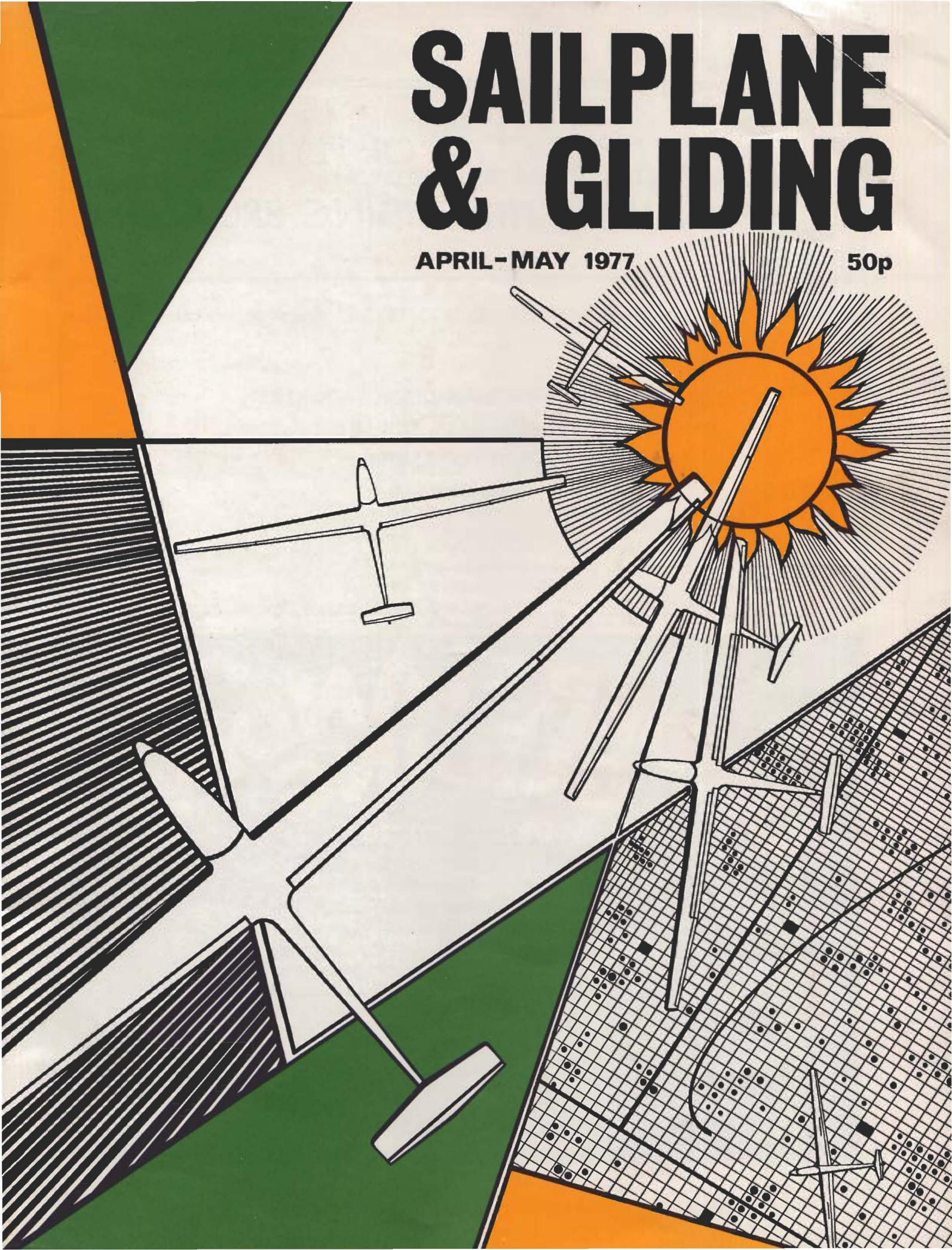
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Editor:
Gillian Bryce-Smith, 281 Queen Edith's Way, Cambridge, CB1 4NH. Tel. Cambridge 47725.

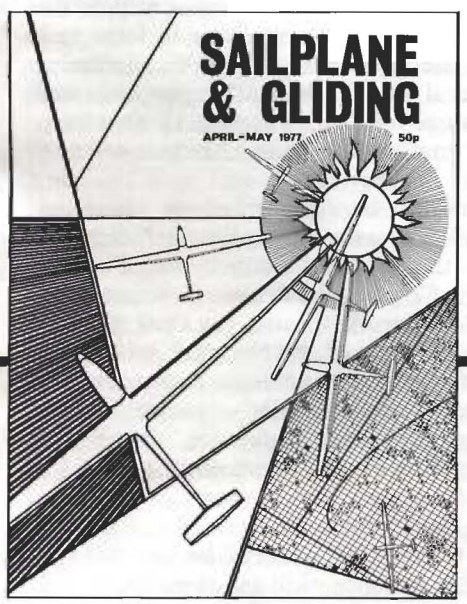
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CHAIRMAN'S REPORT, 1976

There is a tendency for chairmen of national institutions (after nearly 50 years I suppose even the BGA may now be regarded as one) to get so involved in matters of high policy they forget what really counts so far as most of their members are concerned. I make no apology therefore for starting my report with cross-country soaring achievements.

Despite the gloom-ridden national economy in 1976 the quality of life of British glider pilots, from tyros to pundits, got a real shot in the arm. In Britain we had day after day of phenomenal soaring conditions with cloud-bases up to South African levels, and in Finland we achieved what we had been seeking for more than 20 years—another British World Champion.

Our good fortune with the weather was reflected in a rash of new records (26 in all), an enormous number of badge claims (a 30% increase over last year in completed Silver Cs), a National Ladder with more pilots on its rungs than ever before, as well as a highly successful series of competitions. One spin-off from all this activity was more revenue to the BGA and this, plus a contribution from the Sports Council towards coaching and staff salaries and a close watch on our outgoings, resulted in a satisfactory excess of income over expenditure for the Association. John Large, who has been our Treasurer for the past ten years, has indicated that he wishes to retire from the post next year so this is an appropriate moment to record our thanks to him for looking after the BGA's finances so well for so long.

British pilots won six of the 12 tasks

Our national team excelled in this year's World Championships: George Lee won the Open Class beating 38 other pilots, George Burton won a bronze medal by finishing third out of 46 in the Standard Class and British pilots won no less than six of the 12 tasks. Before the event I had said that this Championships would be the last for me as Team Manager, but it was naturally very pleasing to be able to hand over to my successor, Dickie Feakes, after such a triumph. George Lee received congratulatory messages from our Patron, Prince Philip, the Prime Minister and the Minister for Sport.

Our congratulations also go in particular to Chris Garton from Lasham who set up a new UK out-and-return record (801km), breaking the old record by no less than 258km, and to Justin Wills who broke Nick Goodhart's long standing distance record when he crossed the Channel to fly 713km to Trier in Germany. It could be that we shall not have long to wait before the first 1000km glider flight is made from these islands.

At the other end of the gliding spectrum the Vintage Glider Club, led by Chris Wills, staged a very successful International Rally. Some 20 German, Swiss and British pilots flew their beautiful wooden craft on tasks that may have been modest for the plastic pundits but were real tests for those who still like to feel the wind on their cheeks as they glide it out at all of 60kt.

Despite the attractions of being airborne this year your Executive Committee found time to look at the structure of BGA Committees and up-date their terms of reference: the Flying Committee changed its name (but not its function) to Competitions and Badges, a Radio Committee was formed with John Williamson chairing it and Dee Reeves was appointed BGA Public Relations Officer. Some thoughts on overall objectives and policy guidelines for all our Committees were produced with the emphasis on retaining those freedoms we currently enjoy and rejecting any new (and even some old) regulations unless they can be seen to be manifestly desirable.

The BGA is in business to do the bidding of its members and its Committees are now encouraged to publish "green papers" on controversial matters before any final conclusions have been reached. We hope that clubs and individuals will take advantage of these opportunities to participate in decision making. An important rôle for our Coaches and Development and Technical Officers is to act as the Association's antennae. We would like to encourage club officials and pilots to discuss with them any aspect of BGA affairs. If problems cannot be resolved during a visit to a club they will be brought to the attention of the relevant Committee and acted upon. An example of this feedback in action in 1976 resulted in a new insurance scheme being negotiated by the BGA concerning liability claims that might be made against "registered" inspectors.

Flying membership of clubs during the year totalled 10276 and two new clubs joined the Association: Rattlesden and Birmingham University. But after a Department of the Environment inquiry the Inkpen Club was refused permission to continue aerotowing at their site on the grounds of noise and inconvenience to local residents. Gliding clubs are not immune from the increasing sensitivity of the general public to aircraft engine noise and the Technical Committee has commenced work on a long-term project to see what can be done to reduce aerotow noise levels.

The BGA continues to be represented on numerous national and international aviation bodies including the Royal Aero Club, the Central Council for Physical Recreation, the Sports Council, the Private Aviation Committee of the Civil Aviation Authority, the Civil Aircraft Control Advisory Committee of the National Air Traffic Services and the *Fédération Aéronautique Internationale.* The BGA also joined a newly formed organisation, the British Civil Aviation Standing Conference, set up as a pressure group to try to stem the increasing costs of the CAA which are now being passed on to users.

Some of the most important work done by the BGA is that of its Airspace Committee, Chaired for the last five years by John Ellis. His patience, skill and sheer hard work

in dealing with the continuing threat to our sport from more controlled airspace has been much appreciated.

During 1976 one of our Vice-Presidents, John Furlong, died; several clubs as well as the BGA are going to miss his wise counsel. The year saw some changes of BGA officers and representatives. Chris Simpson retired as Chairman after four years of guiding the Association's affairs so successfully and in recognition of this he was presented with the Silver Medal of the Royal Aero Club; Arthur Doughty and Lemmy Tanner took over as Chairmen of the Safety Panel and the Flying Committee; Ian Strachan now represents the BGA on the international gliding committee (CIVV)—and our thanks are due to Ann Welch who acted for us in that capacity for so many years. I should like also to thank all the BGA staff who have co-operated so fully with past and present Committees and who have helped us to achieve such a lot in 1976.

Keith Mansell, Vice-Chairman of the BGA and Chairman of the Midland Gliding Club, was awarded a Tissandier Diploma by the FAI for his outstanding contribution to gliding in the fields of practical, financial and organisational management. And BGA Diplomas were awarded to Leslie Allard, Jack Minshall and Jock Wishart for services to British gliding. Luckily for us all these award winners are only the tip of an iceberg. Gliding in this country will carry on being a story of success for as long as so many of those who find delight in soaring continue to give back to the sport at least as much as they take from it.

Roger Barrett, *Chairman*

REFLECTIONS ON 1976

The British Gliding Association's AGM was held at the Long Mynd Hotel, Church Stretton, Salop, on March 12. It formed part of the programme during the BGA Weekend, a new venture which will be reported on in the next issue. The following are brief extracts from some of the Annual Reports for 1976.

The 100 instructors presented for training by their CFIs were not all of the required standard for assistant category at the end of the course. "Indeed, a few gave the impression of having had no pre-course preparation in the air or on the ground," Don Spottiswood, Chairman of the Instructors' Committee, commented:

"It is most important the CFIs and senior club instructors should fly regularly with potential instructors before they commence formal training and that they should be fully conversant with the BGA syllabus of ground instruction," he stressed.

With the approval of the Executive Committee, this Committee proposes some changes to the experience level requirements for the assistant and full ratings. For many years the minimum experience requirement before a pupil could train as an instructor has been 35hrs P1 in gliders, 100 launches and a Bronze C or higher certificate. 'Although it is rare for anyone to be sent on a BGA instructors' course with these minimum qualifications, candidates with barely adequate experience are more often sent for training.

In recent years the average experience of candidates has gradually risen so that typically they now have a total of 80 or 90hrs and about 75% will have at least a Silver C. Candidates substantially below this level almost always have trouble coping with the course.

Therefore the Instructors' Committee have recommended that from January 1, 1978, candidates should have at least 75hrs P1, a Silver C and at least two years' gliding experience. But candidates with fewer qualifications can be specially recommended by their CFI.

The Committee also proposes to raise the requirements for full rating to Silver C, 150hrs P1 on gliders and the normal rating test with a member of the Instructors' Panel.

There were 21 courses during the year and the Committee carried out 45 rating tests, up grading instructors from assistant category to full category.

There is a need to allow assistant gliding instructors who hold a PPL to instruct gliding exercises in the motor glider and the Committee proposes to arrange regional courses to convert assistant instructors to motor gliders. The scheme will be evaluated during the next year.

Few airspace changes

Little new restricted airspace. Although the year has been busy on the airspace front, John Ellis, retiring Chairman of the Airspace Committee, reported that surprisingly little new restricted airspace has actually been introduced. The main innovations have been the Aberdeen and Newcastle Special Rules Airspace, discussed the previous year.

"At Newcastle, the Northumbria Club has inevitablly suffered some restriction to their operations, but the overall view must be that the introductions have caused us few problems," the Chairman reported.

"The Edingburgh SRA was altered, due to the opening of a new runway, and quite a few changes have taken place in the Airway structure. The most contentious change being the fixing of the "temporary" fuel saving routes which must be regarded as a political move rather than one directly connected with Safety (or even fuel saving to any great extent).

"These obviously make wave flying more difficult in their vicinity but, due to the high base levels, our

arguments came to naught. Yet again, a reminder that up-to-date maps are essential if inadvertent infringements are to be avoided," he added.

Most of the period has been taken up with discussions about changes which may or may not take place during the coming year. These are listed, in no particular order, by the Chairman as follows:

1) Changes to Leeds SRA.
2) Changes to East Midlands SRA and base levels of Amber One and Amber One East.
3) Changes to Bournemouth/Southampton SRA.
4) Review of Manchester TMA.
5) Review of London TMA. North and South.
6) Increases in Airway width near Lasham.
7) Considerations of airspace requirements in Scotland.
8) Change of radio—not now likely to directly affect gliding.
9) Regulation of aerodrome traffic and provision of air traffic services.
10) Changes in "Low Flying" Rules.
11) Thames Valley study—resuscitated "Cotswold" area study mentioned in a previous report.
12) Possibly, review of size and status of aerodrome traffic zones.

Higher accident rate. The increased flying activity during 1976 was regrettably equated with a greater number of accidents, the overall accident rate of 0.40 per 1000 launches being the worst since 1973. Of the 141 accidents 82 were minor and 59 caused substantial damage. Thirty people were injured; four fatally, eight seriously and 16 suffered minor injury.

The Chairman of the Safety Panel, Arthur Doughty, reported: "This is the highest number of injury accidents since 1973 and the fatal and the majority of serious injury accidents were attributed to inadvertent stalling and spinning. In about half of the total accidents the P1 experience of the pilot was less than 100hrs."

This is a 31.8% increase over 1975 (107) whereas the launch rate increased by ony 10.1% and hours flown by 17.5%

Numerous records approved. The Flying (Competitions and Badges) Committee, under their Chairman, Lemmy Tanner, found that reports from Contest Organisers gave them a great deal to work on, particularly with respect to contest rules and handicapping. Numerous records were approved and members spent a great deal of time scrutinising marginal badge claims. A significant number of claims were rejected because of faulty processing by 00s (See Lemmy's article on p61).

The Development Committee (Chairman Joan Cloke) reported that amongst the problems clubs have brought to them during the year are sites, planning permission, rating evaluation, rules and constitutions, as well as relationships with the Ministry of Defence.

BGA registrations were issued to 110 new or secondhand gliders, compared with 136 in 1975, the Technical Committee Chairman, Roy Tetlow, reported. The list of paid-up registered inspectors totalled 264, of which 65 held senior ratings, and 45 new inspectors were appointed during the year.

Motor glider engine repairs and overhauls are being undertaken within the BGA with massive savings to club funds. The Committee's efforts on behalf of clubs to achieve more cost-effective airworthiness are beginning to pay off, especially with motor gliders and tugs. The BGA have established Test Groups at Lasham, Bedford/Cranfield, Cambridge, Bristol, in Yorkshire and at Dunstable.

Philip Wills Reserve Fund A total of £8300 has been loaned at 4% to gliding clubs, of which £3600 has been repaid, leaving £4700 outstanding. The cash in hand stands at £4668 of which £2000 is on offer, leaving a balance of £2668 to meet future requests for a loan. The fund started in 1970 with £6000, £8300 has been loaned, yet the total value of the fund, including repayments due, stands at £9368.

Clubs are reminded that loans from this fund are available for acquiring land, improving or developing the land, or buildings on the land.

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BILL MEYER



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Well, that's more or less how it was with Libby and me.

We had met in passing, here and there, over quite a period, but had never been formally introduced. I was fascinated by her faerie-like beauty of course, but beauty may only be skin deep, and I had long since decided that she was not the girl for me, and had not sought to come to a closer relationship.

Suddenly, however, the Immutable Forces set to work.

A non-flying day and suddenly Libby was in the conversation

How else could it be that I should happen to be working away quietly in the workshop at Aboyne on a non-flying day, and that Pete should happen to drop by on his way from somewhere to somewhere-else, and that we should get to chatting about one thing and another—and suddenly Libby was in the conversation. And I was all at once very interested in what I was hearing about that girl.

And I suddenly had this feeling that I was being swept along almost in spite of myself—you know that "Help—I don't want to risk breaking my heart again, but _____" feeling of willing reluctance you get when the old hormones start to work? But, like that feeling you have as the Big Dipper goes over the top of the first hump, there was no apparent way to stop the process.

Libby was living in the south of England and I was working in the north of Scotland; there was no way in which an introduction could be arranged in the near future. But that didn't seem to matter anymore, the marriage arrangements just went on regardless.

Within three weeks all was arranged, and I was driving south for the introduction—and for the ceremony!

High Wycombe is an awful long way from the Cromarty Firth, and I was not at my brightest when I arrived at the appointed venue after only three hours sleep up Glasgow way.

Formal introductions were duly made by Rex, the ceremony followed immediately, and within two hours we were on the road together heading for Scotland and the honeymoon.

I have to admit that I had entered into the whole business rather in the way of a marriage of convenience, but having actually gone through with the ceremony I was now really hooked, and looking forward to starting life together. I mean, only a heart of stone could resist.

And so we drove north together, through gales and storms and blinding rain. And on the way we got to know each other a little, and learnt to trust each other somewhat too.

But I had to leave my love by the Moray shore and head back still further north to work, with the union as yet unconsummated.

However, it seems that a marriage such as this can stand treatment like that, and the following weekend we were together at last, and ready to really start our life together.

I have to admit to real anxiety at this stage; I was not afraid for myself of course, but to harm this beautiful and delicate creature would be an unforgivable sin, and yet once one has taken all precautions, with the most loving care, there comes a moment of truth—a time when one must move from one state of being to another state of being.

An so my pulse raced as we snuggled together in the grass where the Spey runs into the Firth, and I sought out all the usual portents— wind strength and direction? Sky clear? All clear ahead?

And I raised my left index finger, and said, "Take-up Slack"—

* * *

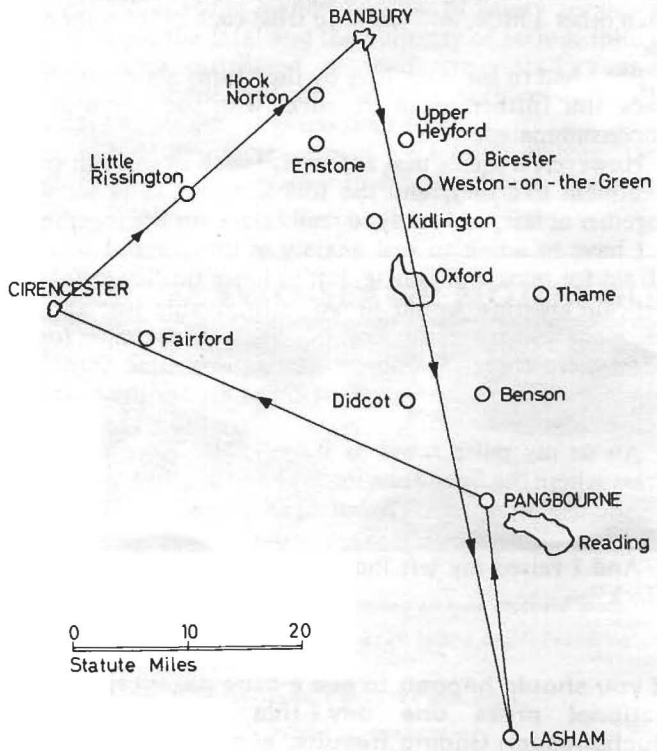
If you should happen to see a little paragraph in the national press one day this summer headed Suchandsuch Gliding Results, and if you should see there, well down the list, "No. 380, Meyer, Std Libelle"—then you will know that my Libby and I are getting on just fine—another arranged marriage is working out.

A DAY AT THE 1976 NATIONALS

In the last issue of S&G Mike Bird analysed Day 2 at Euroglide (see p10) and, before the next crop of competitions, JANE RANDLE has given similar attention to the 1976 Nationals. It may well have been a worthwhile exercise for the benefit of future competitors and certainly makes interesting reading.

This somewhat belated report and detailed analysis of a day at the 1976 National Gliding Championships comes from an idea that discussion of soaring techniques could fruitfully result if a particular day was dissected in detail. Then pilots, who otherwise might not have the opportunity, could compare notes with Nationals level pilots and especially if they had flown on that day.

An ideal day to analyse would have been at a weekend, then there would be more likelihood of many more pilots flying, but unfortunately, none of the weekend days or the Bank Holiday produced good soaring conditions. So I chose Day 3, Monday, May 24, 1976, to analyse, and in particular the Open Class task. This was because of a quirk of the weather which only affected the Open Class. The Standard Class cruised round their 180km triangle through Devizes Castle and Didcot Railway Station. The Open Class were set a quadrilateral, 258km task from Lasham, Pangbourne, Cirencester, Banbury and back.



After two weak and frustrating days, the sun was shining, cumulus popping and the pilots were exuberant. Later, for those of us back at Lasham, an interesting pattern was emerging on the map board. The pins were accumulating round the area of the third turning point and nowhere else.

