS

Name	*Club*	*Date*
D. R. Lowe	Surrey Gliding Club	27.7.63
R. E. F. Smith	Surrey Gliding Club	27.7.63

GOLD C HEIGHT LEGS

Name	*Club*	*Date*
M. J. C. Wright	Surrey Gliding Club	9.6.63
J. V. Harris	R.N. Fulmar Gliding Club	21.7.63
M. J. Gibbons	Oxford Gliding Club	17.8.63
L. S. Whittingham-Jones	R.A.F. Brüggen Gliding Club	2.7.63
A. MacDonald	London Gliding Club	17.8.63

SILVER C CERTIFICATES

No.	*Name*	*Club or School*	*1963*	*No.*	*Name*	*Club or School*	*1963*
1311	F. W. Fay	Coventry	8.6	1337	F. G. Hudlass	Surrey	27.7
1312	H. J. Shaw	Laarbruch	26.7	1338	J. C. Brown	Perkins	28.7
1313	J. F. Thurlow	Cambridge	26.7	1339	H. Orme	Laarbruch	27.7
1314	G. Berry	651 G.S.	23.6	1340	S. C. Hall	Surrey	28.7
1315	K. E. Tinkler	Perkins	20.7	1341	B. D. Baldry	Surrey	9.8

1316	S. Hayes	Doncaster	20.7	1342	E. Richards	Colchester P.O.G.	13.8
1317	F. Hughes	633 G.S.	5.5	1343	J. F. Morris	Windrushers	9.8
1318	W. S. Harrop	E. Midlands	27.7	1344	K. Blake	Moonrakers	10.8
1319	P. J. Henderson	Southdown	27.7	1345	R. K. Baker	Coventry	27.7
1320	J. H. Wheeler	Brüggen	30.6	1346	F. H. Knipe	Yorkshire	27.6
1321	G. E. Dowling	Cambridge	27.7	1347	T. H. Williams	Bicester	1.8
1322	J. Eatwell	Heron	8.6	1348	L. R. Simnett	London	18.8
1323	J. H. Willard	Surrey	25.7	1349	R. C. Henshaw	661 G.S.	12.8
1324	B. Kirby	Kent	27.6	1350	G. Senior	Surrey	28.7
1325	J. W. Johnson	Doncaster	28.7	1351	J. V. Harris	Fulmar	24.8
1326	R. G. Thory	Coll. of Aero.	27.7	1352	J. E. Rooum	Cranwell	26.8
1327	J. R. Barrows	Surrey	28.7	1353	D. J. Parry	E.T.P.S.	30.7
1328	E. A. Cunningham	Norfolk	28.7	1354	D. G. Matthews	Windrushers	27.7
1329	D. R. J. Gifford-Hull	Army	26.7	1355	T. F. Kerry	Bicester	28.7
				1356	D. G. Haward	Surrey	29.8
				1357	P. Shrosbee	Moonrakers	24.8
1330	D. M. Pillans	Derbyshire and Lancashire	25.7	1358	H. F. Jacques	Surrey	9.9
				1359	E. A. Hales	Bannerdown	8.9
1331	K. A. Harrison	Chilterns	21.7	1360	P. J. Teagle	Avro	5.9
1332	G. W. Locke	London	21.7	1361	A. B. Crease	Devon and Somerset	26.7
1333	R. R. Trott	Devon & Somerset	30.7				
1334	R. I. H. Longman	Surrey	30.7	1362	M. S. Armstrong	Derbyshire and Lancashire	9.9
1335	K. Barton	London	31.7				
1336	A. J. Podolski	Norfolk	28.7	1363	A. J. Hogg	East Anglian	27.7

C CERTIFICATES

Name	*Gliding Club or School*	*Name*	*Gliding Club or School*	*Name*	*Gliding Club or School*
T. J. Dorricott	Cambridge	B. C. Walker	Bristol	C. J. A. Stewart	Derbyshire & Lancashire
S. A. Wolf	Anglian	N. W. Cranfield	Lasham		
L. G. Peart	Wessex	W. M. Haworth	Doncaster & District	J. C. Banks	Yorkshire
M. F. Griffiths	Clevelands			J. Dent	Yorkshire
B. Healey	Clevelands	L. G. Barton	Anglian	A. T. Cole	Derbyshire & Lancashire
A. Brown	Northumbria	R. J. Wilson	Kent		
D. B. Nixon	Laarbruch	P. R. Rickwood	Midlands	G. F. Heald	Derbyshire & Lancashire
J. Earley	Aden Services	H. Hargreaves	Blackpool & Fylde	K. B. Mace	Cranwell
D. B. White	Army				
		Miss A. M. Fisher	Midland R.A.E.	I. R. D. Jones	Northamptonshire
I. R. Mitchell	Scottish	R. W. Byron	Southern Command	J. Gardiner	E. Anglian
J. G. L. McIntosh	634 G.S.	J. H. Schooling	Windrushers	J. W. Millbank	Kent
B. H. Masters	Hanuley Page		Midland	B. Cohen	E. Midlands
J. Ford	Chilterns	D. Lewis	Swanton Morley	P. M. R. Richter	Phoenix
R. J. Rushby	E. Midlands	R. J. Stephens	621 G.S.	J. Nicoll	E. Midlands
A. L. Kelly	634 G.S.	G. L. Patterson	Moonrakers	G. C. Sanders	E. Midlands
A. O. Mill	662 G.S.		621 G.S.	D. A. Collins	Bannerdown
J. M. C. Manson	Chilterns	N. B. Smith	Ouse	T. M. Braganza	Windrushers
G. B. Light	621 G.S.	E. R. Gray	Derbyshire & Lancashire	G. G. Grant	R.A.E.
A. C. Pepper	Aden	M. J. Huggett	Southern Command	T. W. Carpenter	E. Midland
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E. D. W. Dunmore	Northamptonshire	R. A. Frith	Bannerdown	T. J. Olney	613 G.S.
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J. R. Taylor	Ouse	P. J. Martin			
C. P. Pinnell	614 G.S.				

CORRESPONDENCE

THE DESIGN OF WORLD-BEATING BRITISH GLIDERS

Dear Sir,

May I please be permitted to comment in your columns on Peter Scott's letter in the October issue of SAILPLANE AND GLIDING? While I endorse his conclusions, I believe there to be a better way in which to produce both the best competition sailplane and the best general purpose sailplane.

The existing type of construction in the classical form of plywood and fabric-skinned wooden frames offers little or no promise of better performance and economy. It is at the end of its road, and even marginally better performance can only be achieved by expensive refinement. This form is basically too heavy and too expensive and an altogether lighter form must now be developed.

The plywood skin, suitably reinforced over areas of greater stress with thin bonded plywood/aluminium/plywood sandwich, and stabilised by expanded plastic, should be designed to take most of the stresses, enabling spars and rib series as we know them to be eliminated.

By this means, a substantial weight-saving could be achieved for the same strength factors, thereby enabling designers to reconcile much more closely the conflict of miniaturisation, high aspect-ratio and wing-loading. This, in turn, would make possible *both* a marked improvement in the top performance class and — what is of far more importance to most members — a diminutive inexpensive general-purpose lightweight in what, by present standards, is the high-performance class. The potential market for this latter could well be much higher than anything we have ever contemplated, for the less pecunious graduate has limited scope unless he qualifies for the first XI.

Here, therefore, is the technical field in which one would like to see the foremost British effort mounted forthwith by our small competent industry, actively sponsored and supported by the B.G.A. and even subsidised by the Government if necessary: the development and testing of a "monocoque" foam plastic/plywood wing specimen.

PATRICK MOORE, *Air Cdre.*

"Chalfont", Ferndale Road, Hereford.

