SAILPLANE & GLIDING

High performance sailplanes page 106

April — May 1968 4s 6d

Very Important Plane for V.I.P's

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SAILPLANE & GLIDING

OFFICIAL ORGAN OF THE BRITISH GLIDING ASSOCIATION

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Cover Photograph : Philip and Kitty Wills at last year's Nationals in his 35th gliding year and his 19th as BGA Chairman! Photograph : Courtesy of Flight International.

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Vol. XIX No. 2

CHAIRMAN'S REPORT ON 1967

IN this, my final report to our members before handing over my job to my successor, it may be valuable to outline in rather more detail than before what the BGA, in its present form, does for the movement which it serves. This may assist members in their consideration of the two important problems which await solution: the possible re-structuring which may be necessary to cope with the increasing size and complexity of the gliding movement, and the problem of finance, which is growing for exactly the same reasons.

All our members will, of course, be aware that the BGA is unique in that it carries responsibility in a number of fields which, in other countries, are controlled by the State. The chief amongst these are instruction standards, pilot standards, operating standards, aircraft maintenance and airworthiness and accident analysis and investigation.

In addition, we also handle the more usual matters of competition regulation and control, records and the issue of badges and everything that comes under the general definition of Public Relations.

Lastly, we do a great deal of work with various Ministries, including the Board of Trade (notably in Air Traffic Control problems) and the Department of Education and Science.

The result is an inescapable growth in the amount of work—and particularly of paperwork—handled by the Association: the weekly mail received at Artillery Mansions now approximates 1,000 letters. It is no unusual thing to find up to three Committees working in Artillery Mansions from 6 p.m. onwards on one night, each requiring secretarial assistance. The consequent pressure on our staff this year reached such an insupportable level that John Brenner spent some time with our Secretary jointly devising various schemes by which the work might be streamlined and in some cases decentralised. I am hopeful as a result that the staff will shortly be able to get through it within reasonable normal working hours, but there is little prospect that it will prove possible to reduce their number, particularly bearing in mind that the employment of a Development Officer, a most important new post, is bound to involve additional secretarial work. (Appointment deferred.)

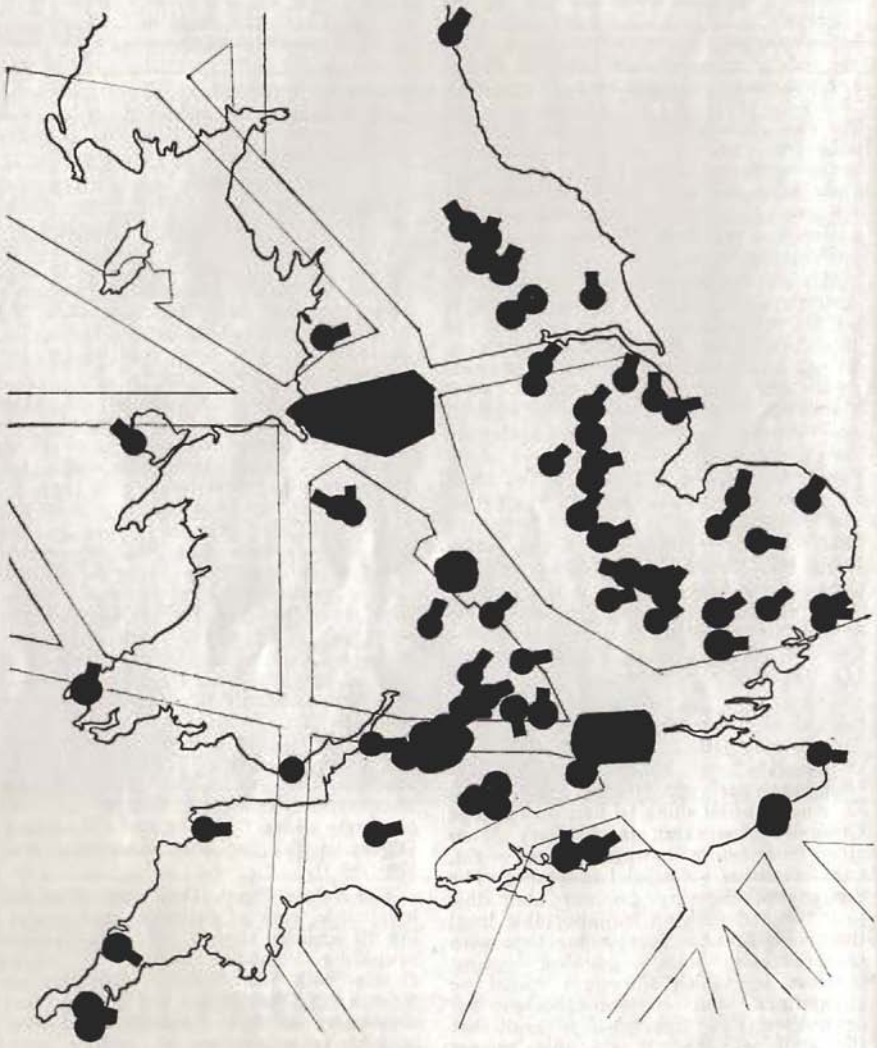
Unless, therefore, we can find the money to balance our budget, we shall have to decide in which field we can reduce our responsibilities, or ask the relevant official body to take them over.

The Instructors' Panel set standards for instructors and pilots. With them works the National Coach, who handles Instructors' Courses held at various sites throughout the country. We do not have official pilots or instructors' licences—and I am sure we do not want them. At irregular intervals it issues the *Instructor*, an invaluable but, since it is issued free, an expensive publication.

The Technical Committee handles matters concerned with airworthiness, including the issue and renewal of BGA Certificates of Airworthiness, and the testing and certification of new types of gliders. It works in close liaison with the Air Registration Board. It may not be generally realised that the reasonably constant flow of new types of British gliders is rendered economically possible only because test groups of the BGA do the necessary work during the period of design, construction and certification at a fraction of the cost involved in countries where all this can only be done at Governmental level. In one country a cost of £30,000 per prototype has been quoted for this work, and needless to say in that country new commercially-produced designs are exceedingly rare. The Chief Technical Officer works for this committee and also:—

The Safety Panel. This panel does the invaluable work of collecting and analysing all accident reports, and subsequently proposing remedial action. It works closely with the Accident Investigation Branch of the Board of Trade, and frequently at their request takes over specific investigations of serious accidents.

The Flying Committee controls the issue of pilots' badges, records and competition regulations, including pilots'



rating lists and the like. A tremendous amount of paperwork is inevitable—and expensive.

The Development Committee deals with all other matters connected with assisting gliding clubs to form and grow, including working with the Department of Education and Science in connection with financial grants.

The work of the Airspace Committee is, I think, adequately understood and appreciated. Last year I reported a very grave state of affairs and the map on page 84 shows how serious it might have been—the imposition of all the restrictions then in the pipeline would have meant virtually the end of gliding in this country, as we know it. I cannot convey the amount of work and worry which ensued, but as a result, although it was too late to stop the imposition of unnecessarily drastic restrictions at Lyneham, we now have a much fuller realisation from NATCS of our needs, and an assurance from no less a level than the Chief of the Air Staff that "on the RAF side there is no intention of turning all the Military Air-Traffic Zones on your map into controlled airspace to the exclusion of gliders".

The Sites Committee is up against the well-nigh impossible task of assisting clubs to find secure sites in our overcrowded country. This is possibly (besides airspace) the most important, as it is the most intractable, problem facing us. The Airspace and Sites Committees could, perhaps, be re-christened The Bed of Nails Committee.

Finally, I come to Public Relations. A large proportion of the letters reaching us come under this heading—from an enquiry on where to go for a gliding course to one from Ruritania (recently granted its freedom) on how to start a gliding movement from scratch. All must be answered, or our image would rapidly deteriorate. On the other side of this coin, every book, tie or badge and copy of SAILPLANE & GLIDING which we sell our members helps stimulate enthusiasm for gliding. On top of this comes what is normally understood by Public Relations—information to and liaison with Press, TV and radio and such like, which could, of course, if time and money allowed, be expanded almost *ad infinitum*.

These are the main fields, but in addition, a number of small committees are set up from time to time to handle specific problems, such as the powered trainer.

Well, which of these operations should be contracted, abandoned or handed over to some other authority? Or should we find, somehow, the money to carry them all on? I suggest there can only be one answer.

Finance. The accounts for 1967 are for a nine-month period only and show income and expenditure very much in line with the budget figures presented to you by the Treasurer at last year's AGM. Due to the continued effort of the BGA sales staff a record growth profit of £2,558 was achieved in the nine-month period. Fears which our Treasurer had regarding sub-tenancies for our offices at Artillery Mansions were not founded and all the leases have now been finalised under the expert guidance of our Honorary Property Manager, Mr. C. Tippett. The Development Committee successfully secured a head office grant of £850 per annum from the Department of Education and Science for head office administration.

The budget for the full year 1967-68 reflects the increased income arising from revised subscriptions, competition fees and the standardisation of charges for all National Gliding Certificates up to Bronze C at 10s. and for all International Certificates (i.e. Silver, Gold and Diamond) at 20s. per leg. A growth profit of £3,500 has been budgeted for and with the continued effort of the BGA staff and club representatives this figure should be achieved. Salaries, of course, form a major part of our expenditure but nearly £800 of the salary figure is for Selective Employment Tax and National Insurance. To assist in the balancing of the budget I am at the moment actively engaged in seeking Board of Trade assistance for the responsibilities which the BGA carries in certain fields which, in other countries, are assumed by the State.

Magazine Committee. I would like to be able to say something especially nice about SAILPLANE & GLIDING on this last occasion. I find I have said it all before —one of the troubles about being best is that one cannot be better still. Once again—circulation up, on the right side financially, tails up. It's been the easiest and nicest Committee to run.

Membership. Between the 1st of January and the 30th of September, 1967, both the Leicestershire and the Essex Gliding Clubs transferred from Associate to Full Membership and the RAFGSA Centre at Bicester also became a Full Member of the Association.

The Glasgow and West of Scotland Gliding Club and the Edinburgh University Gliding Club joined forces to form the Cumbernauld Flying Group as Associate Members and the newly-formed Solent Gliding Club also became an Associate Member.

The membership is now (1966 figures in brackets):

Full Clubs or Associations	30	(28)
Associate Clubs	31	(35)
Overseas Clubs	1	(1)
Private Owner Groups ...	161	(167)
Individual Members ...	33	(27)

The 30 Full Member clubs or Associations include four members which have affiliated clubs as follows:

Army Gliding Association with three clubs.
Civil Service (CISAVIA) with three clubs.
RAF Gliding and Soaring Association with ten clubs.
RAF (Germany) Gliding and Soaring Association with three clubs.
Royal Naval Gliding and Soaring Association with five clubs.

Operations. During the nine-month period under review (the 1966 figures covering 12 months are given in brackets):

Civilian clubs flew a total of 43,847 (38,494) hours from club sites from 195,610 (201,881) launches.

Club-owned gliders total 250 (213).

Privately-owned gliders total 244 (222).

The combined Services flew 14,827 (11,559) hours from 75,759 (70,622) launches.

Certificates were issued as follows:

A and B endorsements including ATC	2,196	(2,576)
C endorsements	406	(438)
Bronze C endorsements	416	(528)
Silver C complete	167	(184)
Gold C complete	19	(10)
Gold C distance	15	(5)
Gold C height	35	(22)
Diamond for goal	22	(9)
Diamond for height ...	13	(7)
Diamond for distance ...	1	(1)

(The ATC issued 2,036 proficiency certificates and 1,506 holders of these applied for A and B certificates through the BGA.)

Project Sigma. The 1969 World Championships have now been deferred and will take place in 1970. Accordingly, Project Sigma, for the design and construction of an ultra high-performance competition sailplane has an extra 12 months fed into its programme which its organisers can put to excellent effect. The programme is going very well indeed and there is good reason to believe it will achieve our best hopes.

Sites. Assistance has been given to a number of clubs during the year and in particular the use of Aston Down has

been obtained for the Cotswold Club at weekends, and a threat to place a radio mast in a position which would have destroyed the value of the Devon and Somerset Club's site at North Hill has been averted.

Extensive negotiations have taken place both with the Board of Trade and the insurance market to clarify the legal position concerning the position of clubs consequent upon revisions to the Carriage by Air Order. A comprehensive circular on the situation has been issued to clubs and they are advised to take special heed of its contents.

There is no doubt that the prosperity of a club depends very largely on its security of tenure of its site. Clubs without this security should leave no stones unturned in their endeavours to improve their situation.

SBAC. During 1967 the decision was taken to bring this fund to a close. It has been of wonderful assistance over the years. I like to think its help to gliding has all been repaid in full, as will the balance of loans still outstanding, as they fall due.

Re-structuring the Association

In my last AGM report I wrote that we intended to present to you at your next meeting proposals for alterations to the structure of the Association, to enable it to cope with the expanded and much more intricate work that now falls on it as a result of the developments of the last 34 years, since its present structure was laid down.

During 1967 the Study Group set up for this purpose, under the Chairmanship of David Carrow, completed its report. It was probably just in time—for Council has by now reached a total of 39—each member, of course, highly intelligent but also highly individualistic. It was therefore quite a job to reach a consensus on so basic a political matter as this.

However, a decision was reached, by a very large majority, and the proposals outlined below will be submitted to you at the AGM.

Before outlining these, however, the following extract from the Study Group report cogently summarises the problem and its alternative solutions:

THE FUTURE CONSTITUTION OF THE BRITISH GLIDING MOVEMENT

The Problem

(i) Council is too big, or will shortly become so. It only works because so few people talk. If the present long and dreary meetings continue, the system will surely break down.

(ii) There is inadequate communication between clubs and Council, viz:
  (a) Associate clubs are only represented by one council member who cannot possibly be expected to look after them all.
  (b) Most Full Member club representatives do not discuss Council matters with their club committees.

(iii) There is little co-operation between clubs in many areas; sometimes, indeed, there is active hostility. Sometimes inadequate assistance is provided for new and struggling clubs by their stronger neighbours.

The solution to (i) is either:

(a) An electoral college, setting up a (very powerful) executive committee with little or no check on its activities for its elected period.

(b) A two-tier system with regional geographical areas clubbing together and sending one representative to the National Council.

To cut a very long story short, Council finally decided to propose to you a modification of (a) above. They recommend an enlargement of the Council, to give more representation to what are at present the Associate clubs. These are, of course, the potential growth-points of our movement, and we are very con-

scious that we have not in the past been able to give them all the assistance they might wish. It is hoped to improve this by giving them a greater voice on Council.

A larger Council will not, of course, be a suitable machine to produce a large number of decisions, and since many of its members may have to come considerable distances, it could not be expected to meet monthly. This proposal, therefore, inevitably leads to the recommendation to set up a smaller Executive Committee, which would meet monthly, and be given terms of reference allowing it considerable powers of decision-making, whilst reserving major or long-term policy decisions for Council itself, which would meet probably two to three times a year.

Since my report has to go to the printers by the end of December, it is not possible here to go into more detail, but a Committee is now sitting to define these proposals, and after Council consideration their final report will be circularised to you prior to our AGM.

If I may insert here my own view, it is that this proposed solution is the better of the alternatives. Nevertheless, unless we do something about it, it lacks one of the major advantages of "regionalisation"—we *must* somehow increase the contacts, co-operation and mutual assistance between clubs in the same geographical areas which have been lacking in the past.

I should personally hope to see a chain of "National Gliding Centres" set up across the country (on the French model) at which courses for instructors, ground engineers and general club operation and administration were made available to all-comers, but primarily to all clubs within each particular region.

Ten years ago it seemed to me that a single such national centre (on the Yugoslav model, at Vrsac) would suffice, but now we have grown to a point where I am sure this could not cover our needs. During 1967 Council has taken the preliminary decisions enabling us to pursue this line of policy if it is the wish of the Association.

Chairmanship

As promised, during the year we set up an elective machinery to find my successor, and I am very glad to report that Peter Scott agreed to nomination, and I and Council confidently recommend that you should elect him to the chair.

Taking part in the affairs of the BGA has filled up a large part of my spare time for a large part of my life. With a man of Peter's calibre taking over, I shall be indeed happy at the prospect of spending more of my leisure hours in the future actually in a glider and less talking about the organisation of the sport. It has been a lot of work, but as a result of my efforts for the British gliding movement, I know I have many hundreds of friends over the world. It is a more than adequate reward.

P. A. WILLS, *Chairman*

MORE HONOURS FOR ANNE BURNS

THE Whitney Straight Award was donated in 1967 by Air Cmdr. Whitney Straight, CBE, MC, DFC, Deputy-Chairman of Rolls-Royce Ltd., to recognise the achievement and status of women in aviation.

It is given for outstanding contributions to aviation either by single achievement or consistent and valuable contributions and is open to women of British nationality active in any aspect of aviation—in flying, in factories, in scientific establishments, in administration and in the Armed Forces.

Anne Burns received this award, which was presented by HRH Princess Alexandra at a ceremony at the Royal Aeronautical Society on the 23rd February, for her work as a flight test observer, her contributions to aviation meteorology and her gliding achievements.

The award is a sculpture cast in bronze by Dame Barbara Hepworth and a cheque for not less than £200.

Anne and her husband, Denis, left for Germany the same evening to collect their new Cirrus.

JUST A DOWN-WIND DASH

By S. M. O'BRIEN

PAROCHIALISM must surely be the last charge to be levelled against SAILPLANE & GLIDING. The December-January issue has some ten pages on the U.S. Nationals, and as many more covering Cyprus, Italy and Austria — all this in addition to the nine non-editorial pages of Overseas News.

Shortage of home material? Or has S. & G. perhaps thermalled out of reach of the two-seatering novice, the circuit-bashing Swallow pilot, the cross-country fledgling? May I suggest that one does not have to be a record-chasing pundit in order to share experiences, and that this excellent magazine might accordingly open its pages to the vast army of non-pundits to whom an exiguous 800 ft. over Much-Binding-in-the-Marsh is at least as interesting as an armchair climb to 8,000 ft. in a dust-devil somewhere on the far side of the planet?*

It was, come to think of it, one of those overseas articles ("Soaring Down Under") that told how an Antipodean club "regarded a down-wind dash for the Gold C as rather non-U". Here, in Soaring Up Over, some of the pundits have been pushing this same point of view. And the result—a rash of aborted triangles, and people spending hours in the air with nothing to show for it but photographs of, e.g., Frome. (Popular turning point in Somerset.)

All of which failed to impress one hustling-type instructor who complained after a week of over-cautious flying—"For heaven's sake somebody *do* something!" And so on a Saturday morning, while I was still knotting a handkerchief across my forehead against the glare, he aerotowed me away westwards, nor looked to right or left (fig.) until we were abeam of Salisbury racecourse. Here I release in whooshing lift which soon has me at the 4,000-ft. cloudbase, and I point the Skylark 4 at Great Yarmouth—this is going to be a piece of cake!

On past Middle Wallop, Andover . . . but it really is too good to last. Coming up to Newbury I am no longer cruising but scampering about in patchy lift, fighting my way back to Greenham Common. I could likewise fight my way back to Lasham, but—Orders is Orders. *Do* something, somebody! Across Green One things look dismal to the north-west, a world of gloom under ragged strato-cu with rain in places—weather, in the Joycean phrase, as uncertain as a baby's bottom.