The Standard Class began to finish, all but three of them completing the course with Simon Redman, the winner, clocking a faster speed than the Open Class winner. From the Open Class came pathetic bleating of dour struggle and landings. They had raced round two turning points and towards the north-east to Banbury. Between Little Rissington and Chipping Norton, the first danger signs appeared in reduced cloudbase and deterioration of the already poor visibility. "Tiptoe" was a favourite term of the day amongst those who completed the task, of those who did not, the cry was "If only I had slowed down, had more height". They mentioned a local gale of howling proportions which they had fought against and lost. The dead area extended round as far as Oxford. Ted Lysakowski got low near Weston-on-the-Green, found some weak lift, but mostly if you got low you had had it. Mike Garrod was with Mike Randle in this area but only one Mike got away and wasn't the Met Man. In fact, poor Mike Garrod was enraged to hear soon after he had landed, Mike Randle call that he had climbed to 6000ft. Then gliding always was a stirring game.

The following are the individual accounts from pilots who completed the course:

JOHN DELAFIELD (81.5km/h) noticed that the clouds were short-lived so he decided to stay near cloudbase. At about Hook Norton, he throttled back because conditions looked bad ahead. He got as low as 2000ft occasionally but went round Banbury at 3000ft. At Benson he found a very strong but narrow thermal and had no trouble after that.

GEORGE LEE (67.3km/h) noticed short-lived clouds and kept moving. He found conditions good from Pangbourne to Cirencester and pushed on. He went round Banbury at 2000ft agl. He climbed to about 7—8000ft near Upper Heyford and got into the better conditions.

JOHN GLOSSOP (66.4km/h) recognised deteriorating conditions at Little Rissington and crept round the Banbury turning point. He reached Benson at 15:45hrs and climbed to 6400ft in very strong lift.

MIKE RANDLE (62.1km/h) slowed down at Hook Norton. He became suspicious when he found the Nimbus 66 hanging on to weak lift near cloudbase. He rounded Banbury at 3000ft and left the area conserving height but not stopping around. He climbed to 5000ft near Enstone but lost much of this flying into the strong wind. He

climbed to 6000ft north of Oxford and found the lift at Benson and crept home.

ALF WARMINGER (56.7km/h) went to the north-west of Banbury to try to keep out of the bad conditions. He was there with Mike Pope. He went round Banbury at 4000ft anf crept south to climb to 5500ft at Kidlington.

TED LYSAKOWSKI (54.6km/h) did not find conditions good to begin with. He had a negative start and it took some time before he could re-start and by then it was 2pm. So he was tending to caution anyway. From 3500ft at Fairford he noticed deteriorating visibility. He rounded Banbury at 2500ft agl. He noticed that the wind was strong and from the east. There was cirro-stratus. He went for a patch of sun at Bicester, nothing; at Weston-on-the-Green the wind seemed to drop but he had to drop his water and picked up a weak thermal when low which enabled him to reach another patch of sun at Didcot where the air seemed buoyant and he found 6kt. There seemed to be a series of clouds at the south-east which bent away southwards. He was in this area at 17:00hrs.

MIKE CARLTON and CON GREAVES (51.3km/h) unfortunately I was not able to discuss the day with these two pilots.

ANNE BURNS (50.3km/h) went all right to Little Rissington and then left course to approach Banbury from the south. Conditions were bad and she went round the turning point at 2500—3000ft. From Banbury she went south-west advancing cautiously but careful not to get low. She climbed to 6000ft at Oxford.

MIKE BIRD (47.9km/h) noticed the bad visibility when approaching area of Banbury and was particularly careful about navigation because he did not want the additional demoralisation of being lost to add to the weak soaring conditions. When down to 1000ft near Thame he noticed that his drift was from the east. At Benson he drifted west to Didcot. He suggested that there was a 50° difference in the wind direction in that small zone. At 17:45hrs he climbed to 6000ft asl at Wallingford.

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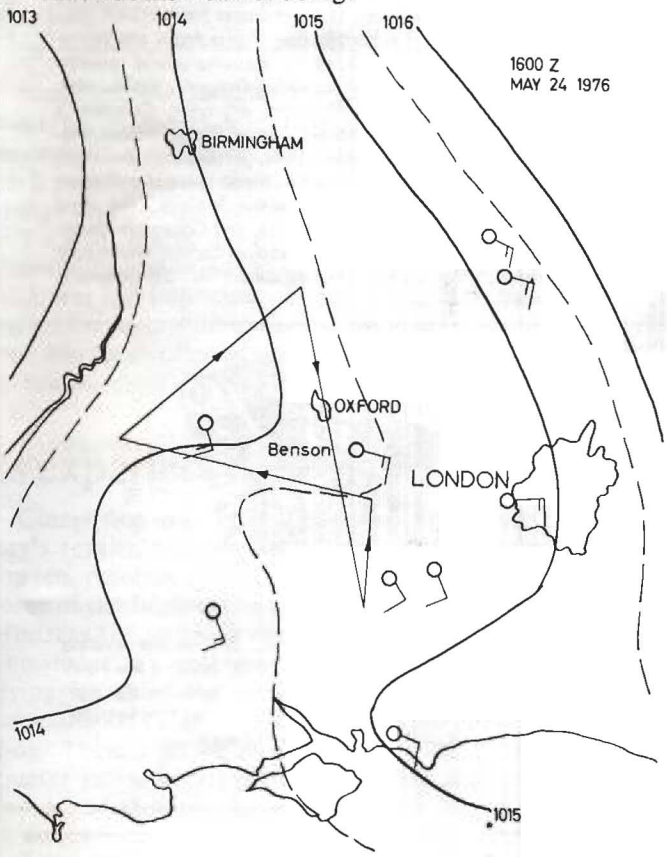
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More than one way to solve a problem

All these accounts, short as they are, show an individual approach. There may be a basic solution, but not only one way to solve a problem.

What was the weather doing?



Weather reports from stations in the area of the course give a fairly uniform picture over the time of the task. The cloud reported was $^{4}/_{8}$ to $^{5}/_{8}$ of cumulus and strato-cumulus with up to $^{7}/_{8}$ of medium level cloud. Examination of all the details plotted on the available Met charts throws no light on the localised patch of poor conditions in the Banbury area or the convergence zone phenomenon reported near Benson. (Many pilots thought the damp air at Banbury was a patch of sea air which drifted up the Thames Valley and that the strong and narrow lift to the south was a convergence zone.) What does show on charts plotted during the afternoon, is a striking curvature of the isobars south of Oxford. Measurements of the geostrophic wind from the 1440Zhrs chart give around 30kt from 160° over the northern part of the course. This would go a long way to explain why those who struggled past Oxford tended to arrive at Lasham with unnecessary height.

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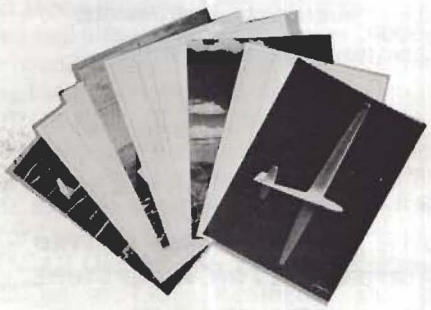
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Pilot & Daily Position		Speed/Distance	Points	Aircraft	Comp No.	Final Position
1	Delafield, J.	81.5km/h	1000	Nimbus 2	66	1
2	Lee, D.G.	67.3km/h	909	ASW-17	26	2
3	Glossop, J.D.J.	66.4km/h	904	Kestrel 19	29	4
4	Randle, M.	62.1km/h	877	Kestrel 20	79	7
5	Warminger, A.H.	56.7km/h	842	Kestrel 19	44	17
6	Lysakowski, E.R.	54.6km/h	829	Nimbus 2	120	3
7	Carlton, M.R., Greaves, C.	51.3km/h	707*	Calif A-21	119	16
8	Anne Burns	50.3km/h	801	Nimbus 2	19	9
9	Bird, M.	47.9km/h	786	Kestrel 19	800	10
10	Garton, C.	195km	528	Kestrel 19	402	8
11	Garrod, M.P.	181km	480	Jantar 19	609	13
12=	Pozerskis, P.	180km	474	ASW-17	260	15
12=	Day, C.G.	180km	474	Jantar 19	70	18
14	Pope, M.H.B.	177km	464	Kestrel 19	46	25
15	Spreckley, B.J.	176km	463	Kestrel 19	590	5
16	Tull, V.F.G.	168km	436	Kestrel 19	415	21
17=	King, P.A.	165km	425	Diamant 18	530	19
17=	Lilburn, D.W.	165km	425	Kestrel 19	173	11
19	Robertson, D.J.	163km	418	Kestrel 19	85	14
20	Roberts, D. G.	162km	414	Kestrel 19	626	12
21	Camp, G.W.G.	160km	408	Kestrel 19	268	6
22	Dimock, H.R.	158km	402	Nimbus 2	514	24
23	Foot, R.A.	155km	392	Nimbus 2	90	22
24	Docherty, T.P.	149km	369	Kestrel 19	727	23
25	Mason, E.	147km	364	Kestrel 19	53	20
26	Cousins, R.	143km	351	Kestrel 19	102	26

Study of the tabulated results may show interesting patterns. Some people find it fascinating to look for answers in a collection of figures. I included the table for such people, but I must admit that I noticed one or two things which could be significant.

To what extent did pure skill play in overcoming these demanding conditions? I say skill, because on this occasion luck was less important. The patch of bad conditions prevailed for several hours for everyone to conquer. It was not just one patch of good weather which a few pilots managed to utilise.

Is experience the answer?

Comparing the final Championship results with the day's results, out of nine finishers, seven finished in the top ten. Another thing I noticed was the length of time that some of the finishers had been flying. Twenty years was an arbitrary figure which came to mind and to the best of my knowledge, at least six of the nine finishers have been flying for that long or longer. Of the non-finishers, for comparison, I know of only four that have been flying that long. There may be more but even so, there is a much greater ratio. Is it significant? That's the question. You could say that of the finishers, six had double figure numbers on their sailplanes as compared with five of the non-finishers—a not dissimilar ratio!

One outstanding statistic from this table is the 14.2km/h margin that John Delafield had over George Lee, and on such a day. It gave him 91 points more than George. At the end of the Competition, the winning margin was 117 points.

What makes this day so interesting is that it was a microcosm of the sort of conditions found in World Championships. Then, because of the sheer size of the tasks set, there are always patches of poor conditions. It is the ability to change gear from good, to poor, to good, that sorts the Champions from the rest. Of the finishers, they changed gear for the poor conditions, for one reason or another they recognised the deterioration and were able to keep their options open. None, however, changed gear back to good conditions but this was probably because the climb at Benson put them on final glide, plus a bit to spare, so they finished high. After that fright, who can blame them?

PIO's AND GIP's

KENNETH HYNES

Kenneth, who has a Silver C and Diamond goal, started gliding at Lasham in 1974. He has a degree in pure mathematics and a long standing interest in cybernetics, hence the involvement with aircraft control systems. His problem with gliding is his size—at 6ft 5½in there are cockpit restrictions!

Karl Striedieck, in an ASW-17, flew a 1616km out-and-return along the Allegheny and Appalachian mountain ranges in May of last year, (see S&G, August 1976, p178). He describes the flight in the October 1976 issue of *Soaring* and at one point says:

"By this time my hands were aching. I had been continuously squeezing the stick to avoid setting off PIO's—pilot induced oscillations—in the bumps. As a matter of fact, I flew with both hands on the stick and arms locked against my legs. The geometry of the ASW-17 controls is such that a positive gust forces the stick back, adding yet more *g*. I couldn't fly much over 100kt due to the sharp, chattering, tortured air currents. Each time I tried to sneak up to 120kt I was rewarded with 3 *g* to the head."

Such control characteristics can not be desirable and I am sure they are simply bad design. In this case, by the way, "PIO" is a misnomer; the pilot did not induce anything, he could only try to prevent the control linkage from doing so.

In S&G, August 1976, p173, ("The Instability of T-tail Gliders"), Humphry Dimock talked about the "hands off" instability of the Diamant, Kestrel 17, and Nimbus that makes them ". . . rear up like a young horse suddenly, or else go into a dive." This description matches Striedieck's. A little positive *g* induces more positive *g* which then produces behaviour like a startled horse.

Impressed by its nastiness

Last summer I flew the Pilatus B-4 quite extensively and was impressed by the nastiness of its handling. The problem of the B-4 is precisely opposite to that of the ASW-17. That is, a positive gust tends to put the nose down. Progressive increase of *g* produces a progressive increase of forward stick pressure, tending to reduce the *g* loading. This gives unpleasant handling.

Perturbations induced by the control linkage, like the above examples, are the result of the masses comprising the control linkage being balanced against a spring or the spring equivalent of the airflow past the elevator. The force produced by these masses tending to move the elevator is proportional to the accelerations they are experiencing. If the *g* loading changes this force changes, but the spring effect remains constant. The resultant force tends to move the stick and elevator against the pilot's resistance. For this reason I refer to the resultant flight phenomena as GIP's (*g* induced perturbations) rather than PIO's. GIP's can only be avoided by mass balancing the elevator linkage masses or constraining them to move at right angles to the acceleration.

This last point is significant because the pilot's arm is a variable mass in the system which can not be balanced. We can allow for it by making the pilot's hand move horizontally at an average air speed. Because of the effect of the arm's own linkage on the system we can not achieve perfection, but if your sailplane flaps its elevator as you push it to the launch point it will produce GIP's in rough air.

PIO's proper result from an intended pilot control action which typically overshoots the intended objective. Again the incorrectly calculated action to correct that error produces a further error and so on—an oscillation and a genuine PIO. Early attempts at aerotow typify this. The beginner takes corrective action based on the input of position error, regardless of motion or acceleration. Only as he slides past the mid-position does he start to apply correction and his motion carries him to another extreme. No matter how nicely the glider flies, the novice pilot is likely to induce this kind of oscillation.

GIP's are feedback phenomena. The system recognises variations in *g* loading and acts to change the *g* loading. By definition a positive feedback system acts to increase a variation and a negative feedback system acts to decrease a variation. The control linkage of a sailplane with positive *g* feedback tries to increase any variation from 1*g* that it experiences. This might be resisted by aerodynamic forces so that the effect is only exhibited within certain ranges of speed and *g* loading. This is the ASW-17 situation. A negative *g* feedback system tries to reduce *g* variations. This is the B-4 situation. Zero *g* feedback pays no attention to *g*.

It seems obvious that positive *g* feedback is a bad thing but at first sight negative *g* feedback seems almost beneficial. This viewpoint neglects the delay inherent in the system between the detection of a variation and reaching a corrective condition and the characteristic of the force available for control operation. It also neglects the nature of the damping available to the system. To change the *g* loading from one level to another we must change the attitude. We must swing the tail up or down. To initiate this movement we must use energy to change the angular momentum. Ideally, half way to our goal we must apply a counter force to destroy that angular momentum so that the swing comes to a stop at precisely the right point. This is just the same situation as centring on aerotow. If we are out of position to the left we start banking to the right; we reach enough bank and start to take it off at such a rate that *half way back to the centre the wings are level* as sideways momentum carries us towards the centre. We keep the roll going, now banking to the left to destroy our rightwards momentum; once again we reach enough bank and start to take it off again so that we reach the centre as the wings come level with ailerons level just as the last dribble of momentum is destroyed.

We don't do it with such terrible symmetry—we make

*George Burton says that the handling of the Kestrel 17 differs from the 19. Both the Kestrel 19 and the Vega have fully mass-balanced elevator systems. As we will see, this solves the problem.

corrections as we go—but that is the plan we work to without even realising it. As pilots we can anticipate what is coming and we can put energy into the control system at an appropriate time. A negative *g* feedback system does not have this advantage; it can detect *g* variation and feed correcting energy into the control system which is at all times proportional to the *g* variation. (Once the tail starts swinging, all the system's components will not experience the same *g* but I will neglect that.) The system is powering inwards until it reaches the no-variation point. It has no means of turning over half way and destroying angular momentum. It has precisely the characteristics that cause the novice pilot to produce PIO's.

Aerodynamic stability saves extremes

It is saved from the extremes of its excess by the aerodynamic stability of the aircraft. If the tail of the aircraft is swinging downwards, we can think of the airflow as coming up towards it. In other words the tailplane has an increased angle of incidence proportional to the rate of swing which acts against the direction of swing, whether the swing is moving towards or away from the centre. With an upswinging tail the reverse is obviously the case. High rates of oscillation are damped more effectively than low rates, but the total system can only produce our control ideal if the stabilising energy absorption in the swing from extreme to centre can be made equal to the energy input from the *g* operated control deflections. I do not think the analysis is worth the effort.

There is an even greater indictment of negative *g* feedback. It acts too slowly to reduce the airframe stress when passing through a sharp edged gust, but in some cases the "correcting action" could arrive in nice time to add to the reverse whip of the wings as the gust load ends. It does not act in time against the pilot snatching the stick if he sneezes or panics. It does act against considered pilot control actions with no benefit at all and produces unpleasant control inputs in turbulence which work against accurate flying and nice handling. It even acts counter to aerodynamic stability. Why are designs still produced with this undesirable system? Only by accident and insufficient analysis it would seem.

All that remains is zero *g* feedback. Gusts may bounce such an aircraft around, but they do not change its attitude or speed. The only feedback that the pilot feels at the stick is aerodynamic. Aerodynamic trim forces will still act to bring the aircraft to a steady glide, provided that it is aerodynamically stable in roll. What more could we want? And the design problem is facile.

One closing thought. When you were being taught to co-ordinate stick and rudder, someone will have told you why it is important to get it right at the first movement. Any slip or skid as you start your turn wastes energy which is gone forever. A GIP in a thermal changes your attitude, this changes your speed, repositions your circle and is not likely to improve your lift. You waste time and energy with control actions and re-centring. No matter how good you are, or how fast you react, you have lost some of your energy and time forever. Apart from that, zero *g* feedback is much nicer to fly, less tiring and leaves you more time and psychic energy to make decisions. All this gets you farther and faster.

THE SOARANOLOGIST BIRD

A LADY BIRD

I should like to introduce you to a particular species of rare bird. Soaranologist is its proper name. It is a gregarious bird which has not been studied often and some of its habits have *never* been recorded on paper.

The fledgling, still in the early stages of development, is content with launching itself as frequently as possible into the air and as quickly returning to the ground. Flapping is often observed.

When the parent bird declares the fledgling proficient enough for a trip on his own, the bird celebrates by flying large numbers of high speed short circuits, only occasionally returning to the parent bird for advice. (Some not at all if it can be avoided.)

The day will come when our bird, no longer content with a view of home, will want to fly away and the parents' blessing is duly given. But very often he is seen overhead for many months to come, waiting for just the right psychological moment. Or he will disappear only to return again within minutes. Some fly round and round and round and eventually return to the ground declaring that the conditions were not really suitable for a first excursion. (Parents tend not to worry knowing that he will outgrow the condition!)

Throws himself into the sky

A really proficient bird who has left home and can stay up all day quite happily, also has his little idiosyncrasies. He is often to be found gazing out of windows at the sky, continuously monitoring the weather reports. On any day which could possibly prove good (less experienced birds watch the sky too but are less discriminating) he makes frantic preparation and, declaring his intent, throws himself into the sky and disappears at high speed. When many miles away he falls out of the sky, and is brought home again – undeterred, head in the sky waiting for the next "good day".

The species Soaranologist has many family branches; there are temperate birds, who are never seen during the colder months, finding that they need to hibernate by the fire and only return to fly when the days are long and warm; there are chattering birds who will advise you loud and long although they have yet to stray from home and there are the strutting birds, sometimes loud and raucous. It is impossible to ignore these and unwise too. Fortunately there are not many of them.

Many of these species, like the Magpie, are fascinated by the glint of Gold or Diamonds and go to great lengths in their quest for them.

The hen of this particular species is quite rare. The reason is hard to determine because the mating habits are as yet an unsolved mystery, while the species continues to increase.

However, this rare bird should be forewarned! Ornithologists determined to know more about this bird and his mating habits are all set to make a study this season and who knows the mystery might be solved! ?

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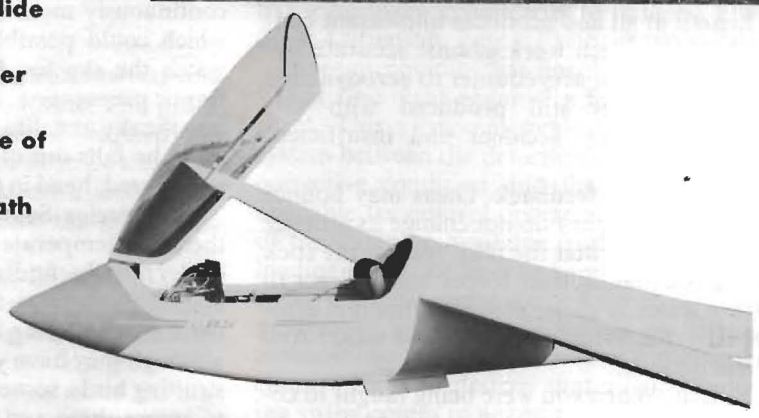
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IF IT'S A BADGE YOU ARE AFTER . . .

L. E. N. TANNER *(Chairman of the BGA Flying Committee)*

1976 will be a memorable year for gliding in the UK. We had super weather, the World Champion, a rash of records and more badge flights than ever. Many pilots will remember their successful flights but unfortunately some will have memories of failure, not as a result of weather but because of a failure to comply with FAI requirements.

All badge flight claims are scrutinised by someone, and ultimately, in cases of doubt, by the Flying Committee (Competitions & Badges). In 1976 it was evident that a significant number of pilots had made insufficient preparation for their flights and that some Official Observers had put signatures to claims which were not substantiated by the evidence.

The following list is a sample of some of the reasons for which the Committee has rejected claims. No pre-flight declaration (written or photograph), photographs of incorrect turning points, photographs outside the photo zone, unrecognisable photographs and no low-point for height claims. Most of these errors could have been avoided by a little forethought and to help this year's badge hunters, here are a few tips for both Observers and pilots.

Official Observers. Every OO should by now have a copy of the Sporting Code so please make an effort to read the relevant rules regarding badge flights. When you are asked by a pilot to witness his declaration or sign and seal his barograph, take the trouble to find out what he is hoping to do and advise him of the requirements for the flight. If later you are asked to sign a claim form, make sure that the pilot's name is on the form and that you actually check that the evidence for which you are signing is correct. Should you be in any doubt, either get the pilot to produce better evidence, *eg* prints of poor negatives, or write a note on the claim form so that the claim can receive special attention at the BGA.

Pilots. Before you get near your glider, preferably at least a day before, get out some maps and decide on a few routes. Select your turning points on the basis that you are both a poor navigator and photographer. You should not, in general, choose airfields, centres of towns or villages or race courses. These have all been major sources of error and are often difficult to orientate.