THAT WORD

Sir,

I have observed that the word "sophisticated" is being used quite often in gliding circles when making complimentary reference to advanced or ingenious designs. My dictionary defines this word as — "perverted by sophistry, i.e. fallacious reasoning; adulterated; debased by something spurious or foreign". This letter is a plea for right use of the Queen's English.

GODFREY HARWOOD

*Westminster, S.W.*1.

WANTED: NEWS OF E. E. H. COLLINS

Dear Sir,

Can any reader give me news of the whereabouts or fate of the gliding pilot Mr. Ernest E. H. Collins, whom I met at Dunstable, and who as my personal guest at the gliding school in Bezmiechowa, Poland, got his Silver C in 1937?

COUNT CZARKOWSKI-GOLEJEWSKI

Wartenberg/Obb., Rosenstrasse 4, West Germany.

[The last we heard of Ernest Collins was that he went to Sweden shortly before the war and helped to start a gliding club there. A letter to his former address has been returned. His description of his Silver C cross-country in Poland was published in THE SAILPLANE AND GLIDER for February, 1938, along with similar accounts by Barry Bucknell and John Wordsworth.—ED.]

BOOK REVIEW

The Story of the British Light Aeroplane, by TERENCE BOUGHTON. Published by John Murray, London. Price 42s.

AFTER a few pages about the early days of aviation, we have a whole chapter on the Itford gliding competition of 1922, followed by one on the "motor glider" one at Lympne the following year, and another on the competition for light two-seaters in 1924. After that came the Moth, and the book gives a very thorough and well documented account of how the light aeroplane movement developed from then until 1939, including descriptions of famous long-distance flights. There is also a "postscript" on post-war developments.

The author apparently became old enough to learn to fly in the late 1930's, but the book is not autobiographical. It is compiled throughout from contemporary aviation magazines, newspapers and books. So he does not philosophise, for instance, on the fact that "putting an engine into a glider — only a little one", as was virtually done in 1923, inevitably leads to cramming on more and more power; and though Lowe-Wylde tried to start again at the beginning with his Drone, the resulting "ultra-light" category now includes aeroplanes more powerful than the original Moth.

The book is extremely well done and makes fascinating reading. It ends properly with a protest against trying to solve problems of air traffic control by "discrimination against one class of user". A. E. S.

Glider Flying, by ANN WELCH. Published by Constable & Co., London, November, 1963. Price 21s. (Also obtainable from B.G.A. Price 21s. plus 1s. 3d. postage, or $4.)

THERE is, of course, already quite a number of books on the market which deal with the sport of gliding. It could therefore be said that it has all been written before, and this in a way is true with the author's latest book — her sixth since the war of which she is the author or co-author. Nevertheless the difference between a book and a good book is how the subject matter is put across, and in this Ann Welch is a past master. She has the knack of saying what she wants to say in simple and clear language which can be understood by everybody.

Repetition of certain aspects of flying is unavoidable, as basically they do not change, but it is very handy to have so many different aspects combined in one book whereby the reader is not left with a lot of questions unanswered in his mind.

In most text books, on any sports, one is normally taken step by step through the whole process of learning that particular sport right from the first chapter. It is therefore refreshing to read in this book, in its very first chapter, of two outstanding examples of "What gliders can do". And by the time one has perused that opening chapter the appetite is thoroughly whetted, and the urge to read on has been firmly established.

This book takes the newcomer from the moment when he simply thinks that gliding might be fun right up to the stage when he feels that the time has come for private ownership. There is also a very useful appendix with information on all gliding clubs in ths country, particularly the potted histories of the various clubs are an original feature which we have not seen in any gliding book before. Only an index is lacking.

As we received the review copy rather late, there was no time to study the book in all its details, but our first impression is that here is a very sensible book that ought to be reviewed in this issue, so that our readers will lose no time in obtaining it. And, of course, there is Christmas . . . R. H.

Gliders, by LARRY KETTELKAMP. Published by Wheaton of Exeter, November, 1963. Price 8s. 6d. Also obtainable from B.G.A. at 8s. 6d. plus 1s. postage or $1.50.

WE asked a fourteen-year-old schoolboy, who is in no way connected with gliding, to read this book and answer a few simple questions. We think his answers speak for themselves, and the only thing we can add is that this beautfully illustrated book (which is very accurate on gliding details) would make the ideal gift or present to any youngster from seven years upwards.

Q. Did you find the book interesting? **A.** Very.

Q. Which bits particularly interesting? **A.** Chapters on Making a Balsa Glider, The First Gliders, and A Glider Ride.

Q. Were there any bits you did not understand? Which? **A.** No.

Q. Did you like the illustrations? **A.** Yes.

Q. Would you make the models in either paper or balsa? **A.** Balsa.

Q. Did you think the instructions clear? **A.** Yes, anyone could understand them.

Q. At 8s. 6d. would you buy the book with your own pocket money? For yourself or a friend? **A.** Yes, it is wonderful value.

Q. Would you like it as a present? **A.** Yes.

Q. Any other comments? **A.** A wonderful book for anyone, excellently written, and very interesting. R. H.

". . . that nothing failed them", by AIR COMMODORE ALLEN WHEELER, C.B.E., M.A., F.R.AE.S. Published by G. T. Foulis & Co. Ltd., London. Price 35s. Also obtainable from B.G.A. at 35s. plus 1s. 6d. postage or $6.50.

ONE day about five years ago, in the bar of the London Gliding Club, the talk turned to military gliding. There was some reminiscing, and may have been a little mild line-shooting, between two or three ex-servicemen present. They were sadly deflated when a charming lady wearing a C badge asked, "But did they use gliders in the war?" We grow old; perhaps it must be explained that they did; that the gliding clubs provided the nucleus of the new arm; and that any worthwhile book on the subject is not only read avidly by the old-timers, but must also offer much of interest to any member of any gliding club.

It is true that five years of intensive development in the design, testing, training in, and mass-operation of army gliders, did not in the end produce a single innovation, in equipment or method, of the slightest use in post-war gliding — with the possible exception of the nylon towrope. Some purists have resented even the mention of those physically and morally ugly "aerial barges" in pages devoted to pure soaring. But flying is still flying; as between a Horsa prang and a T-21 prang there may be no difference of cause, or of effect, save in loudness. A sailplane pilot whose towrope has pulled out at 50 feet over the Lasham hangar cannot but be interested to read of the same thing happening to a 25-seater over the Bay of Biscay; or competition marshals to know how four-engined tugs towing tank-carriers were put into the air at one-minute intervals.

Books about the war have come in three waves. The popular official booklets that came out during or just after the war have not worn well. Too little could be told; every show had to be a jolly good show; there was no background and no perspective. After a lull, the top brass completed their fat apologia, but the vivid detail was missing, and what had seemed a vast and vital operation to the ranks might be dismissed in a paragraph—it would be a poor war, somebody has said, that every man did not think he personally was winning. Then there was the "now it can be told" type of book, written all too vividly, with an eye to the Sunday papers, by a ghost journalist, after a fireside chat with the nominal author. The first paragraph would be something like this:

"The Wing-Commander lit his seventh cigarette, wiped the Ops Room window again, and stared out. 'Things don't look so good, Freddy,' he remarked laconically."

Those books have not worn well either. But we are now getting books of another and valuable kind; specialists who have important details to add to the broad outlines of the general histories are recollecting them in tranquillity. Air Commodore Wheeler's book is one of these. His special viewpoint is implicit in its title, taken from the story of Sir Galahad's preparations for battle with a giant: "Then did Sir Galahad look well to his harness that nothing failed him on the morrow."