It is madness to press on, but let's give it a trial as far east as Reading. Somehow I manage to clamber to 3,000 feet and then make a hopeless dash across the airway. Slowly Benson crawls into view, just reachable. But wait—a whisper of lift from nowhere and I gentle the Skylark into a turn. It is ·ide **'n' weak, only enough** to maintain height, but at least a stay of execution. Stay with it, you intrepid aviator, that

* Our pages have never been closed to such material, but we cannot publish articles that people won't write.—ED.

top cloud cover may not be as thick as you think. There must be some insolation, to judge by the warmth in the cockpit. Endless circling drifts me out of reach of Benson, and then at last a tiny splotch of sunshine breaks over the fields below. After that a long wait for the high cloud to burn off partially, before I can venture eastwards with a fabulous 2,000 ft. in hand.

I beggar my way past Halton, Dunstable, over M1 at 800 feet, and then sadly I am final-gliding for a field near Letchworth. Hold it—there is a small cu building up a couple of miles further on. Can the Skylark do it? It is worth a try, as things look a little less bleak to the east. 400 feet showing, and the terrain is no longer below but around me. That field . that cumulus . . . that altimeter . . . where am I? I'm not all that many wing-spans above the ground, sweating at the wrists, but—yes!—I am in a lovely, burbling lift all around my turning circle, and rejoicing. I wind on a glorious 3,000 feet and then "give the mare her head" due east.

The wind has veered north-west, pushing a grey blanket of cloud between me and goal, so I have no choice but to keep south of it. With Gold C and Diamond Goal awards sadly dropping out of the window, I decide to squeeze a last furlong out of the flight. RAF Wattisham, 1,500 ft. below, is tempting, but fatalistically I glide on in a dead calm, past Sudbury and Stowmarket. At 50 ft. my chosen landing field suddenly fills with high corn, and I have to switch to my alternate next door. Skylark rolls to a stop six hours twenty minutes after take-off, exactly 250 km. from Salisbury, and only a thermal or two short of Great Yarmouth. Interestingly, the big drop in pressure with the worsening weather has made the barograph baseline almost touch my flight trace, making it appear that in my scrape at Letchworth I flew out of the proverbial hole in the ground!

The whole thing cost me a couple of pounds in sweat—and some more in sterling—but, of course, it was merely a down-wind dash. Non-U and infra dig. and all that. Not worth the mention really.

AEROTOWING AND REGRESSION ANALYSIS

By ERIC REED

THE Yorkshire Gliding Club's airfield is some 950 ft. a.m.s.l. Aero-towing is by means of a Piper Super Cub (150 h.p. Lycoming engine with fixed pitch propeller). The following analysis was carried out in two parts. The first part was based on single-seaters of various types and relates to the data generated by 880 aero-tows. The second relates to the club two-seater—a Slingsby Eagle, and accommodates 850 aero-tows. In both cases the aero-tows were carried out between February and November, 1967. A number of pilots were involved with varying degrees of efficiency and experience. All references to height of tow refer to the height above the airfield. No attempt was made to take account of weather conditions. The main purpose of the analysis was to ensure that appropriate charges are made for tows of different heights above the airfield and with a view to provoking other clubs at home and abroad to carry out similar assessments under other conditions and using different tugs. It is also hoped that the analysis will indicate how more efficient management of the club's affairs could lead to greater aero-towing efficiency.

The two sets of data were programmed into an Elliot digital computer and subject to regression analysis. Over the range accommodated by the data, an extremely good fit was obtained for a quadratic regression. It will be seen that the correlation co-efficient (r) is quite good and the significance at 1 per cent level is also convincing. I might say here that the data were deficient in terms of numbers of observations at the ends of the range. The numbers of aero-tows to

less than 1,000 ft. and over 4,000 ft. were relatively small and the vast majority were to 2,000 ft.

The quadratic regressions resulting from the analysis were as follows:

Single-seaters:
$y = -.000004356x + .00000001369x^2 + .07043$
$r = .769$
$t = 35.69$ with 879° of freedom which is significant at 1% level

Two-seaters:
$y = .00004448x + .000000005647x^2 + .04045$
$r = .783$
$t = 36.68$ with 847° of freedom which is significant at 1% level

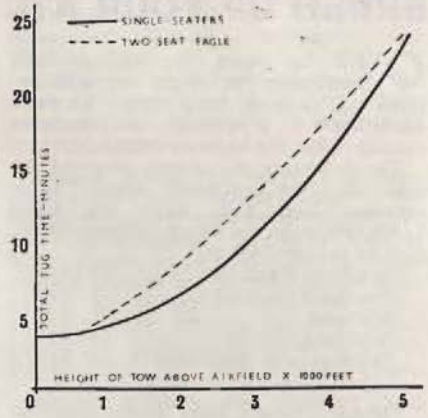
In both equations y = the time in hours required from tug engine "on" to tug engine "off", and for the purposes of the data, the meter in the aircraft was used. x = the height of the tow above the airfield in feet.

The following two tables indicate the mean time taken in hours and in minutes to five selected altitudes. The final two columns indicate the appropriate charges for different tows assuming two bases. One of 20s. to 2,000 ft. and the other 25s. to 2,000 ft., both for single-seaters.

Certain conclusions are possible.

First of all it will be seen that tows to less than 2,000 ft. are relatively expensive due to the high component of ground time. Similarly, the cost of tows to 4,000 ft. and above are also expensive in terms of cost per unit height due to falling efficiency.

In terms of future prospects by way of improving aero-towing costs, note will be taken of the large component of ground time. The single-seater regression is plateauing very quickly below 1,000 ft. and indicates a ground time of almost exactly 4 minutes. Better management and co-ordination of tug activity on the ground should offer material scope for reducing this time.



A recent report from America indicates an important relationship between the weight of the tug and aero-towing efficiency. The cost of aero-towing is probably increased between 30 and 40 per cent as a result of carrying a passenger in the tug and this must clearly be taken carefully into account when making charges for passenger flights under aero-tow circumstances.

This same effect was evident dependent on whether the tug's fuel tank was full or not. It is proposed during 1968 to operate the tug on not more than tank half-full.

The accompanying graphs demonstrate the effect of applying the regressions. The graph for single-seaters probably reflects the true situation better than the two-seater graph.

	Height of Tow (ft.)	TIME		EQUIVALENT CHARGES			
		Hours	Minutes	Shillings	$	Shillings	$
SINGLE-SEATERS	1,000	.079764	4.78584	13.7	1.64	17.1	2.05
	2,000	.116478	6.98868	20.0	2.40	25.0	3.00
	3,000	.180572	10.83430	31.0	3.72	38.8	4.65
	4,000	.272046	16.32276	46.7	5.61	58.4	7.01
	5,000	.390900	23.45400	67.1	8.05	83.9	10.07
TWO-SEAT EAGLE	1,000	.090577	5.43462	15.6	1.87	19.4	2.33
	2,000	.152010	9.12060	26.1	3.13	32.6	3.92
	3,000	.224740	13.48440	38.6	4.63	48.2	5.79
	4,000	.308770	18.52620	53.0	6.36	66.3	7.95
	5,000	.404100	24.24600	69.4	8.33	86.7	10.41

BRUSH UP YOUR ATC

OVER the years, the various rules applicable to flight in different types of airspace have slowly evolved. Sometimes it is difficult to remember exactly what the current rules are.

The following paragraphs describe the rules as they currently apply. It is assumed that you have the latest 1:500,000 maps on which airspace information is corrected to:

*Southern England	19.10.67
Northern England	21. 9.67
Scotland	21. 9.67
Northern Ireland	16.11.67
Orkneys and Shetlands(!)	24. 8.67

*Minor changes have taken place to the S.E. corner of the London TMA.

The rules given are the ATC ones applicable to glider flying only. The rules for flying powered aircraft differ in some cases. *General Rules of the Air are not covered*; only the Air Traffic Control rules are given.

Uncontrolled Airspace: All airspace which is not controlled is known as Flight Information Region (FIR) airspace. It extends from ground level to FL 250. From FL 250 on up it is known as Upper Flight Information Region (UIR) airspace. There are no ATC rules for gliders in FIR or UIR airspace.

Airways: These are distinguished on the map by a name consisting of a colour and a number (e.g., Amber 1) and a base and top height limit. The base heights are sometimes given as heights above sea level (e.g., 3,000 ft.) but more usually as Flight Levels (e.g., FL 45). Gliders may cross airways (except purple airways) provided they can maintain VMC throughout the crossing. The crossing should be substantially at right angles. Otherwise entry into airways is prohibited at all times.

Terminal Control Areas (TMA): These are regions near the larger airports where several airways join together. They are distinguished on the map by the name of the area followed by TMA or Terminal Control Area. The base heights may vary in different parts of the area and are always given as heights above sea level. They have a flat top with the height given as a Flight Level.

Gliding is permitted in TMA's provided VMC is maintained at all times.

The Bristol Channel Control Area is not formally a TMA but the same rule applies.

Control Zones (CTR): These are pieces of controlled airspace that surround particular airports. They extend from ground level to a specified Flight Level. In the case of the London and Manchester Control Zones glider flying is prohibited at all times. In the Gatwick Control Zone glider flying is prohibited above FL 50. Otherwise glider flying is permitted in Control Zones subject to maintaining VMC at all times.

Special Rules Zone (SRZ): These are pieces of airspace surrounding some airports in which special rules apply. They are marked with the name of the airfield and SRZ. They extend from ground level to a specified height or Flight Level.

Special Rules Zones are exactly what they say, i.e., areas where special rules must be complied with. In general, the special rules are:

(1) You must contact ATC on the specified frequency before entering.

(2) You must maintain a watch on this frequency at all times while in the Zone.

(3) You must obey any instructions given by ATC.

Gliders can therefore enter special rules zones if they have the appropriate

frequency, but this implies a many-channelled radio which, as far as is known, no glider carries. Thus, leaving aside gliders with this special frequency capability, the situation is that gliders cannot, in general, enter SRZ's when the Special Rules are in force.

Special Rules Zones come in two sorts: they are either applicable at all times or only in IMC.

Applicable at all times

Birmingham	Liverpool
Bovingdon	Lympne/Lydd
Gatwick	*Lyneham
Glamorgan (Rhoose)	Manston
Glasgow	Prestwick

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*Lyneham (but frequency 130.25 is specially available to enable gliders to comply with the Special Rules).

Applicable in IMC only
Southend

Special Rules Area: The cross-channel Special Rules Area (which covers East Kent and a lot of surrounding sea) is similar to a Special Rules Zone except that:

(a) It extends downwards to 1,000 ft. a.m.s.l. (instead of ground level).
(b) It is only applicable to gliders which cannot maintain full VMC.

Aerodrome Traffic Zones: Every active airfield (and this includes gliding sites when active) has an aerodrome traffic zone round it which extends to 3,000 yards from its boundaries and to 2,000 ft. above aerodrome level.

Gliders may not enter these zones at any time unless either:

(a) they have the permission of the person in charge of the aerodrome, or
(b) they are landing or taking off at the aerodrome, or
(c) they are entering to observe the signal square with a view to landing.

Prohibited and Restricted Areas: There are six prohibited and three restricted areas all of which surround atomic establishments of one sort or another. Gliding is not permitted in the areas as marked and between ground level and the specified height. These areas are at Aldermaston, Caerwent, Calder/Windscale, Capenhurst, Chapelcross, Dounreay, Harwell, Springfields and Winfrith Heath.

The above paragraphs cover all the legal ATC restraints on gliding. There are, however, other items of which it is certainly necessary to be aware.

Danger Areas: In certain specified areas (the "Chart Danger Areas in the United Kingdom" may be obtained from the Superintendent, MinTech Central Stores Depot, Aston Down, Stroud, Glos.) you are warned that any or all of a wide variety of unpleasant activities (guns, bombs, rockets, tethered balloons, towed targets, parachute dropping, no-parachute dropping, etc., etc.) may be taking place.

Intense Military Air Activity: You are warned that this takes place in East Anglia, Vale of York, Honington Control Zone (applicable as a Control Zone to military aircraft only), Thorney Island and Tangmere, South Lincolnshire, Portland.

Intense and High-speed Air Activity: You are warned that intense and high-speed aerial activity takes place at Bedford, Boscombe Down, Bristol (Filton), Farnborough, Pershore.

High-intensity Radio Transmissions: You are warned that at Fylingdales and Malvern high-intensity radio transmissions may be injurious to health.

Spadeadam Rocket Establishment: You are warned that "turbulence is likely to be encountered over this establishment due to the release of vast quantities of heat and steam". Does this represent the start of a new era in which the air pilot gives useful positive information?

So, with all that information committed to memory, you are a fit person to navigate the UK sky in a glider and conform at all times with the law. Please ensure that you do conform. The rules for gliders represent an appreciable relaxation over those for light aircraft. We have only been able to negotiate these relaxations because the vast majority of glider pilots have done their best to conform. Let us not lose this position.

H. C. N. GOODHART,
Chairman, Airspace Committee

LEE WAVES OVER THE WELSH MOUNTAINS

By B. B. BISHOP

DURING 1966 and 1967 a study was carried out into cases of lee waves occurring over the Welsh Mountains and the West Midlands in westerly airstreams.

The cases used in this study have been selected to give as wide a picture as possible of the types of wave flow and their effects in this area. About half of the cases are based on reports made by pilots of powered aircraft or gliders flying in this area, and the remainder are based on surface observations of lenticular cloud formations and their associated surface effects. The area covered by the study is shown in the accompanying map:

It is not intended here to deal with each case individually, as this has already been done in a much more comprehensive study. The main aim of this article is to be of some assistance to pilots intending to fly in the area.

Topography

The Welsh Mountains form a block of high land running nearly due north to south, some 100 miles in length and between 40 and 50 miles wide. The general height of the area is around 2,000 ft., with peaks rising to over 3,000 ft.

Meteorological aspects

In all cases studied there has been a mobile type of westerly flow across the area, and the majority of occasions of wave have occurred either just in advance of, or close behind, frontal zones. This, of course, follows from the fact that a strong flow is necessary for waves to form (with a gradient of at least 20 kts.), these conditions occurring most commonly in mobile, frontal-type situations. The most common areas on the synoptic chart where waves have been noted to form are:

(i) under the slope of a warm front, near the edge of the medium cloud, say 200 to 300 miles ahead of the surface front;

(ii) behind a cold front in stabilising cold air, some 200 miles or so behind the surface front; and

(iii) in situations where a cold front to the north of the area is waving, causing a wide and fairly dry warm sector, with broken cloud.

In the case of the Welsh Mountains (i) and (ii) seem to be the most common, with (ii) accounting for much the greater proportion of frontally-associated cases.

The winds which gave the most marked cases of waves were those from between 240° and 300°, i.e., 30° either side of the normal to the mountains. This 30° angle seems to be the maximum deviation from the normal at which an uncomplicated wave structure will form; any angles outside this giving rise to a complex system, difficult to forecast and equally difficult to soar. The analysis of wind speeds at varying heights shows a requirement for the following minimum values before noticeable waves will form over the Welsh Mountains:

2,000 ft.	25 kts.
5,000 ft.	35 kts.
10,000 ft.	45 kts.

What values would be required for larger ranges such as the Pennines or Scottish Mountains have yet to be investigated.

It is common knowledge that a stable layer is required for waves to form, and this held true in all the cases investigated. The majority of cases had a marked inversion, the base of which was between 3,000 ft. and 5,000 ft. in almost all instances. In all other cases examined, where waves were expected to form, but in fact did not, the base of the inversion was found to be considerably higher than 5,000 ft.

The waves tended to follow the normal pattern of diurnal variation, being at a maximum intensity during the early morning, and again during the late afternoon, but on several occasions weak waves persisted throughout the day.

Soaring aspects of the wave system

The waves, in general, are orientated cross-wind, provided that the wind fulfils the directions suggested earlier; in the case of the Welsh Mountains; this means that the clouds are normally lying north to south. The wavelengths of the systems investigated vary considerably, between 3 and 12 n.m. What does seem to be indicated, however, is that in cases where there is a marked inversion between two unstable layers the wavelength is shorter, whilst where there is a deep stable layer through the lower 10,000 ft. or so the wavelengths are more likely to be in the 10 to 12 n.m. range. The shorter wavelengths, therefore, have a tendency to occur at lower levels, whilst the longer wavelengths are more common above 10,000 ft. The heights to which wave systems occur over Wales vary, of course, with the upper wind and stability conditions, but it seems that on occasions effects can be felt to heights of 25,000 to 30,000 ft., and, in fact, flights in gliders to over 22,000 ft. have been made. The levels at which the strongest waves occur, however, seem to be confined to the medium levels, from 7,000 to around 13,000 ft. The vertical speeds in these layers of maximum effect, in the majority of cases, are between 400 and 800 ft./min., and in certain parts of the wave may be even greater. The effects of the wave system have been noted as far downwind as Birmingham airport, where marked fluctuations in the surface wind have occurred at times in strong westerly airstreams.

Conclusion

It is hoped that this short article will have served to indicate that, even over small mountains such as those of Wales, considerable wave effects may occur. All the suggested requirements for wave formation are, of course, only applicable to the Welsh Mountains, or ones of similar height, width and cross-section. The shortened method of calculating the characteristics of lee-wave flow suggested by Casswell (a simplified calculation of maximum vertical velocities in mountain lee waves; S. A. Casswell, Met. Mag., March, 1966, p. 68) was used as a comparison with the longer methods of calculation, and also with the observed values, and seems quite accurate enough for normal use, even to the accuracy required by soaring pilots, and it is a quick method.

Perhaps it isn't really necessary to go all the way to the Rockies for good waves, except for records . . . at least, not until Amber 1 is widened to meet Amber 25.

INSTRUCTORS' PANEL REPORT

PANEL MEMBERS: Ann Welch (Chairman), Sqn. Ldr. G. McA. Bacon, V. C. Carr*, G. T. Collins, T. Davidson, Sqn. Ldr. J. Delafield, J. J. Ellis, J. C. Everitt* (National Coach), Flt-Sgt. A. W. Gough, J. M. Hands, R. P. Hubble, Air Cmdr. N. W. Kearon*, P. Minton*, R. A. Neaves*, K. O'Riley, Flt.-Lt. J. S. Williamson*. (*Executive Committee.)

NINETEEN - SIXTY - SEVEN figures indicate that a severe shortage of instructors no longer exists. There are now some 400 general and u/t instructors and 230 with categories—an average of some seven instructors per club, although obviously not evenly spread. Problems still exist, however, and considerable, the main ones being the need to improve:

(a) The standard of teaching of the individual instructor, particularly those who were never taught how to instruct in the first place, and who now instruct infrequently.

(b) The instruction a student receives, by reducing the quantity of different instructors he may have, and by enabling him to get more and better training each time he goes to his club. This problem, although contributing appreciably to poor training is, however, tied primarily to club economics, and can only be overcome by an alteration in club structure and charges.

(c) Pay and conditions for the professional instructor.

During 1967 the present category system was studied with the object of:

(a) Raising the overall standard of instructing.