Good turning point features are motorway junctions, rail/river crossings or distinct junctions of any combination of road, rail, river or canal. Many such features are unique and make orientation at the turning point easy. Having made a decision on these points draw in the tracks *and the observation zone* on your map.

Next the declaration for a goal flight. Your declaration must be accurate in terms of start point, turning points, goal, date and *time* of declaration. You must sign it and have it witnessed by an OO. At this stage you might as well have your barograph sealed and take your first photograph. Switch the barograph on when you install it in the glider.

Now, a most important point and one which is often overlooked. The tug pilot must be briefed, either by you or by someone who knows what he is doing, to tow you to your start point at the height required. In most cases this will have to be *overhead* your base as the start point and goal for closed circuits must be the same. One exception to this is if you have organised a start line or an OO to observe you overhead your start point. You will need a tug pilot's certificate of release, so make sure you know who he is. This applies to height claims too.

If you are hoping for a height gain make sure that you have a low-point on your barograph trace. This can be achieved by diving about 200–300ft and pulling up gently. Little height is lost and the trace should be notched sufficiently.

If you get as far as the first turning point, identify it positively and check the observation zone for your orientation. If you can find your camera, take your photographs with care. Either put the lens close to a clear piece of canopy perspex or through the DV panel. If you use the viewfinder to look through the DV panel or the clear perspex you will probably get a pretty picture of opaque DV panel surround or the cockpit placards. So, be careful and try not to shake with fright when you press the shutter release. After landing photograph your glider, preferably with an OO in the picture. Get the OO to witness your barograph trace and landing certificate.

Your film should be developed and left un-cut. This latter is difficult to achieve as photographers live in the dark and therefore don't know much about gliding. (Do not despair about this.) When you get your film back, check the pictures and if you have any doubt about the clarity of the negatives get some en-prints made before you show the evidence to an OO. Then, fill up the claim form, enclose all the evidence and post it off. Oh! And don't forget the money.

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FOLLOW MY LEADER

RHODA PARTRIDGE

Over the last year or two there have been angry mutterings from lady pilots about the immoral way their inept sisters have been led round badge flights in a detailed "left hand down a bit" sort of way. I must admit at once that I was immorally led round my first 300km out-and-return by a scrumptious Aussie pilot,thereby gaining the world's most despised Diamond goal. Follow my Leader, in Australia for heaven's sake. I have heard no angry mutterings from gentlemen pilots. They regard it as a law of nature. Leading women around.

" . . . sudden yell in your ear . . . "

Seems to me there are three things to consider. Jamming the radio. Claiming badges and training. I hate the radio anyway. All those boring chats about Charlie at the launchpoint wanting a flight and the sudden yell in your ear when you've forgotten you've left the beastly thing on. I hate that ridiculous Fox Trot alphabet and I don't like the way women's voices sound. Personally I daren't speak on it because I've this awful conviction that I sound like a cross between the Queen (God bless her) and Mrs Thatcher (and God bless her too—why not?). For dedicated users of radio a "Follow my Leader" flight must be infuriating. Could careful pre-flight briefing cut radio use down to accepatable levels? My scrumptious Aussie pilot and I talk much. A short rueful exchange when we both looked like falling down at the TP and an often repeated sentence from Noel "Get your nose down", when, eyes bulging with fear, I was pointing straight at the ground.

Badges. I eagerly claimed mine because I was quite sure I'd never get it again. (Actually I've done it four times on my own since, thereby making an honest woman of myself.) I'm inclined to think one shouldn't claim. But where do you draw the line? Competition pilots go round in a group and get a lot of help. And what about wave flights? "Over here, Bob, I've got 6 up". Should there perhaps be a special badge for Leaders? Heart shaped, with a ruby for each successful flight?

Training. Follow my Leader is a brilliant way to learn what the sky is up to. How to use it and the best way to handle your glider. I did my very first fast dolphin on that Australian flight and it was a revelation. It also convinces one that a long flight isn't really so impossible. Gives one the courage to have a go. It's very important that the Leader should know what he's doing. There is the danger that he might overestimate the strength and competence of his Follower and he may have the nasty experience of looking down on her, broken in a field. It's not something just any old body should take on. May we have Bill Scull's comments? Meanwhile, the best of British to all Leaders and Followers in 1977.

Anyone like to lead me round a 500 . . .?

Bill Scull comments:

It's not my place to reply Rhoda but since you've asked there are several ways of dealing with these circumstances. It can be discouraged by the leader who can suggest that to claim isn't fair, or better by choosing a task a bit short of 300km. Radio discipline leaves alot to be desired at the best of times, but at least it's being put to some positive gliding purpose on the escorted cross-country—conciseness is essential though when glider-to-glider calls cut out so many other transmissions.

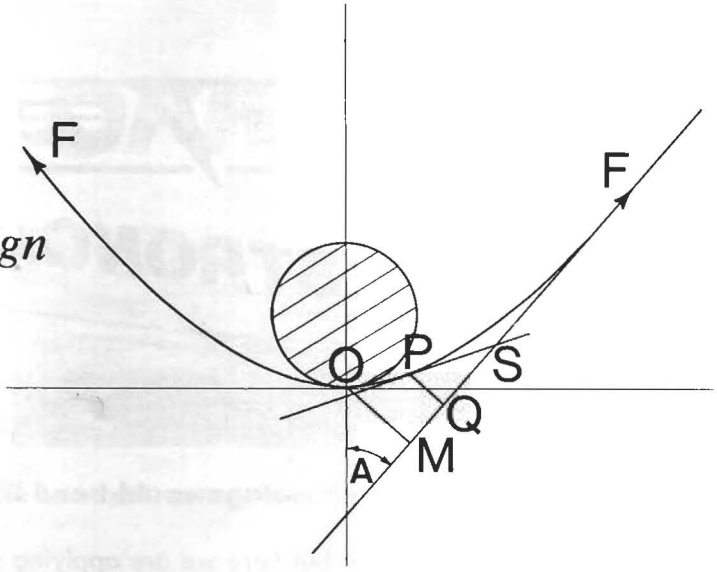
However, the benefits to underconfident cross-country pilots should not be forgotten: I've seen a pilot euphoric after 200km dog leg with (probably) his hang-ups overcome. We've talked about advanced training for years and now something is being done let's not get too concerned about the teething troubles, be they moral or practical—I'm sure they will all be sorted out.

FORTHCOMING EVENTS

MAY 2—15: Inter-Services, Regionals, RAF Hatton.
MAY 12—22: Swiss Nationals, Amlikon
MAY 14—21: Hahnweide International Contest, Kirchheim/Teck, W. Germany.
MAY 28—JUNE 6: German Nationals, Paderborn.
MAY 28—JUNE 7: Open Standard/Sport Class Nationals, Dunstable.
JUNE 11—19: Competion Enterprise, Devon & Somerset GC, North Hill.
JUNE 12—26: Dutch Standard/Club Class Nationals, Terlet.
JUNE 18—26: Western Regionals, Bristol & Gloucestershire GC, Nympsfield.
JUNE 21—30: USA Standard Class Nationals, Ionia County airport, Michigan.
JULY 2—14: Coupé d'Europe, Angers, France.
JULY 12—21: USA 15m Class Nationals, Hobbs, New Mexico.
JULY 16—24: Wycombe Regionals, Booker.
JULY 17—29: Vinon, International Mountain Contest, France.
JULY 30—AUGUST 7: Lasham Regionals, Lasham Gliding Society, Lasham.
AUGUST 2—11: USA Open Class Nationals, Caddo Mills airport, Texas.
AUGUST 2—14: French Nationals, Chateraux.
AUGUST 6—20: International Ladies Championships, Oerlinghausen, W. Germany.
AUGUST 20—29: Euroglide, Coventry GC, Husbands Bosworth.

An Element of Glider Winch Design

I. A. WIGLEY



In these days of high costs of steel and labour, the price of stranded cable has soared and the use of piano wire for launching has become more and more attractive. It is possible to bend stranded cable repeatedly round a small radius compared with its diameter without decreasing its life to an unacceptable extent. One manufacturer recommends that the ratio of the drum diameter to the outside wire diameter of the cable should be at least 1000, so that, for instance, if the outside diameter were .01in a suitable drum radius would be 5in

Piano wire is very tough stuff but like any other material it has its limitations. If it is used within its elastic limit (as in springs) it will withstand the application of a load a great many times, perhaps into millions; but if its yield stress is continually exceeded, it will be cold worked and can't be expected to last very long.

When a wire is pulled under load round a roller, Max curvature occurs at the point of contact. The actual curvature can be either less than or equal to the curvature of the roller depending on the load, the angle between the wire going on to and coming off the roller, the wire diameter and the modulus of elasticity of the material. How to determine a satisfactory roller diameter? A little maths is necessary:

F is the pull in the wire.

I is the moment of inertia of a cross-section of the wire about a diameter. If r is the radius of the wire this is equal to $\frac{\pi r^4}{4}$

E is the modulus of elasticity.
(29,000,000lbs/sq inch for steel)

R is the radius of curvature of the wire at any point.
Call PQ in the diagram y. The bending moment at P is Fy, and it is a fact that:

$$\frac{1}{R} = \frac{Fy}{EI} \quad cy \quad \text{if} \quad c = \frac{F}{EI}$$

PR is a tangent to the wire at P. Call the tangent of the angle PSQ p. It appears after some working out that:

$$y = \sqrt{\frac{2}{C}\left[1 \pm \sqrt{\frac{1}{1+p^2}}\right]}$$

p is known where the curvature is greatest.
It is tan(90–A). So y can be calculated at its Max (OM) and hence the bending moment at O.

Standard engineering formulae can then be used to determine suitable dimensions from the data.

The above procedure is intended as a guide in cases where, as sometimes happens, rollers are used to change or control the wire direction. It isn't needed of course where it is merely a matter of fixing on a suitable main drum diameter.

15 Meter Glass Fibre flapped A/C

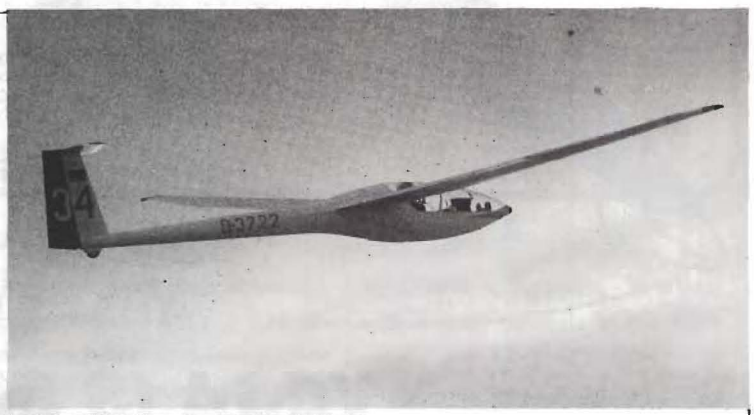
Wing loading	6 to 8.5 lbs per sq ft.
Best glide angle	1 in 42 at 60 kts.
Min. sink	1.1 kts between 35 to 40 kts.
Empty weight	495 lbs.
Water Ballast	242 lbs.
Wing area	108 sq ft.

The DG200 has coupled flaps and ailerons like the Kestrel with powerful top surface airbrakes.

DG 100 15 meter Standard Class A/C

Wing Loading	5.6 to 7.75 lbs per sq ft.
Best glide angle	1 in 39.2 at 60 kts.
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Water Ballast	220 lbs.
Wing area	118.4 sq ft.

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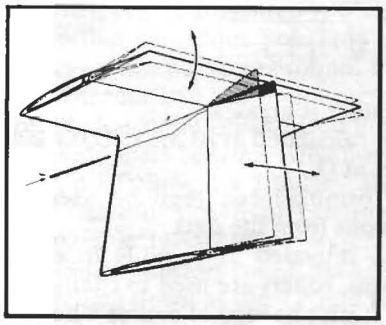
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The point of the exercise is to get the lightest structure that will do the job – it is not yet possible to calculate the strength of a complex, doubly curved shell like **Vega's** fuselage so the answer has to be derived by test. If you have the misfortune to groundloop it will be nice to know that **Vega is Stronga!**



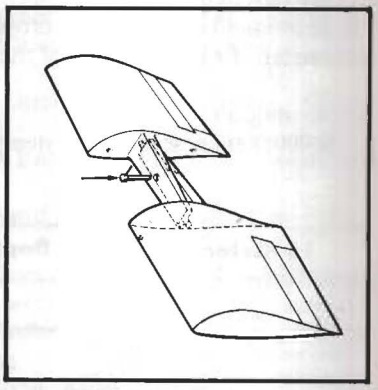
Fuselage under test at Kirkbymoorside. Vega is stronga and lighta!

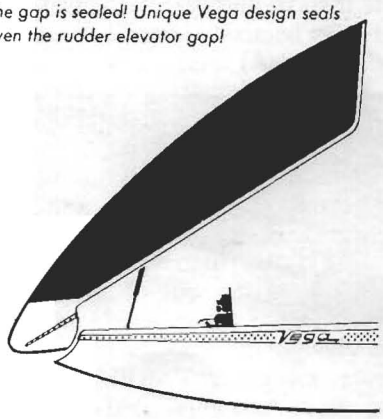


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coaching corner

Decisions—decisions!

An instructor's ultimate responsibility is only really brought home to him when a student he has trained and supervised as a solo pilot has a fatal accident. Maybe the instructor had an intuitive feeling about this particular pilot; should he have stopped him flying? If so, at what stage. Here BILL SCULL, Senior National Coach, considers the dilemma that a CFI is faced with from time to time and some of the implications.

It seems to be a common instructing experience that the students who do least well are the most enthusiastic. For someone taking up gliding it is often the case that aptitude and aspiration are ill-matched and the question is raised from time to time—"wil I ever be able to send him solo" or "should I try and persuade him to take up some other sport?"

When faced with this possible decision one must first consider in detail some of the contributary factors; in particular all the usual adversities in the typically *ad hoc* arrangements for most clubs' instructional system and see whether or not their elimination brings about an improvement in student performance:

1) Is the student flying with too many different instructors? If so then try and restrict him to one or two who are both sympathetic to his learning problems as well as temperamentally suited to the task and the individual.

2) Do his problems stem from bad instructional technique? Too often too rapid a rate of progress (failure to consolidate on the basic exercises) is the cause of poor performance later, simply because he can't fly very well! Another factor which I believe may be of great significance is a loss of confidence experienced by some students who have done more than the average number of launches to first solo without making it. The result is that their confidence, which may never have been great at best, deteriorates (Never be too specific about the number of launches it will take).

The need therefore in the case of a student who, it seems, may not make solo standard is to eliminate, in so far as this is possible, all instructor and instructional confusions. The risks, an accident to the pilot in question, are greatest when a genuinely unsuitable student (very rare in my experience) meets up with an instructor who will never be defeated; that is one who always gets his students solo. This is an instructing trait of which every CFI should be aware.

Slightly outside the intended scope of this article, but worth the digression, is the philosophy of sending people solo. There are two options: "bung them off as soon as they're ready" and the other extreme of "train them up to the eyeballs". (I hope you will forgive the vernacular!). In the case of a student who is low in confidence but adequate in ability the former, although in the best interests of helping to establish him as a moderately confident solo pilot, may seem too great a risk to the instructor making the decision—especially if he has limited experience in this respect (haven't we all!).

In the marginal case, someone about whom you may have very grave doubts of his ability to fly consistently as a solo pilot, then the decision to send him solo—a point of no return—is a critical one. Once solo he has every right to expect to go solo again. To deny him this "right" is difficult and becomes increasingly so once he has made further solo flights. One can only conclude that a pilot who has flown solo once and then never again was exposed to an unreasonably high risk when he was sent. I recall one aeroplane student sent solo at 35hrs or so who was persuaded to give up at 65hrs total experience with nary another solo flight!

Convincing the pilot is virtually impossible

The possibility of becoming established as a solo pilot by "custom and practice" (sporadic solo flights in ideal conditions and always after several flights each day) must be recognised. The decision to stop such a pilot from flying solo again may not be difficult but convincing the pilot in question that he should is virtually impossible; even the most difficult tasks on check flights may not be performed as badly as you need to justify your case, or if they are they will not be recognised by him. The dilemma has moral connotations. Have you the right to say "you can no longer go on gliding because I believe you will eventually kill yourself?" "Eventually" may be ten years hence and think of the fun he will have meanwhile.

The dilemma may be a continuing one if, for example, before a pilot is properly established in one respect he is pressing on to the next—going cross-country perhaps before he has shown his ability to soar locally. Especially

once the pilot has become a private-owner the ability to control him is reduced and the risks may remain high. A pilot who can fly accurately when giving most of his concentration to speed control and balance may be at great risk when faced with a field landing. An instructor not being as assertive as he might be, attempting to control a pilot with a strong personality, obviously has problems. Again the dilemma; what is an acceptable degree of risk? This question engenders the one "is a sport without risk worth doing at all?"

The compromise—there has got to be one—is in minimising the risk. Hold back the press-on over-confident individual if you can, especially if he is low on flying ability. Persuade him to buy a glider which is easy to fly—good brakes, easy speed control and reluctant to spin—so that if he does have an accident it will not be too serious. If he does kill himself and you can say that you have taken all reasonable steps to train, supervise and advise him, then your conscience will be clear.

The instructor's dilemma hinges on what is an acceptable degree of risk and who is at risk, the pilot himself or third parties. The decision whether or not to stop someone flying must not be taken lightly and must ultimately be the CFI's. It may be influenced by whose glider the pilot is flying, his own or the club's. Should it be? I said it was a dilemma.

CAR RETRIEVING - BEWARE

PHILIP HUNT

The towing of gliders, particularly club machines by means of a rope attached to some convenient point on the back of the family car, though fairly widespread in its application is a practice to be viewed with considerable suspicion.

If it must be done there should certainly be a degree of care. Not only can it prove damaging to the glider if things should go wrong, it can also prove highly dangerous to personal safety under certain conditions.

We all know of cases where some unfortunate soul has been caught fairly smartly in the ear with a wingtip seconds before someone has noticed the impending danger and shouted "Watch your heads!" However, there are other potentially dangerous consequences of getting that helpful pull with the aid of a piece of mum's washing line attached to the bumper of someone's Cortina.

Consider what is likely to happen should the glider wheel or skid either drop into a hole or fetch up against some uneven ground or other obstruction.

(1) The tow rope may break - the best thing that can be hoped for.

(2) The glider release hook assembly may be either bent or badly strained - to the detriment of subsequent pilots trying unsuccessfully to release.

(3) The car may be damaged - together with one or both of the first two possibilities.

That, you may think, is all? Not so kiddies! There is a further and much more dangerous possibility, and in case you should be tempted to think it not very likely let me tell you what happened recently at a large gliding club in the south of England.

A K-7 had just landed beyond the grass section and on to a crossing tarmac runway. The instructor and P2 turned the glider around whereupon some kind person arrived with a car and tow rope which was attached to the glider. The retrieve commenced with one person on the wingtip and the other very properly walking by the nose. On rejoining the grass section the glider skid and wheel encountered the slight step up with the result that the glider stopped dead. Unfortunately, the car driver, not realising immediately, continued to pull. The person by the nose shouted "stop" and half turned to examine the cause. It was indeed fortunate for him that he did so for at that moment he was struck at the base of the skull by a square piece of steel and a boot catch which, still attached to the rope, had torn bodily from the car.

The rope had stretched considerably without breaking and the lump of metal after breaking had returned with the force and velocity a competent crossbowman might well have envied. The result, a suspected fractured skull, deep lacerations of the scalp necessitating several stitches and hospitalisation. One shudders to think what might have been the result had the projectile been received full in the face or eyes. Plus, of course, one damaged car and a possibly badly strained release mechanism.

The short answer is either don't do it - or beware! Never tow on a boot lid or other unsuitable projection (bumpers are not good either). Use a proper tow hitch position and watch carefully all the time for hazards, holes and ridges. With a heavy glider something's got to give and you could easily kill someone, silly as it sounds.

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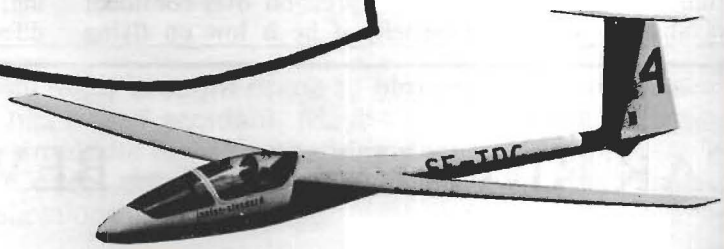
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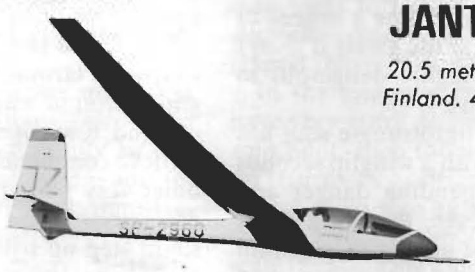


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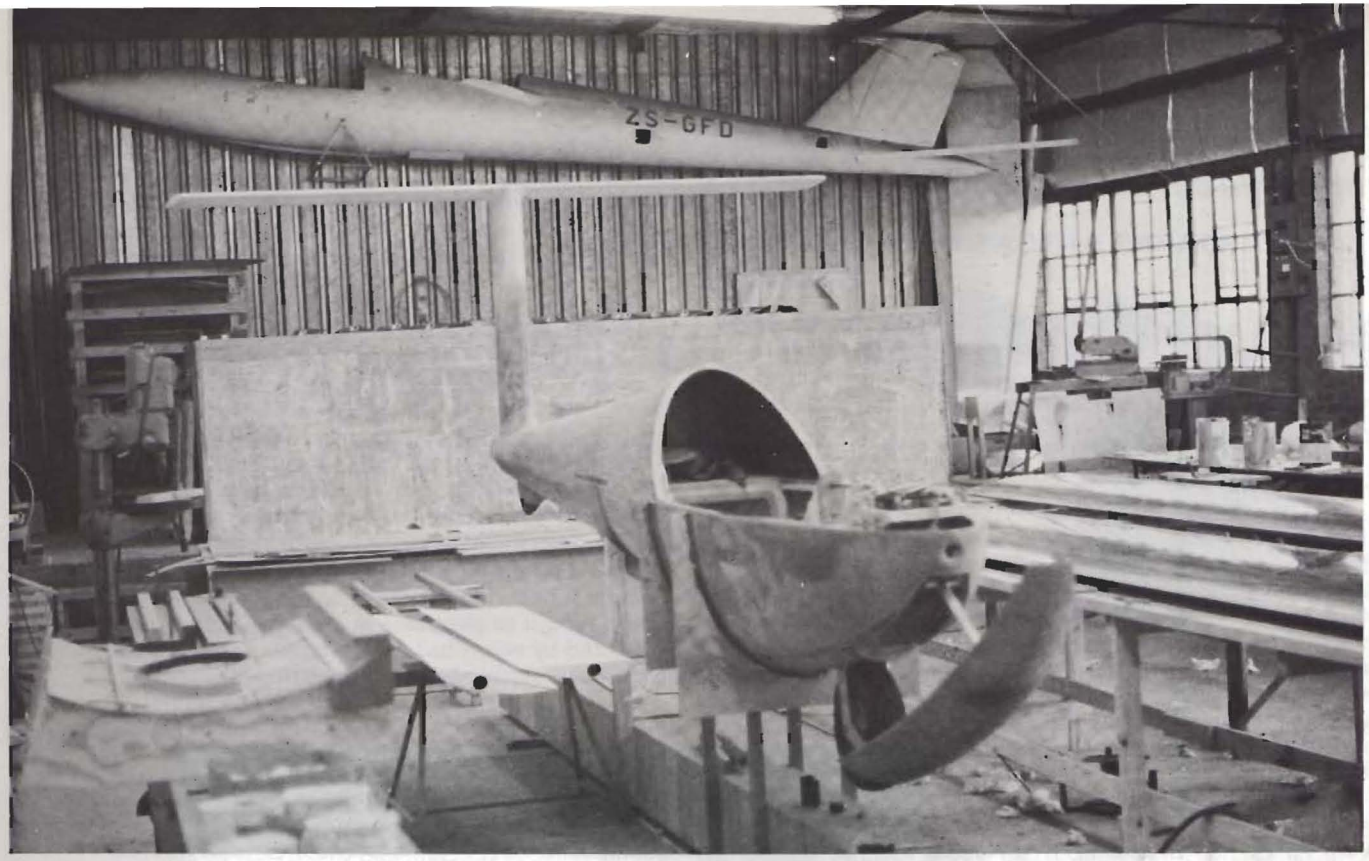
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MORE ON THE B-5

John Ellis has brought back more news and the first pictures of Pat Beatty's new design the B-5 one of which we print here. (See also S&G Feb. issue, p32; June, 1976, p115.)