The task of the author and the test-pilots under his command at the Aircraft Experimental Establishments was to ensure for the front-line aircrews that nothing failed them. But they were not content to remain backroom boys. These test-pilots went on "operational attachments" to see for themselves how the air war was being fought. They had one great advantage over their temporary battle-companions: they were trained to observe accurately, to report their observations clearly, and to offer concise practical conclusions. (Most operational pilots, however brave and however honest, were sadly unreliable at "de-briefings".) The author has taken the bold step of devoting about half of his book to a selection of these reports. He has rightly resisted the temptation to cut them. Despite occasional minor technical details of little present interest, and indeed partly through the cumulative effect of well-observed detail, the general effect of these reports is far more vivid and convincing than any deliberately coloured tale.

Four chapters are given wholly to the work done for, or with, airborne forces; principally to gliders. We read of the tests made in 1942 at the R.A.E. on the eight-seater Hotspur, by a Flight under F/Lt. "Dougie" Davie (of the pre-war Cambridge and London Gliding Clubs):

"At about 4,000 ft. the glider got into a position where Davie had to cast off owing to the malfunctioning of the automatic pilot. Immediately after casting off Davie found that the controls did not work and he told his two passengers to bale out. The technical officer remonstrated with him and started to say something but Davie told him to 'shut up and get out'. The technical officer again tried to argue but was again firmly told to get out quickly, which he did. Winfield had already gone. Just before Davie himself got out he had a last quick look round the cockpit and suddenly noticed that on casting off he had forgotten to disconnect the automatic control. It was that which was preventing the controls working, and it was that also which the technical officer had been trying to point out to him. He pulled out the automatic control, glided down, and landed himself safely. His two passengers had also landed safely by parachute but they had to walk home."

(Let us remember, though, that in flying it is the mistakes that make the funniest stories, which may make them seem more common than they really are.)

When the 15-seater Hadrian, the 25-seater Horsa and the tank-carrying Hamilcar were tested, all sorts of permutations and combinations were tried, such as one four-engined tug towing two Hadrians, and two four-engined tugs towing one Hamilcar; after take-off, one tug would release. Gliders were "snatched" from the ground by a tug flying over dangling a rope which was wound on a drum in the tug's tail, the drum being progressively braked to take up the load gently: it worked.

A chapter on the airborne invasion of Sicily embodies a brilliant report by F/Lt. D. A. Grant, who sums up that unhappy operation rightly in a sentence: "In short there were too many people doing something for the first time that night." The appalling operation of towing Horsas from England to North Africa deserves a book to itself. In 1944 the author took command of one of the stations allotted to airborne operations.

And so to D-day and Arnhem.

This is a good meaty book; not much of it suitable for serialisation in a Sunday paper, but a "must" for wartime glider pilots and a "should" for sailplane pilots and technicians.

L. W.

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Christmas Crossword

by GORDON CAMP

Solution in our next issue.



ACROSS

5. Qualification towards Silver, Gold and Diamond badges (1, 4, 2, 6).
8. Equipment to attempt a task (6).
9. Gigantic bird of Eastern tales (3).
10. From which bird-watchers operate (4).
11. Wrinkle, wrinkle, little ——,
    Stressed beyond your proof so far,
    Up above the World so high,
    Am I glad that I don't fly! (4).
12. An age of sailplane manufacture (4).
13. Medieval peasant (4).
14. Gliding badge, as good as (4).
15. Insufficient rudder showing? (4).
17. Fitting (3).
18. Large South American vulture (6).
19. Prevailing cause of hill lift (8, 5).

DOWN

1. Early morning delivery flight? (4, 3).
2. Cause of reduced lift? (7, 5).
3. Motion about lateral axis (5).
4. Cumulonimbus (12).
6. Local Rag Deed upset in preparation for Diamond flight (4, 8).
7. They go far! (12).
13. Fate of pilot flying low and slow (5, 2).
16. One flies by their seat (5).

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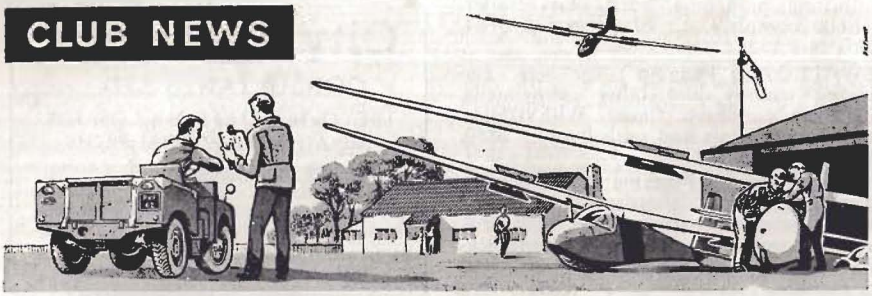
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CLUB NEWS



WE welcome to this issue two new clubs. The Worcestershire Gliding Club, who are operating at Honeybourne Airfield, near Bromsgrove, and in the Overseas Section the new Services' Club at Detmold, in Germany.

I am often asked how much news should be sent in. Well, in principle we allow about 300 words for B.G.A. Full Member clubs, 200 for Associates and Overseas and about 100 words for the rest, which includes individual Service organizations. But if you all sent the full amount each time we would not have room for it all. The main thing is, if you have something of real interest to others to tell we will do our very best to include it, providing it has not been covered elsewhere in the magazine, or is out of date.

The final date for copy for the February issue is Wednesday, 11th December and please send it typed double spaced on foolscap to me at 14 Little Brownings, London, S.E.23.

A VERY MERRY CHRISTMAS AND NEW YEAR TO ALL CONTRIBUTORS AND READERS.

15th October, 1963 YVONNE BONHAM, *Club News Editor.*

ABERDEEN

SEVEN months have now elapsed since we took up residence at Litterty, and the runways now sport a first season's growth of grass. Plans are afoot to clear up one or two soft spots next spring and also to improve our long access road.

Nine courses were successfully completed and our thanks go to the club instructors who gave up so much of their holiday time, and also to Alan Middleton who spent practically the whole of his summer vacation driving the winch during the courses.

Alan received his due reward, however, in late September by gaining a Silver Height in the Swallow and remaining airborne for approximately two hours. This was the first appearance since we moved to Litterty of the wave conditions we expect in strong South West and West winds.

Since then, the syndicate Olympia and club Kranich have also explored these wave conditions and we hope to have sampled bigger and better waves by the time this appears in print. Naturally aero-tows have been in great demand and Angus Macaulay, our C.F.I., has been kept busy flogging the Tiger up to 2,000 feet.

Amongst our newer members, solos have been performed by D. McKinnon, J. Anderson, I. Anderson, R. Leslie and G. A. Anderson who has also since then notched his C certificate flying the Tutor.

In the near future a few more comforts will be available when a hut we have purchased becomes a clubhouse. A T-21 is also on the cards and so the ghost pilot in the rear cockpit of the T-31B which troubles some pupils will finally be laid by the heels.

F. C. M.

BLACKPOOL & FYLDE

SINCE our last appearance in these columns we have been flying entirely at Samlesbury Airfield, which is now our established summer site, owing to Blackpool Airport becoming so exceedingly busy during the season flying holidaymakers to the Isle of Man, the Channel Islands, etc., and also many Continental and Irish Services.

It is a pleasure to report two Silver C Height legs at Samlesbury in August by Gil Haslam and John Gibson. John also made a good attempt at his Distance but did not care for the weather ahead so headed for home and arrived back with ample height.

Ivor Stretch, Gordon Bleasdale and John Gibson took our Olympia 2B away again this year and had an interesting week at Bicester. Unfortunately Ivor, who had contacted some excellent lift and "burned his boats", soon found that conditions were no longer what he had expected.

A satisfactory "L" shaped field was duly chosen where a herd of cows were peacefully grazing in a far corner, but the whistle of the dive brakes apparently did nothing to increase the tranquility of this ideal setting and Ivor found himself with a minor stampede on his hands. The Olympia is now flying again—the cows came to no harm.

Congratulations to Jane Murdoch, our schoolgirl member, who is now solo and should have received her certificate from our President, Herbert Liver, long before these notes are in print.