(b) Increasing the number and uniformity of checks on an instructor's competence.

(c) Making the paperwork both more useful as a progress record and simpler for BGA office administration.

The changes, which will come into effect on 1st January, 1968, include the requirement for a pilot to go through an approved training course and be tested before starting to instruct at all. This Assistant Rating will be issued at club level.

There will also be a Restricted Rating for those few CFI's who have not yet obtained their Silver C's. The restriction is that the CFI will not be able to teach or allow cross-country flying from his club except by Silver C pilots, or instructors for the purpose of gaining their Silver C.

Instructors who have never obtained a category, and those who started in 1967, will have until the end of 1968 to obtain either an Assistant or Full Rating.

In addition to carrying out category tests and running, or assisting with, instructors' courses, Panel members tested all 60 semi-final candidates in the Wills Glider Pilot competition. The help given by this competition to improving the quality of training for the post solo student pilot, which included the printing of a training manual, and the production of a series of test papers also useful for testing instructors, was very great. For this, and the valuable prizes of two Swallow gliders and four baro-

graphs for the best clubs, the Panel would like to thank W. D. & H. O. Wills.

The National Coach ran training courses for 38 instructors during the year and visited a large number of clubs. Four years of this work has set a valuable example for instructor courses, which will now enable many of the bigger clubs to train their own instructors to a uniform high standard. In turn this will enable the work of the National Coach to be concerned much more in future with training and helping CFI's, particularly in small and new clubs.

As has been announced, John Everitt is leaving the BGA and this opportunity is taken to thank him for building up the job of National Coach from scratch and to wish him well in the future.

During 1967 only two copies of *Instructor* were produced, due to shortage of money. In this respect, it must be accepted that there is a limit to what can be achieved by any voluntary organisation without adequate funds. On the one side clubs need to take in more new members than can be efficiently trained by spare-time voluntary instructors; going professional is not the answer if this puts charges higher than people can afford. On the other side instructor Panel members can only do so much in their spare time. It takes a whole day to properly test one instructor for a full rating, and some examiners may do ten or more in a year, as well as their other Panel work, and often do the job of voluntary club CFI as well.

With some 60 civilian clubs, one professional National Coach will only be able to help CFI's at a rate slower than that at which the movement is changing and expanding. What is needed, in addition, is a small national instructors' school and test centre established at one of the bigger clubs, and professionally staffed, which could deal with the routine work of basic instructor training. This would leave the National Coach freer to assist with the vital job of training and assisting CFI's and the Panel examiners more time to develop badly-needed advanced instructor training, as well as continuing to carry out rating examinations all over the country.

ANN WELCH, *Chairman*

POLISH GLIDERS

FOR HAPPIER, SAFER GLIDING

HERE ARE JUST TWO GLIDERS—BOTH DESIGNED FOR PERFORMANCE FLIGHTS UNDER VARIOUS ATMOSPHERIC CONDITIONS.

SINGLE-SEATER, FOKA 4 is built to conform with the standard class of OSTIV, and is designed for performance flights under any atmospheric conditions.

Wing span: 15 metres. Aspect ratio: 18.5. Best gliding ratio: 34

Never exceed speed: 260 kilometres per hour. Flying weight: 386 kilogrammes.

TWO-SEATER, BOCIAN

Due to its many flight qualities under varying thermic conditions, Bocian is suitable for all types of performance flights. The pilots' seats are in tandem, and there are coupled control columns, which make the glider ideal for basic training.

Wing span: 18 metres. Aspect ratio: 16.5. Best gliding ratio: 26

Never exceed speed: 200 kilometres per hour. Flying weight: 525 kilogrammes.

MOTOIMPORT

PRZEMYSLOWA 26, WARSAW, POLAND
Cables: Motorim, Warszawa. *Tel:* 28-50-71

Sole Agent in U.K.
NORCO AVIATION LIMITED
BURRELL ROAD, HAYWAROS HEATH, SUSSEX. *Tel:* 51771

AUSTRALIAN NATIONALS

By C. E. WALLINGTON

FOR many Australians Christmas means a leisurely day swimming or surfing, fishing or bushwalking, picnicking or enjoying any of the outdoor pursuits that are so easy in this country. But for 120 glider pilots and their families it meant travelling distances between 50 and about 1,000 miles to Benalla for the 8th Australian National Gliding Championships. Situated about 100 miles north-east of Melbourne, the aerodrome at Benalla is the home site of the Gliding Club of Victoria. With its grass runways the airfield has ample room for a Championship and accommodation was available in the wooden huts, laundry and toilet facilities that once formed a migrant camp.

As well as doing my usual job of met. briefing I was lucky enough to fly in this Championship, thanks to Jeremy Pickett-Heaps who invited me to share his Skylark 4 with him.

Christmas Day and Boxing Day provided typical Australian scenes of beautiful cumulus at 7,000 ft. dotted about a bright blue sky. Two-hundred kilometres before lunch, then a swim while one's partner flew during the afternoon, was our programme for these two practice days.

On the opening day, 27th December, 1967, a fairly short 162-km. triangle via Corowa and Yarrawonga was started after the usual opening ceremonies. With strong thermals up to cloudbase at 9,000 ft. it was fairly easy going for League 1 pilots. Twenty-seven of the 31 in this league completed the task with John Rowe and Malcolm Jinks leading the field. They averaged 95.7 and 93.7 km/h., while close behind them with a speed of 87.4 km./h. was Mayer Page, whom many at Lasham will remember. The good conditions did not last all day, however; late in the afternoon patches of heavy sink were difficult to get through, and medium and high cloud cut off the sun's heating; so the two-seaters launched after the two single-seat leagues did not manage to complete the race.

The next day a 300-km. triangle via Tocumwal and Echuca was set in conditions that produced a mixture of strong but rough thermals, local over-clouding with no lift below, patches of heavy sink, large patches of medium and high cloud and headwind components of 20 knots on the first two legs. An added complication was that the western half of this triangle overlaps irrigation areas where thermals sometimes tend to be weaker. It was over this area that Malcom Jinks had to dump the water ballast from his Diamant to work patchy lift up from 500 ft. But he was first back with a speed of 69 km/h. followed by Ted Sherwin in a Libelle and Maurie Bradney in his Boomerang. The day was a triumph for Peter Hanneman and Alf Watts, flying the only two-seater to complete the course. I made slow progress against the headwind and finally came to earth near the first turning-point after going the wrong side of a line of cumulus — the structure of which was all too apparent when viewed from the ground.

In strong convective conditions in Australia many thermals appear to start as willy-willys, or dust-devils. These narrow whirling columns of dust are

sometimes visible up to several hundred feet and may persist for a few minutes. This whirling ascent of incipient thermals occurs in many countries, but they are not always obvious unless they whip up dust to make them visible. There is plenty of dust in Australia and plenty of strong sunshine, so willy-willys are a common sight to the glider pilot, and they are easier to see through polarised sun-glasses. Unlike the vortex ring type of thermals, they tend to throw a glider out of the lift at low levels, so a positive effort has to be made to stay in the rising air of a willy-willy type of thermal.

The 29th December was unusual. It rained. For some months there had been a drought in the southern half of Australia. Reservoirs were 40 ft. below normal. Competing gliders with skids had to have them of brass to reduce the risk of fire when landing in a dry, parched field, and sacking to beat out a fire was part of the routine cross-country equipment. But today it was overcast, and after delaying briefing to make sure that it really was going to rain, it was declared a rest day.

The next day was still cloudy, but the rain had stopped and some of the cumulus that formed at 4,000-6,000 ft. developed into shower cloud with local squalls and dust storms underneath. With such variable convective conditions and a wind of 30 knots it was decided to set distance-along-a-line across the wind, from Benalla to Yarrawonga to Benalla to Yarrawonga . . . *ad. inf.* At briefing someone asked if the organisers would set a limit on the number of legs to be flown, but they were assured that this would not be necessary. Indeed, the wind veered to give a particularly strong head component on the way out from Benalla, so the few that did manage the struggle almost as far as Yarrawonga took three hours to do so, while the return leg completed by Bob Martin in a Diamant took only about an hour. G. Hayes in a Libelle and C. Deland in a Boomerang almost got back to Benalla, but all the others scattered about the countryside after having put up valiant struggles on the first leg. Some scored zero for the first time in their competition experience, and some indulged in the rather un-Australian activity of slope-soaring small hills.

New Zealand's Peter Heginbotham in an Austria SHK did well to reach Yarrawonga, while Jeremy Pickett-Heaps in the Skylark 4 was prevented from reaching there by a near-by dust storm.

The 31st December allowed a race to be set again; this time a 234-km. triangle via Oaklands and Corowa. It was not longer because thermals were not expected to develop quickly; however, during the afternoon they were moderate to strong up to 7,000 ft. and most aircraft completed the task. First was John Rowe with a speed of 80.4 km/h. in a Libelle; then Malcom Jinks with 75.8 in the Diamant; and third, Dick Deane in a Boomerang.

By now the supremacy of the glass fibre machines was becoming clear. Not only could their pilots fly them fast; they had also shown that they could scratch away from low levels in difficult conditions.

New Year's Day. With a trough of low pressure across Victoria conditions looked gloomy and there seemed to be only about a 20 per cent chance of good breaks in the overcast before mid-afternoon. However, as in many countries, predicting the formation or dispersal of medium and high cloud is notoriously difficult, and, after it was decided to declare a rest day, conditions improved. Most pilots and their families took the day off to visit some of the beauty spots in the well-wooded mountains to the south.

The next day, 2nd January, thermals started early under a clear sky, but they were limited in depth to about 2,500 ft. until after midday. The task set was a 310-km. triangle via Tocumwal and Burrumbuttock. I decided to risk an early start with a quick retrieve if necessary, and was able to make 20 miles before landing beside the road where Jeremy and my wife, Joyce, were ready with the trailer. But back at Benalla, in the weak thermals, a tragedy had already occurred when Ralph Chappel of the Geelong Club was killed after his Arrow had collided with a Ka-6. The Ka-6 was damaged but landed safely. The day's contest was cancelled.

Medium and high cloud were back again on 3rd January, but after a delayed briefing it was possible to set the short 165-km. Benalla-Yarrawonga-Corowa triangle. Conditions were almost English with only moderate thermals. One distinctive feature of these thermals was the shear at about 2,500 ft. Inland in warm continental climates it is not uncommon for wind changes with height to be much sharper and more variable than is normal in England. On this day it was necessary to make a pronounced shift in position towards the north-east in order to keep with a thermal through the 2,500-ft. level. Once through this level, however, the fastest pilots were able to work thermals between 2,500 and 5,000 ft. around the course. Although I had predicted a shear, I didn't shift over enough at first and so made rather a slow time. First of the 19 pilots to complete the task was Bob Rowe in a Libelle with 67.6 km/h., then Bob Martin with 67.2 in the Diamant and Peter Rohrlach with 65.2 km/h. in a Boomerang.

Conditions and the task were repeated on the next day. However, different pilots were flying in about two-thirds of the aircraft. In the present Australian system there are two pilots for each League 1 aircraft and they fly according to a schedule prepared by the organisers to ensure that, as far as possible, each pilot flies against all the others, except, of course, the pilot who is sharing his aircraft. It is then the pilot's average daily points that count for the championship. Peter Heginbotham in the Austria SHK

won the day despite being harrassed by two eagles based somewhere in the middle of the triangle. Several of us had encountered these eagles; earlier in the competition they seemed quite amiable, but perhaps by now they were getting a little tired of intruders on the Benalla-Yarrawonga-Corowa circuit. They even knocked a bit of paint off the wing tip of the Arrow in which L. Hika was first of the 14 League 2 pilots flying the task. Peter Heginbotham's speed was 65.0 km/h. and he was followed by John Rowe with 62.5 in a Libelle and Maurie Bradney with 65.2 km/h. in his Boomerang.

Variable medium and high cloud was with us again on 5th January, and to make best use of a probable improvement aircraft were marshalled to their take-off positions to await the word "go". It was still hot and dry and a daily sight was the fire tender and a crop-duster aircraft spraying 3,000 gallons of water on to the runway to keep the dust down during take-off. There was only a short period of good soaring conditions, but enough for pilots to complete a 133-km. triangle via Euroa and Dookie. As well as moderate thermals there were some large areas of sink. Jeremy was flying the Skylark 4 today, and no doubt blessed all 18 metres of its span as he crept over the airfield boundary after what seemed an interminable final glide. Peter Heginbotham won again with a speed of 74.5 km/h. and was followed by Bob Martin (69.3 km/h.) and Bob Rowe (64.6 km/h.).

The 6th January was another day with weak or moderate thermals. The task was the 200-km. Benalla-Tocumwal-Yarrawonga triangle. Bob Martin was down to 300 ft. 15 miles out from Benalla, but he gradually struggled up to 6,000 ft. and was the only League 1 pilot to complete the course. But for most pilots it was slow going and many of them were scattered along the second leg by the end of the day. Werner Geisler in the Foka 4 and Dick Gething in the Dart 17 took second and third League 1 places, while Peter Hanneman again showed his skill in a Blanik to become the only two-seater pilot to get back to Benalla, his speed being 46.5 km/h.

Good thermals were with us again on 7th January for a 310-km. triangle via

Tocumwal and Burrumbuttock. Thermals developed early and were soon going to 8,000 ft. There was some heavy sink in places, but Malcom Jinks broke his own Australian 300-km. record with 96.1 km/h. and Doug Yarral in the SHK claimed a New Zealand record for his speed of 80.6 km/h. Forty-two of the 52 competing aircraft finished the course. Ted Sherwin in a Boomerang (89.2 km/h.) and Bob Rowe in a Libelle 83.8 km/h.) took second and third place in League 1.

On the last day but one John Rowe with an average of 975 points and Bob Martin with 971 were neck-and-neck for the Championship with Malcom Jinks (951 points) not far behind. Today would decide the outcome. The task in moderate to good thermals was the 375-km. triangle via Tocumwal and Lockhard. There was slight haze beneath an inversion at about 6,000 ft., but, as usual, navigation was easy. The meandering Murray River and its tributaries flanked by willows and gum trees stand out clearly against the dry landscape. A wind shear effect on thermals was again noticeable, this time at about 4,000 ft. Flying the Skylark, I made rather slow progress on the first leg, but a lucky thermal through the inversion to 7,200 on the last leg was enough for a 22-mile glide back to Benalla. John Rowe found 1,000 ft/min. sink in places, but made sure of the championships by winning the day with a speed of 85.4 km/h. in the Libelle. Next was G. Hayes (78.9 km/h.) also in a Libelle, then Peter Heginbotham (78.9 km/h.).

The last day, 9th January, brought superb thermal conditions with cumulus at 9,000 ft., but to ensure that scores were ready in time for prize-giving at 6 p.m. only the 165-km. Yarrawonga-Corowa triangle was set. Malcolm Jinks won the race, with Ian Pryde of New Zealand second in the Dart 17.

So ended a championship which in Australian gliding literature will probably be noteworthy for mediocre weather. But mediocre here means good rather than superb soaring conditions. It was a good contest, well organised and enjoyable. John Rowe, this year's winner, and Malcom Jinks, winner of the previous three Australian Nationals, are undoubtedly names that will feature in international gliding for some time to come. They both gained Gold C's at the age of 15 and had 1,000 hours' gliding before they were 21. But hot on their heels are a number of other Australian pilots with plenty of racing experience.

The far-sighted policies of the Waikerie Club, under the guidance of Bob Rowe, paid off yet again; the first three championship places and all the daily prizes, except the two won by Peter Heginbotham, went to Waikerie pilots.

Australia will make a bid for the World Championships in a few years' time. I would advise any visiting pilot to bring an aircraft with a high rough-air speed, but whatever he brings he can count on having good flying, keen competition and sincere friendship.

WORLD CHAMPIONSHIPS APPEAL

DONATIONS from the following to the British Team's expenses are gratefully acknowledged:

Adair, A. J.
Air League of Gt. Britain.
Deane-Drummond, A. J.
Dimock, H. R.
Doncaster & District G.C.
Doughty, A. W.
Harper, R. D. M.
Harwood, J. E. G.
Lawson, W.
McEvoy, Sir Theodore
Portal, J. R. A.
RAFGSA Bicester.
SBAC (£1,000)
Smith, I.

The raffle held on behalf of the team produced nearly £170. The winning tickets were drawn by Mrs. Mallalieu, wife of J. P. W. Mallalieu, Minister, Board of Trade, at the BGA Dinner-Dance. Christine Graham-White collected a small token for selling the greatest number of tickets.

The Fund totals £1,300, but more money is urgently needed to meet the expenses of sending the British team to Poland, and it is not too late to send contributions to the BGA office.

AGM AND DINNER

THE last Annual General Meeting to be chaired by Philip Wills was also the longest for many years, and threatened to be longer still until the Rating List critics were persuaded to keep their views bottled up till the afternoon. The main subject was, of course, the proposed new constitution with an enlarged Council to meet less frequently and an Executive Council to run BGA affairs for most of the time. Full details will be voted upon by an Extraordinary General Meeting when they are worked out, but the present meeting voted *nem. con.* in favour of its general principles.

Our new chairman, Peter Scott, was elected with acclamation. His first job was to invite Philip Wills to become President—there has been none since 1964. The meeting closed with the re-election of Sir Theodore McEvoy, John Furlong and Basil Meads as Vice-Presidents.

At the subsequent dinner in the Connaught Rooms, Philip Wills reminisced about the Primary glider of the 1930's before introducing the guests: "Bill" Mallalieu, Minister for the Board of Trade; Walter Winterbottom of the Central Council for Physical Recreation; John Ware of "you know who" (and if you don't, it's W. D. & H. O. Wills); Simon Ames of "our Big White Father", the Royal Aero Club; two more representatives of the B.o.T. — Ian Riddoch, the Under-Secretary, and Nick Gilling; and Ken Owen, formerly of *Flight*.

John Ware was struck by the contrast between his present "elegant surroundings" and his last gliding occasion at Lasham, when upon rising to make an after-breakfast speech, he "sank back again into that mud".

Mr. Ware had "a piece of paper" to hand over to Peter Scott; this turned out to be a £250 cheque for the Instructor Scholarship scheme — £50 more than his firm's previous contribution. He followed this up with a copy of a new film, "Glider in the Sky", made by his firm, for our Team to take to Poland.

Mr. J. P. W. Mallalieu said he had intended to refer to gliding as a sport, but now realised it was a religion. He made a welcome offer of £3,000 to pay

for the work done by the BGA in administering safety regulations — work which would otherwise have to be done by his Board.

Peter Scott reminded his audience that it was at the Connaught Rooms, in December, 1929, that the BGA was inaugurated, and followed this up with a wealth of good stories.

Barbara Carrow, on behalf of the whole movement, made a presentation to Philip Wills; Mr. Mallalieu presented the Annual Trophies, and the hall was cleared for dancing.

CVSM MEETING

PRESIDIO COUNTY Airfield, Marfa, Texas, USA, has been selected as the venue of the 1970 World Gliding Championships. The provisional dates suggested are the last week in June, practice period; and the first two weeks in July, contest period.

A total of 80 gliders will be accepted, and it may be possible to hire gliders and retrieve cars in the USA.