This picture shows clearly how far forward the wings of the B-5 are mounted (the pilot sits behind the main spar) and the unique arrangement of the undercarriage "skid" which should prevent nose-overs on landing. When retracted it faires into the front fuselage which consists of 35 layers of GRP to take the various loads.

The rear fuselage and fin are the cleanest John has ever seen. The tailplane, elevator and rudder all being beautifully faired. The entire tailplane moves completely for trimming by means of a low-geared cockpit lever. Contrary to Mike Garrod (last issue) John states that the fuselage is of glass-fibre/wood and not glass-fibre/metal construction.

The 15—19m wingtip extensions carry the same lift coefficient and are of narrow chord. Like the camber change they are operated electrically. (The extensions can be seen in the photo.)

The camber changing portion of the wings consists of a sort of fairing in sections, each section being flexibly sealed to the next.

Standard flight flaps are incorporated with a landing flap position. The latter is, however, not interconnected with the ailerons. All controls throughout the B-5 are totally mass-balanced.

The calculated performance shows an L/D of 1:42 at 75kts and 1:14 at 150kts. VNE is around 200kts. As John says—think of the height gain after crossing a startline!

First flight is now scheduled to take place in May or June.

For those interested the fuselage on the wall in the background is that of the old BJ-3, its wings were later used on the BJ-4.

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ALASTAIR WILES writes about his Silver C distance attempt which might well be helpful to other pilots planning their first cross-countries.

HOW **COULD** YOU FAIL?

"You've only to go with the wind and stay up for an hour or two . . .

I gained my Bronze badge about three weeks earlier and was bursting to prove I was a "natural" at this cross-country lark. I made copious notes at the CFI's cross-country briefing, and read them so many times that I just about knew them by heart. I even primed two potential retrieve crew members to be ready at short notice and all the paraphernalia that I would need was carefully stowed in the boot of the car. Now all I wanted was a bit of decent thermal activity and the wind in a friendly direction, preferably south-easterly so that I could follow the M1 from Dunstable to a sympathetic place like Husbands Bosworth.

Day broke that June day, as a possible. It did not look all *that* good though, and so I went to work as usual, resolving to keep an eye on developments up above. Things seemed to improve and by about 11.30 I was getting quite excited.

A real pundit's opinion

By strange coincidence, a real pundit had just joined the firm. I asked what he thought about the chances of a Silver distance flight. He looked carefully out of the window; "Not the sort of day I would take-off for soaring. But you might do it if you're lucky." That was good enough for me!

I phoned my wife to tell her to expect me home the following morning, bolted my lunch, and tore off to the gliding club. The then deputy CFI was in charge. Did he think I could have a bash at Silver distance? "Well" he said, "Your main problem is which way to go. You've either got to head north-west or east, and both directions are a bit crosswind."

I resolved to keep to the right of Cambridge. Maybe I would land at Duxford, or if things looked good I would go on a bit and land at Newmarket Heath. Taking special care not to hurry the DI of the K-8, I stowed all my gear away, lashing the derigging tools in the fuselage behind my head with specially strong adhesive tape. I even remembered to leave the ignition keys in the car's ashtray so that my crew could find it.

Eventually I was out on the field, with the club barograph sealed, signed and switched on. Everything looked all set to go, the thermals were still popping, but it was now 3pm. Perhaps a quick word with the deputy CFI to make sure it was still OK.

"Well," he said, "you really should have got here at 9 o'clock this morning and taken your time over the preparations. Make sure you make 3000ft before you set off. Good luck".

There was too much work to do on tow to worry about the task ahead. Then it struck me that the pilot was doing rather a steep turn. When was he going to pull out of it? He never did. In fact the genius had found me a thermal and was leading me round in it at 850ft!

It was a nice thermal. Four knots lift and right over the club. What was it the CFI had said? You've only got to go with the wind and stay up for an hour or two to clear Silver distance easily. How could people fail? It was so easy.

I lost the first thermal at 2500ft. I don't know how. I searched for it for some minutes, losing height at 3 or 4kts all the while, and that was when the first forebodings set in. But why should I worry? The sky was littered with cumulus clouds. I set off towards a likely looking cloud and found another 4kts lift. This time I took it to cloudbase at around 3000ft or perhaps a little over, and by now I had drifted a mile or two downwind of the club. The moment of decision had arrived!

I had to decide whether to turn my back on the club or flunk out of it. Wouldn't it be easy to do an hour or two of local soaring? No retrieve problems. No late night.

With my heart thumping loud enough to be heard back on the ground. I pointed the nose towards the north-east and realised that I had committed myself. Within seconds I would be out of gliding range of the club, and would only be able to get back by finding and working lift. It's a funny sensation, the first time you experience it. A mixture of fear, anxiety, elation, and a dozen other emotions culminating in the realisation that this is what it's all about. This is what you have been working towards for the last 114 launches. Above all, it felt good.

Things went well for a bit. There was the M1. There was the Luton to Bedford railway line. Keep north of Luton on a north-easterly heading to clear the Luton SRZ before heading more easterly. I was actually enjoying it. I looked around at the scenery, and down at the ground, playing at choosing fields to land in. What were the three important points? Slope, surface, wind. And look out for telegraph poles, cows, and courting couples. This was *terrific!*

That doesn't look right

Now then, I remember thinking to myself, let's make sure I know where I am, and that I'm still on course for Henlow. Barton-in-the-Clay should be somewhere below us, and that conglomeration of road junctions at Shefford should be dead ahead. That doesn't look right! I looked back over my shoulder and the M1 was still in view, just. Couldn't be far off course. Have another look at the map. That's funny, I can't seem to relate any features on the ground with those on the map.

I told myself not to panic. After all, someone had said that if you were not sure of your exact location, make progress in the direction you reckon you want to go, and try to pick it up on the map later. But was it the CFI or a fellow peasant who said this? And if I did not know where I was, I might be pretty near the controlled zone complex.

Whilst I studied alternately the map and the ground, I was losing height. Another decision had to be made. Was I to go on, hoping to miss the prohibited zones, or turn back towards the club until I could pick up a feature I recognised? I realised that the first option was just not on. Cloudbase was a little over 3000ft. I dared not enter cloud because my chances of navigation were then nil, and anyway I might still be in Amber 2 airway. Unless I could get significantly higher than 3000ft I risked violating the controlled zone complex. There was really no choice.

I turned back to Dunstable. But now I had lost sight of the M1. And where were all those previously ubiquitous cumulus clouds? Down to 1500ft. The ground looked reasonably inhospitable below. Must have chosen *the* field by 1000ft, the CFI had said. And then I found a puff of lift, worked it back up to 2500ft, lost it, and set off again for Dunstable.

My luck finally ran out a few minutes later. I chose what I thought was a reasonably sized field with lowish obstacles round it. The funny thing was that the grass was multicoloured. In the centre of the field, in a more or less circular shape, the grass was a paler green. All around the outside it was a bit darker, and along the dividing line there were occasional white blobs. This puzzled me. I looked hard for a fence, but none could be seen. I finally judged it to be safe, flew over it at about 600ft, and realised it was a cricket pitch! Now committed, I resolved to land on the outfield in order to avoid aggro. As it happened, I did a rather nice circuit and landing directly into wind.

Self satisfaction on a successful field landing

The relief was enormous. I had successfully accomplished my first field landing. The K-8 and I were both intact. I remember clearly that the self-satisfaction resulting from the landing just about balanced the disappointment of having failed the task, the easy task of going with the wind and staying up for an hour!

As I sat in the glider waiting for my heartbeat to slow down from its rate of around 2000 per min, I noticed rather a lot of activity across the field. There were three men in dark blue uniforms and a very large Alsatian scurrying across the field. It turned out that I had landed on the sports field within the grounds of a firm working on secret government contracts. The security guards hauled me off to the chief security officer, who must have believed my tale because he not only let me use his phone, but gave me a cup of tea as well!

I had been up for 1hr and 20mins, covered some 20 miles, three of them in the wrong direction. So what lessons did I learn from this flight?

First, for difficult flights like first cross-country, take lots of time over the preparations. Get to the club early and plan everything carefully. Don't rush these preliminaries, for you will probably forget something vital to the success of the flight. Even if you don't forget something, you will be in a pretty hectic state when you get into the air, and this reduces considerably the chances of success.

Secondly, if you are not flying directly downwind, work out the effect that the cross wind will have on your flight path. Draw a vector diagram showing windspeed (*ie* speed and direction whilst thermalling), and inter-thermal speed. If you reckon to spend 50% of your time thermalling and 50% flying between thermals, you will not be far out. I was probably on a heading of about 055° between thermals, so it is not surprising that I got lost, since I was tracking much too far north.

Thirdly, I found out on this flight that I could not navigate in the air. This amazed me, because I am a brilliant navigator on the road! But there is a world of difference, and I had not previously been out of sight of the club. If you have any doubt about your ability to relate the map to *unknown* features on the ground, ask for a lesson in the two-seater, or better still, get a lesson in a motor glider, where you can learn cross-country navigation independently of the weather.

And lastly, don't be in too much of a hurry to tackle the task. It is worth waiting for conditions to be just right. After your first cross-country flight, when you have proven to yourself that you can do it, then you can be more adventurous in attempting cross-wind flights in marginal conditions. Gain confidence in your flying ability first.

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Goal and Return	1,298.97km	K. H. Striedieck, USA	ASW-17	17.3.1976
(Jointly held)	1,298.97km	L. R. McMaster, USA	Std Cirrus	17.3.1976
Goal Flight	1,231.8km	H-W. Grosse, W. Germany	ASW-17	16.4.1974
100km Triangle	175km/h	K. Goudriaan, South Africa	ASW-17	22.11.1975
300km Triangle	153.43km/h	W. Neubert, W. Germany (in Kenya)	Kestrel 604	3.3.1972
500km Triangle	143.04km/h	E. Pearson, Gt Britain (in SW Africa)	Nimbus 2	27.11.1976
750km Triangle	125.44km/h	E. Mouat-Biggs, South Africa (in Rhodesia)	Nimbus 2	16.10.1975
1000km Triangle*	98.44km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	18.1.1977

MULTI-SEATERS

Height Gain	11,680m	S. Josefczak and J. Tarczon, Poland	Bocian	5.11.1966
Absolute Height	13,489m	L. Edgar and H. Klieforth, USA	Pratt-Read G-1	19.3.1952
Straight Distance	970.4km	I. Renner and H. Geissler, Australia	Calif A-21	27.1.1975
Goal and Return	751.30km	E. Minghelli and R. Gravance, USA	Prue 2A	26.7.1975
Goal Flight	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
100km Triangle	142.92km/h	K. Holighaus, W. Germany and U. Plarre (in Switzerland)	Janus	15.8.1974
300km Triangle	122.06km/h	E. Makula, Poland and J. Serafin (in USA)	Calif A-21	24.8.1974
500km Triangle	114.86km/h	E. Makula, Poland and Adele Orsi, Italy (in USA)	Calif A-21	20.7.1974

SINGLE-SEATERS (WOMEN)

Height Gain	9,119m	Anne Burns, GB (in South Africa)	Skylark 3B	13.1.1961
Absolute Height	12,190.2m	Betsy Woodward, USA	Pratt-Read 195	14.4.1955
Straight Distance	749.20km	Olga Klepikova, USSR	Rot Front	6.7.1939
Triangular Distance	769.4km	Adela Dankowska, Poland	Jantar 1	2.6.1975
Goal and Return	672.2km	Adela Dankowska, Poland	Jantar	29.5.1973
Goal Flight	731.60km	Tamara Zaiganova, USSR	A-15	29.7.1966
100km Triangle	127.24km/h	Adele Orsi, Italy	Kestrel 604	19.8.1975
300km Triangle	114.45km/h	Susan Martin, Australia	Kestrel 17	11.2.1972
500km Triangle	113.9km/h	Yvonne Leeman, South Africa (in Rohodesia)	Libelle 301	16.10.1974
750km Triangle	73.62km/h	Adela Dankowska, Poland	Jantar 1	2.6.1975

MULTI-SEATERS (WOMEN)

Height Gain	8,430m	Adela Dankowska and M. Mateliska, Poland	Bocian	17.10.1967
Absolute Height	10,809m	Mary Nutt and H. F. Duncan, USA	SGS 2-32	5.3.1975
Straight Distance	864.86km	Tatiana Pavlova and L. Filomechkina, USSR	Blanik	3.6.1967
Goal and Return	546km	Adele Orsi and M. Monti, Italy	Janus	27.4.1976
Goal Flight	864.86km	Isabella Gorokhova and Z. Koslova, USSR	Blanik	3.6.1967
100km Triangle	104.1km/h	Adela Dankowska and I. Kostka, Poland	Halny	12.8.1975
300km Triangle	97.74km/h	Adele Orsi and F. Bellengeri, Italy	Calif A-21	18.8.1974
500km Triangle	69.6km/h	Tamara Zaiganova and V. Lobanova, USSR	Blanik	29.5.1968

BRITISH NATIONAL RECORDS

SINGLE SEATERS

Height Gain	12,700km	M. J. Field	Skylark 4	9.5.1972
Absolute Height	13,050m	M. J. Field	Skylark 4	9.5.1972
Straight Distance	741km	P. D. Lane (deceased) (in Germany)	Skylark 3F	1.6.1962
Triangular Distance	770.99km	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975
Goal and Return	801.3km	C. Garton	Kestrel 19	22.7.1976
Goal Flight	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
300km Goal and Return	141.3km/h	E. Pearson (in Rhodesia)	Nimbus 2	25.10.1975
500km Goal and Return	117.3km/h	C. M. Greaves (in South Africa)	Kestrel 19	1.1.1975
100km Triangle*	143.3km/h	E. P. Hodge (in Rhodesia)	Std Cirrus	30.10.1976
300km Triangle	130.9km/h	E. Pearson (in South Africa)	Std Cirrus	1.1.1972
500km Triangle	131.9km/h	E. Pearson (in Rhodesia)	Nimbus 2	5.11.1975
750km Triangle	109.8km/h	M. R. Carlton (in South Africa)	Kestrel 19	5.1.1975

MULTI-SEATERS

Height Gain	6,300m	L. S. Hood and M. Slater (in France)	K-7	3.2.1970
Absolute Height	9,519m	Anne Burns and Janie Oesch, USA (in USA)	SGS 2-32	5.1.1967
Straignt Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal and Return	362km	A.H. Warminger and R. Tucker (in South Africa)	SGS 2-32	4.1.1968
Goal Flight	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
300km Goal and Return	81.9km/h	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
100km Triangle	83.52km/h	E. Pearson and A. Martin (in South Africa)	Kranich 3	7.1.1968
300km Triangle*	81.1km/h	J. R. Jeffries and Gillian Case	Calif A-21	29.5.1974
500km Triangle	88.4km/h	J. R. Jeffries and Gillian Case	Calif A-21	31.5.1975

SINGLE-SEATERS (WOMEN)

Height Gain	9.120m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Absolute Height	10,550m	Anne Burns (in South Africa)	Skylark 3B	13.1.1961
Straight Distance	524km	Anne Burns (in South Africa)	Skylark 3B	31.1.1961
Goal and Return	545km	Anne Burns (in South Africa)	Std Austria	6.1.1966
Goal Flight	528km	Ann Welch (in Poland)	Jaskolka	20.6.1961
300km Goal and Return	107.5km/h	Karla Karel (in South Africa)	ASW-15B	1.1.1975
500km Goal and Return	102.6km/h	Karla Karel (in Rhodesia)	ASW-15B	16.10.1975
100km Triangle	110.8km/h	Karla Karel (in Rhodesia)	ASW-14B	2.11.1975
200km Tiangle	109.4km/h	Karla Karel (in Rhodesia)	ASW-15B	15.10.1975
500km Triangle	108.9km/h	Angela Smith (in South Africa)	Libelle 301	28.12.1972

MULTI-SEATERS (WOMEN)

Absolute Height	9,519m	Anne Burns and Janie Oesch, USA (in USA)	SGS 2-32	5.1.1967

(* Flights subject to homologation)

UNITED KINGDOM RECORDS

SINGLE SEATERS

Height Gain	12,700m	M. J. Field	Skylark 4	9.5.1972
Absolute Height	13,050m	M. J. Field	Skylark 4	9.5.1972
Straight Distance*	713km	J. Wills	Std Libelle	1.8.1976
Triangular Distance	606km	C. Garton	Kestrel 19	10.6.1976
Goal and Return	801.3km	C. Garton	Kestrel 19	22.7.1976
300km Goal and Return	106.4km/h	D. G. Lee	Kestrel 19	17.8.1975
500km Goal and Return	89.7km/h	C. Garton	Kestrel 19	22.7.1976
Goal Flight	579.36km	H. C. N. Goodhart	Skylark 3	10.5.1959
100km Triangle	114.2km/h	R. Jones	Nimbus 2	30.4.1974
200km Triangle	97.0km/h	R. Jones	Nimbus 2	30.6.1975
300km Triangle	105.4km/h	R. Jones	Nimbus 2	29.5.1974
400km Triangle	90.0km/h	D. G. Lee	Kestrel 19	19.5.1974
500km Triangle	106.9km/h	R. Jones	Nimbus 2	31.5.1975
600km Triangle	88.8km/h	C. Garton	Kestrel 19	10.6.1976
100km Goal	128.4km/h	K. A. Harrison	SHK	13.4.1969
200km Goal	114.3km/h	I. W. Strachan	Skylark 4	2.6.1963
300km Goal	132.8km/h	A. H. Warminger	Kestrel 19	24.4.1976
500km Goal	90.7km/h	H. C. N. Goodhart	Skylark 3	10.5.1959

MULTI-SEATERS

Height Gain	6,740m	J. R. Monteith, USA and M. C. Mahon	Capstan	2.11.1972
Absolute Height	7,620m	J. R. Monteith, USA and M. C. Mahon	Capstan	2.11.1972
Straight Distance	421.5km	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
Goal and Return	350.2km	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
300km Goal and Return	81.9km/h	J. R. Jeffries and N. Foster	Calif A-21	17.8.1975
Goal Flight	421.5km/h	J. S. Fielden and Valerie Fielden	Bergfalke 3	14.8.1970
100km Triangle	83.5km/h	J. R. Jeffries and G. E. Love	Calif A-21	22.4.1974
200km Triangle	72.8km/h	J. R. Jeffries and A. Kirtly	Calif A-21	5.8.1974
300km Triangle	81.1km/h	J. R. Jeffries and Gillian Case	Calif A-21	29.5.1974
400km Triangle	68.4km/h	J. R. Jeffries and G. E. Love	Calif A-21	7.5.1974
500km Triangle	88.4km/h	J. R. Jeffries and Gillian Case	Calif A-21	31.5.1975
100km Goal	96.5km/h	D. B. James and K. O'Riley	Gull 2	27.5.1957
200km Goal	77.8km/h	B. J. Willson and H. Daniels	Blanik	11.7.1970
300km Goal	69.2km/h	W. A. H. Kahn and J. S. Williamson	Eagle	14.4.1958

SINGLE-SEATERS (WOMEN)

Height Gain	5,820m	Rhoda Partridge	Std Cirrus	18.3.1974
Absolute Altitude	6,530m	Rhoda Partridge	Std Cirrus	18.3.1974
Straight Distance	454km	Anne Burns	Skylark 3 B	10.5.1959
Goal and Return	303km	Angela Smith	K-6 E	14.8.1970
300km Goal and Return	60.8km/h	Anne Burns	Nimbus 2	26.7.1975
Goal Flight	309km	Anne Burns	Skylark 3 B	12.4.1958
100km Triangle	80km/h	Anne Burns	Cirrus	12.6.1969
200km Triangle	69.3km/h	Anne Burns	Std Austria	22.8.1964
300km Triangle*	77.3km/h	Jane Randle	Kestrel 19 (mod)	18.8.1976
400km Triangle	60.6km/h	Anne Burns	SHK	5.8.1964
500km Triangle	76.1km/h	Anne Burns	Nimbus 2	31.5.1975
100km Goal	96.5km/h	Rika Harwood	Olympia 2 B	27.5.1957
200km Goal	85.5km/h	Anne Burns	Olympia 419	2.6.1963
300km Goal	63.9km/h	Anne Burns	Skylark 3 B	12.4.1958

New records have to exceed the old ones by: Distance 10km. Heights 3%. Triangles and O&R 2km/h. Straight Goals 5km/h. Back-dated to 1.1.1975 performances better than 75% of the single-seater General records will be required to activate Restricted Class records, there are no height records in this Class.