We are exceedingly pleased with our summer site at Samlesbury and are grateful to English Electric for the use of this aerodrome. We have, however, now returned to our home site at Blackpool, where flying will take place throughout the winter.

J. S. A.

BRISTOL

OCTOBER produced one exceptional day, Sunday 13th, when a strong N.W. airstream started a wave system from the Welsh mountains. It was first contacted about midday, when people soaring the ridge in hill and thermal lift found strong lift at 2,500 ft.

This proved to be the best wave yet contacted at Nympsfield and the greatest height reached was 12,000 ft. a.s.l. In all about ten people climbed to between 9,000 ft. and 12,000 ft. a.s.l. The wind strength at that height was 50-55 knots.

Unfortunately the wave was not quite strong enough for Gold height, which several people missed by only a few hundred feet. However, Mark Westwood did a Silver height climb and also five hours in the Olympia, and John Greenhill did five hours in the Ka-6.

Peter Clifford Ltd. had loaned the Blanik for the week-end and it was put to good use touring the countryside at 8,000 ft.

During the other flyable week-ends since mid-August, K. Chard did his Silver distance, and Messrs. W. Harper, L. Smith, C. Dart, I. Pickering, N. Harris, F. Hutchinson, E. Aylett and "Doc" Lomas have obtained C's. J. Luckie, T. Stapleton, P. Clarke and Thelma Barrett have soloed.

Bill Malpass, who soloed in July, has been on a trip to the States where he got his Silver height and five hours at the New Jersey Club, during a total of 23 hours flying.

In the workshop, another trailer rebuild is being undertaken by Ted Holmes and Harold Jefferies, who are now the acknowledged experts. A 3½ in.



Peter Scott, of the Bristol Gliding Club, holds the Londonderry Cup after winning the 1963 *National Championships. On his left is Denis Corrick, the Chairman of the Bristol Gliding Club.*

lathe has been obtained and is installed in a partitioned-off section of the workshop, which is also said to be Ray Jefferies' sleeping quarters. Some work on the site has been undertaken, including re-gravelling in front of the clubhouse and some concreting and draining.

The Christmas party will be held at the clubhouse on 14th December and any visitors will be welcome. The record for our new full-yard-of-ale can be attacked at the same time.

We are delighted to announce the arrival of Doug and Joy Jones' new crew member, Lynette Mary.

A. L. S.

CORNISH

SUMMER started quite promisingly with a modest record of three cross-country attempts by the Swallow in one week-end. In one of these Ernie Hayman was once again overtaken by unsoarable conditions just short of his Silver distance.

On the same week-end George Collins, who had bigger things in mind, flew his Skylark to near Glastonbury.

Since this time there has been no further cross-country flying due to the onset of "summer" proper, a bent Tiger (now straightened) and perhaps a little lack of enterprise in using winching facilities at our Newlyn Downs satellite.

However, a good day's thermalling was organised by Pip Philips flying from St. Eval airfield and Gordon Bawden and Ted Mann have sat out their five-hour legs over the cliffs of Perranporth.

Due to numerous conversions to the Swallow the flying list for this machine is now overcrowded and urgent steps are being taken to expand the club fleet for next season, when we hope, in the statistics, to make miles more significant than hours.

After four years of diplomacy, plain hard work and general ulcer-gathering, Bernard Warmington has retired from the office of Club Chairman. At the Annual General Meeting his retirement was accepted with regret in the knowledge that Bernard has done far more than his fair share for us. Ernie Hayman was unanimously elected to fill the vacant Chair and we all wish him a smooth ride.

Our members wish their many friends in the gliding movement a happy Christmas, and big fat thermals in the New Year.

J. E. K.

CAMBRIDGE UNIVERSITY

IN spite of unkind weather, our five elementary gliding courses in July and August were quite successful. Two of the pilots who went solo also managed their C flights. Ray Haddon, who organised the courses, was asked to do the same job again next year. Ted Warner bore the brunt of the instructing and also took a leading part in the first Instructors' Course held at Cambridge this summer.

After a limp thermal soaring season we had hoped to have a lively bout of slope-soaring at the Long Mynd in September. The camp took place all right, but, alas, hardly any hill-soaring. Sixty flying hours were shared by the 28 members of the camp; last year we did 160 hours, during the September camp.

Unfortunately we lost the use of the Sky which had been operated by the Club for almost two years. This splendid sailplane was sold by its owner, Simon Redman, and the Club reached another low-point in the number of cockpits available.

However, as so often in this Club, something invigorating happens when things are getting a bit dull. This time it was the temporary addition of a Ka-7 to our fleet. This high-performance two-seater belongs to Eric Richards and his partners and is now being operated by the club until the syndicate find another site in the neighbourhood of Colchester where the aircraft was previously kept.

Another boost to the club's activities was, of course, the annual influx of freshmen at the beginning of the academic year. Once again, the new undergraduates have brought fresh enthusiasm, new ideas and further opportunities for the instructors to train real pundits.

After another year's struggle with the launching equipment, the details of which shall remain unrecorded, it is nice to reflect on a gadget that really works: our Tiger Moth. Managed by Bryce Smith, and flown by a reliable team of tug-pilots, the Tiger provided over 500 tows last year.

G. S. N.

COVENTRY

SINCE August there have been relatively few soaring flights of any note. However, training has been going well and the following members have gone solo in that period: Messrs. Collins, Bradley, Nurcombe, Ostens, Poole and Wilson. This easing of the congestion on the T-21 list has enabled us to take on several new members.

I greatly regret having to record that Ken Owen, our treasurer, has moved from the district and has had, in consequence, to resign his office in the club; however, we expect to see him about from time to time. This occasion cannot pass without tribute being paid to the energetic and efficient way in which he has done this job for us.

His successor, Mike Bagnall, will be the first to realise just how much he will have his work cut out to match Ken's performance, but the characteristic enthusiasm with which he is already tackling the job should bring the sort of results we have come to expect from the holder of the post.

Recently Alwyne Findon's new winch put in its first appearance and it is at the moment under evaluation and has to date worked very well. More people are learning to drive it and the combination of diesel engine, fluid flywheel and ability to use solid wire promises us good launches and should give the economy and reliability we require.

Another aid to more flying is the return of the club Olympia to service. During its absence the solo pilots and would-be cross-country flyers were a bit restricted. Despite this absence, however, Elsie May did attempt a Silver C distance in the Prefect but she did not get quite far enough.

As "C. of A. Season" approaches us again the next big event will be the Annual Dinner-Dance for which the tickets are selling rapidly.

C. D. D.-J.

DERBYSHIRE & LANCASHIRE

THE latest addition to the club fleet is the eagerly awaited prototype Peak 100. Members who have flown this high performance side-by-side two-seater are most enthusiastic. The machine will be used for advanced training, leaving the two T-31's for ab-initios.

The wave season returned in September providing keen Tutor and Prefect pilots with a crop of Silver C heights and duration flights.

New accommodation at Camphill includes eight comfortable double rooms, colloquially known as "Nesting Boxes", which have been constructed over the new club room.

We welcome our new stewards, Mr. and Mrs. Slater who have forsaken a local golf club for the rigours of gliding.

J. N.

DONCASTER

AT last we have been able to realise part of our major expansion programme. We have the first T-21B of the two we hope eventually to have at the head of our fleet. The cry for a second two-seater has changed its tune to a cry for a second T-21.

Now that the two two-seaters are constantly circling the airfield, we find that our stalwart instructors are getting so dizzy doing circuits that we now have a full-scale instructor training programme under way to ease the pressure. Maybe next year this foresight of our

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flying instructional team will lead us into the 7,000-8,000 launches per year bracket, but even if it does not, our instructors may be justly proud of their recent flock of solo fledglings.

Among them were André Miguet of Paris, who managed to solo just before his return to France, and Maureen Withington, whose solo and C flights were only some 10 or 12 circuits apart.