OSTIV IN POLAND

ACCOMMODATION for OSTIV Congress participants during the World Gliding Championships has been arranged at a fine new hotel and/or bungalows at Boszkowo, 25 km. from Leszno airfield. The hotel beds are in double rooms with a shower. The specially reduced cost, $10 per day, includes breakfast at the hotel, lunch at the airfield, dinner at either, transport between both and participation in the excursions provided by the Polish Aero Club.

To ensure accommodation, delegates should write by 1st May to: Aero Club of the Polish Republic, Krakowksie Przedmiescie 55, Warsaw, giving dates of arrival and departure and means of transport. By 15th May a reply will be sent enclosing a permit which will facilitate obtaining a visa in the delegate's own country.

Other visitors to the championships should write for information to a special bureau which the Aero Club has set up to advise them, namely: Przedsiebiorstwo Imprez Sportowych, Warszawa, Poland, Stadion Dziesieciolecia.

DATA ON SAILPLANES WITH A GLIDING RATIO BETTER THAN 32:1

Compiled by RIKA HARWOOD

SINCE the last edition of *World Sailplanes Vol.* 2 was published in 1963, it is often difficult to find details of some of the newer or well-known high-performance sailplanes.

In an effort to collate some of the information we have at hand which may be of general interest, we have tabled a number of sailplanes with a *claimed* performance better than 32:1.

Every effort has been made to ensure that the information given is as accurate as possible, but it should be borne in mind that weights often differ from one sailplane to the next of the same type.

We should be grateful for any information readers can give on any sailplanes we have missed out with a performance of 32:1 or better, and giving the details as set out in the table.

We wish to thank the Editor of *Jane's All the World's Aircraft* for allowing us to use some of the data in their latest issue.

Nick Goodhart comments on the table on page 110.

Column No. **1**=Wing area, sq. ft.; No. **2**=Empty equipped weight, lbs.; No. **3**=Maximum weight, lbs.
Remarks Column: Constr.=Construction; Conv.=Conventional; Retract.=Retractable.

Country	Sailplane Type First Prototype Flew in	Span Metres	Wing Section	1	2	3	Glide Ratio claimed at Knots	Remarks
AUSTRIA	Mg-23 SL April, 1962	16.40	NACA 63$_1$315	153	529	794	33:1 at 42	Wood constr. Conv. tail. Fixed wheel.
BRAZIL	ITA Urupema (Under constr.)	15	FX-05-191	129.2	421	635	Min. sink 1.2 Ft./sec. at 40	Honeycomb sandwich constr. of paper/wood "isopon". DFS type airbrakes. All-moving conv. tail. Fixed wheel.
FINLAND	IKV-3 Kotka June, 1966	18.20	FX-60-126 (tip) FX-62-K-153 (root)	183	749	992	38:1 at 54	Constr. similar to Vasama and Havukka Std. Flaps. Conv. tail. Retract wheel.
FINLAND	KK-1-e UTU August, 1964	15	NACA 63$_1$612 (tip) NACA 63$_3$618 (root)	121	441	684	35:1 at 43½	Glass-fibre polyester sandwich constr. T-tail. Fixed wheel.
FINLAND	PIK-16C Vasama. Orig. version 1961	15	NACA 63$_2$615 (tip) FX-05-188 (root)	125.9	419	661	34:1 at 46	Wood constr. Originally V-tail, now conv. tail. Fixed wheel.
FRANCE	Siren C30-S Edelweiss Sept.,1962	15	NACA 64 series mod. as per 7 series	133.9	518	838	36:1 at 51	Sandwich/wood constr. V-tail. Fixed wheel. (Edelweiss-4 under constr.).

Country	Sailplane Type First Prototype Flew in	Span Metres	Wing Section	1	2	3	Glide Ratio claimed at Knots	Remarks
FRANCE	Wa-26 Squale July, 1967	15	Wortmann series	130.09	485	776	36:1 at 48½	Wing, wood constr. Fuselage, glass-fibre constr. Flaps which act as air brakes. Conv. tail. Retract. wheel.
GERMANY	AS-W 15 Due to fly Spring, 1968	15	Wortmann series	118.40	394	660	38:1 at 46	Glass-fibre/balsa constr. Conv. tail. Fixed wheel. (Retract. wheel and brake parachute optional for Open Class and record flying.)
GERMANY	AS-12 dvlpd. from D-36 Jan., 1966	18.30	FX-131 modified	139.9	648	915	over 40:1 at between 38-69	Glass-fibre reinforced plastic/balsa constr. Lower-surface-hinged flaps which act as air brakes. Perton-type tail parachute. T-tail. Retract. wheel.
GERMANY	BS-1B Delivery Dec., 1968	18.70	Eppler 348-K	150.4	639	995	45:1 at 54	Three-piece wing, otherwise similar constr. as Libelle. Ailerons linked differentially with high-lift flaps. T-tail. Retract. wheel.
GERMANY	Cirrus Feb., 1967	17.74	FX-66 series	135.6	573	882	44:1 at 46	Glass-fibre/foam sandwich constr. Conv. all-moving tail. Space for water ballast. Retract. wheel.
GERMANY	Ka-6E Spring, 1965	15	Jukowsky (tip) NACA 63-615 (middle) NACA 63-618 (root)	133.5	430	661	32:1 at ?	Constr. similar to Ka-6CR. Redesigned tail surfaces, taller fin and rudder, lower fuselage. All-moving conv. tail. Fixed wheel.
GERMANY	Glasflügel Kestrel. Delivery Dec., 1968	17	?	124	463	772	43:1 at 54	Glass-fibre/balsa sandwich constr. Flaps. T-tail. Retract wheel. Jettisonable tail parachute.
GERMANY	Glasflügel Libelle dvlpd. from H-301 and H-30 (6 mths. del.)	15	Hütter section	102.3	397	662	39:1 at 46	Glass-fibre reinforced plastic/balsa sandwich constr. Flaps, GFK air brakes. Conv. all-moving tail. Jettisonable tail parachute. Retract. wheel.
GERMANY	Libelle-Standard. Delivery Aug., 1968	15	Hütter section	104.6	375	640	38:1 at 46	Slightly changed profile to that of Glasflügel Libelle, otherwise similar constr. Fixed wheel.
GERMANY	LS-1 Nov., 1967	15	FX-66 series 19.4 to 17.0% thick	104.84	396	705	37:1 at 48½	Glass-fibre/plastic sandwich constr. Flaps. All-moving T-tail. Fixed wheel. (Retract. wheel optional.)
GERMANY	Phoebus	15	Eppler 403	141.5	485	772	37:1 at 49	Glass-fibre/balsa constr. All-moving T-tail. Fixed or retract. wheel.

	Sailplane Type First Prototype Flew in	Span Metres	Wing Section	1	2	3	Glide Ratio claimed at Knots	Remarks
GERMANY	Phoebus-C	17	Eppler 403	151	531	827	42:1 at 49	Glass-fibre/balsa sandwich constr. All-moving T-tail. Retract. wheel.
GERMANY	SB-7 dvlpd. from SB-6 1962	15	Eppler 306	127.6	562	794	37.5:1 at 48½	Glass-fibre sandwich constr. All-moving T-tail. Retract. wheel.
GERMANY	SB-8 April, 1967	18	FX-60-126 (tip) FX-62-K-131 (middle) FX-62-K-153 (root)	151.8	485	716	41:1 at 44	Glass-fibre/basa sandwich constr. Flaps over full span. T-tail. Retract. wheel.
GERMANY	SHK (1967 version)	17	Eppler 266	158.2	573	815	38:1 at 47	The 1967 model has a completely faired-in canopy. V-tail. Retract. wheel.
GERMANY	Zugvogel V 1964	15	FX-60-126 (tip) FX-61-184 (root)	129.9	463	705	34:1 at 48	Wood/fabric constr. All-moving conv. tail. Fixed wheel.
GT. BRITAIN	Dart Nov., 1963	15	NACA 643618 (root) NACA 643615 (tip)	136	530	840	33.5:1 at 46	Changed from wood to metal spar. Wood constr. Conv. all-moving tail. Fixed or retract. wheel.
GT. BRITAIN	Dart Oct., 1964	17	(as above)	149.3	615	820	36:1 at 45	Metal spar. Constr. as above. Fixed or retract. wheel.
GT. BRITAIN Orig. USA	HP-14-C 1968	18	FX-61-163	146.21	560	800	44:1 at 47	All-metal constr. Full-span flaps which act as air brakes. Retract wheel. Changed from V-tail to conv. all-moving tail.
ITALY	Aviamilano A-2 Standard	15	FX-61-163	127.6	419	683	34:1 at 47	All-metal central torsion box and spar. Trailing-edge air brakes on inner wings. All-moving T-tail. Retract. wheel.
ITALY	CRIB E.C.-41 dvlpd. from Uribel C Dec., 1966	17.64	Eppler 357	166.8	606	882	38:1 at ?	Wings similar to Uribel C with tips extended. Fuselage of new design. V-tail replaced by conv. tail. DFS type air brakes. Fixed wheel.
ITALY	M-100 S 1963	15	NACA 63-618 mod. (root) NACA 63-615 mod. (tip)	141	441	694	32:1 at 43½	Wood constr. Conv. tail. Fixed wheel.
ITALY	M-300 Feb., 1968	15	Eppler 266	96.8	374	661	39 : 1 at 48½	Metal/wood constr. Non-structural parts glass-fibre. T-tail. Fixed wheel.
POLAND	Foka-5 1967	15	NACA 633618 mod. (root) NACA 4415	131.64	564	849	34:1 at 51	Constr. similar to Foka-4. The Foka-5 has a T-tail.
POLAND	Zefir 4	19	NACA 66215-416	169	948	1,213	42:1 at 57	Multi-longeron spar-less wood constr. Fowler flaps. Conv. tail. Tail parachute. Retract. wheel.

Country	Sailplane Type First Prototype Flew in	Span Metres	Wing Section	1	2	3	Glide Ratio claimed at Knots	Remarks
SOUTH AFRICA	BJ-3 1965	16.15	NACA 661212 (root) NACA 0009-64A 0.8 (tip)	132 (excl. flaps)		1,150	40:1 at 70	Glass-fibre/duralumin sandwich constr. Fowler flaps. DFS type air brakes. T-tail. Retract. wheel and nose wheel.
SWITZERLAND	Diamant (Production completed)	15	Hütter section	104.5	420	660	39:1 at 54	Moulded all glass-fibre sandwich constr. All-moving T-tail. Air brakes fitted near trailing edge. Retract. wheel.
SWITZERLAND	Diamant Feb., 1967	16.50	Wortmann series (mod.)	143	585	770 +130	42:1 at 54	Space for 130 lb. water ballast. (Optional extra for 16.5 and 18 metre Diamant.)
SWITZERLAND	Diamant Jan., 1968	18	Wortmann series (mod.)	154	615	840 +130	45:1 at 51	All three versions have been fitted with flaps. Flap deflection is synchronized with partial downward aileron action.
SWITZERLAND	Elfe MN-R April, 1964	17.5	Pfenninger (at root)	142.2	529	816	42:1 at ?	Glass-fibre/balsa constr. V-tail changed to conv. tail. Retract. wheel.
SWITZERLAND	Elfe S-3 May, 1966	15	Wortmann series	128.1	463	695	36:1 at ?	Glass-fibre/balsa sandwich constr. Conv. tail. Fixed or retract. wheel.
SWITZERLAND	Elfe AN-66 1966	18	Eppler 441	150.7	635	882	45:1 at 52	Metal spar. Sandwich constr. Flaps. V-tail. Retract. wheel.
USA	BG-12B July, 1963	15.24	NACA 4418 (root) NACA 4406 (tip)	141	525	800	34:1 at 45	All-wood constr. Trailing-edge flaps used as air brakes. Conv. tail. Fixed wheel.
USSR	A-15 1961	17	NACA 643618 (root) NACA 633616 (tip)	132	705	838	40:1 at 54	All-metal constr. Fowler flaps. V-tail. Upper-surface spoilers. Retract. wheel.
USSR	KAI-19	20	?	150.7	736	913	45:1 at 46	All-metal constr. Flaps. T-tail. Retract. wheel.
YUGOSLAVIA	Delfin Nov., 1963	15	NACA 633618 mod.	138	490	732	33.8:1 at 48½	Wood constr. All-moving conv. tail. Fixed wheel.

Column No. 1=Wing area, sq. ft.;
No. 2=Empty equipped weight, lbs.;
No. 3=Maximum weight, lbs.

Remarks Column:
Constr.=Construction
Conv.=Conventional
Retract.=Retractable

Conversion factors:

Multiply	metres	by	3.28	to get feet
,,	sq. ft.	by	.0929	,, sq. metres
,,	lbs.	by	.454	,, kilograms
,,	Knots	by	1.15	,, m.p.h.
,,	Knots	by	1.85	,, km./h.
,,	Knots	by	1.69	,, ft./sec.
,,	glide ratio	X		,, claimed glide ratio

A LOOK THROUGH THE LIST

By NICHOLAS GOODHART

IN the absence of a new issue of the *World Sailplanes*, S. & G.'s list is a terrific help in keeping in touch with the way world sailplane development is going. Many readers will draw their own conclusion from reading the list, but for those who do not have the time or inclination to study it I have put down in the following paragraphs the thoughts that occurred to me.

Forty-two designs have been tabled (of which few are just new marks) in five years. *Clearly no falling-off in enthusiasm to advance the art.* Twenty-one designs are 15-metre. *The Standard Class continues to attract much interest.*

Some 15-metres have retractable wheels: *presumably these can be fitted with fixed wheels for Standard Class competition, but two have trailing-edge flaps, which excludes them from Standard Class even if the flaps are only intended as air brakes.*

GRP (glass-fibre re-inforced plastic) is used structurally in 15 cases. *There will soon be enough production machines flying for a valid judgement to be made of GRP's advantages and disadvantages.*

Only three designs are all-metal (aluminium alloy). Metal is used structurally in three other designs. *We will have to wait some time yet before the pros and cons of this type of construction become clearly established (in Europe).*

Wing sections used are:

15 Wortmann series.
14 NACA family.
8 Eppler series.

The Wortmann (and the Eppler, I presume, in the absence of published data) have a clear advantage over the NACA sections and have been in existence since the early 60's.

Wing loadings are worth investigating. *The higher the wing loading the easier it is to get a good glide ratio, but this does not necessarily mean a better cross-country performance. For the Standard British Thermal (which has an absolute vertical velocity of 4.6 knots at its centre) it seems that the following wing loadings are about optimum:*

With NACA wing sections . . . 5 lbs./sq. ft.

With Wortmann plain wing sections . . . 5+ lbs./sq. ft.

With Wortmann variable camber wing sections . . . 5½ lbs./sq. ft.

Nearly all the designs are higher than these figures, which tends to indicate design for a stronger thermal—or perhaps the weight just came out too high—it's been known to happen. Some are, of course, designed to carry water ballast and the unballasted flying weight may be much lower than the max. weight quoted.

Of particular note among the unflapped types are:

Country	Type	Wing Section	Wing loading
Finland	IKV-3 Kotka	Wortmann	4.6
Poland	Zefir 3	NACA	7.15
USSR	A-15	NACA	6.35

The fitting of flaps makes possible a high wing loading while still retaining an adequate climbing performance.

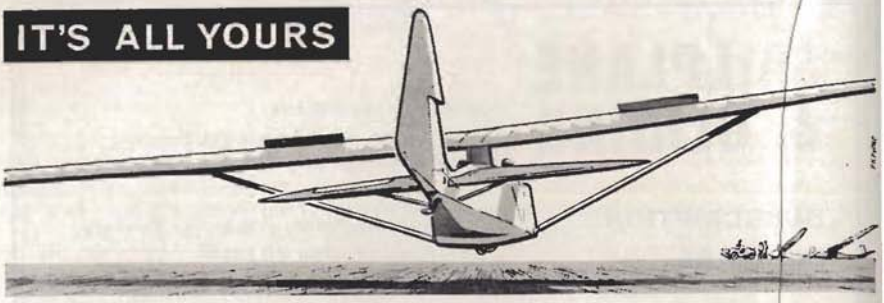
Outstanding examples are:

Country	Type	Wing Section	Wing loading
Germany	BS-1	Eppler	6.55
S. Africa	BJ-3	NACA	8.72

The min. sink quoted for Brazil's ITA Urupema is interesting; it represents a glide ratio at min. sink of 56.4!

No mention has been made of claimed glide ratios for two reasons. *First, the gulf between* claim *and* actuality *may be quite large; second, glide ratio figures are not, by themselves, an indication of cross-country performance. For example,* 40:1 *at* 70 *knots (BJ-3) would be far preferable to* 45:1 *at* 45 *knots (KAI-19) if both had equal low-speed performance. They do not, of course, but the difference would have to be known and examined in detail before any relative merit could be established. Even then it would only be shown that the BJ-3 was outstandingly good in very strong thermals and the KAI-19 in weakish thermals. This is scarcely surprising since this represents the conditions in the two countries concerned.*

IT'S ALL YOURS



Instructors' Conference

THE Instructors' Panel recently held two Instructors' Course Policy Conferences for CFI's from clubs intending to run courses this year.

The first was at Dunstable and the second at Sutton Bank, and thanks are due to the London and Yorkshire Clubs for making us all so welcome. The purpose of the conference was to ensure that everyone running courses put over the BGA syllabus to a uniform standard and with similarity of emphasis. At the end of the year a further meeting will be arranged so that everyone will be able to compare notes, and to suggest improvements for the future.

Subjects dealt with on the courses included the mechanics of running a nine-day course, teaching air exercises, demonstration and practice, lecturing, safety and supervision of the solo pilot. Nine Panel Examiners helped run the two meetings, and 26 club representatives attended.

* * *

The Wills Glider Pilot Competition 1968

W. D. & H. O. Wills are again generously holding the competition to find the best trained club pilot. Prizes, which will be awarded to the clubs of the winning pilots in the north and the south, will be special Swallow gliders. For the competition Slingsby's are giving the Swallow more wing, a longer nose and improved handling qualities. The two second prizes will be glider radio transmitters, and the two third prizes, barographs.

As last year, the competition will consist of 3 consecutive training programmes. At the end of the first the CFI will select the best candidates in his own club and these pilots will then work through the second training syllabus before going to the semi-final centre in their area to compete against candidates from other clubs. The ten winners will then do some further training, both flying and ground, to prepare for the finals.

The semi-finals will be held at various Regional Centres on 6th July, and the finals will be at Lasham from 2nd-4th August.

THE WILLS AEROPLANE FLYING TRAINING SCHEME is also being held again this year. This will enable 60 people to learn to fly, and the winner to have his own aeroplane. Both these schemes have done a great deal to raise training standards and this has been recognised by the award of the BLAC Lennox-Boyd Trophy, given for the greatest contribution during the year to light aviation.

* * *

Cross-country at . . . 3 m.p.h.

NOW that gliders fly around at over 100 knots, much of the personal touch has left the sport—at least while one is airborne; aircraft are superbly instrumented, there is instant radio communication and the pilot fits neatly into his tailored capsule.