Conversion Factors: Multiply km or km/h by 0.621 to get statute miles or mph. Multiply km by 0.54 to get nautical miles or kts. Multiply metres by 3.28 to get feet.

No side of a △ may have a length less than 28% of the total distance of the course when the flight is made to obtain a record, except that for △ of 750km or more no side may have a length of less that 25% or more than 45% of the total distance of the course. (FAI Sporting Code 1.1.1975, Section 3, paragraph 1.4.4). Available from BGA.

RESTRICTED CLASS

Straight Distance*	713km	J. Wills	Std Libelle	1.8.1976
Triangular Distance*	503km	C. C. Rollings	K-6E	20.4.1976
100km Triangle	109.7km/h	D. S. Watt	Std Jantar	16.8.1976
200km Triangle	96.2km/h	A. J. Stone	Std Cirrus	16.8.1976
400km Triangle	91.7km/h	S. J. Redman	Std Cirrus	31.5.1976
500km Triangle*	77.4km/h	C. C. Rollings	K-6E	20.4.1976
300km Goal	131.1km/h	J. Wills	Std Libelle	24.4.1976

MOTOR GLIDERS (** also Brit. Nat. Record)

100km Triangle	57.3km/h	I. W. Strachan	SF-27 M	13.6.1971
200km Triangle**	48.2km/h	I. W. Strachan	SF-27 M	23.8.1976
100km Goal	85.7km/h	I. W. Strachan	SF-27 M	16.7.1971

MULTI-SEATERS

100km Triangle*	36.04km/h	P. T. Ross and H. Daniels	SF-28A	27.6.1976
200km Goal*	66km/h	P. T. Ross and P. Fletcher	SF-28A	18.7.1976

INTERNATIONAL MOTOR GLIDERS

Goal and Return	603.81km	K. Heimann, W. Germany	SF-27 M	28.4.1976
100km Triangle*	107.5km/h	W. Collée, W. Germany	Nimbus 2 M	3.7.1976

MULTI-SEATERS

Height Gain*	5.330km	H. Lehmann & Barbara Zuck	RF-5B	13.8.1976
Absolute Height*	6.220km	H. Lehmann & Barbara Zuck	RF-5B	13.9.1976
Goal Flight	646.42km	G. Jacobs & G. Hüttel, W. Germany	SF-25E	28.4.1976
100km Triangle	73.82km/h	F. Kensche & H. Schäffer, W. Germany	SF-25E	19.4.1976
300km Triangle	67.42km/h	W. Hoffman & R. Schwarzer, W. Ger	Bergfalke 4 M	6.6.1976

INTERNATIONAL 1000km FAI DIPLOMAS

At the CIVV meeting on March 5, 1971 it was agreed to issue FAI Diplomas to pilots who achieve, or had achieved 1000km flights. So far the following pilots have exceeded that distance. The previous 20 flights were published in the April-May, 1976, issue p79.

	Declared	*Flown*			
21	= Triangle 1062km	1015km	H-W. Grosse, W. Germany (in Australia)	ASW-17	13.2.1976
21	= Triangle 1062km	1015km	M. Jinks, Australia	Nimbus-2	13.2.1976
23	= Goal and Return	+ 1289.96km(118km/h)	K. H. Striedieck, USA	ASW-17	17.3.1976
23	= Goal and Return	+ 1289.96km(107km/h)	L. R. McMaster, USA	Std Cirrus	17.3.1976
25	Goal Flight ?km	1195km	H-W. Grosse, W. Germany	ASW-17	28.4.1976
26	Straight Distance	1051km	V. Kreussler, W. Germany	Kestrel 17	28.4.1976
27	Goal Flight 1263km	1060km	S. Baumgartl. W. Germany	ASW-17	29.4.1976
28	Goal and Return 1616km	(123km/h)	K. H. Striedieck, USA	ASW-17	19.5.1976
29	Triangle 1100km	1080km	H-W. Grosse, W. Germany (in Finland)	ASW-17	9.6.1976
30	Triangle 1070km	1050km	S. Baumgartl, W. Germany (in Finland)	ASW-17	9.6.1976
31	Triangle 1027km	(103km/h)	J-L. Auban, France	LS-1F	29.7.1976
32	Triangle 1063km*	*98.44km/h	H-W. Grosse, W. Germany (in Australia)	ASW-17	18.1.1977
33	Straight Distance	1009km	S-H. Georgeson, New Zealand	???????	29.2.1977

* Flights subject to homologation. + Current world records. () Approximate speeds for interest only. Flight No. 28 – claim for World Record withdrawn.

BGA & general news

SHORT LIST FOR THE BRITISH TEAM

The 12 pilots shortlisted as potential members of the British Team for the next World Championships in 1978 are: George Burton, John Cardiff, John Delafield, Bernard Fitchett, Chris Garton, Ralph Jones, George Lee, Simon Redman, Chris Rollings, Ron Sandford, Steve White and John Williamson. The Team Manager will be Dickie Feakes.

BGA APPOINTMENTS

Three people take on new BGA jobs following the 1977 AGM—Joan Cloke replaces John Large as Treasurer, Rex Pilcher follows John Ellis as Airspace Committee Chairman and Paul Thompson takes over as Chairman of the Magazine Committee from Anthony Edwards.

Joan Cloke, who glides with the Southdown Club, has been a member of the Executive for several years and is already Chairman of the Development Committee (a job for which she hopes to find a successor during the year). Joan had a previous look at her task when she was acting Treasurer for a few months in 1966 before John Large was appointed to the post.

Rex Pilcher is a first officer with British Airways and, like his predecessor, a member of the Airways Club at Booker. Rex, who has two legs of his Diamond badge and flew in his first Nationals last year, has been working closely with John Ellis on airspace problems throughout the previous season.

Paul Thompson will take up the reins of the Committee charged with looking after our magazine and he will bring with him the expertise which he has been using as Chairman of Lasham Gliding Society for the past few years. Paul is also a member of the BGA Executive Committee.

Barry Rolfe
BGA General Secretary

ANNUAL AWARDS—1976

The BGA has announced the following:

Douglas trophy (the maximum cumulative distance achieved by three pilots from the same club): Surrey & Hants for flights by C. Garton, 801km on July 22; A. D. Purnell, 640km on July 22 and H. Hilditch, 614km on July 17. Total 2055km.

California in England trophy (longest flight by a women) Pamela Davis (Lasham Gliding Society), 430km triangle on July 27, Club Libelle.

Volk cup (longest declared distance by a pilot holding no Gold or Diamond legs): Catharina Edwards (Cambridge University), 316km triangle on August 18, Olympia 463; and V. Luck (Airways), 316km triangle July 27.

De Havilland cup (best gain of height); Alan Kenworthy (Yorkshire), 29500ft, on June 14, DG-100.

Wakefield trophy (longest flight originating in the UK): 801km out-and-return on July 22; and the **Manio** cup (fastest declared 300km triangle): 318km at 106.7km/h, on August 16, C. Garton (Surrey & Hants), Kestrel 19.

Frank Foster trophy (fastest declared 500km triangle): B. T. Spreckley (Wycombe Air Park), 503km at 98km/h on April 28.

Seager cup (longest distance in a two-seater): M. C. Carlton and B. T. Spreckley (Wycombe Air Park), 635km, Calif A-21.

National Ladder trophies.

L. du Garde Peach (winner in club aircraft): C. C. Rollings (Airways), 8249pt.

Enigma trophy (winner in private aircraft): L. E. Beer (Thames Valley), 9556pt. (Laurie has won the trophy for the second year, this time with an increase of (2755pt.)

A new trophy. George Lee is the first to receive the beautiful trophy presented by the Yorkshire GC in memory of Barrie Goldsbrough. It is for the highest placed pilot in the World Champs and was designed and made by David Lilburn.

STRUCTURE OF THE BGA

The membership structure of the BGA is now made up of 81 full members and 90 associate members. The 81 full members include three members which have affiliated clubs as follows: Army Gliding Association, 2 clubs, RAF Gliding and Soaring Association, 12 and Royal Naval Gliding and Soaring Association, 3.

Operations

During the year ending September 30, 1976, (1975 figures in brackets), civilian clubs flew a total of 110822 (98979) hours from club sites from 329801 (311170) launches.

Club owned gliders totalled 301 (293) and privately owned gliders 731 (660). The combined Services flew 26369 (29326) hours from 102169 (107881) launches.

Certificates

Certificates were issued as follows: A and B endorsements 2229 (2041), C endorsements 193 (182), Bronze C 657 (544), Silver C 451 (347), Gold C 93 (49), Diamond goal 102 (79), Diamond height 51 (29) and Diamond distance 37 (29).

A and B certificates were applied for by 1200 (1142) holders of the ATC proficiency certificate.

NATIONAL LADDER CHANGES

The National Ladder rules have been changed, as suggested by Anthony Stone (Cambridge University GC), with a readjustment of the speed index handicap value and the scrapping of different values for downwind and closed circuit tasks.

In addition, to add some encouragement to the wave flying fraternity, Mike Garrod, National Ladder Steward, is altering the dividing factor in the formula from 20 to 10. A 20000ft gain of height will therefore be awarded 1500pts. But there is a limit of three height gains as he considers that one cross-country should be included in a total of four flights.

Mike explains: "To anyone with average experience at a proven wave site, a 15000ft gain is not that difficult to achieve, and certainly without the concentration required for a high speed cross-country flight. One could even repeat the same flight on the same day without any sweat, if one felt that way, whereas it would be difficult to score over 1000pts twice in one day on a cross-country."

Full details of the new system have been circulated to clubs. Incidentally, there are still two Ladders but the Private is now called the Open Ladder and is for any glider whereas the Club Ladder stays for flights in club gliders only.

The Ladder is only just off the ground with nine entries in the Open Ladder, all from the Essex Club with one flight each. M. Throssel is in the lead with 445pts with A. Mainwaring (440pts) and P. Bartle (425pts) close behind.

THE BRUNT TROPHY

The Brunt Trophy, awarded each year for the best gain of height by a student member of a university gliding club, has been won for 1975—76 by Peter Verkroost (Imperial College) with a climb of 17900ft at Aboyne.

COMPETITION HANDBOOK

Extensive revision of the Competition Handbook has taken place and it is expected that Contest Organisers will be supplied with an advance copy by the end of March. The Scoring section has also been revised and prospective scorers are advised to liaise with Contest Directors in order to obtain the new information. The net result of the changes does

not alter the effect of the scoring but the presentation is completely different.

Speed Indexes The following amendments and additions have been made to the Speed Index list published in S&G, December 1976, p269.

Speed Indexes	Gliders (* include ballast)
118%	Jantar 2*
116%	Jantar 1*
106%	Nimbus 15*, PIK 20D*, DG-200*, Vega*
104%	Motor PIKE
102%	PIK 20C*, ASW-19*
100%	DG-100*

L. Tanner
Chairman, Flying Committee (Competitions and Badges)

NEW CHAIRMAN

Ian Scott-Hill, a director of British Airways, succeeds Philip Wills, President of the BGA, as Chairman of the Royal Aero Club. Christopher Simpson, Vice-President of the BGA, and Frederick Marsh, the air racing pilot, were elected Vice-Chairmen at the AGM in January.

If you have any contributions to S&G please send them to the Editor at 281 Queen Edith's Way, Cambridge, CB1 4NH, tel 47725 and not the BGA office at Leicester.

ACCIDENT AT LASHAM

A K-13 stalled and spun in at Lasham prior to landing during a red card check on February 19. The instructor, Mike Carr, broke a leg and the pupil, Leonard Boyce, is just out of intensive care after a foot amputation. The K-13 was a write-off

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1976
77	J. H. Bryson	Ulster	10.10

DIAMOND DISTANCE

No.	Name	Club	1976
1/142	M. Bird	London	25.7

DIAMOND GOAL

No.	Name	Club	1976
2/798	A. P. Moulang	Kent	12.8
2/799	J. N. C. Cooke	Bicester	18.7
2/700	S. P. P. Thomas	South Wales	12.9

DIAMOND HEIGHT

No.	Name	Club	1976
3/285	B. L. Cooper	Deeside	8.11
3/286	D. R. Campbell	Airways	8.11
3/287	J. A. Fraser	Deeside	17.4
3/288	J. H. Bryson	Ulster	10.10

GOLD C COMPLETE

No.	Name	Club	1976
599	D. R. Campbell	Airways	8.11
600	C. V. Perkins	Cambridge Univ.	6.9
601	J. F. Mills	Tsiska Soaring	15.8
602	S. P. P. Thomas	South Wales	12.9

GOLD C HEIGHT

Name	Club	1976
C. E. Headey	Fulmar	24.10
E. Corbett	Essex	8.10
J. E. Moseley	Cambridge Univ	6.9
D. R. Campbell	Airways	8.11
C. V. Perkins	Cambridge Univ	6.9
R. R. Rodwell	Ulster	10.10
J. M. Scott	Cambridge Univ	15.8
J. A. Fraser	Deeside	17.4
A. Schubert	Cambridge Univ	2.1.77

GOLD C DISTANCE

Name	Club	1976
J. N. C. Cooke	Bicester	18.7
J. F. Mills	Tsiska Soaring	15.8
S. P. P. Thomas	South Wales	12.9

SILVER C

No.	Name	Club	1976
4687	B. R. Forrest	Enstone	17.7
4688	Ruth Housden	Cotswold	10.7
4689	P. H. Roberts	Eagle	14.9
4690	P. J. Bourne	London	23.6
4691	A. J. Millson	SW District	22.10
4692	C. B. Moore	London	6.9
4693	J. D. Packer	Kent	25.7
4694	C. J. Jenicek	Terlet	6.7

all pilots can read—but the BEST PILOTS read

Sailplane & Gliding

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WINCH AND AUTOTOW EQUIPMENT

"Blacksmithery is more cost effective than technology." Some disconnected jottings and unconfirmed random thoughts by R. B. STRATTON—BGA Chief Technical Officer

WINCHES

POWER UNITS

Untaxed diesel fuel is essential to cost-effective operation (alternatively propane?).

Rates of acceleration of modern diesels are adequate (turbo-blower could be fitted). Power not less than 5.7 litres?

Torque-converters or automatic gear-shifts are desirable to avoid clutch slipping.

Nine litre buses make good winches and normally incorporate pre-selector boxes and fluid drives.

Diesels have good idling torque, and if idle RPM is correctly set, will take-up slack without slipping the clutch.

Bus transmissions provide adequate drag for towing-out cables without use of mechanical brakes.

Alternators should be fitted to provide positive generating supplies at idle RPM.

Electric (or alternative) coolant-fans should be fitted, to optimise operating temperatures (most winches are over cooled).

Fuel system filtration should be improved with water-drain facilities. Excessive fuel-pumps "lift" should be avioded by gravity tanks or floor-level installations. Sight-glass contents gauges are simplest.

Battery capacity should be not less than 100AH (or greater).

WINCH EQUIPMENT

Tost Winch Drive Shafts have suffered repeated drive-key failures at the drum end, in UK (diesel) application, and triple keys are now fitted in some cases. Probably due to deceleration torques of fully-loaded drum against a "hard" high-compression diesel, with no fluid coupling.

Accessability. Why box the machinery in such a way, you cannot see it, or work on it? Why not provide top cover only, readily removeable?

Tost pay-on gear (belt driven in self contained oil bath) is very reliable and is protected by the belt-drive.

No pay-on gear is preferred.

Drum/cable speed to be 55kt or better.

Simple (hydraulic) load-in-cable indicator system (for novice drivers) could be devised, measuring loads in top cable outlet pulley. Not to be an infinitely accurate device—but a red-green-red type indication. Put non-dimensional numbers on it if you wish. Cheap anemometer could be fitted for guidance of winch driver.

Hydraulically operated disc brakes are preferred, with pressure gauge, so that pre-selected pressure can be set to minimise pay-out over-run fumbles. RAFGSA fitted commercial vehicle (transmission) discs to World War II winches.

Brake pipe-lines (or Bowden Cables) must be protected against strangulation by overspill cables.

Mechanical drum brakes are inconsistent, inaccessible, and usually impossible to adjust with finesse.

Brake operating lever (mechanical and hydraulic) must facilitate the selection of small increments of braking (fine tooth ratchet or other such device). Possibly accessible hand-screw rod?

Cable must be prevented at all costs from escaping from the drum into the machinery.

Clearance around drum to accommodate loose strands or loops, is usually inadequate.

Lubrication of transmission. Systems should use one grade of oil throughout, and plastic sight-glasses are preferable to dip-sticks.

Lubrication of front pulleys and swinging-gear has never been adequately provisioned. Why not automotive grease nipples?

Prime-mover winches are preferable to trailer-winches, and common electrical and fuel systems are possible. Any cheap vehicle will do.

"Special Parts". Avoid almost all "special-to-type" parts. Select standard hardware from all common engineering/automotive/agricultural sources—and identify as such.

Winch (for saleability) should accept either stranded cable or piano wire (or parafill ropes??).

Tost winches (complete) or unit sub-assemblies are available from Germany.

GOON-PROOFING CRITERIA (Winches)

Electrical systems must be impossible to leave switched-on when winch is not in use (press-button switches turn themselves off). Provide battery condition indicator.

Fuel systems—contamination proof, provide protected filling facilities.

Transmissions—avoid clutch-slipping requirements for taking-up slack.

Gear selectors—eliminate incorrect selection by providing correctly matched automatics (Cotswold GC?).

Pay-out fumbles. Provide consistent braking or drag facilities in transmission system.

Cables must be escape-proof.

Cable repair facilities, cutters and "Talurit" presses should be secured to the winch (or whatever facilities are required).

Accessability to re-thread cables, must be instant.

Pay-on gear should not require synchronisation.

All pulleys and guide systems should be replaceable in the field without tools. Spare units should be readily available.

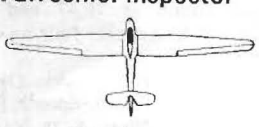
Maintainability. Provide adequate access, lubrication and cleaning facilities.

Sub-assemblies. Demonstrate the ability to lift out main assemblies, without major dismantling of CAB/chassis units.

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By L. GLOVER senior inspector



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AUTOTOWING

VEHICLES

The ultimate in low cost launching must come from diesel (or propane?) fuelled vehicles.

Whereas diesel vehicles may not cope adequately in very low wind velocities, overall, it would pay to have a cheap petrol powered vehicle in reserve, for such occasions.

Developments in diesel powered vehicles using automatic gear-boxes, turbo-blowers, two-speed rear axles, etc, may one day overcome these minimal deficiencies.

Autotowing round a pulley, has obvious advantages in turn-round-time—launch height, optimising use of available road space etc.

Parafill ropes are giving highly cost-effective results in some clubs.

Towing round a pulley with Parafill has not yet been achieved, and will require low inertia large diameter pulleys.

Load-in-cable devices are known to exist—hydraulic, electronic and of the "butcher's" scale variety.

High power/weight ratio vehicles are required but retaining adequate powers of traction. Top speed 60mph.

WHO TO CONSULT—(not a complete list)

Propane-powered towcars—Lasham GC.

Bus winches—Doncaster GC and many clubs north of Doncaster; Fenland (RAFGSA, Marham); Kestrel (AGA, Odiham) and South West District (AGA, Upavon)—Tost/belt drive unit, see S&G, February 1977, p18.

Tost two-drum winches (diesel powered)—Bicester (RAFGSA Centre).

Two-drum diesel/torque converter winch—Woodspring GC, Weston Super Mare, see S&G, August 1976, p165.

Part Tost—Oxford GC, Weston-on-the-Green and South West District GC.

Autotow developers—Cotswold GC, Aston Down (diesel), see S&G, February 1976, p27; Bannerdown, (RAFGSA, Colerne) (diesel) and Essex GC (pulley/petrol).

Parafil operators—RAEGC Farnborough; Heron (RNGSA, Yeovilton); Culdrose (RNGSA) and Bannerdown.

Pulley and cable technology—J. C. Riddell. Ardly House, Hollybush Green, Collingham, Wetherby, Yorks.

overseas news

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

EARLY START FOR HANS-WERNER

1063km at approx 98.44km/h in the ASW-17 is Hans-Werner Grosse, of Germany, latest claim for the world records of speed and distance around a triangular course.

The flight from Waikerie, Australia, on January 18, took him about 10hrs 48min having released at **08.28am.**

The first four hours never saw him above 4000ft. Later he worked to 5000 and an occasional 6000ft.

According to *Australian Gliding* no one has previously ventured so far north of Waikerie as Hans-Werner during his various attempts at ever greater triangles. With search and rescue plans made in advance he seems able to make progress over desolate regions which have so far daunted Australian pilots.

My own tally of his 1000km plus flights is now 11 (seven of which triangles) with many more around that distance. Most of these were attempted in less than ideal conditions but the one thing they always have had in common is an *early* start. So why not follow his example on your next long cross-country flight, be prepared and start earlier!

R.H.

AUSTRALIAN NATIONALS

Held at Renmark in South Australia, the National Championships had good weather on every day but one. In addition to the Open (tasks varying from 223 to 546km) and Standard Class (tasks 223—504km) there was a 15 metre Class (same tasks as Open) but shipping delays reduced its number to seven, two of which were PIK 20D type which arrived "at the last minute". In one of these Ingo Renner won in the 15-metre Class and came third in the Open Class, which was won by Malcolm Jinks with Tony Tabart second. In the Standard Class Tim Knappstein (Hornet) won, with David Pietsch second. There were no serious accidents or incidents, but one Standard Class pilot had aileron jamming at 10000ft and was "withdrawn" after landing.—*Australian Gliding.*

NEW ZEALAND CHAMPIONSHIPS

Held at Waipukarau in the Hawkes Bay district of North Island, this year's Championships, like last year's, had four competition days out of 14 available—not a good record though January is the height of our summer. A new scoring system was introduced which gave a calculated "day factor" which devalued the day's points significantly if a short task (less than 100km Open/Standard, 100km Sports) was set or if a proportion of the field failed to achieve this distance. In the Sports Class a day factor was applied to each day, and the highest points devalued were 656 on the last day.

We welcomed Ernst Peter, West German Champion and winner of the Italian Champs, who flew an ASW-19. He came fifth overall and won the last contest day.