Another distinction, too, has been achieved, that is, the first member to obtain the Silver C duration on our flat site. Sid Hayes, after many abortive attempts managed his five hours and height qualifications from the site.

He thus became the first to qualify for the Silver C having completed all three legs at Doncaster. Strangely enough, 14 days later John Johnson did five hours at Doncaster in his venerable but beautiful Rhönbussard.

Three more interesting aircraft have recently been based here. Les Muncaster and his Oly 463, which he very sportingly permitted a number of our members to fly, all of whom had high praise for its ease of handling and its ability to soar, even on marginal days.

John Everitt and the Capstan were also welcome visitors on the first of our Capstan Courses, and just in time to tow the Capstan, the Tarr-Bower-Robinson Tug-Master arrived as a replacement for the Jackaroo.

Some of our members took their latest winch, an A.E.C. diesel bus, to the Northern Nationals, to assist with launching. A combined winch and four-berth caravan, this vehicle makes us capable of flying expeditions to new sites, which we hope to try some time in the future.

Our Ladies' Committee, which has been re-formed this year, is making tremendous efforts to provide social events. Their Barbecue Night in the Club Hangar was a resounding success. With built-in bar and three-piece band, some 220 people had the time of their lives, so much so that they now have planned a "Wild West Night" when it is hoped to welcome up to 300 people, and provide a meal and a 24 ft. long bar.

We look forward to this night of frivolity, since it is at events such as this that all members and their friends mix and converse and are drawn together into a true club atmosphere, which is carried with them to the flying field and makes for more pleasant and safer flying.

B. H. F.

GLASGOW & WEST OF SCOTLAND

NOT a great deal to report from Balgair Moor. Our Retrieve Winch is now in operation and, after a few minor mods., will prove to be a most useful acquisition. Our thanks to Gordon Forrester for his time and labour on this machine.

By the time this reaches print, our Tutor will have had its first taste of soaring on the Fintry Hills. Only a final coat of dope on the wings and it is ready for shipping to Balgair. Does anybody have a cheap Tutor trailer?

The weather up North has not been too kind to us recently. Very strong winds which, while mainly flyable, hinder the rigging and de-rigging. These latter processes must unfortunately be our "cross" until we can somehow acquire a hangar. Still—we always hope!

An article on gliding in a local county paper, inserted by club member, Marjorie Buchanan, has aroused a great deal of interest in that area and already has resulted in several new members and a number of other potential members. The more the merrier!

Our move from the site at Carnwath, Lanark, to Balgair Moor cost us several local Lanark members who are unable to travel the distance. New members are therefore warmly welcomed.

Since this is the last issue of 1963, may I, on behalf of my Committee and club members, take this opportunity of thanking our many gliding friends who have helped us in numerous ways during the year. In particular, our thanks to Rab Williamson and John Henry. May the coming year bring many successful flying hours to all bitten by the gliding bug.

D. C. S.

LASHAM

THE erection of our new clubhouse is well under way. The final cost for the completed building of 5,400 square feet including the paved area and approach roads will be approximately £3 per sq. ft.—not £4 as reported in the

last issue. Completion date is promised for the end of January 1964.

We now have a fleet of three T-49's (Red Barrel, Moomin and Flook) and our pupils are now taught on these superb gliders. After a certain number of solo flights in the T-49, they will then convert on to the Swallow. Our wonderful, revered T-21 "Daisy" which came to us in 1949 will be retained and will be used for certain aspects of training and joy-riding.

On Saturday, 12th October, Lasham produced its best wave ever. It sat one mile south of the airfield and ten flights of over one hour were carried out with climbs from 1,900 ft. to 4,000 ft. being recorded. Our Chairman, David Carrow, managed to stay aloft for two and a quarter hours.

Geoffrey Firkin has been appointed as our new Secretary of the Society and we wish him well.

Talking of wells—some members, led and inspired by Bill Bailey who is the Captain of the Imperial College Club, indulged in a spot of hole-boring. Bill claims that Lasham is really a fairly thin (20-odd feet) layer of clay sitting on a vast bed of chalk. The theory is that if we can bore into chalk we can dispose of certain unwanted waste very easily. His team had reached a depth of 30 feet by Sunday night—no chalk. They are determined to hit chalk and break the world record for hand-boring (42 feet).

The flying side is going fairly well although we are still down on the total number of launches for the year due to the dreadful winter. Up to the end of September 19,000 launches were carried out as compared with 22,000 for the same period last year.

W. K.

LONDON

PLANS have been drawn up for the extensive modernisation and re-organisation of our buildings. In particular, our wartime huts are to be demolished and replaced by a new extension to the existing clubhouse; and a separate hangar is to be erected for our Tiger Moths.

Changes are also occurring in the constitution of the club's fleet of gliders; when all the sales and purchases are completed, the club will be operating two T-21B's, three Prefects, two Olympia 2B's, Skylark 2, Sky, Skylark 3 and a T-49.

At the beginning of this year Lasham and Dunstable promoted the "Collector's Plate", a scheme that other clubs might like to follow. The idea is that if the Plate happens to be at Lasham, say, then it stays there until someone from Dunstable soars to Lasham to claim it, and vice-versa.

Far from encouraging pointless downwind dashes on good "triangle" days, the scheme has prompted several good cross-country flights, including three out-and-returns between the two sites.

Incidentally, we hope that Lasham, who have held the Plate since August, realise how difficult it is for us to reach them, as more often than not we have the prevailing westerlies to penetrate.

After three years' painstaking work, brothers Vic and Ron Tull have finished assembling their Skylark 3 kit, and their meticulous craftsmanship has produced probably the finest Skylark 3 ever built privately. Several mods have been introduced during construction, including a Skylark 4 canopy and a new type of fresh air duct, designed by the Tull brothers themselves.

On Saturday night, 14th December, we are holding the Christmas party, when one of the features will be a Mad Hat Competition; first prize of a bottle of champagne will go to the most ingeniously designed head-dress, preferably on a gliding theme. Visiting couples from other clubs are sure to find a welcome at the party.

G. C.

MIDLAND

IT is with great sorrow that we have to report the death of two of our members.

On 28th September, Peter Head was killed in an accident in the Eagle. Peter joined us five years ago, had served on the Committee for the past three years and took over as Secretary six months ago. On 13th October, Teddy Proll died after a long illness. Teddy became our Ground Engineer shortly after the war and was one of the solid foundations upon which the club's expansion was based.

We all owe much to Peter and Teddy and our deepest sympathy goes to their respective families.

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The new bunkhouses are well on their way. The main structure is now complete and the fitting out of the interior is in hand. Sunday, 13th October, brought us a day of outstanding wave flights.

The best four flights, which were all from catapult launches, were Ron Rutherford, Skylark 4, 16,000 ft.; Ric Prestwich, Skylark 3F, 14,800 ft.; Mike Randle, Skylark 2, 13,800 ft.; and John Anstey, Skylark 4, 12,000 ft.

The heights quoted are above the Mynd and therefore represent the gains involved. Ron Rutherford was the only pilot to have oxygen. Contact was generally made over the Stiperstones.

We take this opportunity of wishing all our gliding friends a Merry Christmas and a Very Soarable New Year.

K. R. M.

NEWCASTLE

THE weather has been unkind to us at Carlton this year, and our number of launches and flying generally have not been as good as we had hoped. However, we are looking forward to some good winter hill and wave soaring, provided we don't disappear under umpteen feet of snow as last year.

If we have not been able to fly, we have not been idle. Our clubhouse is now more habitable, and extensions and new workshops are being erected. We now have a diesel winch, thanks to a good deal of patient work by Ron Dixon and thanks to the Doncaster Club who helped with advice and allowed us to inspect, measure and photograph their latest masterpiece.