Not so in a hot-air balloon—in which the Chairman of the Instructors' Panel found herself a day or so ago—drifting gently across a housing estate and chatting to the inhabitants. One is surprised by several things. One has a sensitive built-in variometer: by simply holding a damp hand out of the basket it is possible to feel whether you are rising or sinking even on a calm winter day.

And it will obviously take some time to get used to the mentality of field landings. With me on board we landed in quite a normal small field, except that it was a monastery; but later on the possibilities were discovered. Following a chat with the landlord of a pub, the pilot decided to land in the car park; unfortunately the arrival of one more car plus a puff of air put this out of reach. Some 20 minutes later, having travelled a distance of some 20 yards, the balloon was put neatly down in between the rotating filters of a sewage farm in a landing field at 20 by 30 yards!

ANN WELCH

BGA NEWS

1967 Annual Awards

The British Gliding Association has pleasure in announcing the following awards for 1967:

DE HAVILLAND CUP for the greatest gain in height: to Charles Ross (Scottish Gliding Union) for a gain of 20,550 ft. at Portmoak on 18th March. Skylark 3F.

MANIO CUP for the longest goal flight: Not claimed.

WAKEFIELD TROPHY for the longest flight: to Anne Burns (Surrey & Hants Club) for a distance of 252 miles (407 km.), Lasham, Leominster, Northampton, Lasham, on 5th August. SHK.

CALIFORNIA IN ENGLAND TROPHY to a woman pilot for the longest flight: to Anne Burns for the triangle which won the Wakefield Trophy.

VOLK CUP for the longest pre-declared goal-and-return flight: a tie between Richard Brisbourne and Alan Purnell (Surrey & Hants Club), who both flew from Lasham to Kidderminster and return, distance 196 miles (316 km.) Purnell, 1st June; Skylark 4. Brisbourne, 5th August; Dart 17R.

SEAGER CUP for the best closed-circuit performance in a two-seater: to Ray and Peter Stafford Allen (London Club) for a goal-and-return flight from Husbands Bosworth to Cranfield and return on 23rd July. Capstan.

DOUGLAS TROPHY to the club putting forward three flights by three different club members in club aircraft, aggregrating the largest cross-country mileage: to the Surrey & Hants Club for the following flights:

Tony Burton—Lasham, Radstock, Long Marston, Lasham, on 9th July. Skylark 4. 201 miles (323 km.).

Alan Purnell—Lasham, Chedworth, Sywell, Lasham, on 30th June. Dart 17R. 197 miles (317 km.).

Richard Brisbourne—Lasham, Kidderminster, Lasham, on 5th August. Dart 17R. 196 miles.

Total distance: 594 miles (956 km.).

FRANK FOSTER TROPHY for the fastest speed round a 100-km. triangle: to George Burton (Imperial College Club), for a speed of 53.4 m.p.h. (85.9 km./h.), Lasham, Hungerford, Fullerton, Lasham, on 20th August. Dart 17R. This flight (subject to homologation) broke the existing UK single-seater 100-km. triangle speed record.

ROBERT PERFECT TROPHY to the club with over 50 flying members which has the highest number of BGA categorised instructors in proportion to flying membership: to Cornish Club (89 members, 13 of whom are instructors).

National Ladder Trophies

ENIGMA TROPHY to the pilot flying a privately-owned glider who has scored the most points in the National Ladder Competition: to Alan Purnell (Surrey & Hants Club).

L. DU GARDE PEACH TROPHY to the pilot, all of whose flights were made in a club-owned glider, who has scored the most points in the National Ladder competition: to John Barrows (Surrey & Hants Club).

* * *

Competition Numbers

It has been pointed out that private owners may not be aware of the fact that untaxed competition numbers go back into the pool of numbers and may be re-allocated to other machines. In addition, these numbers should be obliterated from the aircraft as soon as possible in order to avoid possible confusion at a later stage.

There are several quite famous numbers which have not been taxed for 1968 and their owners would probably hate to lose them. However, forewarned is forearmed.

Purchase of Second-hand Gliders

The second-hand market in gliders is notably free from the aura of horse-trading which surrounds similar activities in the car market. But from time to time, complaints come to the notice of the BGA, mostly relating to rather old machines. In some cases the blame lies with the purchaser: he buys a machine which the vendor does not claim to be airworthy, hoping to put it into good order. He then finds that the amount of work is far more than he anticipated and complains that he has parted with good money for a heap of junk. Sometimes the situation is more obscure: a machine is sold on the understanding that it is in reasonably good order, but the purchaser finds after close inspection that it has sundry bad repairs which will be expensive to rectify. The vendor may be quite honestly unaware of these defects: they may well have been inserted by persons unknown, long before the machine came into his possession.

It is obviously impossible to inspect a second-hand machine before purchase in sufficient detail to ascertain the precise condition of every part of the structure. Inevitably, a few transactions will be less than satisfactory to one or both of the parties concerned. But some disappointment and/or acrimony can be avoided.

It is in the opinion of the Technical Committee that unless purchasers are experienced in assessing gliders, they would be well advised to take the advice of an approved inspector in the course of making arrangements for purchase of second-hand gliders. Of course, the inspector can only give advice, and the final decision must remain the purchaser's responsibility.

If the glider is very ancient indeed, or of some very obscure type, or to be imported from abroad, it would be prudent to seek the advice of the Technical Committee at an early stage.

F. G. IRVING,
Chairman, Technical Committee

Correction to page v. of 1967 Index: Post-war National Championships Placings—2nd place for 1949 should read: J. C. Neilan, W. A. H. Kahn, D. Reid (Weihe).

POWERED GLIDING COMMITTEE REPORT

COMMITTEE MEMBERS: D. H. G. Ince (Chairman), J. B. Brenner, J. C. Everitt, J. E. G. Harwood, F. G. Irving, R. A. Neaves, A. D. Piggott, P. Ross, Maj. E. G. Shepard, Ann Welch.

IN July the Powered Trainer Co-ordinating Committee's terms of reference were extended by Council to include motor gliders and auxiliary powered sailplanes—hence the change of title.

Powered Training

The one essential objective at this stage has not yet been realised. It is, perhaps over-simplified, to obtain comparisons by means of practical experiment, between the following three methods of pilot training.

(i) All through on gliders—current launching methods.

(ii) Ab-initio on existing light aircraft types—conversion to gliders—solo on gliders only.

(iii) Ab-initio on a specific powered aircraft which has been selected to have characteristics corresponding as closely as possible to those of a glider.

Clearly, there is a wealth of experience and information available concerning the first method.

On the second method, the Committee has, with the support of the Board of Trade and the Instructors' Panel, sought to obtain further information by means of powered training experiments at Lasham, Perranporth and Challock. Unfortunately, these experiments have been limited by a number of factors—including, not least, aircraft serviceability. It seems to be the majority view of the instructors who have been involved that the use of existing light aircraft is a considerable advance on all-through glider training. This, however, is not enough and more specific evidence is required.

The third method depends entirely on a suitable aircraft becoming available and in this respect progress has been disappointing. The position on those projects which were reported to the last AGM is now as follows:

(i) Slingsby Aircraft—other commitments are currently such that Slingsby's have been forced to abandon any idea of powered trainer development—at least for the present.

(ii) RF5—at the time of going to Press, the RF5 has just flown but further information is not yet available.

(iii) Kittiwake—a two-seat version of this aircraft is to be built by Robinson Aircraft at Blackbushe.

In addition to the above, it has now been possible to evaluate the Motorfalke. This proved to be a remarkable insight into what can, and has been achieved, in terms of a self-launching glider with very little sacrifice of (glider) performance. As such, it augurs well for the future of the auxiliary powered sailplane. Given a more powerful engine (Scheibe now have a VW engined version flying) and a few detailed changes, the Motorfalke could be of very considerable interest.

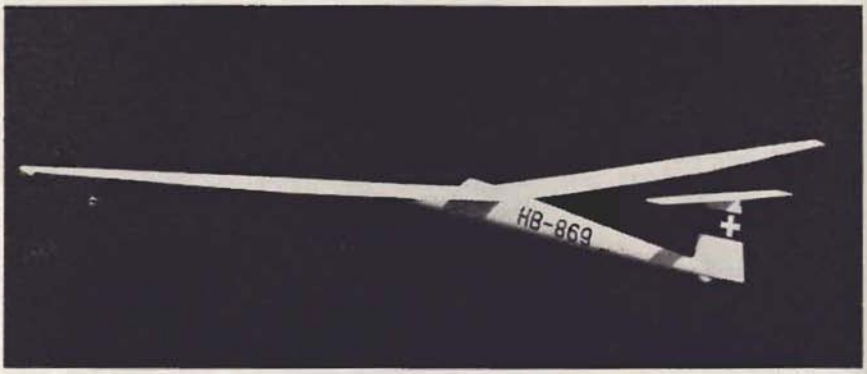
To summarise: 1967 for powered training has been a year of very slow progress and considerable disappointment. The prime objective for 1968, therefore, continues as before—practical evaluation of the three methods described above. Only then will it be possible to provide sound guidance, based on factual evidence, which is vital if essentially correct decisions are to be taken about future training improvement.

Motor Gliders and Auxiliary Powered Sailplanes

A report now being drafted will survey the known and foreseeable implications of self-launching gliders and sailplanes as a new and growing branch of the sport. It will include sections on airworthiness, operational regulations, competitions, records, badges, pilot qualifications, training methods and instructional standards, etc.

D. H. G. INCE, *Chairman*

DIAMANT



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These superb fibreglass sailplanes have flaps (+16° to -10°) as well as very effective airbrakes.

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DIAMANT 16.5 1.42LD at 62mph. 1.30 at 82mph. Min. sink 1.8ft. sec. £2,545 at exchange rate 10.40.

Low lined trailers supplied.

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Manufacturers: Flug-und Fahrzeugwerke AG, 9422 Altenrhein, Switzerland.

FLYING THE DIAMANT 18

By LEANDER MARKUS RITZI

PLACE: Altenrhein airport, Switzerland. Time: 2 p.m. on a dull winter day with some Föhn and increasing westerly winds. Participants: the new 18-metre Diamant fresh out of the mould and sparkling white with its elegant contours, the ship's designers and builders and I, the pilot, with the task of giving a neutral verdict on this newest racehorse from Altenrhein's stables.

My report will be limited to cockpit, flight and control characteristics. I cannot comment on the performance at this stage.

Instruments on this prototype are rudimentary. I do not know the instrument errors (according to the factory the ASI was indicating too much).

Here we go!

The *cockpit*, into which I am carefully "inserted", is neatly made: no Rolls-Royce, no stock car, just right. Head and back rest as well as pedals are adjustable on the ground in many ways. The reclined position is comfortable but there is no excessive space. The fuselage shape stems from the experimental KaBiVo which had been designed by engineering students. I'm sorry to say that I am not as aerodynamically shaped as the students are. I am still comfortable in the cockpit, but have rather little space for navigation utensils and food.

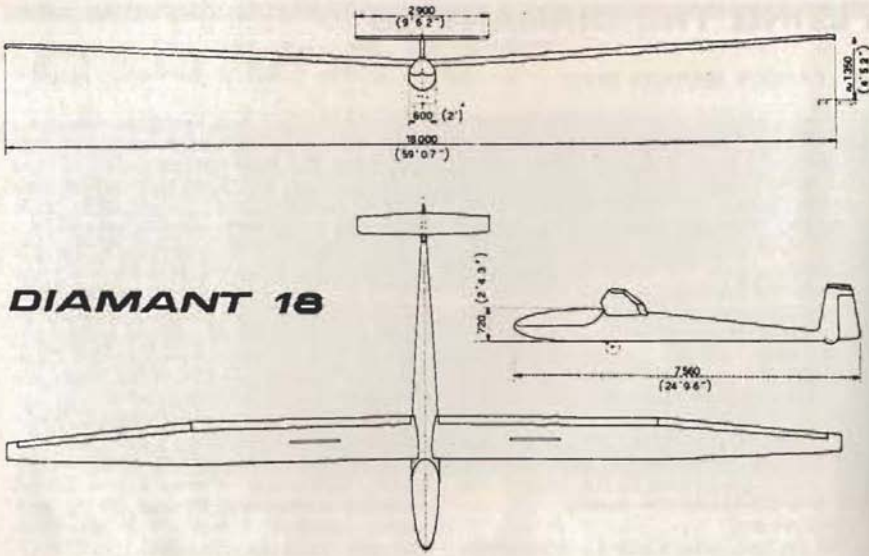
The controls and operating levers are arranged in a practical manner; only the trim knob requires reaching across. With an extended arm I can get at the knobs on the instrument panel. Aero-tow release is not to my satisfaction as I can only just reach it. This can easily be adjusted.

The very accessible and quickly interchangeable instrument bloc provides space for five large and two small instruments, plus radio. Forward and lateral visibility is excellent. In spite of the pale winter sunshine I notice no distortion and practically no reflection.

Ready for take-off—we're rolling.

With flaps neutral I lift off at about 50 m.p.h. Immediately there is ample control response. The undercarriage must remain out until after release since the tow hook retracts with it. Everything is fine on tow, so I try flying low in the prop wash, high above the tow plane,

The author is a well-known figure in international gliding. For many years a member of the Swiss Team, and placed 2nd in Standard C1 in 1965. He is a Captain with SWISSAIR and has temporarily withdrawn from competitive gliding.



and twice initiate a slack in the tow rope—no problem to recuperate.

Lake Constance looks grey, cold and menacing below. At 1,500 ft. we encounter slight Föhn turbulence. I release at 3,300 ft. and retract the wheel: it becomes silent. Fifty m.p.h., I set the trim and let go all controls. There is a minute, steady oscillation with the speed varying between 44 and 53 m.p.h. Laterally the Diamant does not move a bit, and it flies absolutely straight on course. Not bad!

I vary the speed with the flaps. The control lever is easy to operate and for every position the corresponding speed is marked: from 37.5 m.p.h. (+ 15°) to 120 m.p.h. (− 12°).

Now I get to the *low speed* test. With flaps neutral I hold the nose up: 50, 45, 40 m.p.h. When I reach 36 m.p.h. the ship dips very gently on its nose, almost unnoticeably. Aileron and rudder control remain good. If I let go the control stick the plane accelerates by itself.

Same procedure with flaps at + 15°. At indicated 34 m.p.h. the Diamant shakes slightly, dips forward and picks up speed. If I keep the stick fully back, it just remains in harmless stalled flight. Now I try it from a nose-up position. The higher I pull up, the more pronounced is the dipping. How about a spin? Tight nose-high spirals all produce more or less pronounced stalls, but no spin.

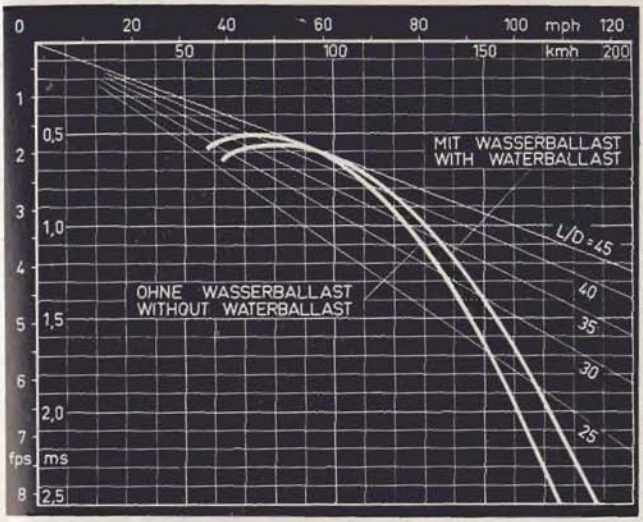
In short, really extraordinary low-speed characteristics.

Control Pressures and Response

Elevator: like every pendulum elevator, lots of response with little forces, especially at high speed. Ailerons: for an 18-metre ship rather good; reduced action with much positive flap deflection. With neutral flaps, full ailerons and rudder the rate of roll from 45° to 45° is 4.8—5 seconds at indicated 56 m.p.h. Rudder: good response with medium control pressure. Damping could be somewhat better. Side-slips are easy.

In circling flight the Diamant 18 is very stable with good lateral manoeuvrability. One can comfortably hold any bank with the stick in the middle. A piece of cake for cloud-flying.

A short test: how is transition from thermalling to high-speed flight? In my second attempt I manage to accelerate from 50 to 94 m.p.h. in 11 seconds. A



"U"

Calculated polar curve for the Diamant 18.

good time, though it requires rapid flap adjustment to negative and definite forward push of the stick.

Eight-hundred feet above ground; forgotten anything? Ventilation. Certainly important with so much plexi. The knob is within easy reach and well adjustable over the whole range. Air intake is from the nose. It seems quite effective, though difficult to judge at today's — 5° C.

Approach with air brakes and flaps. They told me best efficiency of the brakes would be at 75 m.p.h. I find this a bit high for practical purposes. In competition the decision to land is often taken so low that picking up 75 m.p.h. is not possible. I therefore try at 65 m.p.h. Although forewarned, I am baffled by the way this thing goes down. To keep up the speed I must dive at over 20° angle. Against my judgement I had crossed the threshold at 650 ft. and I am on the ground before half the runway (2,000 ft.). Flare-out is short due to the rapid deceleration, but it can be regulated with the air brakes. On finals one must know that aileron efficiency is reduced. Guiding the ship on the ground is normal. The wheel braking action is still insufficient; but I'm told that it takes about 20 landings to run in the brake discs.

Important: they don't publicise but still recommend to belly-land on delicate landings. This would do no harm whatsoever on average soil (not tarmac). With this method the landing just has to be exceptionally short. I've never flown any sailplane that offered so many possibilities and such a margin of safety in this respect.

The Diamant 18 in a Nutshell

Comfortable cockpit, but no room to spare; excellent visibility; very good low-speed characteristics; pleasant control handling; outstanding landing aids, providing high safety on off-field landings.

(For specification see page 109.)

TECHNICAL COMMITTEE REPORT

COMMITTEE MEMBERS: F. G. Irving (Chairman), R. C. Stafford Allen (Chief Technical Officer), P. Bisgood, J. B. B. Johnston, J. D. Jones, J. Leach, K. R. Obee, C. O. Vernon, B. E. Warner, L. Welch, R. B. Stratton.

Advisors to the Committee: Lt.-Cmdr. R. Brett-Knowles (Instrument Development Co-ordinator), P. Ross (Powered Trainers).

Terms of Reference:

To advise the Council on technical matters; in particular to supervise the Airworthiness Scheme.

1. Supervision of the issue of Certificates of Airworthiness.
2. Supervision of the approval of Inspectors.
3. Consideration of all technical problems.

Work of the Committee:

	1967 (9 *months*)	1966 (12 *months*)
Number of Meetings	7	7
New Certificates of Airworthiness Issued	47	68
Certificate of Airworthiness Renewals	383*	407*
Major Overhauls	38	51
New Glider Types Certificated	6	2
Renewals of Inspection Approval	90	80
Renewals of Senior Inspection Approval	25	21
Renewals of Firms' Approval	0	3
New Inspectors Approved	6	13
New Senior Inspectors Approved	3	3

*Includes major overhauls

THIS year's statistics relate to only nine months, so a direct comparison with 1966 is rather difficult in view of the seasonal nature of much of the work. But it seems apparent that the volume of technical activity continues to increase, and that the BGA is now responsible for the airworthiness of about 500 machines. The following notes relate to those aspects of the Committee's work which are likely to be of general interest. In fact, they form only the tip of the iceberg; there is an enormous volume of correspondence, investigation and deliberation lurking in the background.