Day 1—Open, 292km quadrilateral; Standard, 261km quadl; Sports, 127km triangle. The course led to fairly rough country to the NW, but conditions were not good later in the day: only five Standard and two Sports Class got home, with speeds less than 65 and 40km/h respectively. One Open pilot landed in an almost inaccessible river flat meadow; it took 5 ½hrs to carry the Nimbus to its trailer and the crew returned to base at 7.30am.

Day's winners: Open, D. Yarrell (Nimbus 2); Standard, B. Fowler (Std Libelle); Sports, D. Goodrick (Oly 463).

Day 2 (after four no-contest days)—Open and Standard, double out-and-return, 265km; Sports, 125km triangle. Another scratchy day: thermals good intermittently; no cloud. Only two got round: Ivor Evans in the Open and Trevor Mollard in the Sports. Standard winner, B. Fowler.

Day 3—Open and Standard, triangle plus out-and-return, 212km; Sports, 127km triangle. Of 27 Open and Standard starters, 22 got round in times varying from 2hrs 29 ½min to 5 ½hrs. Pete Heginbotham (Nimbus) by retaining his waterballast flew at least 15km/h faster than those who didn't. The Standard had a close finish between F. Desborough (ASW-19) 67.17km/h, F. Gatland (Std Libelle) 66.94, M. Stevens (Std Libelle) 66.75 and G. Larson (Std Libelle) 66.31; but the Std Libelle's handicap put Desborough's ASW-19 in third place. Day's winners: Open, P. Heginbotham (Nimbus 2); Standard, F. Gatland (Std Libelle); Sports, T. Horn (Swallow).

Day 4 (after another no-contest day)—the Open and Standard Class had a triangle plus an out-and-return, Open 196.8km, Standard 179.98km, with an 82.44km out-and-return for the Sports Class. This was Ernst Peter's day: he won in the Standard Class in 2hrs 5min 57sec at 85.74km/h. He recrossed the line 50min after his first crossing, having nearly fallen out of a cloudstreet before finding the lift was under the upwind side. In the Open Ian Pryde, last year's Champion with a Nimbus but now flying an ASW-17, won the day at 104.17km/h. In the Sports Trevor Mollard (K-6BR) won twice, going round at 76.47 and then again at 82.44km/h. Another four no-contest days followed.

Leading Final Results. Open Class: 1, I. Evans, Nimbus 2, 2656pts; 2, P. Heginbotham, Nimbus 2, 2270pts; 3, D. Yarrall, Nimbus 2, 2211pts. Standard Class: 1, M. Stevens, Std Libelle, 3067pts; 2, B. Fowler, Std Libelle, 2943pts; 3, G. Larsen, Std Libelle, 2780pts. Sports Class: 1, D. Goodrick, Oly 463, 1511pts; 2, T. Mollard, K-6BR, 1458pts; 3, T. Horn, Swallow, 1590pts.

ROSS MACINTYRE

CONTEST OF CHAMPIONS

The 1977 US Smirnoff Derby is scheduled to start on May 3 from Los Angeles and finish at Dulles Between May 17-20.

Invited this time are: The '76 winner, Wally Scott, USA, the only one who has won this event twice. World Open Champion, George Lee, Gt. Britain; World Standard Class Champion, Ingo Renner, Australia; US National Open Class Champion, Al Leffler, and George Moffat, USA World Open Champion in 1970 and 1974.

The reappearance of Moffat in contest flying has stirred a flurry of excitement among contest fans. In the '75 Derby he beat Hemut Reichmann, Germany, then reigning World Standard Class Champion.

The '77 Derby will provide an oppotunity to give speculators an idea on how moffat might might have fared against Lee and Renner in Finland last summer.

Both the George's are flying PIK 20Bs. Ingo is expected to fly a PIK 20D, and the new Mosquito, to be flown by Al Leffler, will no doubt be watched closely for its performance, by all competition pilots. Wally's mount is not yet known.

Hannes Linke will be Director and Manager of the Smirnoff Derby.

(from a report in *Soaring*)

SOUTH AFRICAN NATIONALS

A 750km triangle was one of the Open Class tasks in the South African Championships, which were favoured by 11 good days out of a possible 12. Bruno Gantenbrink from the Ruhr won in the Open Class, followed by Klaus Goudriaan, Tom Biggs and Georg Eckle. Chris Falkingbridge from Britain won in the Standard Class.

Elsewhere in South Africa, on January 4 H. Dieter Henschel flew a 500km triangle in a Std Cirrus at Bitterwasser at 134km/h and Georg Langenau put up a German record for the 500km triangle at Bloemfontein with 137.5km/h. Ted Pearson, British but domiciled in Rhodesia, on November 27 last, beat the World record for the 500km triangle with 143.04km/h in a Nimbus 2 at Bitterwasser.—*Luftsport.*

SECOND 1000km in NZ FOR GEORGESON

Dick Georgeson on a distance attempt from Town Peak, S. Island to Hicks Bay, N. Island, landed about 1009km away on February 29.

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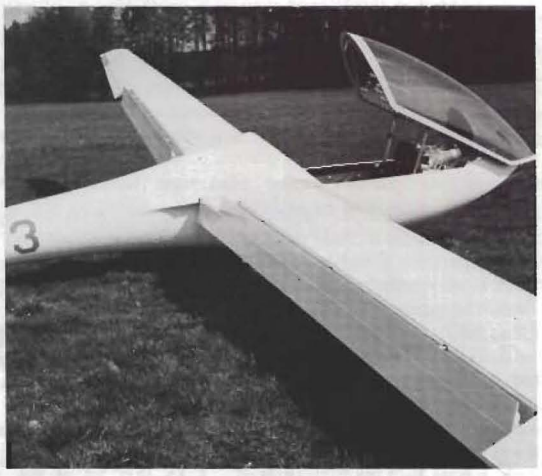
Mosquitoes are now in the UK and the agent's ship is based at Lasham.

Over 20 have now been completed and following intensive tests and development, a full German Certificate of Airworthiness has been issued.

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your letters

INKPEN

Dear Editor,

R. H. Wright may well be right (S&G, February 1977, p34), except that even wire-launching over 28 days would still be subject to planning.

However, we here at Inkpen are much more concerned at our reported "disastrous situation" and "demise", etc, and the apparent acceptance of the fact that we all have to advance rearwards to nationwide wire-launching.

First, if pilots (and pupils) will consult p37 (of the same issue of S&G) they will see that Inkpen GC *is* surviving, at Thruxton, presently by courtesy of the owners, Western Air Training, *et al.* It is hoped that this (aerotowing) situation can be built upon for the future. We have a high proportion of glass, and private owners, but also an effective output of just solo pilots, for the size of our membership.

We envy Ruth Tait (p24) being able to come to a new site agreement by two-thirds the way down the second column; our present fate, in chasing landowners, MoD, etc for an alternative site, seems close to that of the oozlum bird (tight circles, indeed)!

London R. S. MAXWELL FENDT
Secretary of Inkpen GC

DIFFICULTIES FOR BRITISH PILOTS IN GERMANY

Dear Editor,

W. C. Lombard certainly raises a point in the December 1976 issue of S&G—Flying Gliders Abroad, p274. One difficulty for glider pilots visiting Germany is that we are obliged to pass exams, theoretical and practical, for the so-called "Luftfahrerschein" or PPL Class C for glider pilots. What the British equivalent could be I don't know. I have yet to meet an instructor back home who can make sense of the paper although it is written in English.

We must also renew this licence every two years after having first had a medical by a recognised MD at a total cost of approximately £35. I can't help wishing that gliding was as easy here as in the UK.

Erftstadt, West Germany. R. CLAY

CHEAPER COARSE GLIDING

Dear Editor,

Your correspondent, J. B. Pailing, (February issue,p34) was right, I'm sure, that most club pilots only want to fly as much as possible as cheaply as possible. Spending members' hard earned money on £14000 worth of glass or tin is very selfish as only a very small number will be allowed to fly it—leave the exotic to the rich private-owner group.

He asked what's happened to the Duster. Sadly, I can only admit not much in the UK. It is a 13m all-wood machine with a Skylark performance and an empty weight of only 390lb. (See S&G, December 1974, International One-design Class for the other 95%, p265.)

I have a set of plans, No. 297, but have not started building yet. There are five sets in the UK, but over 100 Dusters are flying in the USA and it is being custom built by a manufacturer.

A kit for home constructors costs £1000 (1976 price), ex-factory, California, CWO, instruments extra. I am advised that it is selling well in plans, kits and finished machines. It can be built by one unskilled person in 700hrs and 500hrs in a professional workshop.

I am sure there is a market for this type of machine in clubs for the coarse gliding type and perhaps a one-type contest/meeting could be arranged on the lines they are contemplating in the United States. To save your airmail letters to the USA, just drop me a line.

"Salamis", Jacobstow, Bude, Cornwall. DENIS RATCLIFFE

COARSE GLIDING STILL ALIVE

Dear Editor,

The trend towards the demise of Coarse Gliding (Letter, J. B. Pailing, S&G, February, 1977), was foreseen not least by Ann Welch, who warned us about it in these pages. Obituaries are premature, however. The Coarse Pilot is alive and well and living at Cock Hill, and at other clubs where winches and old gliders survive. At our place, bent things get straightened (or Fixtered) to coarse cries of "Where's me 'ammer?", dark glasses are welding eyeshields, and members manipulate a digger, bulldozer, tipper, dumper, spades, drainpipes, slates, bricks, cement, angle iron, etc to the detriment of once-immaculate flying overalls. We even have a number of winch drivers!

A glider which sounds like the one Mr Pailing is looking for is already available. It is the Swales SD3-15T, presently costing about £4800. It is a good scratcher and has a very respectable cross-country performance. It has superlative low-speed safety, with no trace of wing drop even when circled tightly down to the stall, with great reluctance to spin unless forced and recovering almost by itself, it can be landed with full and effective airbrake at 40 knots as gently as a feather. Reliable and extremely robust, it would seem the ideal club type. The only feature which might displease Mr Pailing is the close acquaintanceship of its designers with the BG-135!

Lytham St Annes, Lancs J. C. Gibson

THE AIM IS FOR MAXIMUM ENJOYMENT

Dear Editor,

Is J. B. Pailing really as cynical as he suggests in his letter? If so, then why does he continue gliding?

He states that the "fundit" or coarse pilot is a fast disappearing breed, because of the appearance of the "exotica" pilot, easily recognised by his ex-service type flying overalls and sun glasses (the latter being highly polished).

Well let me put my case forward. I am certainly not an "exotica" pilot, I wear flying overalls and sun glasses for a reason. The overalls help keep my ordinary clothes clean and also provide me with extra pockets for such mundane things as maps and pens etc, and these pockets are easily accessible without having to undo safety straps and perform contortions to reach pockets in trousers and jackets. Sun glasses I wear (weather permitting) for the simple reason that they stop me from being dazzled, and if they are highly polished then I apologise but I wonder how many pilots have taken evasive and violent action to avoid a speck of dust on their glasses.

While I do not profess in any way to be an expert or in the same class as George Lee and Co, I certainly hope that my flying is not "coarse" which the dictionary suggests is—rough and inelegant.

Since Rodney Tibbs (S&G, April 1975, p56) brought out his now famous article on the enjoyment of gliding there has been a lot of criticism both for and against his arguments. Well as a relative newcomer to the sport in terms of hours (not very many I am sorry to say), let me put forward a suggestion that I hope will cover all possible arguments on the subject.

Surely the idea of our sport is for the maximum enjoyment for the individual to be gained in his or her, own way, whether it be 500km triangles, circuits round the airfield or if it be your particular thing, driving the winch. I am certainly not knocking cross-country flying, far from it. While not yet at the standard to go away on my own, I must admit I am quite looking forward to the day when I can just beetle off and tackle the challenge that this affords. Neither am I knocking the pilot who is quite happy to do circuits, or the person who drives the winch (let's face it, without the unselfish person who drives the winch or towcar or pilots' the tug we who happen to enjoy the company of the birds would never get off the ground). The maxim being—do your own thing.

To turn to another point raised by Mr Pailing—that of cost. Let us not kid ourselves, the days of cheap gliding, or for that matter, any sport, are over. Apart from one or two clubs who employ professional instructors, it is a marvel that so many clubs have been able to hold down their costs and still remain a going proposition.

From his comments I gather Mr Pailing either owns or has a share in a glider. I don't know what his aerotow charges are (if any), but at my own club (Norfolk) at present they are £1.75 for a single-seater and £2.25 for a two-seater to 2000ft. And if this means that I can enjoy myself in the air (which for pilots is where it really counts), then I am quite happy to pay. This statement does not imply that I have unlimited funds, far from it.

Mr Pailing suggests that many accidents are caused by lack of recognition of the cause and effect of stall and spin, due to lack of circuits in an

open cockpit glider. Well I learnt to fly in an open cockpit glider (the old faithful brick—T-31). And while certainly learning cause and effect of the stall, actual spinning was not possible due to lack of height on a winch launch, so I was left to find a suitable method of finding out about spinning from the type of launch where I could get reasonable height to carry out this manoeuvre in safety (aerotow). OK so it costs more. But ask yourselves, which is more important, your money or your life?

I suggest that it has nothing to do with whether or not you have a canopy over your head, but, to keep down costs, many pilots at *ab-initio* stage do not receive this instruction due to lack of facillities for getting that extra bit of height required.

On the subject of cheap gliders I can only agree with Mr Pailing. Certainly most good performance gliders at the moment are not in the financial region of most medium performance pilots and if anyone can come up with a suitable glider the ordinary club member can afford then I for one will be very pleased. But until then I am afraid it is a case of either utilising club gliders or considering a syndicate for me.

On the subject of S&G catering for the "exotica", I can only say that from reading reports on such things as Euroglide or the Nationals, I am finding it easier to understand the intricacies of good cross-country flying, so keep up the good work.

Stowmarket, Suffolk KEVIN J. BERTRAND

TRAILER PROBLEMS

Dear Editor,

I am writing to tell of a rather interesting retrieve incident which occurred with a commercially built trailer, and which I think may be of interest to owners of similar trailers.

The trailer concerned was of lightweight metal construction and built by a well known firm who I believe have now given up trailer manufacture in favour of other forms of glider work. It towed like a dream, BUT! The photograph speaks for itself.



After slightly less than a season's retrieving the towing A-frame suffered a classic fatigue bending failure where it joined the trailer underside. The fault was discovered after towing up the Chalford Valley near Stroud, when the A-frame box section was found to have failed on all but the bottom flange. If complete failure had occurred when towing uphill, the consequences could have been disastrous.

Examination of the failed section revealed that the top flange was slightly rusty, indicating that failure here had occurred over a period. I suppose regular and careful inspection should indicate any impending trouble.

To repair the trailer the complete A-frame was replaced by one with a box section of the same outside dimensions, but with twice the wall thickness ($\frac{1}{8}$in instead of $\frac{1}{16}$in), a repair that I hope will be very successful.

Stroud, Gloucestershire. R. G. FURLEY

STALLING AND SPINNING ACCIDENTS

The following letter from Chris Rollings, CFI of Wycombe Gliding School, was sent to Bill Scull, Senior National Coach, commenting on the Accident Review feature in the last issue, p22.

Dear Bill,

Enclosed are a few thoughts on the recent stalling and spinning accidents. I realise that none of it is particularly new but it does add up to a positive suggestion: more emphasis in the early stages (of instruction) on airspeed and slightly less on attitude.

Agreed you can teach someone to fly quicker and apparently better by attitude (until the accident); might there not be a parallel in teaching circuits by reference points? Anyway I look forward to hearing your comments on it.

Concerning spinning accidents, the following points seem to me to be of some significance. First and foremost (as pointed out in S&G) all types of glider, even the most "unspinnable" are at risk.

Most spin-ins commence at a height where an *immediate* recovery from the incipient stage of the spin would enable a safe landing to be made. In many of the spin-in accidents the glider is of a type in which any elevator position other than fully up would not allow the spin to develop beyond the incipient stage. In the course of my gliding experience I have witnessed several spin-ins and read descriptions of many others. **I have never seen a recovery from an accidental spin below 300ft or so,** despite the fact that there should be adequate time and height for such a recovery. Inquiries amongst experienced instructors suggests a pattern, *ie* **in gliders that spin below 300ft the pilot seldom, or never, attempts any sort of recovery, despite the fact that in many cases simply not having the stick fully back would effect a recovery.**

In my opinion the reason for this is the heavy emphasis placed on flying by attitude (as opposed to airspeed). It is possible to spin from exactly the normal turn attitude by progressively crossing the controls and *maintaining* the correct attitude with the elevator. Apart from the odd control position the only real clue to the appraoching spin is the ASI. The pilot who gets into a spin in this way is not expecting to spin and is in an approximately normal attitude; so naturally when the nose drops he pulls back and the more it drops the more he pulls back (a not atypical remark by a survivor is "I think the elevator must have gone wrong, I kept pulling back but the nose wouldn't come up"). Given time, of course, a pilot will realise that he is stalled and spinning and take the correct recovery action, but not before the ground has intervened if he was low to start with.

As is pointed out on instructors' courses, even a well-trained early solo pilot has only spent a fraction of 1% of his flying time actually stalled, *ie* in a situation where pulling back on the stick will not raise the nose, the rest of the time "if I move the stick back the nose comes up and . . ." From the early solo stage onwards this proportion gets worse. In the frightened situation, the ground is close in front of the descending nose, reason takes a holiday and powerful conditioned reflex pulls the stick back in an attempt to raise the nose.

There can be no cure for this situation because to fly a glider successfully the "normal", the normal stick back nose up, response must be automatic and unthinking—a conditioned reflex. To do the reverse, that is to move the stick forward as a necessary prelude to raising the nose, must be a reasoned override of this conditioned reflex; the very thing we have seen does not happen in reality.

To lay emphasis on better spin recovery teaching is therefore to miss the point. The victim fails to recover not because he doesn't know how to but because he doesn't know he is spinning. If he survives to write an accident report he will normally indicate his subsequent realisation that he was spinning in the report, as something he knew at the time, leaving the erroneous impression that poor spin recovery was the fault, not failure to recognise the spin.

My conclusion is that, regretfully, most pilots who stall in turns near the ground will probably spin-in. My recommendation? Emphasise the need to prevent stalling near the ground by selecting a safe speed and

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maintaining it by *frequent reference to the ASI,* not optimistic guesses based on the gliders' attitude, but maintain a minimum airspeed below 500ft.

Bill Scull's comment.

Chris's comments are all very valid; I tried to deal with overcoming the conditioned reflex in "After the stall" (S&G, April 1975, p55)—but not too well from some of the feed back I've had. With regard to the emphasis on airspeed monitoring I couldn't agree more. Getting the emphasis right—something that should be done at quite an early stage of training—must strike the balance between adequate lookout and maintaining safety speed.

THE "THEM" AND "US" ATTITUDE

Dear Editor,

As a power pilot, a soaring pilot and also a keen follower of soaring and light aviation generally, I wish to express my exception to the "snotty" attitude taken by John Ellis, Chairman of the BGA Airspace Committee, in his article, "Conspicuity of Gliders", in the last issue of S&G, p27.

First of all, let's get things straight. A power pilot holds a licence issued by the relevant body, *ie* the CAA. This is issued only after the applicant has passed a flying test, written exams in aviation law, navigation and meteorology and an oral test on aircraft technical knowledge. A gliding certificate, with all due respect, is in no way comparable.

Contrary to what he thinks, the business of flying light aircraft has a lot to do with stick and rudder and maintaining a good lookout.

Who is acting in the most responsible way? The power pilot flying his course in a brightly coloured aircraft with, in times of low visibility, navigation lights and possibly strobes and keeping a general lookout, or a soaring pilot flying in similar low visibility without lights, in a near white painted aircraft with his eyes glued on a variometer?

Now let's consider the standards of average soaring pilots.

1) No mandatory medical check to agreed international standards of eyesight and hearing.

2) No medical check at regular intervals to ensure eyesight and hearing have not deteriorated.

3) No legal requirement for spectacle wearing soaring pilots to carry a spare pair of spectacles when flying.

4) No radio exam (which is probably why, thank God, soaring pilots are limited to three frequencies).

All in all, glider pilots in the UK enjoy a pampered and privileged position *vis-a-vis* their opposite numbers in the power league.

But it ill becomes someone in a position of apparent authority to perpetrate this continual "them" and "us" attitude shown by many in the soaring world, especially at "national" centres—except when they require an aerotow, of course!

John Ellis should remember we are all users of the airspace over this cramped little island and separation safety is *everyone's concern.* Derisory remarks in magazines are *not* likely to increase mutual respect between airspace users and understanding of their problems.

West Croydon, Surrey. D. F. BARLEY

John Ellis replies:

The important part of Mr. Barley's letter points out that we are all users of airspace and that there is a need to increase mutual respect. This is very true if we are all to continue to maintain airspace for sporting purposes. The fact that glider pilots operate their aircraft in a different fashion does not mean they are a different species *(homo lilienthalis* perhaps?).

Mr. Barley's comments on licences, lookout, medicals, radio exams would take too much space to answer here. I think the gliding movement is fully capable of coming to its own conclusions. However, I must answer his sentence about our so called "pampered and privileged position". If he is referring to our independence, I must remind him that his has been achieved solely by the past and continuing effort of *glider* pilots—with a lot of mutual understanding and respect between ourselves and the Authorities.

Given common purpose, the power fraternity could still achieve some similar degree of independence, although I fear that the common purpose and therefore common effort has not yet shown itself.

Finally, my apologies to anybody who feels insulted by my calling his spam can a spam can, I learnt the expression from a power pilot. If that makes me toffee nosed, it gives me something else I can glue on my variometer as well as my eyeballs.

THE POLITICS AND GLIDING CONTROVERSY

Dear Editor,

Mike Garrod is wrong (S&G, February 1977, p35). FAI never took the decision, absurd or otherwise, to exclude Rhodesia from the World Championships in Finland.

All members of FAI are entitled to enter World Championships. The Central African Soaring Association is an Associate Member of FAI, was entered, and had been accepted.

Unfortunately no sporting body in the world has any power to prevent the Government of any country saying who may enter it and who may not.

If Mike is looking for a crusade, maybe he could tilt at a few Governments.