On a recent solo pilots' course (which coincided with five days of stable air) Tom Shepherd and Marjory Trueman converted to the Olympia, and David Lilburn scraped along a short section of the ridge for 5 hours and 1 minute to gain his duration.

Norman Revell and John Appleyard, flying the T-21 in strong wind conditions, recently contacted a wave from a 700 ft. winch launch. Having reached 11,200 ft. a.s.l. the climb had to be abandoned, still with 3 green showing, as low cloud was creeping in below them.

A tephigram supplied by a local met. office for that day shows near perfect conditions for wave, with a strong wind of steady direction in the wake of a very weak cold front, and with alternating bands of unstable and stable air up to about 11,000 ft.

Further research into waves, their formation and forecasting is obviously a must if we are to take the best advantage of them in the future.

Finally, we wish to all our friends in the gliding world a very happy Christmas and lots of soaring in 1964.

B. W. B.

NORTHAMPTONSHIRE

THE club decided in July to sell the T-31 and purchase a higher performance two-seater which could be used for ab initio and also advanced training. The purchase of a T-49 Capstan would have been ideal but funds were not sufficient, so a T-21B was purchased from the Rearsby Club and we took possession of it on 12th October. All members who have flown it are delighted with its performance.

Cross-country flying has been attempted whenever weather conditions permitted, and D. Jones reached Little Staughton and Eddie Clarke landed near Nottingham to gain his Silver C distance leg.

Now that a two-seater glider is available again it is hoped to start an intensive winter training programme.

Gordon Grant, our Chairman, is back with us again after his car accident in the early summer.

R. N. W. K.

NORTHUMBRIA

AS mentioned in the August issue the club's A.G.M. was held on 2nd July. At a meeting a club constitution was approved and a new Management Committee elected, the principal posts

in which are: Chairman, Roy Bousfield; General Secretary, Harry Anderson; Treasurer, Rob Gains; Dave Wilson continues as C.F.I. assisted by Tommy Ruffel.

Stemming from the Management Committee a number of sub-committees have been formed which are now becoming very active.

We have recently bought a bus from the local Venture Bus Company at a reasonable price. This is now well on its way to becoming a two-drum winch. (Anticipating the ambitious plans for syndicates within the club and additional club aircraft.)

The framework of a small hangar-cum-workshop is the latest thing to grace the skyline at Hedley-on-the-Hill. This should be complete by the time we go to press and a start made on the clubhouse, the materials for which have arrived. Rob Gains will no doubt be pleased to see the clubhouse going up, his caravan on the field has been frequently overloaded in the past few months.

The flying record for Northumbria this year is not tremendous, the weather being the principal drag, along with late starts and two unfortunate incidents where the T-31B was involved in a heavy landing with minor structural damage, putting it out of commission for a month. In spite of these setbacks, however, there have been flights of note.

The initial best flight record was 3,100 ft. with a duration of 29 minutes. This was improved on 13th July to 3,300 ft. and 53 minutes by the C.F.I. in the T-31B. The record at the time of writing stands at 5,600 ft. with a duration of 1 hour 20 minutes. This was set up by "Danny" Borritz in the Kite 1 on 13th September.

Who said 13 was an unlucky number? Alan Cawthorn doesn't think so. On 13th July, having cast off at 660 ft., he picked up some green ball in the Kite 1 and worked up to a height of 2,600 ft. for a 45 minute flight to gain his C. In contrast to this launch height, Tommy Ruffel had a launch to 2,200 ft. in the T-31 on 28th September using the "vigorous" wind conditions.

Just in case anyone thinks it is impossible, earlier this year a young member arriving at the club forgot his field regulations and stopped his car in the middle of the field just as an aircraft was given the "All Out".

Unfortunately the car was over the cable and its rear wing was promptly sawn in half as the aircraft took a nose dive. Needless to say the said young member now has a very good memory along with the writer who was in the cockpit. Later at the scene of the crime some wit observing that the burnt cut ended an inch from the petrol tank said something about a thermal!!

From Northumbria a merry Christmas and a 10 up New Year to all.

C. R. S.

SCOTTISH

AUTUMN appears to have brought a marked increase in the number of visitors to our airfield. Among these were representatives of the following clubs: Bannerdown, Bristol, Surrey, Acklington, Lakes and R.A.E. Bedford. The last named group, R.A.E. Bedford, appeared with three aircraft (Bocian and two Olympias), and stayed for seven days.

On the day of their departure, the start of the Wave Season began and flights of 3,000 to 12,000 ft. were noted. On the following day, Monday, 29th September,

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after very rough conditions, a slight easing of the wind strength permitted the launching of an Olympia and Swallow.

The pilots, A. Sambale and J. Paterson, made use of hill lift over the Bishop Hill as a step to the first wave and then set off on an extensive tour of the wave system covering south east Scotland, before setting out to cross the border.

Ansgar Sambale (Olympia) reached R.A.F. Acklington (distance 90 miles, best height 15,000 ft.) and John Paterson landed six miles south of Berwick (distance 63 miles, best height 12,000 ft.).

The flights completed the pilots' Silver C requirements and added Gold C height legs to the S.G.U. bag. Similar conditions prevailed on several days following this.

Sundays, 5th and 13th October, gave rise to flights from 3,000 ft. to 12,000 ft., C. Ross (Skylark 3) and I. Dandie (Skylark 2) reaching 12,000 ft. on the respective days. It was noted that 13th October gave rise to more difficult conditions with considerable turbulence and no lenticulars marking the wave positions.

W. A. S.

SOUTHDOWN

THE club held an away-camp at Tibenham during the summer which was combined with a visit to Seething where members were able to put in an enjoyable day's flying with the Waveney Flying Group.

Peter Henderson and Derek Holland paid a visit to Monflorite (the Spanish site which members have now visited for the third successive summer). Conditions were slightly less good than usual but Derek managed to return with his Silver Height.

June saw the arrival of a gleaming white Olympia 463 at Firle jointly owned by six club members which, incidentally is the first syndicate to be formed and based at the club.

During September the Club Olympia and Olympia 463 were taken to Shoreham aerodrome where Geoff Creffield, John Simeons and Peter Wildbur took part in some dual-aerotows at a Press Display given by Beagle Aircraft. Dick Stratton bravely drove the "Terrier" tug. Club social activities got off to a good start with a very successful and well attended dance at Selmeston.

Congratulations to our two feminine pilots who recently went solo—Jennies Goldstein and Swinhoe—also to Tony Bywater who soloed in September and to Peter Henderson who completed his Silver C with a 100 km. flight from Firle to Winchester in the Olympia.

It is with great regret that we report the death on 26th September of John Simeons, one of our most enthusiastic and hard working instructors with a tremendous zest for all things gliding. His death will be keenly felt by his many friends and syndicate partners, whose sympathies go to his mother in her great sorrow.

P. W.

WORCESTERSHIRE (Honeybourne)

DURING our 16 months of existence we have operated from several sites, our present headquarters being Honeybourne old Aerodrome, near Evesham.

We are, however, developing our new site at Bickmarsh, near Bidford-on-Avon. This is a 250-acre field on which we have obtained a lease, also planning permission to operate from one, and later two, strips approximately 1,300 yards by 40 yards, with a section adjoining one runway for the erection of the necessary buildings.

The hangar—one large Nissen hut—is in course of erection and the E. to W. runway is the scene of much activity with tractor and discs making ready for seeding.

On the flying side our fleet consists of one T-31 with a Tutor arriving in four weeks' time. Our winch is an Austin 2-ton lorry with axle and drum mounted behind the cab, the engine performing the duties of propelling the vehicle to launching position, whereupon it is attacked with assorted spanners and in ten minutes flat the prop shaft is ready to turn the cable drum.

Retrieving the cable is done by motorcycle combination and so far both winch and motorcycle have worked satisfactorily.