Ostiv Sailplane Development Panel. The Chairman attended a meeting at Stuttgart in May, which was largely devoted to the airworthiness of glass-fibre gliders. Notes on this meeting have been published in SAILPLANE & GLIDING together with the Technical Committee's decision regarding the airworthiness of such machines: that, so far as structural integrity is concerned, glass-fibre gliders will only be acceptable in the UK if they have obtained a full German C. of A. or if documentary evidence is provided to the effect that the structure has been successfully subjected to the static and dynamic tests required by DVL.

New Types. Among new types certificated during the year, the most interesting were the SZD Pirat, the Schleicher K-13 and the SHK. In all cases, the Committee is grateful to the manufacturers for the excellent documentation provided, which greatly facilitated their certification.

Permits to fly were granted to various British-built HP-14 variants. This type is now being developed into a definitive version, and we will soon be concerned with the certification of this very interesting machine.

The Chief Technical Officer. Mr. Stafford Allen has not only been heavily engaged

in visiting clubs and examining applicants for inspection approval, but is now more formally concerned with the investigation of accidents. In this sad context he has been working closely with the Accidents Investigation Branch. His monthly newsletter is an invaluable channel of communication with inspectors, and he organised a most useful conference at the Bristol Gliding Club in September.

It was clear from this meeting that there is great interest in the airworthiness of metal gliders, and two instructional courses were kindly arranged by Mr. Bott of Midfly, Elmdon. These courses were of an experimental nature, and a comprehensive syllabus for future instruction has now been drawn up.

General. I have also made various visits to clubs during the last year, mostly for flying or social purposes. It is most gratifying to record that although much club maintenance has to be done under conditions which are less than ideal, the inspectors display an impressive enthusiasm for keeping their machines in good condition. Much of the Committee's work is concerned with matters of fine detail, in itself a tribute to the desire of inspectors to ensure that no aspect of airworthiness is neglected. We are most grateful to them for their support during the year. Likewise, it is fair to say that the BGA could not maintain this level of technical activity without the services of the Chief Technical Officer. In Ray Stafford Allen, we have a dedicated enthusiast who modestly combines great technical competence and experience with the ability to inspire confidence and provide mature advice.

The list of indebtedness grows longer every year: we are very conscious that, in addition to the inspectors and the CTO, we rely heavily on the good offices of the Club Technical Officers, the firms, members of Government Departments, the Air Registration Board and the BGA Secretariat. We thank them all for their splendid support.

F. G. IRVING, *Chairman*

THROW AWAY THE TASK-SETTER

By CHARLES ELLIS

SINCE C. E. Wallington's article "Throw Away the Slide-rule" in the December, 1964, issue of S. & G., which was followed by the late Ron Watson's article in S. & G. for October, 1965—comparing the results obtained by Wallington's system with that used in the last World Championships—it is surprising that in view of its simplicity nothing further has been heard of it.

Furthermore, the article was a refreshing blast of objectivity upon a scene obscured by compromise, panic-stricken expediency and mathematical window-dressing. Notwithstanding its lucidity, however, I am sure that, in the current state of our sport, a quantitative scoring system is to be preferred to a qualitative one. The difference can best be illustrated as follows:

According to Wallington, if A flies in a three-day contest against B and turns in a better performance than B upon two of those days, then A is the better pilot regardless of the fact that on Day 1 A flew 100 miles against 95 by B. On Day 2, 200 miles against 190 by B, but that on Day 3 B flew 150 miles against 75 by A. I contend that a quantitative assessment of these flights is both feasible and justified and that the aggregate of the assessments proves that, contrary to Wallington, B is the better pilot. On other occasions the two systems might well be in agreement, and Ron Watson illustrated this point.

The basis of the Wallington system, which I cannot accept, is that the degree of difference in performance between two pilots can be due only to luck, and that the only indication of their relative merit lies in the order in which they are placed. I am quite sure that luck enters into the results of gliding competitions to a lesser extent than is popularly imagined. It is unfortunate that polite consolations passing between competing pilots may have been construed by non-participants as indication of a high luck element in competition flying.

In his article "Wally" quoted specific instances that had occurred during Nationals to illustrate the serious effect of "luck" upon a pilot's final placing under a quantitative (BGA) scoring system, and demonstrated the mitigation achieved by the use of "Wallymarks". Fortunately, the instances quoted are readily identified and, having flown in the same National contest referred to, I am certain that "luck" had nothing to do with it. Competition pilots are always tending to "press their luck" or running the risk of being too "timid". The situation is well known in most sports, and I see no reason why, in gliding, consolation needs to be fortified by an especially benevolent scoring system. The only circumstances which must be guarded against in formulating a scoring system for gliding contests are clearly those outside the control of the contestants.

There is no difficulty in arranging a contest conforming to this requirement, but the maximum number of participants would, of course, be limited by either the facilities available for simultaneous launching, or the safe capacity of one thermal. It is worth bearing this in mind when discussing the "unfairness" of a scoring system. We could, for example, abolish large contests and revert to "matches" as devised by the BGA well over a decade-and-a-half ago (see GLIDING No. 4, Winter 1950-51, page 170). If the BGA could be persuaded to re-issue the circular they sent out in 1951, it would be clear to everybody that very little progress has been made in the intervening years.

When the number of contestants exceeds this ideal quantity "unfairness" may arise as a result of quickly changing weather conditions, or as a result of conditions imposed by the organisers. The former most frequently arises in conjunction with a misleading met. forecast, and if a proportion of the contestants are still on the ground during a fleeting interval of soarable conditions, and unable to get launched before it changes again, the unfairness is self-evident. Not so self-evident is the situation which sometimes follows. Whilst

the "lucky ones" are being retrieved a more potent spasm of soarable air passes through and provides even better results for the later starters. It is absolutely vital that we should be able to distinguish between this situation (when short periods of soarable conditions are separated by longer periods of unsoarable conditions) and what, for lack of a better phrase, are described as "poor days" (i.e., days when the soaring conditions remain weak, but consistent over a large part of the day). There is a tendency to discredit such days for the reason that pilots' performances are unimpressive, but I am of the opinion that by far the most beneficial effect that championship flying has had upon the sport in general, has been the demonstration that cross-country soaring is possible on the most unlikely-looking days.

I can think of no reason why a pilot who puts up a relatively good performance under such conditions should have his score devalued merely because a large number of his competitors are unable to match his performance. In the absence, however, of highly gifted "umpires" who could pronounce on the validity of each day, we are driven to accept the results as a practical indication of the day's soarability. For contests where some control is exercised over the standard of entry (e.g., Nationals, especially League 1), the percentage of competitors required to score in order that a contest day may be declared, should be very high (say 90 per cent). Whereas for contests without such control (e.g., World Championships and Regionals) the percentage must, of necessity, be lower, but should not under any circumstances be less than 50 per cent.

The "2X rule" would be unnecessary, of course, under such conditions. Once it had been decided that a particular day qualified as a contest day under these rules, then on no account should performances be devalued merely because of an unusually wide disparity between individual performances. If such devaluation is persisted in, it must be recognised that by so doing the organisers are introducing an element of luck into the results, which would not otherwise exist. For most competition pilots will, at some time or other, make silly "boobs" that have nothing whatever to do with the performances being put up by other pilots. They would surely agree that a "duck" was all they deserved on such an occasion, but whether they lose 1,000 or 200 points is entirely a matter of luck if devaluation forms a part of the scoring system.

Trying to compensate for "fluky" weather by juggling with the "possible" score is an entirely wrong approach to the problem. When we extend the use of devaluation to cope with the varying percentages of pilots who succeed in completing races, we must recognise that it is not the weather we are compensating for in this case, but the imperfections of the task-setter!

Having considered the conditions under which competitors can be fairly assessed, we can move on to the method of marking their performances.

For some reason that has never been clear to me the BGA continues to use two distinctly different scales for this purpose. One is linear, the other not. One says, "If A goes twice as far as B,

then he must be twice as good"; and the other says, "If A goes twice as far as B, then he must be four times as good".

There is also the extraordinary situation where pilots are called upon to race along a track in order that their speed may be measured, and then presented with a collection of marks for both speed and distance in various proportions according to the success of the field in completing the course. All very complicated and entirely unnecessary. Those pilots who have registered a speed can be marked in relation to the speed of the fastest man. Those who have failed to complete the course cannot be marked for speed. However, they can easily be given marks in relation to the speed of the slowest man to complete the course (to whom they are clearly inferior) and in proportion to the extent of the course that they have covered. By this means the pilot who just fails to cross the finishing line always get one mark less than the slowest man. If only one pilot finishes the race, he is automatically the slowest as well as the fastest man! If nobody finishes, it becomes "distance along a set line", and marked accordingly.

There may be lines of argument for marking with a non-linear scale, but if it is said to magnify small differences in pilots' performances I should like to suggest that the only thing we are likely to magnify effectively are the inaccuracies in our measurements. Do we really measure performances to an accuracy of 0.1 per cent under all circumstances, as the system implies?

Meanwhile, I suggest we stick to a linear scale for both speed and distance; it has at least the merit of consistency.

Is a variety of tasks necessary?

In the early days of gliding contests marks were awarded for duration, height and distance. Duration marks were abolished when distances made official control of time impossible, and height went the same way when it was realised that, as well as being difficult to measure, it could be traded for distance. About the same time the idea of telling the pilots where they must go (instead of letting them please themselves) was introduced. It soon became clear that this presented an opportunity to measure "speed".

This then became the most popular task, although free distance, distance along a set line and pilot-selected goal were also used. The last of these was the most unpopular and died a natural death, only to be revived as a many-headed ghost in "cat's cradle".

The objection to pilot-selected goal was that it made the pilot's success dependent upon something over which he had no control—the reliability of the forecast. It is astonishing therefore that cat's cradle ever saw the light of day, since it suffers from the same defect.

It seems clear that the most reliable way to measure the relative performance of pilots is to release them at the same time and get them to follow closely a set course. It is then immaterial whether we measure speed or distance. We have considerable experience of the first choice but the second has received barely any consideration as it has always been assumed that lengthy retrieving would be involved. If, however, a comparatively small closed circuit is used, and "lapping" employed, retrieving is no problem. The pilots fly around the course as long as they can. When a pilot lands, and assuming it can be confirmed that he has rounded the turning points correctly, the total distance he covers day-by-day is recorded, and at the end of the contest the pilot with the highest aggregate is the winner. This type of task would satisfy at least those pilots who complain that they are unnecessarily restricted by the organisers and are never allowed to do enough flying during a competition.

Its chief merit is that it eliminates the two people who are responsible for most of the "luck" that now appears in championship results, *viz.*, the forecaster and the task-setter. It has two further and less obvious merits that are be-

coming increasingly important in UK. Firstly, it is possible even at a place like Lasham to have a course of such a size and shape that it can be outside of controlled air space. Secondly, if a course is selected that includes a number of intermediate landing fields, it becomes possible to impose penalties for outlandings that should do much to improve gliding's image amongst our farmer friends.

Summarising

1. Although the Wallington system is unsurpassed for simplicity, it incorporates a basic fallacy which, in certain circumstances, could lead to wrong conclusions.

2. The largest element of luck in BGA-style competition is due to the organisers including the forecaster and task-setter. The use of a task which dispensed with these duties would therefore reduce the risk of a "lucky" result.

3. Obvious irrationalities in the BGA marking system need to be eliminated without delay. If this is done, badly needed simplification will emerge.

IT has been decided by the Committee that during the summer months, when the club never has been used a great deal, that we shall only open on Tuesday, Wednesday and Thursday evenings, from 6 p.m. until 11 p.m. This will take effect between Easter and September.

Wednesday evenings, as already reported, will continue as club night, but there will only be a lecture or a film show on the first Wednesday of each month.

The Art Society Talk (with slides) will be open to all.

Y. C. B.

DIARY OF LECTURES

First Wednesday each month at 8 p.m.

Mar. 27. "Chitty Chitty Bang Bang" by M. Brighton (Ballooning).
Apr. 3. Glider in the Sky. New film by W. D. & H. O. Wills.
May 1. K. G. Wilkinson, Ch. Eng. BEA. Blind Landing Development.
„ 29. Art Society Talk. Around the globe with Douglas Ettridge and Michael Savage.
June 5. "Why Fly?" by Ian Scott-Hill, Traffic Manager BEA.

PHILIP WILLS

IF you look up the London Gliding Club's news for 9th April, 1933, you will read of "The Fox-Moth owner's unique Prüfling landings on assorted and highly unusual parts of the landscape". Philip Wills had broken into the news—never to break out of it thereafter. He had arrived under power, discarded it, got his A and B, and was trying to get his C the same day in a wind blowing almost parallel to the Downs. But it blew the right way at last on 6th June. By that time the first British thermal flights were being done, so he bought a Scud 2 and taught himself thermalling.

Having thus got well and truly into the game, Philip was surprised to find British gliding split asunder into two warring factions—on the one hand, the leading clubs who did all the soaring, and on the other, the BGA, for whom they had no use. He decided that this wouldn't do, started asking awkward questions in letters to THE SAILPLANE & GLIDER, was made BGA treasurer in the hope of keeping him quiet, took the opportunity to go through their files, unearthed evidence of years of gross inefficiency causing widespread exasperation, and—well, to cut a long story short, after a further year of hard struggle we got the other lot out and the BGA was given a constitution that enabled it to be run by the real gliding people, namely, the clubs.

This constitution has stood the test of time, and only now, with British gliding undergoing a sort of population explosion, is it having to be revised.

The year 1934 was crucial in setting British gliding on the road to success, and not merely in soaring technique, the real purpose for which the BGA had been founded in late 1929.

On 18th March Philip put up his first British record—56 miles distance. It then became touch-and-go who would get the first British Silver C; but Eric Collins beat him to it in April, because Philip had to wait for a west wind to do his five hours. So he became second in Britain and No. 45 in the international list.

Apart from flying, Philip spent much of 1934 taking most of the initiative in establishing a "National Gliding Centre". With the German Wasserkuppe in mind, everyone took it for granted that a really high hill, or even a mountain, would be required, so Sutton Bank in Yorkshire was chosen. A high spot in my memory was the bright future that seemed to be opening up when a party of us went up there in Philip's Monospar one weekend. The landowners had been squared, capital was raised to start the new venture, Major J. E. G. Shaw was financing a big new factory for Slingsby at Kirbymoorside, Norman Sharpe had amalgamated the local clubs into the Yorkshire Gliding Club, and the BGA had for the first time an active glider pilot as chairman—Espin Hardwick, who was there too, with the idea for a Midland Gliding Club already in his head. There we sat in a circle on the landing-ground-to-be, talking of the future with an air of "everything's going my way".

And that's how it all began—both for Philip and for the development of a real British soaring movement. Subsequent history can only be skipped through. Philip flew in the first International Contest in 1937 and in every subsequent one up to 1958. He became the third Gold C pilot in the world in 1938 with a high cumulus climb at Dunstable and a cross-country to Cornwall. During the war he became second in command of ATA, the ferry pilots' organisation, and subsequently did a short spell as BEA technical director before returning to his own business.

In 1949 he began his 19 years' spell as BGA chairman. Another high spot in my memory was a dinner in a Madrid restaurant in 1952 for the whole British party when we all knew Philip had just become World Champion (though the Spanish could not be got to confirm it till after the following day's *siesta*). And in 1960 he became the second British pilot to get three Diamonds. These post-war years brought more national records and, in addition to World Champs., soaring visits to Yugoslavia, Italy, Holland, the United States, Australia and New Zealand's Southern Alps (to 30,000 ft.).

Well—"you know the rest"—at least up to the present day. But the story isn't finished yet.

A.E.S.

▲ 1949

▼ 1963

▲ 1966

▼ 1963

1949 – 1968

1958 ▲

▲ 1965

1957 ▼

Fuller

AIRSPACE COMMITTEE REPORT

COMMITTEE MEMBERS: H. C. N. Goodhart (Chairman), Miss P. L. M. Buckley, C. A. P. Ellis, D. H. G. Ince, O. W. Neumark, E. E. Reeves, D. A. Wilson.

NINETEEN - SIXTY - SEVEN started badly. Despite any and all of our appeals to reason and logic, made at levels up to and including the relevant Minister, we were unable to stop the application of permanent control in the Lyneham Special Rules Zone. It is, however, only fair to say that the RAF, having once got their zone, have made all possible efforts to ameliorate its impact on gliding. The special radio channel they have provided for gliders has enabled suitably equipped gliders to transit the area successfully and the RAF controllers have been co-operative. But, of course, nothing can hide the fact that, once controlled airspace has been misapplied as it has at Lyneham, a precedent has been created for further misapplication.

On the credit side there is little tangible to report, unless one includes the westward extension of the London TMA which, in its final form, is not seriously damaging to gliding; as originally conceived it would have seriously reduced the value of Booker, Dunstable and Lasham. The credit item I would like to report, but cannot, is the decontrol of some of the bits of controlled airspace which are not, in fact, used by controlled traffic. Despite repeated requests from us the BoT has steadfastly avoided examining the usage of the bits which we have noted as insufficiently utilised.

However, it is on the tangible side that we feel some progress is being made. Very slowly we are beginning to get understanding of what we are talking about through to the people that matter. They begin to realise that we genuinely mean it when we say that we are just as keen to give the commercial airliner an adequate safety level as they are. Where we differ is on the means to achieve this aim.

We have shown quite clearly that the aim is achievable without the Draconian measures currently envisaged. It remains to get this across to the point where it begins to be reflected in the Air Traffic Regulations. This point is a long way off but at least we can say that, tenuous though it may be, there is some sort of a dialogue in progress.

Looking back in the record I see that I last felt as optimistic as this in 1963 but minds soon closed and the conventional wisdom again prevailed over logic. I can only hope that this time we shall be luckier. So much depends on individual personalities and these, particularly the Minister's, are inclined to change at intervals which are sometimes shorter than the time it takes to become properly aware of the many aspects of the whole airspace problem.

The future. The most critical item for the immediate future is a misguided conviction on the part of National Air Traffic Control Services that safety is enhanced by the creation of Special Rules Zones round small civil airports. It can be easily shown that these zones in fact create an increase in collision risk, rather than a decrease, and on this basis we have fought and will continue to fight their introduction. An arrangement in which all traffic passing within, say, ten miles of an airport was asked to communicate *if it could* and all traffic using their airfield was *required* to communicate, would completely solve the small civil airport problem. It will be a valuable step forward when it is clearly understood that moving a collision out of one particular area into another does not eliminate it.

Another item that hangs over us is the Military Aerodrome Traffic Zones problem. Fortunately, as the Chairman notes in his report, he was able to get direct reassurance on this problem from no less a level than the Chief of the Air Staff. This, however, does not eliminate the problem entirely but simply ensures that we will have the opportunity to examine each proposal on its merits and fight it where necessary.

Finally, may I repeat perhaps the most important point of all. My position in negotiating with NATCS depends entirely on the responsible approach to Air Traffic Control regulations which glider pilots display. Singly and collectively I must ask all pilots to be rigorous in their obedience of ATC regulations and ensure that they keep fully up to date with the current rules.