Farnham, Surrey ANN WELCH
Vice-President of FAI

POLITICAL INTERFERENCE OF CONCERN

Dear Editor,

Mr R. S. Shaw (S&G, February 1977, p35) is quite correct in saying that race and nationality are irrelevant to a true sportsman. That is precisely what the Central African Soaring Association, CASA (Rhodesia's equivalent of the BGA), has been trying to impress upon the members of FAI. Rest assured Mr Shaw, our pilots were chosen because they were the best, simply that.

Perhaps you have not noticed how few of the so called "Black African" States are members of FAI or wondered why none were represented at Räyskälä. Remember also that there are other less obvious forms of discrimination than that attributable to skin pigmentation, and it is up to the integrity of all aero clubs to see that they uphold the Statutes.

"Sport must never be used as an instrument of Cold War."

Fifteen years ago the Aeronautic Federation of the Soviet Union defended this principle in defence of East Germany and North Korea. Isn't that precisely what is happening now, not only in gliding but in all sports? But why should the individual sportsmen be necessarily associated with the policies of his Government? Anyway, in world competition we are not bound to meet people whose beliefs do not always match our own.

Governments grant visas not aero clubs. Agreed, but had the IOC cancelled the Games over the "Taiwan" issue would the Canadian Government have stepped down, or would all those billions of dollars worth of stadiums have been left to lie idle? Are we sportsmen not partly to blame?

Is the "inter nation" aspect of competitions being overplayed and encouraging interference? Should we place more emphasis on the individual, without reference to country, flag or anthem, or would this spoil the spirit of the contest and make organisation difficult?

FAI recognises records for supersonic and space flights. Are these truly "sporting achievements?" Does their inclusion strengthen FAI by increasing its size and influence, or are they a millstone around the necks of those trying to keep politics out of sport?

It's a changing world. How would you feel if a British team were excluded from a World Championship, or could it never happen?

How much effort is worthwhile if the very concept of WORLD sport is to survive? To keep gliding, if you like, as "Free as a Bird." Isn't it a pity

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that many of the early flights of the pioneers of aviation, limited only by technical problems and physical endurance, can today be made impossible, simply by the absence of a rubber stamp?

Southampton KARLA KAREL

IAN ROBERTSON REPLIES

Dear Editor,

I refer to my previous appeal to keep politics out of gliding (S&G December 1976, p274) and to my disappointment at the exclusion of the Rhodesian team from the World Championships. R. S. Shaw is clearly a make-believe politician and not a competitive glider pilot,-I can't find anyone with that name in any of the competitions or FAI badge awards listed in S&G over the past year. It is precisely people of this type who use sport for their own nasty political ends and his/her response to my letter merely illustrates the point I made. Such people never do their homework and ignore the facts:—

1) Rhodesian sporting policies are *very* different to those of S Africa.
2) There is no colour bar in the Central African Soaring Association or in any of its member clubs. One club has had an Indian member for many years.
3) There is no gliding interest among black Rhodesians.
4) The Rhodesian team was chosen on merit alone.

After leaving Britain I lived in Rhodesia for many years and learned to glide there. The least I can do for a fine country is to object most strongly to this shameful treatment of fellow pilots. To be apathetic to this interference in our sport is to become party to it. *Let it never happen again.*

Randfontein, South Africa. IAN ROBERTSON

(Correspondence on this subject is now closed. Nobody wants politics in sport but no sporting body is competent to change the minds of government. ED.)

BOOK REVIEWS

CFIs' Handbook edited by W. G. Scull, Senior National Coach. Available from the BGA.

This is a must for every CFI to have on his bookshelf for quick and easy reference on all matters relating to the operations of his gliding club. Very little of the handbook is new material, but Bill Scull has collected an immense amount of useful information and presented it in a very convenient format. Most of the sections have been written by Bill over the last few years and have appeared in *S&G, Instructor* or other BGA publications.

The Handbook contains sections on supervision, accident prevention, airspace, technical, tug operations, sites and motor gliders, in addition to a chapter on the CFI's rôle.

The last section is new and an excellent brief for any budding CFI, or indeed a current one. My one disagreement with Bill is over his assertion that CFIs should only remain in office for two to four years. Surely it all depends on the CFI? As long as he retains a freshness of approach, the confidence of his instructors and is keen on the job, he should not be replaced just because his time is up.

As well as CFIs, every instructor would find this Handbook a useful reference book which he could keep up-to-date with articles published by the BGA.

B. H. BRYCE-SMITH

Jane's All The World's Aircraft 1976/77 edited by John W. R. Taylor. Published by MacDonald and Jane's Publishers Ltd at £25.

Gliding takes some 44 pages in this 67th issue of the most comprehensive of aviation reference sources with hang gliding reduced to less than half a page, and this devoted to details of the principal organisations governing the sport. The year before hang gliding was absorbing far more space but the Editor explained in the foreword that "the sub-section seemed inappropriate—even potentially hazardous to inexperienced would-be pilots—at a time when the regulations governing hang gliding are being revised and given more authority in several countries, following accidents."

The Editor added that when new regulations are published, and it can be ensured that gliders described and illustrated in **Jane's** conform with them, the sub-section will be re-introduced. Meanwhile hot-air balloons are in the book for the first time.

Jane's has been completely re-set and this issue, like its predecessors, aims to give a completely reliable and up-to-date reference work of the products of the world's aircraft industry.

The gliding sub-section is beautifully presented with a generous allocation of photographs, some particularly fine. Sailplanes are listed under their country of origin and it's interesting to see the spread of glider manufacturers. From W. Germany predictably taking the most pages with 16, there is in contrast a few lines under Philippines announcing they are developing a two-seater training glider.

G. B-S

Amendments to the Club Directory in the February issue, p36.

Aquila GC have asked us to change the original information they gave about visitors by air and the use of radio equipment, call signs or wave bands, and also to delete all reference to contacting the Secretary for permission. Instead visitors by air, PPR by telephoning the CFI, Fritwell 594, or the deputy CFI, Brackley 702384.

Birmingham University GC is independent of Stratford on Avon GC although both are based at Long Marston airfield Aston University operates with Stratford.

Essex GC: 51°44N 00 10E, 321asl. North Weald airfield, 2m NE Epping Flying: Weekends, some summer evenings. Summer courses from May 30.

Stratford on Avon GC's tel No. is Stratford on Avon 3290.

Bannerdown (RAFGSA) have a new tel No.—Box 2824, and there is often midweek flying during the summer.

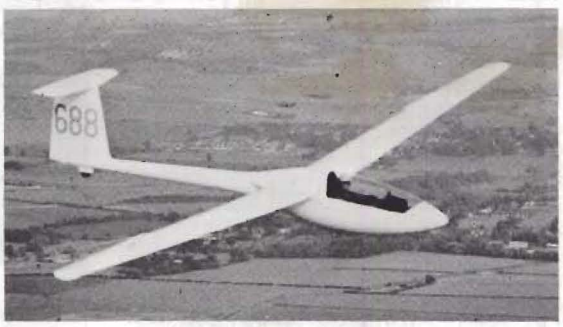
Correction: *In George Burton's article, Design Philosophy of Vega (S&G, December 1976, p258), the tailplane area should have been 12.4sq/ft (1.156m²).*

pik 20

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club news

"Ye Olde Gliding Club"—a visit by Henry VIII and entourage when the Culdrose Club held a medieval banquet.

Copy and photographs for the June-July issue of S&G should be sent to the Editor, S&G, 281 Queen Edith's Way, Cambridge CB1 4NH, tel Cambridge 47725, to arrive not later than April 13 and for the August-September issue to arrive not later than June 15.
February 16, 1977

GILLIAN BRYCE-SMITH

AQUILA

Although we haven't appeared in print for some time the club is alive and kicking. Last year we improved and extended our hangarage, re-built our twin-drum winch and are presently working to continue aerotowing in 1977. Our membership, although fluctuating, is at an acceptable level, the glider fleet now numbers eight and we await with interest the arrival of a Vega ordered by a club syndicate.

Congratulations to our Chairman, Chris O'Neill, on Diamond goal, Malcolm Lassan on Gold C height and to David Hodgson who soloed at 16 years. Congratulations also to those members with first solos, Bronze completions and Silver legs to their credit, two rather special ones being Silver distances by Geoff Lescott (Oly) and Len Holden (Weihe) in the oldest (but much loved) machines in the club.

We had a double celebration in 1976, our tenth anniversary, when we invited back founder members, coupled with the successful completion of their instructors' course by Messrs D. Gillam, M. Lassan, T. Norris, P. Wilde and Lis Clarke (this was also our year for emancipation).

On Saturday, June 4, we are to host a Jubilee Rally/Competitions week for the Vintage Club.

D.G.G.

AVRO

1976 was another outstandingly successful year for Avro, based at Woodford in Cheshire. The club celebrated its 22nd year by, for the seventh year running, beating all previous annual flying records with a total of nearly 700hrs flying and just under 5000 launches. July was the best month with nearly 200hrs and 800 launches and June 13 the best day with over 100 launches. There were two cross-country flights of over 200km, 256km by Ron Asplin, CFI, and 220km by Dave Bailey—plus a Gold C height gain of 12400ft by Ivor Corkell.

Membership, which is open to past and present employees of Hawker Siddeley, their families and employees of British Airways Manchester, has now topped 300. The club operates a Skylark 3, a K-7, a Swallow and a T-21. The Skylark 3 is based at Shobdon for cross-country flying and the remainder of the fleet is at Woodford—housed and maintained in the historic original A.V. Roe hangar erected in 1925 for the assembly of AVRO 504 biplanes.

Sadly, the club lost one of its most enthusiastic and dedicated members, when Lawrie Frakes died in November following a long illness. Lawrie had been an instructor since 1970 and will be missed by everyone.

During the coming year the club looks forward to the opening of its new clubhouse at Woodford, and is hoping to acquire an additional glider.

C.B.G.M.

BRISTOL & GLOUCESTERSHIRE

Our usual spate of good wave has not appeared this year and apart from a few good ridge days, flying has been mostly confined to circuit bashing.

Our Christmas bun fight was the usual resounding success with a grand session afterwards. The annual dinner-dance is in March with the AGM on Saturday, April 19.

There has been tremendous activity in the workshops with the rebuilt Swallow virtually complete and the Blanik almost back together again. Our Super Cub is now airworthy after a major engine rebuild—next in line for "Chalky" White is the Auster.

Since the demise of Inkpen, the number of gliders on site has increased by five after a careful analysis of launching capacity etc.

R.A.R.

CAMBRIDGE UNIVERSITY

On January 9 C. Perkins and A. Blacklee winched from Duxford and soared the T-21 along what appeared to be a non-precipitating line squall—sort of type of thing! This first soaring flight of the year lasted 22min.

Our annual dinner was on February 12 at Churchill College when the club trophies were presented. Speakers included Roger Barrett, Chairman of the BGA—ten out of ten!

S.N.L.

COVENTRY

Lou Frank has been succeeded by Lemmy Tanner as CFI and by the time you read this Lou will have emigrated to South Africa. There does seem to be a regular migration of Coventry members to that part of the world. We all wish Lou, Ann, and family good luck in their new "home", and lots of good gliding. Lemmy Tanner has lost no time in introducing his own idea's—within two weeks we had purchased a K-8 and plans are already afoot to acquire another.

The Bocian that has been refurbished by members looks really smart in its yellow and white colour scheme. The club's second Bocian

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was written-off before we could start fettling it, but fortunately we managed to purchase a new one, giving us a sound fleet for the coming season.

C.T.

DERBYSHIRE & LANCASHIRE

The annual dinner-dance in February found us saying farewells. Mick and Dolly Wright are leaving Camphill after seven years as our resident steward and stewardess. We are much indebted to them and send our best wishes in their next venture. Let's hope the grandfather clock will remind them of good times spent here.

We also say goodbye to Mike and Jenny Armstrong who are moving from the area after many years. Mike has been an instructor for the last ten years and Jenny has been making sense of the flying sheets.

Congratulations to Steve Woodhead and Charles Walker on going solo. We are awaiting the arrival of a syndicate owned PIK in April and the summer courses, already well booked, are from May to the end of September.

The Vintage Glider Club are planning to hold an autumn rally at Camphill from October 1—2 when we will be delighted to welcome spectators as well as aircraft and their owners.

C.D.R.

DEVON & SOMERSET

There was a unique flight at North Hill on New Year's Day when Kevin Jenkins celebrated his 16th birthday by going solo in our Bergfalke 3. Kevin was briefed for the flight by his father, club instructor Ken Jenkins, who then flew the tow-tug to make sure that Kevin kept in line!

Congratulations also to Chris Miller, Gordon Peters and Dave Brearey for going solo and Ian Gordon and Mel Pitts for gaining their Bronze Cs.

Work on the new trailer for the K-8 is nearly finished, and the winch and tractors have been completely overhauled and refurbished by a small band of club members. The new cable retrieve vehicle is nearing completion in the workshops, complete with heated cab and automatic transmission, which should ensure an endless stream of volunteer drivers!

M.G.P.



Kevin being briefed by his father.

DONCASTER AND DISTRICT



Sheppies awaits the "up slack" at Doncaster.

Photo: Graham Wilburn

Members have been working on Cs of A and painting trailers and the club fleet is now ready for the coming season with a new Swallow to add to the K-13, Bocian, Swallow, Skylark 2, Olympia 460 and Super Cub. As we go to press we await clearer skies for Chairman, Frank Thompson, and CFI, John Stirk, to approve our option on a second tug, a Scheibe Sperling.

Courses were a great success last year and Lilan Sharpe and Dave White are enthusiastically taking bookings for 1977. John Houghton and friends eagerly await the arrival of their Kestrel which will bring our glass ships fleet up to two Kestrels, a Cirrus and the Std Libelle.

The airfield lease problem is very much with us as the local authority is seemingly determined to build here, but one ray of hope is the Ministry for the Environment's public inquiry in April.

Congratulations to Jeremy Mills who went solo on his 16th birthday and good luck to Neville Spencer, Bill "Commander" Thorpe, Melvyn Morris, Joe Millward and Dinsdale Richardson destined for instructor courses this season.

P.Y.

DORSET

Our club fleet is under review. After extensive discussions the Flying Committee has decided that at least one of our two Swallows should be replaced by a higher-performance machine. We achieved 3233 launches between November 1975 and October 1976. Incidentally, our only weekday operations are on Wednesdays in the summer.

Congratulations to Peter Domoney and Barney Toulson who passed the instructors' course held at the club towards the end of last year. We are grateful to Allen Palmer for running the course.

Some rough weather left its mark just before Christmas by overturning the Skylark 4 trailer which sustained substantial damage. Fortunately the glider was not inside!

During the winter our mobile canteen has been providing hot drinks and soup at the launchpoint, as well as being an enjoyable meeting place. We have maintained Wednesday activities by holding lectures which have been useful to pupils and experienced pilots alike. Our thanks to the instructors who have spent so much time in preparing the lectures. The cheese and wine evening in February was a great success.

C.R. & R.O.

DUNKESWELL

The soaring season opened for us on January 29 with a cloud climb to 3700ft by Mike Fairclough in the club YS-53. Dave Spedding and John Bottomly have gone solo, John also completing his A and B, but unfortunately bad weather precluded Julian Pearson from celebrating his 16th birthday with a solo.

We now have a second tug aircraft, a Beagle Terrrier, to support the increased fleet and are happy to congratulate Barbara Fairclough on obtaining her PPL, which came through to speed her recovery from a knee operation. All our summer courses are now fully booked.

A.C.P.

ENSTONE

Our training programme has continued during the winter months and we have seen many first solos. Paul Lees has taken over as CFI after the resignation of Doug Blore. Many thanks Doug for your valuable contribution to the club. Our demolition squad (no, not the children) have been in action knocking down disused buildings on the airfield, and plans are afoot to erect a new hangar.

We have decided to hold our task week during the Easter holiday. Entries from other clubs are welcome.

M.W.

ESSEX

Congratulations to four new solo pilots in the first month of 1977, which got the New Year off to a good start. We had a very successful annual dinner-dance on January 7 when the cups were presented. Glenys Withrington received the *ab-initio* trophy and two magnificent Gold distances were rewarded by the President's cup to Mike Jeffries and the Rodwell trophy to Peter Bartle.

Our club fleet is being updated by a new K-13 and some exciting changes in the private fleet are planned in the near future.

S.L.C.

ESSEX & SUFFOLK

Events lately have been overshadowed by the death of Jeff Cork, after a short period of illness. Jeff started his gliding at Whatfield and

had flown with us for 4½yrs. His Silver C was completed last season and he was a member of the Pirat syndicate. He was a very popular member, always ready to lend a hand; and made many friends on his expeditions to Usk, Challock and Tibenham. We extend our sympathy to his wife Jean and daughter Alison.

The annual dinner-dance was a great success. The Instructors' pot was awarded to John James; and the new club 100km triangle trophy was won by Tony Woof (Oly 463).

Because of the extremely wet winter our grass runways have become rather boggy at Whatfield. Nevertheless flying was able to continue for several weekends at Lavenham airfield, thanks to the owner Mr. D. Alston, and our first thermals of the season showed themselves on February 13.

We still await the erection of our clubhouse which is in sections, sitting around in neat piles; we require something called planning permission. Our AGM looms up in March.

C.C.S.

HAMBLETONS

We are sad to report that one of our oldest instructors, Bill Wintrip, died in December. His fatherly advice and cheerful philosophy will be sorely missed.

Once again, after only 14 months, we have had another change of CFI. Bob Beck has left the RAF and at a farewell party for Bob and his wife Carolyn a gift of Waterford glass was presented from both clubs on the Dishforth site in appreciation of their enthusiastic efforts over many years. We wish Bob well in his commercial career.

The wave, normally such a feature of Dishforth, hasn't yet appeared at weekends but we have had some enjoyable flying days, making full use of the newly acquired Motor Falke.

A.W.

HEREFORDSHIRE

Our Rallye Commodore tug is back in service after a new engine and lengthy C of A. We hope to replace the club Pirat with a K-8 for the summer season and to obtain greater utilisation from the single-seater. New privately-owned aircraft include a Skylark 4 and a PIK 20.

The Regionals at Shobdon will be from August 6—14 and our freedon from controlled airspace restrictions should attract competitors. Visiting private owners are welcome during the summer but please write to the CFI to confirm arrangements.

C.B.N.

HIGHLAND

Wave is off over Dallachy this winter. Our biggest excitements have been launching off ice (more than usually uplifting), and landing in mud (altimeter reads —6ft). The latter has not improved the appearance of the Bocian wings that we so laboriously stripped, fabriced and repainted earlier this winter.

Congratulations go to Colin Foreman and Alasdair Macphail on going solo, and to Gerry Robson on his first Bronze leg.

The Auster has returned from its long sabbatical and is successfully dividing its time between ourselves and RAF Fulmar at Milltown eight miles away, so we have hopes at last of contacting the elusive wave and, come the spring, escaping the sea breezes.

A shock rates assessment of £10 per acre on our land alone (we have no buildings) has brought us into conflict with those twin Hydras the Moray District (assessment) and Grampian Region (discretionary relief). No official outcome as yet, but we have hopes of a reduction. Sound advice for others engaged in similar battles seems to be to observe the three Ps—Publicity—not too much, People—get them on your side and Politeness!

R.E.T.

INKPEN

Highlight of our winter season was undoubtedly our annual dinner when we were proud to have as guest of honour the World Champion, George Lee himself accompanied by the British Team Manager and present BGA Chairman, Roger Barrett. What more could we ask for a successful evening.

Behind the scenes a great deal has been done to secure the future of our club and at the time of writing the Council are encouraged by one or two developments resulting from these efforts. One thing is certain, Inkpen lives on and we are all anticipating another exceptional soaring season.

R.G.W.

LAKES

Distinguished visitors from the gliding world do not generally beat a path to remote clubs such as ours, so it was with particular pleasure we welcomed Ken Wilkinson, Vice-President of the BGA, to our annual dinner-dance. He entertained us with a fascinating account of his experimental flying activities during the war on troop carrying gliders, after which the following trophies were presented:— the Duddon cup for services to the club, Charlie Bull; the Dodd cup for the best progress, Bob Humber; the Leighton Hall cup for the most outstanding flight, Arthur Alsford and the Lonsdale trophy for the best cross-country from Walney, Dennis Carey.

In recent weeks Peter Craven has gained Gold height in wave, John Johnson has gone solo and both Neil Braithwaite and Ian Henderson have completed their Bronze C.

D.J.C.

LINCOLNSHIRE

The annual dinner-dance and prizegiving was in January with George Lee, World Champion, as guest of honour. George presented the trophies, the notable winners being Mike Ward, who took three awards for height, duration and furthest distance by a Bronze C pilot, and Shirley Beedham, who won the CFI's *ab-initio* trophy.

Mike Ward, Len Cooper and Geoff Bolton completed instructors' courses during the winter. The cable welder has proved successful and is in regular use. It has greatly reduced cable foul-ups, especially on pull-outs.

Steve Hurt is holding a task week from August 8—12 and we shall therefore be operational during that period. We welcome any visitors who are advised to land on the runway. We are situated beside the river Witham ten miles east of Lincoln.

G.A.B.

LONDON

The most obvious change that the casual visitor to Dunstable will notice this year is the replacement of K-8s by K-18s as the entire solo fleet. To us ex-Tutor pilots, it is astonishing to think that now *ab-initios* go solo in gliders equal in performance to the best contest gliders on the market ten years ago. The versatility of the K-18 is conveyed by the fact that last summer pilots of modest cross-country experience were doing as much as 1500km in a five-day course. These courses for pre- and post- Silver C pilots are a Dunstable innovation—and now an institution; as mother hen, John Jeffries, takes two or three solo pilots with him across vast tracts of country—up to 400km at a time, pausing only to descend, brakes out, into the depths to pluck out a struggling chick; rescue completed, the gaggle staggers off across the empyrean . . .

Two professional tug pilots and five tugs mean that we will have a minimum of two towplanes available at all times. Again the Easter Comp will be run by Dilys Yates.

M.B.

MIDLAND

Poor weather has affected club flying and access to the top of the Mynd was blocked by snow on several occasions. Arctic blizzard conditions, however, failed to separate 65 or so members from a superb Christmas lunch. Full marks to staff and senior members who turned out when even a husky would have stayed at home.

Like the seaside landladies, our winter pre-season spruce up is under way and we look forward to happier than ever course members in '77.

G.C.

NORFOLK



Norfolk sum up their winter activities with this illustration by Charles Hall.

NORTHUMBRIA

The ravages of rain and snow have not improved the surface of our grass tug strip. The result is our Chipmunk rests forlornly in its hangar alongside our gleaming new IS-28B2. With this addition to our club fleet and the advent of drier weather, our CFI plans to initi-

ate cross-country training for all suitably qualified pilots.