Our present membership is 32 with a long waiting list.

On 8th September an Olympia landed at our Honeybourne site after a cross-country flight of approx. 50 miles from the Long Mynd.

T. M.

SERVICE NEWS

EAST MIDLANDS (Swinderby)

MORE successes to add to our list. During August and September a great effort was made to get people through their Silver distance legs before the revised rules came into force. Three members — Pete Rickwood, John Shorter and Des Sheen — did so, to bring the club total this year to nine. We now learn that the distance requirement is not, after all, to be raised. We're not complaining!

Ian Hamilton took the Olympia up to 11,300 ft. for a well deserved Gold height, while at the other end of the scale Gordon Buchan and Charlie Howell managed the fifteen minutes for their C badges.

Also of note during the period under review was the granting of Air Scout wings to Peter Thorpe. Peter joined the club through the 7th Lincoln Scout Troop, and was the first Lincolnshire air scout to go solo.

Equipment-wise we have made a couple of good swaps. The T-31 has been exchanged for a Kranich to enable the club to offer realistic training in soaring and the old Tutor has been replaced by another fitted with spoilers, which should eliminate a lot of those infuriating long overshoots.

Last, but certainly not least, we would like to use this page to convey our thanks to Bill Harrop for his magnificent work as club technical officer. Bill is being posted out of the Lincolnshire area, and we will all be very sorry to see him go.

A. W. P.

FULMAR NAVAL (R.N.A.S. Lossiemouth)

THE wave season has started here, causing both frustration and elation. Some days we have had to stand and stare, due to high winds, but Dave Alty has claimed a Gold height, reaching over 14,000 ft. from a 1,100 ft. auto-launch.

Henry Dyce managed to coax the Prefect up to 4,500 ft. but did not quite manage his Silver C gain. During the summer leave period both the Skylark and Prefect were away for spells.

The Skylark was at Lasham in the R.N.G.S.A. Competition, where Derek Marpole gained good experience and his Silver C, whilst the Prefect was at Portmoak achieving yet another five-hour leg.

The ladies are very much in evidence, with Ann Pritchard and Ann Martin soloing and Sheila Innes flying the circuit once more. Our recently acquired tow-cars (ex-U.S.A.F. Ford F 100 Pick-ups) are proving very well suited to the role of launching our gliders. Clubs who auto-tow are recommended to consider these vehicles. The secretary will give details on request.

Mention of our C.F.I.'s (Dave Innes) success (second place, league two) in the National Gliding Championships was omitted from the last bulletin. We are very pleased with him and hasten to include it here. At the A.G.M. we said farewell to Nick Taylor, the last secretary. A public thank you Nick for your efforts, and success to you in Malta.

P. G. C.

R.A.F.G.S.A. CENTRE (R.A.F. Bicester)

SINCE we sold the Eagle during the Nationals we have been without an advanced two-seater, but now the gap has been filled by a Blanik. Andy Gough and Bill Andrews went over to the Continent in the Auster and towed it back.

Since its arrival most of the instructors have been converted and it has soared for considerable periods in weak October thermals. For most of us this is a very sophisticated aeroplane, with its retractable undercarriage, Fowler flaps and effective wheel brake. It is easier to winch launch than an Eagle. Take off is with about ½ flap, raising the undercarriage as the tug lifts off and retracting the flaps above the ground turbulence.

The view from the cockpit is excellent, better than almost any other tandem two-seater that I have ever flown, powered or glider, and it is one of the few sailplanes with a good rearward view.

Handling is a delight and the controls are well harmonised. Stalling and spinning are conventional. Inside the cockpit there are no exposed control rods or cables and the floor is well sealed against loose articles. Instrumentation is at present incomplete but will include full blind-flying instruments and possibly oxygen later. Adequate space has been provided for the installation of equipment.

Thermalling is done with varying amounts of flap, depending on the size and strength of the thermal, and the low speed handling is very good indeed. For flying between thermals the flap is retracted. The circuit is conventional and the undercarriage is lowered downwind, landing roll is short because, except for the Peak, we now at last have a sailplane with an effective wheel brake.

Construction is all metal and the standard is very high. It remains to be seen what problems the transition from wood to metal will bring, but all other fields of aviation have successfully made this transition, and it may well be that wooden structures will become part of aviation history. R. P. S.

RED HAND
(R.A.F. Ballykelly)

DUE to work on the airfield no gliding was possible during the month of August. However, in September we have somewhat made up for lost time. On 14th September Scott Anderson climbed to 9,000 ft. in wave contacted from motor-tow and in the course of six hours flew to Limavady, Dungiven, crossed Lough Foyle to Greencastle in the Irish Free State and back to Ballykelly.

The following day Tom Heslip, who had previously made a marginal Silver C height on his conversion to the Skylark, also contacted wave to 8,000 ft. Unfortunately, the wave collapsed and appeared to clamp lift back on the ridge, thus depriving Tom of his duration after three and a half hours.

The six mile run to "Ben Twitch" has now been well established for club pilots and Grenville Hill has been over on two occasions to get the feel of the ridge. His return terminated at Limavady, so that we are now making the trailer pay its keep.

The latest progress in getting off the airfield is due to "Zot", who took an expedition with the Olympia to the top of "Ben Braddock", a 1,470 ft. hill at Dungiven, 15 miles from Ballykelly. Zot did the first 80 ft. motor-tow launch from a forestry commission road leading through a peat bog to the edge.

After an hour "Spider" Webb used the winch for the second launch, and this seems a better proposition for club use. This site has a very good potential in a west-north-west wind, both for hill soaring and as a starting place for cross-country. There was no marked curl-over landing back on the road and with some work clearing boulders could become interesting on a more permanent basis.

We are sorry to say goodbye to Dave



"Ben Twitch" showing in the background, the 1,200 ft. ridge 6 miles N.E. of Ballykelly.

Ellis, our C.F.I., who has gone to work in the Liverpool area. We hope to hear more of him in the future, with perhaps a visit from him and others during our wave project over Christmas. Ex-Ballykelly people please note. G. M. H.

WHITE ROSE
(R.A.F. Rufforth)

FLYING has continued steadily throughout the summer, and we seem to have achieved a fair number of certificates for a club of our size, despite the regular downpours.

Tony Barmby recently returned from Bicester with an instructor's category, much to the relief of our C.F.I. and only other instructor, Tony Morris.

We now have a Tutor in place of our Grunau Baby, which suffered extensive damage on an undershoot in July, although the pilot escaped injury.

Jim Smith got his five hours on Sutton Bank in August. He attempted his Silver Distance a week later but landed short after covering 25 miles. Ray Poxon has also had a go but also landed short at Linton-on-Ouse.

C Certificates have been gained by Tony Barmby, Dave Smith, Pete Luckhurst, Dave Rhodes and Barry Dobson, A and B Certificates by Derek Brooks, Tony Rodmell and Ken Keeble.

We are hoping to move to Church Fenton before the end of the year, as our hangar and maintenance facilities are very limited at Rufforth. J. G. S.

OVERSEAS NEWS

THE CRUSADERS
(Cyprus)

OUR ambition has been realised, and with the gliding year ending this month we can announce 3,970 launches and 404 hours flying with three weekends in hand. In the process we have gathered 13 solo pilots, 5 C certificates and one Silver height on this somewhat unrewarding site.

Latest solos are our invaluable ground equipment member, Jim Weaver, and Frank Waddington. Peter Williams, who recently got his C, has also converted to the Swallow. Peter's brother, Chris, is now learning to be an instructor, along with Dennis Roberts (ex-East Midlands).