H. C. N. GOODHART, *Chairman*

SOUTH AFRICAN NATIONALS
2nd — 13th January

This article has been compiled from news received from Tony Hyde, Gay Shields, Boet Dommisse and Alf Warminger

VISITORS from Belgium, Germany, Holland, Rhodesia and UK were amongst the 29 pilots who took part in this contest, which was held this time at Tempe airfield, Bloemfontein, the main centre of the Orange Free State.

The best weather conditions occurred in the week before the contest, when a number of world and national records were broken.

Competitors were flying on alternate days, as the majority of gliders had two pilots. Where there was only one pilot, the meeting voted beforehand on which day he would fly—odd or even dates. Tasks were flown on all 12 days so that each group had six days.

Scoring was based on a modified Wallington system with first place receiving 1,000 points, second 950 and third 900 points and so on. Handicaps were allocated as follows:

	%		%
BJ-3	100	Phoebus	114
BS-1	102	Austria-S	114
ASW-12	102	Vasama	116
Cirrus	104	Zugvogel 3B	116
Libelle	107	Zugvogel 3	120
BJ-2	111	Ka-6	120
HP-11	114	Olympia 465	125

Unfortunately there was no met. man available on the site, and hence the forecasts were sometimes rather sketchy.

To shake down the organisation, a 100-km. triangle practice task was flown on the 1st January: this was won by George Eckle in a BS-1.

2nd Jan.: With cloudbase at 14,500 ft., 4/8 cumulus, and a N.W. to W. wind, 10 knots, the 216-km. out-and-return set was straightforward and all pilots completed the task with ease. Pat Beatty (BJ-3) was fastest with 2:00:15 followed by Martin (Zugvogel 3B) and Clifford (HP-11). (Non-handicap places shown.)

3rd Jan.: Three alternative out-and-return distances were given of 546, 678 and 786 km., the winner being the pilot who completed the furthest task or distance.

During the course of the day, strong headwinds of 30-40 knots developed which ruined the tasks. Most of the pilots struggled for hours about halfway out to the nearest turning-point. Six of them abandoned the task and came home; this included "Bomber" Jackson (BJ-3) who turned back 20 miles short of the nearest turning-point at 5 p.m., thus scoring zero. Heini Heiriss (ASW-12) won the day, landing just short of the nearest turning-point, followed by Meyer (Austria-S) and Jimmy Arnett (Vasama).

George Collins, who had arrived from UK only that morning, flew with Alf Warminger round a hastily organised 100-km. triangle in a Blanik, breaking the British National 100-km. two-seater record!

Alf Warminger and George Collins after their 100-km. triangle.

4th Jan.: The forecast wind was shown as approximately 20 knots, and a 308-km. triangle was set. However, it was not the wind but the first turning-point which troubled pilots. Stillerus railway station, a minor station almost due north of base, proved difficult to identify, and several pilots had rounded stations in that area without finding the correct one.

George Eckle (BS-1), who had been well off course but had managed to get back on, made a spectacular final glide from 75 km. out to land at 7.50 p.m. assisted by a row of car headlights—as it was almost dark.

Ted Pearson (Cirrus) won the day with 4:31:00, followed by Beatty and Clifford. Boet Dommisse (*hors concours*) in his BS-1, however, did the fastest time.

5th Jan.: A 20-knot W. to S.W. wind did not unduly worry the pilots, who were set a 218-km. out-and-return. Everyone completed, with several pilots going round twice; they were, however, unable to improve their speeds. First, Keim (Cirrus) 106.5 km./h. Second, Heiriss (ASW-12) 102.3 km./h. Third, Jackson (BJ-3) 98.5 km./h.

6th Jan.: Pilots were given another chance to find Stillerus railway station, as they were set the same task as on the 4th. The weather did not come up to expectations and a number of pilots had to land in rain along the second leg.

There was great excitement at the finishing line when two gliders were spotted very low down some way out. One just made the field but was unable to cross the finishing line; the other, Klaus Keim in a Kranich 3 (on his day off in the contest), landed one mile short of what would have been a two-seater world record!

It was again Pat Beatty who won in 2:44:18, followed by Eich (Austria-S) and Moore (Austria-S).

7th Jan.: The forecast gave light and variable winds below 10,000 ft. with possibly some over-convection later in the day; a 328-km. triangle was therefore deemed to be the right length of task. It turned out to be a corking day as the over-convection did not occur. There were still 5-knot thermals up to 10,000 ft. at 5.30 p.m., and in view of this a 500-km. triangle would probably have been a better task. Several national records were broken, including the one set up by George Collins and Alf Warminger a few days before. (Ted Pearson, who is a British National and lives in South Africa, flew the Kranich 3, improving the record considerably.) Jackson won the day, followed by Keim and Heiriss.

8th Jan.: A low which was centred over the Orange Free State produced stratus which cleared but slowly. Briefing had been postponed twice, and a 100-km. triangle was set with first take-

Dealesville Road Bridge, 1st turning-point on the 8th January.

off at 2.45 p.m. After this bad start to the day things turned out surprisingly well and most pilots were able to complete the task. Winner, Dr. Seton (Libelle), followed by Eckle and Beatty.

De Brug Railway Station, 2nd turning-point on the 8th January.

9th Jan.: More storms threatened today's flying and another 100-km. triangle was set. Unfortunately the first take-off was about a half-hour too late, with the result that a number of pilots got caught near the first turning-point in a storm.

Only "Bomber" Jackson completed the task in 54 mins. Brian Cole, who had abandoned the task, landed in a terrific downpour back at base. Boet Dommisse had taken the precaution to have all available hands standing by for ground-handling to prevent damage to aircraft and trailers.

Klaus Keim in the Cirrus was turned upside down and is still wondering how the aircraft righted itself! Hair-raising tales were told of flying at placard speeds with brakes, flaps and undercarriages down and still going up at 5 m./secs.!

10th Jan.: The forecast promised strong thermal activity later in the day, with a 10-knot northerly wind up to 3,000 ft., and above that south-westerly winds, 10-25 knots. Task: 509-km. triangle; launching to start at 10.30 a.m. The first take-off was not till 11.50 a.m. and even this was still too early, so in

Bothadrift Bridge, 1st turning-point on the 10th January

consequence the first leg proved to be the most difficult one. After this the weather improved and 6-metre thermals were plenty. In fact, all but three pilots completed the task; one of the three,

Belmont Rail Junction, 2nd turning-point on the 10th January
Photographs of turning-points by Alf Warminger

misjudging his final glide, landed one field short!

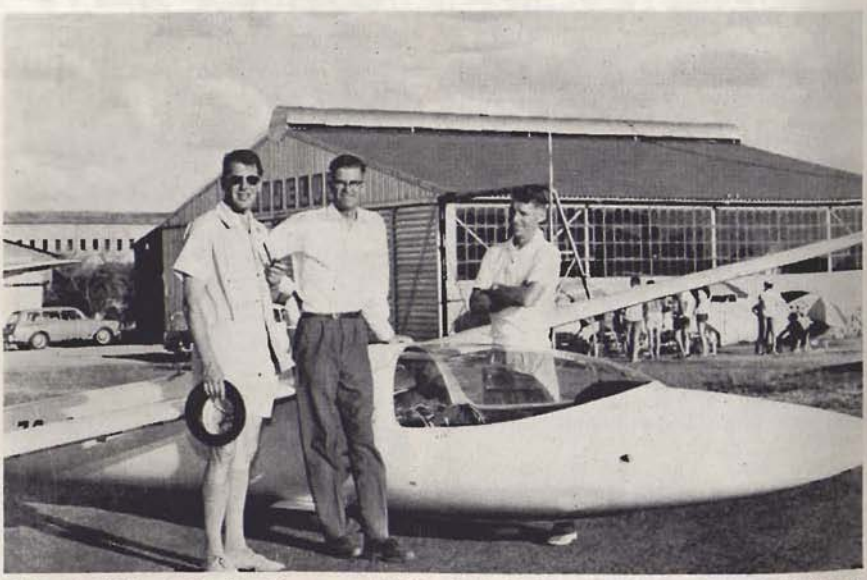
This was an obvious BJ-3 day and Pat Beatty, who took off at 12.30, came home 4:07:06 later, winning the day handsomely. Second, Pearson. Third, Martin.

11th Jan.: Light variable winds were forecast with cloudbase rising to 12,000 ft. Another 500-km. day: this time a 546-km. out-and-return. However, thermal strength was not as good as promised, and also the wind was a lot stronger than forecast.

All pilots encountered difficulties in crossing large gaps on the way out. One had to land after 40 miles, having found absolutely nothing from 7,000 ft. above ground level. The earlier starters had the most trouble again and had to land before the turning-point. Another batch ran into trouble on the way back with only about 30 km. to go. Jackson put up the best time with 5:20:25, followed by Heiriss and Keim.

12th Jan.: Surface wind 15 knots, but rapidly increasing with height to 30 knots at 8,500 ft. Task set was a 300-km. triangle. With the "snifters" being blown back at an alarming rate by the strong wind aloft, a noticeable reluctance to take off was felt at the launching point. Most pilots delayed their take-off to around 13.30-14.00 hours. Their fears were well founded, and, in fact, the task proved impossible. Only Beatty, Pearson, Anderson (Ka-6) and Martin were able to reach the first turning-point, the rest landing between 40 and 50 miles out.

13th Jan.: A civic reception was laid on for 18.00 hours. As the forecast was for moderate conditions only a 105-km. triangle was set with the starting line closing at 14.00 hours. However, the conditions turned out to be excellent, especially for the later starters, and no doubt times could have been a lot better if the start line had been open longer. The winner today was Tim Biggs (HP-11), followed by Yvonne Leeman (Phoebus) and Howse (Ka-6). Unfortunately "Bomber" Jackson failed to complete the task, having run into a 7-metre down just after the first turning-point, from which he was unable to extract himself.



L. to R. Fritz Johl, Pat Beatty and "Bomber" Jackson with the B(eatty) J(ohl) 3. Photo courtesy "The Friend Newspapers Ltd."

Pat Beatty in the BJ-3 won the contest handsomely in the Open as well as the Handicapped section, and undoubtedly the BJ-3 is the star performer in South African conditions. Pat and "Bomber" Jackson also took the team prize.

Adrian Martin in the Zugvogel 3B and Graham Anderson in the Ka-6 put up amazing performances, competing against all the "hot" ships except the Diamant.

At least nine national records were broken and the following world records (which, of course, are all subject to homologation) were flown during the practice week:

28th Dec.: "Bomber" Jackson in BJ-3 flew a 500-km. triangle at approximately 136 km./h.

28th Dec.: Yvonne Leeman in Phoebus flew a ± 625-km. out-and-return. Klaus Keim and passenger flew the same task in a Kranich 3. Yvonne Leeman and Mandy Human also flew the Kranich 3 round the 100-km. triangle at approximately 96 km./h. to break the two-seater world feminine record. (**Correction** to page 78, Feb.-Mar. issue: Boet Dommisse's 100-km. triangle is, owing to photographic troubles, not a world record, and this is, therefore, still held by Herman Linke (USA) in a Libelle.)

Final leading results

Open Class		*Pts.*
1. P. Beatty	BJ-3	5850
2. T. Pearson	Cirrus	5300
3. H. Heiriss	ASW-12	5200
4. A. Martin	Zugvogel 3B	5000
5. T. Biggs	HP-11	4850
8.=A. Warminger	BJ-2	4450

Handicapped Class		*Pts.*
1. P. Beatty		5450
2. A. Martin		5000
3.=T. Pearson		4850
3.=G. Anderson	Ka-6	4850
3.=H. Smet	Libelle	4850
11.=A. Warminger		4450

FLYING TALK

Nationals Entry Selection After 1968

ENTRY into the 1969 Nationals is to be selected according to the placing of pilots in competitions in 1968 only. The main features of the new system are as follows:—

(a) Two-thirds of the places in each Nationals Class are available for the most highly placed pilots in either of the preceding season's Nationals Classes (Open and Sports Classes in 1968).

(b) The lowest placed third of the pilots in both Nationals Classes will not gain entry qualifications, and to re-qualify would have to compete in heats (Regionals) in the following season.

(c) The highest placed pilots in the preceding season's heats will qualify for the remaining places in each Nationals Class.

WHY MAKE THIS CHANGE?

1. New Competition Structure

In 1968 we have two National Class Competitions (Open and Sport), taking place at different sites, at different times of the year, and probably with quite different weather. The Rating system which we are discarding was developed to control entry into a single Nationals, with two Leagues divided by pilot skill. Without fundamental changes, we could not feel confident that the rating system would preserve the equality of the two Classes, and allow balanced interchange between them and free movement upwards from other competitions at a predictable rate.

2. Clarity

While to most of us rating seems complicated and obscure, the new method of Nationals Entry Selection is straightforward. It is now quite obvious who it is intended to promote, demote or retain, and this intention is clearly carried out.

3. Fairness

All competition pilots can now qualify for immediate entry into the Nationals by direct competition in heats which they can freely enter. The selection will be made on a single recent result, and pilots are not unduly hampered by other less favourable performances. This is achieved at the expense of being harsh

(but not unfair?) to those who have the misfortune to be lowly placed in a Nationals: they cannot fall back on any previous successes, and must make way for others. Because everybody has frequent opportunities to requalify, there is no lasting unfairness, however.

4. Flexibility

Annual heats mean rapid adaptation to changes in pilot performance and competition structure. Flexibility is further enhanced by using only the final placing results of competitions, and being independent of the detailed daily soaring. This gives us greater scope to experiment with new tasks and scoring systems. It also saves a lot of tedious detailed work processing the daily results.

ENTRY SELECTION SYSTEM FOR 1969 NATIONALS

1. Nationals Entry Selection

When entry into a National Class Competition is over-subscribed, entrants will be selected according to qualifications gained in the previous (single) season's competitions. In 1969 places will be allocated as follows:

(a) Two-thirds of the available places will be open to entrants who gained RETENTION QUALIFICATIONS in *either* of the two National Class Competitions held in 1968.

(b) The remaining places will be for entrants with PROMOTION QUALIFICATIONS gained in any of the heats held in 1968.

2. Form of Competition Results to be Used

All the competition results used are final placing lists. Competition Organisers will prepare them for this purpose as follows:—

(a) Handicapped marks/points will be used to produced a final competition result list. Every competitor at the start of the contest must initially be on the list.

(b) Drawn places will be resolved by lot.

(c) Teams will be represented by one pilot only (see para. 6(b)).

(d) The resulting list of pilots will be numbered consecutively from one upwards.

Subsequent to this, the BGA Flying Committee will edit the results of *heats* as follows:—

(e) All pilots who also competed in Nationals in 1968 will be deleted from the final placing lists received ((d) above).

(f) The remaining pilots in each heat will be renumbered consecutively from one upwards.

3. Retention Qualifications

Only pilots placed in the top two-thirds of a National Class Competition will earn Retention Qualifications. Where it is necessary to choose between entrants with Retention Qualifications, priority will be in order of their final placings. If two entrants have the same placing gained in different classes, priority goes to the one seeking to re-enter the same class.

4. Promotion Qualifications

All competitions accepted by the BGA as qualifying competitions (except Nationals) will serve as heats. Promotion qualifications will be gained by the highest placed pilots in each heat. The order of their promotion priorities will be decided as follows:—

(a) The system requires all heat sizes to be different, so the BGA Flying Committee will make (by lot) the minimum alterations necessary to achieve this.

(b) For each pilot in each heat, his placing number (e.g. 1st, 2nd, etc.,) is divided into the heat size.

(c) All the pilots' names are arranged in descending order of the resulting numbers. Where a group of pilots share the same number, they are ranked in descending order of heat size.

(d) For pilots named more than once on the list, all but the highest references are deleted.

(e) Pilots are then numbered consecutively from one upwards to give their order of promotion priority.

A Promotion List of suitable length will be published by the BGA at the end of the 1968 season.

5. Heats Entry Qualifications

Entry into heats will continue on a fairly informal and random basis of selection and all pilots may fly in as many heats as they can gain entry to. Pilots who compete in Nationals in 1968 will not be able to gain promotion qualifications (see para. 2(e)) for entry to Nationals in 1969.

6. Teams

It is intended that there should be the maximum possible freedom for pilots wishing to fly in team entries. In order that this freedom should not displace other competitors, the retention and promotion qualifications of teams are dealt with as follows:—

(a) When entering a competition, a team will be selected on the qualifications of the best qualified pilot only; the other pilot(s) will be ignored. However, all pilots must satisfy the minimum experience qualifications for the competition, and share the flying on a basis acceptable to the competition organisers and the BGA.

(b) In all competitions the qualifications gained by a team will only be attributed to the pilot making the highest proportion of the individually available score. The other pilot(s) will be ignored after the operation of 2(c).

7. Definitions

Top two-thirds: where this gives a fraction, take the next highest whole number of pilots.

Available places (as in para. 1(a)): The BGA Council, advised by the Flying Committee, has discretionary powers to allocate places to members of the British Team or other special cases where potential Champions might otherwise be excluded. In the unusual event of their doing so, "available places" is defined as the number of places remaining.

Heat size (as in paras. 4(b) and 4(c)): This is the size after the operation of rules 2(f) and 4(a).

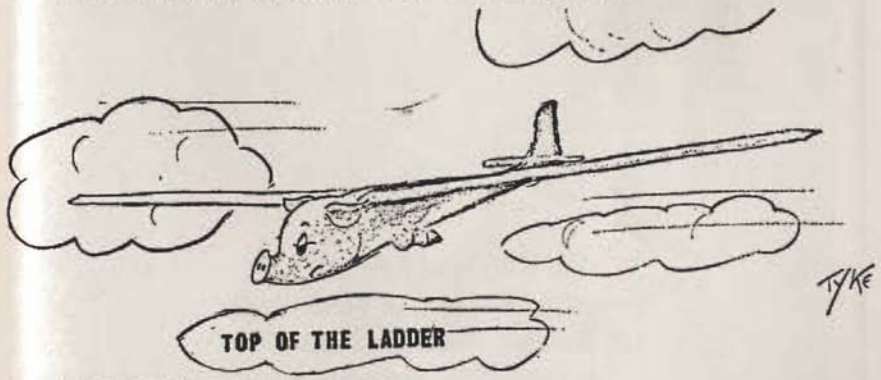
ROGER BARRETT, *Chairman,*
Flying Committee.

* * *

Senior Official Observers

WE are starting the Senior Official Observer scheme (see S. & G. December, 1967, page 474) at the 12 or so clubs that send in most claims. From 1st April, 1968, if a Senior Official Observer at a club has countersigned a claim form for a leg of the Silver badge, the evidence (barograph, chart, calibration trace, landing certificate, etc.) does *not* have to be sent to the BGA.

The scheme will be extended if the trial at the large clubs is as successful as we anticipate.



CONGRATULATIONS to the Trophy winners and the runners-up.

Flights in privately-owned gliders: ENIGMA TROPHY to A. D. Purnell (Lasham Gliding Society), 4744 points; 2nd, J. C. Cardiff (London club), 3524 points; 3rd, G. B. Atkinson (Leicestershire club), 3359 points.