The Development Committee is awaiting the result of its grant application towards the building of a new clubhouse. If all goes well this should be a memorable year for Northumbria.

R.R.H.

OUSE

The RAF are allowing us to have a flying week as we did last July, although dates haven't yet been fixed. As the sale of the airfield has not been finalised, we have been told we can stay until September 30. Then we will be negotiating with the new landowners to remain on the site.

Congratulations to Julian Day and Alan Mendetu on going solo. The Swallow is back after its complete overhaul and the building of the pulley-launching vehicle is coming on well—our thanks to the Cotswold GC.

J.G.

OXFORD

Ian March, who recently sold his K-8 to the club, now has a Pilatus which first flew from our very soggy field in February. Flying fees have undergone a modest increase for the coming season, and first solos include Steve Noujaim (age 16) and Gavin Wye.

P.H.

RUSSAVIA COLLECTION

The Imperial War Museum at Duxford has kindly consented to the use of precious workshop space by Duxford Aviation Society members for aircraft restoration, and this has enabled Mike Russell to set up a new workshop almost specifically for vintage gliders. The gliders listed below have been moved in since September, together with a Tiger Moth G-APMM to be restored as a suitable vintage-type tug.

So far, more than a dozen folk are involved, all dedicated (or getting hooked, anyway) to glider restoration. Some are airline (we sport over 30000hrs), some are gliding, (two inspectors, an instructor, a Gold and over 2000 gliding hours) and some are . . . well, just new to it all, and learning fast. As our aim is to restore all we collect to best possible flying condition, and then to operate to rallies, displays, and for our own pleasure in the summer sun . . . and hopefully preserve and teach some of the dying crafts of wooden sailplanes: "things that go creak in the flight!"

Alistair Raby and Philip White are mainly involved in the Moth, and David Braham, Roy and June Parker and others with, initially, the first Kranich; though we don't allocate work specifically, preferring to "mix it" as each project demands. Sunday is the "working day" so if you are passing, or land at Duxford, drop in for a coffee—Building 63, first left inside the main gate: who knows we might offer you a chisel, or the glue pot!

In our care are the following, in various ownerships: the Petrel BGA 651, two Kranichs, BGA 907 (Swedish) and BGA 1147 (German), the Willow Wren BGA 162, Nacelle Dagling BGA 493, the ex-Shuttleworth GB IIb VN148, and a collection of broken bits of Oly (thank you, Ralph and others) which will become, for the fourth time, BGA 618! In the offing is another ex-GSA GB IIb, and maybe a Rapide so we can travel in style.

We'll report future progress in these columns, and if we're airborne it's "Petrel" to "Antique Base" on 130.4.

M.C.R.

SCOTTISH GLIDING UNION

Jim O'Donnell has stepped down after four years as CFI for a well deserved rest while Roy Surtees shows every sign of being a very popular successor. A more active than normal AGM resulted in quite a few Board changes which in return has led to more development work.

Progress continues on the new winching system and conversion of the old workshop into new offices and a briefing room is well underway. The Caravan Committee got the new site operational in June.

We have acquired a (Phantom) member who has turned out to be the World Champion. Our heartiest congratulations to George Lee and also to Tom Docherty for his record breaking flight from Portmoak to the south coast (See S&G October 1976, p228).

Contrary to normal migratory movements, a SGU expedition to Lasham is planned for June.

R.H.

SOUTH WALES

With the high rainfall, flying has ceased as the airfield is water-logged and more suitable for salmon from the nearby Usk than a winter wave site.

Before this we had several good flying days, the most notable flight being to 17000ft over the Black Mountains by John Grehan in his Kestrel.

Reluctantly, the club is forced by increased insurance, VAT and inflation, to increase its charges for all services this season.

In recent years we lost two instructors who went to work in the Middle East, with rumours now of more going. If this trend is nationwide, there should be the nucleus of a first-rate soaring club in the Arab oil states.

J.D.S.

STAFFORDSHIRE

The AGM at the end of January saw Doc Bradwell and John Graham again taking on the offices of Chairman and Treasurer. Joe Malkin is our new Secretary and committee members are Roy Mountford, Gordon Brocklehurst and Philip Barnshaw. CFI Arthur Lowens resigned this year and his place will be taken by Charles Webb. The only increase in fees agreed at the AGM was the raising of the price of hangarage from £10 to £15.

Two courses are planned again this year, one being to Shobdon which proved so popular last year. The Chairman's cup was awarded to Charles Webb for his many years of stalwart service to the club.

The recent snowfalls in the Peak District caused the postponement of Robert Wilshaw's buffet party which is now planned for early March.

F.B.

SURREY & HANTS

Events over the winter have been somewhat fluid as plans for '77 are made and it keeps raining! Our fleet is being updated again. Our faithful Phoebus 266, which it has been said is the Chairman's Personal Aeroplane—he has done 470hrs in it—is being sold to provide initial funds for two Vegas, and the sale of the B-4s will complete the fleet rationalisation to give high-performance flying to the less experienced members. This will give a balanced fleet for rapid progress to high-performance flying *viz:* five K-8s, one K-6E, two Astirs, two Vegas and Kestrel 19.

Life came to the sky toward late January and some good cumulus gave the first excitement to early K-8 pilots who only converted after the '76 thermals had emigrated.

C.L.

WELLAND

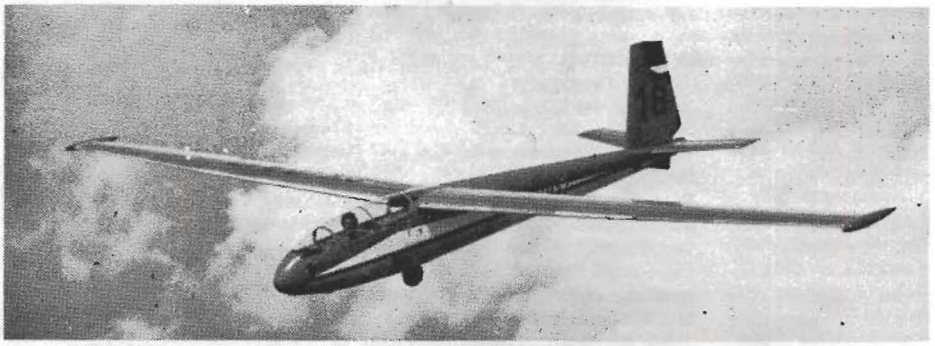
We are now nearing the end of our winter work programme and have just completed the hangar extensions. Last season proved to be our most successful since the Group was formed in 1972. Due to a combination of the magnificent summer and the great enthusiasm



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shown by the members, we achieved 1237 launches resulting in six A and B certificates; four Cs; eight Bronze C legs and three Silver Cs. Not bad for a total membership of 26.

In August the Group purchased a K-4 so our Bergfalke is now more available for advanced training and solo flying. We also have two syndicate owned single-seaters on the site. Visitors are always welcome.

P.B.

WOLDS

A newly installed electric generator supplies power to both hangar and workshop where the hard core of club stalwarts carry out maintenance to gliders and ground equipment. The two winches and the retrieve truck have benefited so far and some major work on the K-7 is planned for early spring.

Bill Young, Peter Norrison and Mike Waudby have completed their Bronze Cs and Colin Milner has added his name to the already extensive list of instructors.

This small but active club has excellent facilities on a large three runway airfield adjacent to the main York road and a warm welcome awaits day or new members. Good ground equipment and slick organisation keep flying lists short.

The first issue of the club newsletter, recently issued free of charge to all members (with their subscription reminders), contains details of plans for next season's activities which include a club task week for private owners and club pilots.

G.H.H.

WOODSPRING

Since October we have had few flying days and now the airfield is water-logged. This has caused a severe loss of income and our Treasurer anxiously awaits the subscriptions, due on March 1.

We are seeking a club solo machine to replace the Meise and are very grateful to Tony Fisher for allowing us unrestricted use of this machine for the last 18 months.

We have an expedition to Portmoak at the end of February, taking the club Bocian and three syndicate machines. We have been greatly helped by a visit from a Nympsfield based tug. This enabled our potential instructors to get some worthwhile spin and aerobatic practice.

J.W.

WYCOMBE AIR PARK

Many of our pilots have been in winter hibernation during the uninspiring weather. Various members have mounted expeditions to wave sites and Dennis Campbell achieved Diamond height at Aboyne.

Our tug/glider fleets have been improved with a 180hp engine fitted to the Super Cub during December and the arrival of two Astirs. We are hoping to take delivery of a two-seater Astir before the end of the year.

New gliders have been ordered by various members and Ted Lusted has taken delivery of a new DG-100.

M.H.B.P.

YORKSHIRE

Sutton Bank has had its fair share of snow this year but this has not deterred our hardier members, or the various clubs who visit us during the winter. The club has acquired a Rallye Commodore to replace the Terrier as one of the tug planes, and a K-8 has been added to the club fleet.

We have lost two members to Saudi Arabia—Barry Gregson and Don Austin. Hilda Gregson, our Secretary, will again be dealing with the courses and this year's Northerns, before joining her husband in Saudi Arabia.

G.B.

Service News

ANGLIA

The new season opens with several changes in instructors and management, as can be expected in a Service organisation. We are very grateful for John Turnbull's work as Treasurer and bar member and for Dick Hunt's miracles on the club ground equipment to keep us operating. John is now in Northumberland and Dick is in Germany shortly to be joined by John Jenkins.

Ian Wood, Dave Bearcroft and Dereck Beaney are off to Bicester in March for an instructors' course and should double the club instructor strength on their successful return.

During the winter flying has continued, ATC and weather permitting. Tommy Cardot showed us how to soar the K-8 and B-4 in February. Work has been continuing on the new Astir trailer which should be completed in March. All we need now is the Astir to allow CFI, Alan Jury, to fly in the Inter-Service Regionals at Halton in May.

At the AGM in February the CFI reported over 1000hrs for last season, with no accidents, from the four club gliders. John Turnbull was awarded the challenge shield for his 300km triangle in the club Pilatus B-4 and Dave Bearcroft won the *ab-initio* cup for the best progress. There are plenty of new enthusiastic members and there is a temporary move during the soaring season of Phantoms and ATC to Wethersfield.

A.R.J.

BANNERDOWN (RAFGSA)

The season starts with the addition of a private Motor Falke to the club and a K-13 to replace our hard-working Blanik. Our K-8 is back on line after a winter beauty treatment of recovering and respraying. At the AGM, trophies were presented to Cary Darby for the most meritorious flight of the year; to Den Britton for the best height gain over the club site; to Chris Bunn as our best *ab-initio* with the Pete Dawson trophy for the most work done in the club on the ground and in the air going to Terry Joint—needless to say, the Hog of the Year award also went to Terry!

Ken Hartley again won the Britton trophy on points for cross-country flying and has been selected to fly the Nationals this year. Roger Crouch, Jock Wishart, Andy Hancock, Terry Joint and Mick Webb are representing the RAF in this year's Inter-Service Regionals.

J.J.H.

BICESTER (RAFGSA) Centre)

The winter months have seen a welcome influx of new members, notably apprentices and young airmen from RAF Halton. There are now often more members on the airfield than at the height of last summer. The new Super Falke and Astir are now flying, the cabin heater and electric starter on the former being much appreciated during the recent cold weather.

Many fields in the Bicester area are flooded, but thanks to an excellent drainage system our airfield has always been firm enough for flying.

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Recently an enormous tractor has been dragging a special plough across the field to inject liquid fertilizer beneath the surface. It may be good for the grass, but unfortunately it has brought up many large stones in its wake.

There is plenty of activity in the hangar with several members busy with C of A inspections. Paul Bolton is completing a trailer for the new Astir from a basic box built by John Delafield. Ron Newall, our MT member, is fitting an impressive looking engine into one of the Tost winches. It is so large that he has had to cut away the front panel of the winch casing to accomodate it.

Several members headed north, to Sutton Bank or Aboyne, last autumn in search of rather elusive wave. The only one to be successful was Pam Newall with a well deserved Gold height. Our Chairman, Jack Alcock, and Doc Saundby are preparing to take the Astir to Aboyne in March.

We have said goodbye to Nigel King who has been posted to Germany. He spent so much time working on our tugs that many members thought he was one of the full time Centre staff. An old friend, Paddy Hogg, has recently joined the staff.

Among the many courses run at the Centre are some sponsored by the Ministry of Defence as part of the Joint Services adventure training scheme. Young, and not so young, servicemen and women are able to learn to glide while on duty and with all expenses paid! The first course this year was dogged by bad weather, there being only two flying days. However this did not stop Paul Carter, an airframe fitter from RAF Abingdon, with no previous experience of gliding, from going solo on the following Saturday.

T.C.H.

CLEVELANDS (RAF Dishforth)

Once again, as is always happening with Service clubs, postings and retirements take the toll of good members. Our CFI, Bob Beck, has handed over on a temporary basis to Gordon Hunter (see Hambletons). Both flying hours and cross-country mileage increased last year, achieved by the addition of the Motor Falke and other gliders and Bob's efficient running of the club.

Our Tug Master, Bill Andrew, has been posted to Abingdon on promotion and we owe him our thanks for getting the tugs through their C of A.

Anyone travelling to Portmoak or Aboyne on expedition will be welcome to call in at Dishforth.

J.A.S.

CRANWELL (RAFGSA)

The last two months have been fairly quiet with several weekends' flying lost to poor weather. Our B-4 is still earning its keep at Portmoak. Due to sickness, the AGM was postponed from December to March.

The club SF-26 has gone to Wittering to join the new East Midlands Club and we wish them well with their new organisation and the SF.

Our President, Gp Capt Bacon, left Cranwell in the New Year and our best wishes go with him. In his place we welcome Gp Capt Scambler. Bryan Harvey, our OIC, is due to leave us in April for a posting in Germany. Bryan has been with us for several years and been a key member in the successful running of the Cranwell gliders. Good luck Bryan and many thanks.

E.G.N.

CRUSADERS (Cyprus)

Last year's statistics showed we had over 7000 launches and 1000 flying hours. Unfortunately we are facing a desperate shortage of instructors. Our CFI, Tony Clarke, and assistant Cat, John Mooring, are leaving before Easter.

There must be full Cat instructors bursting to take over a club with a fleet of six gliders, 100 members and situated in a climate second to none. Beer and eating out is cheap and our clubroom, ably managed by John Mooring, rings with merriment.

M.H.B.

CULDROSE (RN & RMGSA)

We have seen little of the severe weather conditions experienced around the majority of the UK and even had the odd day of weak thermals. The winter lecture and social programmes are going well and have included a medieval banquet, a club outing and the annual dinner.

Work goes ahead on the club aircraft and the "Royal" tug is still giving great service. It is hoped that we will soon have a new Blanik to join the club Capstans and Pirats and there should be a syndicate Prefect, a privately-owned Grunau Baby and Arthur Brooks' Kestrel. We also hope to have another visit this year from Alan and Billie Davie with their Diamant.

P.W.

EAGLE (Detmold)

We had very successful flying on Boxing Day, with a good turnout of people. In spite of a snow-covered airfield, the weather was crisp and clear, and the day was nicely rounded off with *Glühwein*, hot snacks and a good gathering in the bar.

Since then, the aircraft group, led by Martin Hardy, have made excellent progress in the workshop and the aircraft are beginning to look in fine fettle with new coats of paint everywhere. We are unable to operate the winch on the slushy water-logged field, so are continuing with the Falke and aerotows.

M.A.H.

FENLAND (RAFGSA)

Congratulations to Andrew Elliott for going solo on his 16th birthday and to Phil Morgan for resoloing. Eleven hardy souls braved the weather on New Year's Day and flew a total of 22 launches, one even soaring for 19min off the winch.

John Lambert and Steve Stevenson have been posted, John completing his Bronze C before leaving.

We have sold our K-6E and are eagerly awaiting the allocation of an Astir. The trailers for an Astir and K-18 are almost complete

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thanks to the hours put in by Stu and Jill Hoy and Jock McGarry. The clubhouse is undergoing extensive renovation to enlarge workshops, accommodation and bar.

Finally a request—does anyone know of a cheap bus waiting to be towed away?

J.D.B.

FOUR COUNTIES (RAF Syerston)

Work continues on our second all-metal trailer and we now have a full complement of trailers for the coming season, including those for the replacement aircraft. We keenly await the arrival of an Astir and PIK 20 as replacements for the Kestrel and Std Libelle.

The Christmas party was most successful, thanks to the ladies section. Our AGM in January was well attended and the girls provided a superb buffet.

I.Mc.

FULMAR

Members are busy preparing the aircraft and MT for the summer but our future at Milltown is still in dispute. However, we are getting a few bonuses with the occasional wave climbs from the winch—our tug is out of service. Recent successes include climbs by Oscar Constable (8900ft) and Malcolm Thompson (7500ft), both for Silver height.

With the return of our Pilatus we are looking forward to an expedition to Aboyne in March. We welcome Steve Stephenson from Marham who will help with the *ab-initio* training. Alas we must say farewell to Al Fox, deputy Chairman, who has moved to Chilterns GC, and our deputy CFI, Tim O'Donovan, on leaving the RAF. We wish them good luck.

G.E.H.

HUMBER (RAF Lindholme)

It is our tenth anniversary this year and we are hoping to have a party at Easter to mark the occasion. All former members are cordially invited, the more the merrier. Unfortunately our CFI, Bob Sheffield, and his wife, will be unable to attend as they have been posted to Germany and Bob goes at the end of March. Tom Barnes will be our new CFI and we wish Bob and Jane all the best.

Membership is on the increase and now that we have two winches and an autotow operational we are hoping to increase our launch rate greatly.

K.M.G.

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KESTREL (RAF Odiham)

During the autumn some members made the trek to Aboyne and, although the weather was poor, Pam Davis and Pete Richie achieved Gold height. Pam, in addition to being our Secretary, is also an instructor and has recently gained her full rating.

There are changes in the aircraft fleet. Our faithful T-21s are leaving us, the K-6CR is also being sold and we are taking delivery of a Blanik. This will give us a fleet comprised of the following: K-7, Blanik, K-8, K-18, K-6E and Std Cirrus.

1349 (Woking) Squadron ATC Sponsored Flight.

On Sunday, June 27, two members attempted a sponsored five hour flight in the Squadron's T-21. The club operates this glider in co-operation with the Kestrel Club. The two pilots, Flt/Lt C. Chappell and CWO K. Horlock, had waited weeks for the right conditions. On the third launch they found strong lift and climbed to 8200ft. For the next three hours the height varied between 5000 and 8000ft with cloud streets towards the end of the flight. They landed at 7.14pm after 4hrs 42min.

P.W.A.

PHOENIX (RAF Brüggen)

In November we hosted the RAF Germany Gliding Association's AGM and were pleased to welcome the Association's new Chairman, Air Commodore J. D. Jones, and some 50 members from the other British clubs in Germany. We were the proud recipients of the NATO Challenge Cup—presented for the greatest improvement over the previous year in badges gained, number of launches, and hours and distances flown.

In December we had a pantomime in our aircraft workshop which was a great success, as was the children's party afterwards—many thanks to Ann North-Graves, and F. Christmas. December also brought our Blanik to replace one of our K-7s. It is proving so popular we hope to replace one of our other K-7 with another Blanik later this year. The expedition to Issoire, France, is in February, and we hope to run an aerotow course shortly at Vennebeck. Tim Oulds is to represent Phoenix at the Inter-Service Regionals Comps this year, the first time the GGA have sent a competitor and aircraft from Germany.

January brought two welcome solos—Gaby Drücker, just 16, daughter of one of our NATO members, and Steve Wilcox,—and a sad goodbye to Wally Lombard. Wally, twice Competition Director for the Detmold Comps, was Army Member for the Association and its Vice-Chairman. He has served us well as a full Cat and tug pilot, among other duties, and was instrumental in erecting our all-metal hangar—now that we are attempting to re-clad our MT hangar we are even more appreciative of his efforts! Thank you Wally for all you have done for Phoenix and congratulations on your promotion.

M.T.

TWO RIVERS (RAF Laarbruch)

Our three-aircraft expedition to Vennebeck in November resulted in six durations and a total of 97 flying hours over the fortnight. Our thanks to Vince Mallon in particular for his hard work to make this possible.

At the RAF German Gliding Association AGM at RAF Brüggen in December our then deputy CFI, Geoff Millward, was presented with the Pete Lane trophy for the fastest closed circuit of the year. Geoff has since taken over as CFI from Eddie Edwards, to whom we say a grateful thank you.

We are sorry to say goodbye to Mike and Wen Uphill on their posting to Odiham and we lost Bob and Rosemary Leadbeater to Cosford: Field Treasurer and chief cook respectively, they did a tremendous amount for the club.

Congratulations to Phil Buckley, our most recent solo pilot, and goodluck to Mike Davis, Harry Thomas and Martin Spalding on their instructors' courses in March.

A.C.G.

WREKIN (RAF Cosford)

Our Chipmunk has a new C of A, thanks to much preliminary work followed by a solid fortnight spent at Bicester by Jake Jacobs, helped by Mick Boyden and Andy Bachelor. Our thanks also to Andy Gough and the RAFGSA Centre for their help.

Ron Jackson was our first solo of the year, after only 35 launches, and we hope that he will be followed by six others on our *ab-initio* course at Easter. Our thanks to Frank Kennedy who recently handed over his job as Stats member to Andy Bachelor but has volunteered to assist in maintaining the various graphs he has put up to chart our progress towards our targets.

Roger Staines has put in great effort running weekly lecture evenings and film shows throughout the winter, and has recently taken over as Secretary from Dave Wood. Our appreciation to Dave who has been Secretary for three years as well as an instructor. He remains deputy CFI until his departure in June.

Jackie and Trish have handed over the responsibility for running the bus to Marina, and we are very grateful for their help last year.

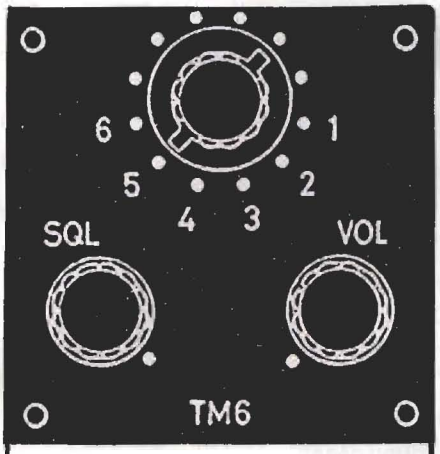
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