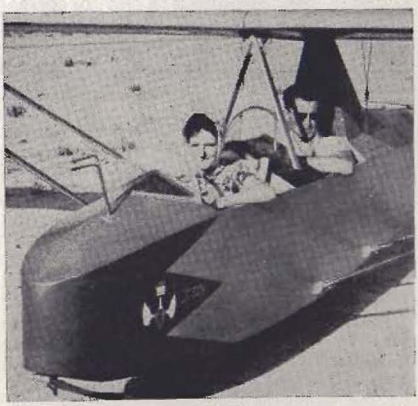
John Beckett is a very welcome new member to add to our depleted instructor staff. John gained his experience with apprentices at Halton.

On Battle of Britain day a small display was put on by the club, a static exhibition of our Swallow suitably spruced up and three separate aerobatic displays at hourly intervals through the afternoon in the T-21. A raffle organized by our secretary and treasurer, Steve Sanders, collected a useful sum and provided 10 trips by lucky winners in one of our two-seaters.

We look forward, with the annual majors completed, to our winter thermalling season. Still our most oft replaced items are the main and tail skid metal shoes, which are now vast hunks of ¼ in. plate to withstand runway landings. Thankfully, this system does not upset the trim!

We were sorry to lose Dicky and Dorothy Doidge a few weeks back and hope they can soon resume the sport. Good luck both.

Our latest visitor from Germany is Ken Newholm. We welcome anyone of the gliding world passing this remote



One of our lady members in the T-31.

way and can offer some delightful circuit bashing!

A Merry Christmas to all the followers of motorless flight. J. H. B.

EAGLE
(Detmold, Germany)

THE formation of a Service gliding club at Detmold has been made possible by the disbandment of the club at Hildesheim. We are inheriting a considerable amount of their aircraft and equipment. At the moment we have their winch and retrieve vehicle and we are eagerly awaiting the arrival of the aircraft and a brand new winch.

We will be sharing Detmold airfield with the local German civilian club, who will, we hope, provide us with aerotows. We are very grateful to Lt.-Col. Sutcliffe for permission to operate here.

Our fleet will consist of a T-21, a Grunau Baby and a Swallow. We hope to be able to add to these in the future.

Our first period of operation will be devoted to instructor training and training near solo pilots to solo standard, so as to be able to utilise the solo aircraft to their full. This will be done by Major Shephard, who is our only qualified instructor.

Any gliding types who care to visit us will be very warmly welcomed.

H. B. E. M.

HOLLAND

SINCE the Nationals a lot of cross-country flying has been done, but the results have not been very spectacular. Many Gold C and Diamond Goal attempts have been made, but only a few were successful.

The week-end of the 26th July proved easily the best and during that week-end Pim Sierks flew 314 km. from Venlo to his goal in Würzburg; J. Hartkamp, 301 km.; Ch. Bertels, 359 km. and J. P. van Geuns, 319 km., the latter gaining Dutch Gold C No. 40.

On 18th July Chris Rab was launched from Venlo in a Ka-8 for a five hour attempt. Not having a watch, he took no risks by landing prematurely and when he landed at the end of the day, he had been airborne for 10 hrs. 24 min., breaking the previous duration record in thermals of 9 hrs. 43 min.

D. W. (Nash) Zondag made the first ever 300 km. dog-leg flight from Holland. He was forced to remain within the boundaries of Belgium by some new French customs regulation, which stated that every glider pilot landing in France without prior permission would be fined £50 for illegal frontier crossing.

This situation has now been sorted out, but it made flying in southerly directions more or less impossible.

A new Dutch two-seater Goal and Return record was set up on 1st August by Aart Dekkers and Hans van der Stroom, who flew a Ka-7 from Hilversum to Keiheuvel and back, a total distance of 222 kms.

The production of the Sagittas is still in full swing. The one which was sold to New Zealand has done so well in wave conditions that a second one has been ordered, which is now on its way out there. Also a 17 metre version named Super Sagitta has been built for a Belgian customer. J. Th. v. E.

NIMBUS
(Geilenkirchen, Germany)

OWING to our press member's inability to read a calendar we were missing from these pages in the last issue. Let me hasten to assure all our many fans that we haven't been eaten by unfriendly natives or captured by gentlemen with snow on their boots.

This season has not had spectacular results, but with 10 solos, 6 C certificates, 7 Silver legs and a Gold height we are moderately happy. The club fleet is undergoing a rather drastic modification programme and next year we hope to be able to field a Ka-8, a 463, a wooden Ka-6 and the Rhineland, plus, of course, the everlasting T-21 and a pair of Grunaus.

Pete Lane, C.F.I. of a little club down near Brüggen somewhere, has brought our tin Ka-6 as his own personal bird machine and if he can reach the pedals hopes to do great things. The Nimbus club, however, have their doubts that he'll be able to see over the side.

A syndicate aircraft has appeared in the hangar. Sam St. Pierre and Len Tanner, flushed with their success in R.A.F. Germany Comps., went temporarily insane and are now the proud

possessors of a pile of dry rot, piebald hessian and a loud smell of cheese that they insist is a Minimoa. Well, as long as the woodworms hold hands nothing should fall off.

26th October sees six aspiring Silver C's off to Oerlinghausen for some ridge flying and 5 hour attempts. The duty scribe will be there as instructor in charge and having seen the site and operating methods wishes the party was going to an easy site like S*TT*N B*NK.

With the advent of winter one problem of flying discipline has solved itself. Throughout the summer we have had a lot of unbriefed formation from a Buzzard and although he is basically a sound pilot (one might even call him a natural) his initial approaches to take up station can be just a little nerve-racking.

A. M. P.

PHOENIX

(Brüggen, Germany)

SINCE our last report, the months of August, September and early October have been particularly unsatisfactory as far as soaring goes, though almost every week-end and quite a few week-day evenings have been flyable and a good deal of training has been put in.

A and B Certificates during this period have been obtained by treasurer Roger Preston, secretary Dave Butterworth, Allan Winstanley, Tony Lister and lady members Diane Bloomfield and Michéle Scarfe. C Certificate flights have been achieved by Roger Preston, Dave Butterworth and Bill Atherton and Silver C Height by Peter Treseder.

During August, a week's expedition with a Grunau was organised to the local German gliding club at Wesel airfield, which resulted in a Silver C Distance for Doug Ponting, thereby completing his Silver C. This expedition was in conjunction with the Wesel club's week's camp, so consequently when the whole of Brüggen rolled up on the Saturday night, a good Anglo-German beer session was indulged in by all.

A hill-soaring expedition with the Olympia is being organized for the very near future, in conjunction with the R.A.F. Club at Geilenkirchen, to go to the German gliding site at Oerlinghausen. For January, 1964, we are now making plans for the R.A.F. Germany wave project, to be held at Issoire.

On the instructors side, John Hardie was exported to the R.A.F.G.S.A. Centre at Bicester during September, and duly reappeared with a C instructor's category; this now gives us six full club instructors.

For the uninitiated, let me give a brief run-down on Brüggen. We are just on the Dutch-German border, and, as some goon recently worked out, exactly 500 kms. due east of Lasham (at least one pilot here this year declared that as his goal).

We have been allocated a corner of one of the hangars and rooms adjoining for aircraft, club-rooms and workshop. Our fleet consists of a Ka-4 Rhönlerche two-seater (initial training), a Grunau Baby 2B, two Grunau Baby 3's, Olympia 2B, Ka-2 ("advanced" two-seater), Skylark 3F and a syndicate Ka-6.

Two winches, a jeep, a B.M.W. (club retrieve vehicle) and other usual assorted gliding club junk complete the equipment. Not included in the latter category are C.F.I. Pete Lane and chief "glider-doctor" Mitch Mitchell.

Thermal-soaring conditions between March-October are fairly good, with cloud-bases up to 7-8,000 ft. and thermals of up to 4-5 m/sec. Aero-tows are not available, but are completely unnecessary as far as getting away is concerned, so good are the low-level thermals.

So, on that soaring note, I will just end by saying we are now preparing for winter and aiming to fly right through regardless.

L. S. H.

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