Flights in club-owned gliders: L. DU GARDE PEACH TROPHY to J. R. Barrows (Surrey & Hants.), 1853 points; 2nd, J. R. Jeffries (London club), 1712 points; 3rd, L. Frank (Coventry club), 1614 points.

During the course of the year 187 pilots took part in the Ladder—an encouragingly large number for the first year. There have been reports from several clubs that this competition has encouraged pilots to attempt more ambitious tasks, particularly closed circuits.

The Ladder will provide the challenge

that is lacking in non-competitive flying. So . . . Fly For Fun With an Aim this year by taking part in the Ladder and have a *permanent* competition. The Ladder caters for pundit and beginner alike.

We have made a few alterations to the Ladder rules for 1968 and full details of these will be sent to your club Ladder Steward. The most important change is that *it is no longer essential to carry a barograph for distance flights.*

This year the National Ladder will be organised by Tony Deacon, of the Airways Flying Club. If your club would like to take part, please write to him at 53 Point Royal, Easthampstead, Bracknell, Berks. (Only the first 100 places are listed below.)

ROGER BARNETT

No.	*Name*	*Club*	*Points*
1	Purnell, A. D.	LGS	4744
2	Cardiff, J. C.	LO	3524
3	Atkinson, G. B.	LE	3359
4	Ellis, J. J.	WAP	2831
5	Doughty, A. W.	WAP	2701
6	Fitchett, B.	LE	2472
7	Garrod, M. P.	LO	2367
8	Simpson, C. R.	LE	2362
9	Partridge, P.	C	2142
10	Brenner, J. B.	M	1892
11	Pennycuick, C. J.	B	1883
12	Day, C. G.	LGS	1855
13	*Barrows, J. R.	S&H	1853
14	Malpas, W. E.	B	1854
15	Horan, M.	M	1840
16	*Jeffries, J. R.	LO	1712
17	Sandford, R. A.	B	1697
18	Deacon, A. J. R.	WAP	1693
19	Bentson, C. W.	LO	1692
20	*Frank, L.	C	1614
21	Barrett, R. Q.	LO	1554
22	Simons, M.	LO	1534
23	Cousins, R.	K	1508
24	Harper, M.	B	1481
25	Purdie, P.	MO	1436
26	Chubb, R.	D	1422
27	Maitland, A.	M	1405
28	Pope, M.	B	1294
29	Innes, D. S.	MO	1284
30	Eyers, I. L. A.	WAP	1259
31	Vesty, I.	LE	1258
32	Covington, A.	C	1238
33	*Randle, M.	M	1231
34	Rutherford, R.	M	1221
35	*Miers, R. E.	M	1213
36	Corbett, T.	M	1210
37	Stuart, J.	B	1206
38	Goodfellow, A. P.	NOR	1192
39	Westwood, M.	B	1185
40	Elliot, C. R.	F	1168
41	*Glossop, I.	F	1150
42	Paine, N.	WAP	1129
43	Hatton, R.	K	1054
44	Wilton-Jones, M.	F	1050
45	Letts, A. J.	LE	1046
46	Stoddart, R. C.	N	1038
47	Ross, C. C.	S	1036
48	Carson, D.	M	1026
49	Horne, P. R.	LGS	1019
50	Barrett, R. V.	B	1009
51	Camp, G.	LO	996
52	Fay, W.	C	996
53	Paul, I.	N	988
54	Goldsborough, J. B.	Y	960
55	Gaunt, N.	Y	921
56	Gunner, R.	B	893
57	*Woodhouse, C.	C	881
58	Wilkinson, N.	MO	879
59	Argent, J.	LO	867
60	Falkinbridge, C.	C	861
61	Linee, T.	D	851
62	Hatton, R.	K	826
63	Weston-Allwork, J.	MO	815
64	*Peddie, G. D.	S	793
65	Honey, M.	K	782
66	Whittle, P. E.	LE	779
67	Bull, R.	M	745
68	*Banks, P.	C	741
69	Findon, A.	C	725
70	Strange, R.	D	723
71	Fitchett, F.	LE	711
72	*Aincough, E.	M	694
73	Hindle, R.	Y	692
74	*Marshall, B.	S	692
75	Caveen, A. R.	M	685
76	Griffiths, A.	M	683
77	Powsey, A.	K	668
78	Fraser-Beck, J.	LO	667
79	Hurwitz, P.	M	666
80	Hext, B.	MO	664
81	Kelly, B.	MO	663
82	Haynes, K.	C	656
83	Smith, R. J.	LO	651
84	*Ricketts, J.	M	646
85	Anstey, J.	M	645
86	Parks, J.	C	644
87	Brighton, B. W.	N	628
88	Nurcombe, K.	CC	624
89	Hopkins, C. P.	LO	603
90	Honey, M.	K	600
91	Smith, Angela	LO	590
92	*Staton, E. A.	M	586
93	Kingsford, P.	K	578
94	Jones R.	B	576
95	Waring, D.	C	575
96	Revell, N.	N	575
97	Prestwich, R.	M	560
98	*Butler-Maddon	F	558
99	Treadway, P.	E	553
100	Bulmer, G.	B	547

Abbreviations

B=Bristol
C=Coventry
D=Dorset
E=Essex
K=Kent
LE=Leicestershire
LGS=Lasham Gliding Society
LO=London
F=Fenland
M=Midland
MO=Moonrakers
N=Newcastle and Teesside
NOR=Norfolk
S=Scottish Gliding Union
S&H=Surrey & Hants
WAP=Wycombe Air Park
Y=Yorkshire
* Club-owned gliders

Ladder Secretaries please note: The BGA Handicapping Committee would like to know if any ladder flights have been claimed for gliders having a handicap *greater* than 120 per cent. Could you send the names of any glider applicable before 22nd September to: Fl.-Lt. Ian Strachan, c/o Officers' Mess, RAF Syerston, Newark, Notts.

HOWIDIDNTDOIT or Foiled Again

By PLATYPUS

(The writer has longed for years to write a Willsian "howidunit" describing a brilliantly organised 300-km Diamond out-and-return; we see ourselves painting a dazzling word-picture of heroic struggle crowned with success as ... from the last exhausted thermal of the day we slip across the club boundary going downwind at nought feet to the cheers of amazed fellow-members ...

The literary plain has been easier to come by than the brilliantly organised 300-kms, however. So we have written articles instructing other pundits how to write howidunits, and even a presumptuous article on planning the great feat called Howwengonnadoit. Now we complete the trilogy by writing of a heroic struggle crowned with absolutely nothing, except for a few salutary lessons, that is ...)

THE first task of the day is the battle of wits with the weatherman. This goes best if he has been on duty all night. "Today's forecast?" he says blearily. "Well, same as yesterday, really." Rapier-keen we shoot back, "Same as yesterday's forecast or same as yesterday's weather?" A pregnant pause at the other end of the line while he ponders whether saying, "Carry oxygen and a map of Scotland" or "Rain all day" would settle our hash more effectively. Finally he comes up with a real teaser designed to maximise panic. A belt of rain would move from east to west at about 10 knots reaching Dunstable at 3 o'clock and it would probably be 11.30 before we could get to the club and organise ourself into the air.

We decide on Dunstable to Ludlow and back. A swift dash. . . .

A swift dash downwind to the turning point and a battle upwind in the strongest part of the day might bring us to the edge of the murk, say 15 miles from home, around tea time—then a bold glide-out. The Dart 17R was capable of it even if we were not. (*Downwind* first is a good rule when flying self-imposed tasks, particularly if the weather is expected to deteriorate. You burn your boats quickly instead of hanging about with one foot in the club and you can enjoy several hours' good soaring before being washed out of the sky.)

Now all we have to do is simply:

Rig three other chaps' gliders.

Rig own glider— Hey, come back, you three!

Smoke barograph.

Wind barograph.

Inscribe barograph baseline.

Seal barograph.

Get barograph signed by official observer.

Start barograph ticking.

Find map.

Put barograph in the glider, idiot!

Inscribe line on map—blast! No chinagraph pencil for glossy fablon-covered map. Have to do without a line.

Camera loaded? Well, photograph the official observer by the tail. First catch your observer by the tail, have they gone into hiding or what?

Declaration form! Heavens, any well organised (Lasham) pundit has D.F.'s strapped to his knee and an o.o. on a chain. Use scruffy bit of paper with Ludlow Town scrawled in blood or charcoal or something.

Right, now, out to that far distant knoll at the end of a bit of string. (Hate the north-east run.) Sorry, no. Help another pilot out there first. Come back, all set. Heck, where's me telephone money. Run and get the money, then—Ye Gods! The parachute! Rush to the parachute rack—not there. Not in glider or trailer. A process of ruthless deduction establishes that it must be strapped to the behind of a lady member who is —aaargh! as they say in the strip cartoons—circling manfully so to speak,

under fat cumulus. To add insult to injury Mike Till emisis past in the Tiger bellowing and circling his finger over his head, meaning "come on, you idlers, the air's lovely!"

Exactly the same thing happened the last time we got the Dart out. That time we brought another lady down to earth with a bit of black magic, now we repeat it—a sort of rain dance with eyeballs rolling skywards and added curses. It works again and the dear girl winds round and down only slightly later than the tug. As she rolls to a halt the owner of the parachute flings himself upon her and a fierce tussle ensues. "You might let me get out of the glider first," she shrieks. She has a point there; it makes it a lot easier to tear the parachute off her back. An ugly episode, even if we were asserting our rights.

Three more gliders have now arrived in front of us at the aerotow point. Oh well, now it's past 12 o'clock and the whole thing looks daft, but eventually we rumble away and up and forget it all as the thermals bump us around on the tow.

After the earthbound drama the flying is fairly prosaic. As the day builds up we discard modest thermals; strong ones are gleefully circled in to the accompaniment, as usual, of raucous bathroom-style singing. A very noisy regional competition is in progress. We turn the radio off, better to hear the vario sweetly sing top C to our C flat. Ludlow is lost, found again, photographed and left behind.

Galloping back upwind we see high in the eastern sky a grey line spreading. The forecaster was right; calling Dunstable we learn that it had clouded over at 3 o'clock and now at 4 o'clock it was raining there. About 5 o'clock we meet the murk near Bicester, 25 miles out; a smooth toboggan-ride in dead air brings us to a large field with 600 ft. to burn, just outside Aylesbury. Little do we know that around the car radio a debate has been raging—should they let us know that stretching the glide could give us Gold distance? Sensibly the temptation is not put in our way; we are blissfully unaware since with no line or distance marks on the map we have no clue how far we have gone.

Drama once more, back on the ground. There is just a chance we had done it! The beautiful barograph trace is carefully removed. Carefully signed by an official observer, carefully lowered into a dish of clear dope—and gently floats off in a little sooty puddle, leaving the foil clean as a whistle. Our boggling eyes discern the message "Ilchester cheese with beer" mocking at us through the fixing fluid. A partner who shall be nameless has used cheese-foil as an ersatz and we are the first to discover that the coating must have been soluble in dope. We could cry; we *de*cry. Some wag suggests that the trace should have been fixed in beer; we decided to fix ourselves in beer instead.

Then we are told that Ludlow Town is not a proper declaration anyway. Too vague. Should be a railway station, a public lavatory or some other unique landmark.

Then we learn that being off the line loses you distance in a failed out-and-return attempt. If you declare Hartlepool in a straight line and land at Plymouth that's all right for your Gold, but not on tasks with legs. Sorry, but there it is. Oh yes, and we were one witness missing on the landing certificate. Know-

ing us they should be grateful for a landing certificate at all, with or without signatures. We stumble off and get fixed some more. . . .

* * *

After all the fuss it was an immense relief to be told, days later, that we had done just 299.5 km., so the whole gruesome business of the misdeclared turning point, the vanishing barograph trace (the o.o.'s energetic signature in biro is embossed on a shining roll of Ilchester cheese foil, which we suppose we could frame or put in our log book), the distance off the line that we hadn't drawn on the map and the missing witness did not have to be explained in triplicate to the BGA, the FAI, the CIA and the House of Lords. The Flying Committee gave us a conditional discharge with costs and we were bound over to be of good behaviour for the rest of the season.

All we face now is a charge of attempted rape. We should worry. Nobody can produce a declaration form and it wasn't witnessed by an official observer.

(Postscript: Shortly after, while tilling the weed-plagued Islington mulch at 11 o'clock on a Sunday, we are called by our partners. Bloated with hours, they insist we fly. Everything will be taken care of. After wrestling with our conscience she agrees to let us go and our Beetle roars up the M1 to arrive at the launch point at 12.15 for an instant tow. We trickle up to Lincoln and back and sure enough . . . "from the last exhausted thermal of the day, etc., etc." The moral here for the incurably incompetent is—if a job's worth doing someone else had better do it—though you may have to wait ten years before they take sufficient pity on you.)

DART TROPHY—This beautiful Trophy together with 6 miniature replicas has been presented by Slingsby Aircraft Ltd.

It will be awarded to the winner of the first-ever one-design high-performance sailplane competition in the UK to be held at Lasham from the 18th-26th May.

This Dart competition, which is being supported by most Dart owners in the country, will also offer the whole of the British Team an opportunity to practice before going to Poland immediately after this contest.

STRUCTURAL FAILURE IN NATIONAL LADDER

By R. STRANGE

THE first year of the National Ladder Competition has ended and, by the number of pilots who scored, was a resounding success. Obviously the gliding movement is more competition-minded than the pessimists thought, and next year the number of pilots in the ladder could well double.

The competition that was started for fun could, and probably will, in the next two years, become a very serious competition between pilots and rival clubs, with the same sort of spirit prevailing that one associates with Regional and National Championships. Already the National pundits are raising their ugly heads (they are really quite charming in the bar) and, it seems, have already started setting the pace and cleaning up the prizes.

Obviously this competition is ideal for giving some of the younger and older pilots, who, due to financial and family problems, are unable to enter the Regional competitions, but who are competitive minded, a chance to make a name for themselves. However, many of these pilots, who are private owners, as well as club pilots, are flying aircraft in the lower performance bracket (Oly 2B's, etc.), and many of them must already be becoming disheartened at never finishing in the first 100 as the pundits and their hot ships sweep the board. Obviously a closer look at the structure of the ladder must be taken.

The first significant factor that must be taken into account is that this competition, unlike a Regional, is run over a period of 365 days. This means that the marginal days of weak thermals, which so often help the lower performance aircraft in the Regionals, will become almost non-existent. Most pilots will be able to pick four or more cracking days, using wave or thermal.

However, as most pilots know, even on the best days while on a long cross-country, one frequently runs across the dead patch. This problem is due more to the geological structure of this country, rather than the complexity of atmospheric processes.

However, the dead patch is as much of a hindrance to the low performance aircraft as the weak thermal conditions are to the high performance aircraft. The ability to cross these patches on a good day, with the minimum amount of scraping, is of paramount importance when going for speed round a triangle. No amount of handicapping is going to help when one is left sitting ten miles short of the goal.

It is on this problem that the mathematician and his handicap falls down. Even a computer would be hard pressed to think up a solution.

If one now takes a hard look at the competition, one sees that the leaders clocked up a large amount of points. One doesn't have to be a genius to know that financially one cannot afford to do wild dashes downwind each weekend. Obviously, to clock up points like this, one has to concentrate on large triangles in the region of 300 km. One doesn't have to produce polar curves and the rest of the complicated data to know that the bigger the triangle the more of a disadvantage the non-laminar aircraft of over 106 per cent are at.

Let us look at a simple example. On a good day a pilot can generally rely on six hours of good thermals to keep him airborne. After that, as the thermals die, it is more of a case of luck and being in the right place at the right time. If the terrain beneath is unsuitable for thermal production, even the best pilot is liable to fall down.

Now let us compare two aircraft, one of 112 per cent handicap and another of 90 per cent. I can safely say that the pilot of the 90 per cent handicapped, say a Dart, would have to be pretty good to keep up an average ground speed of 50 km./h. on a triangle, with a 10-kt. wind speed component.

Thus, when deciding on his task in the morning, he would probably, on hearing the met. report, calculate a triangle on the basis of six hours' flying at 50 km./h. giving him a possible triangle of 300 km.

The pilot of the 112 per cent handi-

capped aircraft, say a Sky or Weihe, on hearing the same met. forecast also assesses six hours' flying. However, due to its much lower performance, the pilot of this aircraft would have to be of outstanding ability to keep up an average ground speed of 35 km./h. Thus the pilot of the Weihe would assess his triangle on the basis of six hours' flying at 35 km./h., giving him a possible triangle of 210 km. No mean feat for a non-laminar type. (Both pilots succeed, the non-laminar pilot being hailed as a future world champion, the 90 per cent handicapped—well, money buys success!)

Now let's take a look at the points result (including handicaps):

Dart: 300 km. at 2½ pts./km.	=	750
+ speed points $\frac{300 \times 50^2}{2000}$	=	373
		1,123
Handicap 90%. Total points	=	1,011
Weihe or Sky:		
210 km. at 2½ pts./km.	=	525
+ speed points $\frac{210 \times 35^2}{2000}$	=	257
		782
Handicap 112%. Total points	=	876

The Dart is thus an easy winner.

However, had it been a set triangle of, say, 110 km. during a club task week, on the above points basis the Dart would have scored:

110 km. at 2½ pts./km.	=	275
+ speed points		137
		412
Handicap 90%. Total points	=	370
Weihe or Sky:		
110 km. at 2½ pts./km.	=	275
+ speed points		63
		338
Handicap 112%. Total points	=	379

Thus a more realistic result on comparing skill would have been achieved, with the Sky scraping home the winner.

Now let us take a hard look at the results and present structure. Firstly, the 90 per cent handicapped pilot is firmly in the lead, not only in my fictitious example, but also in the 1967 final results. If the contest was being run over a short period, the non-laminar pilot could consult his local witch doctor and ask him to pray to the gods for marginal conditions, plus a few fields the size of cabbage patches and some stone walls, just conveniently past the X mark. And, of course, not forgetting to let a new hungry mouse loose in his opponent's tail chute compartment.

However, the contest is run over a long period. It is more than likely that after the 90 per cent handicapped pilot's epic journey, there will be at least another 60 soarable days ahead. Obviously the Dart, SHK, Cirrus, etc., owners are not going to have much difficulty in picking three or more days in which to put up comparable or even better performances. Thus the non-laminar pilot is going to steadily drop behind the leaders, without a chance of regaining any lost ground.

However, there are still many older type aircraft in use and always will be. As the more and more sophisticated ships are invented, so the Darts, SHKs, etc., will slip back into the position now held by Skylark 2's and Olympia 2B's. The present structure of the ladder gives the

Darts, etc., too much opportunity to clean up all the prizes. The Services have long realised the difference of performance between aircraft, and as a result run two classes. Many foreign competitions are also run with two classes under the title of Open and League 2, the latter consisting of Olympia 2B standard.

The only way to make the National Ladder fairer is to split it into two classes. It seems that the long-serving title "League 2" is to be dropped this year. What better action than to reintroduce it to the National Ladder, saying that all aircraft over 102 per cent should be eligible for League 2, whether 15 or 18 metre, keeping their current handicaps. There would be no further paperwork required. All that would need to be done is for the Ladder Committee at club level to insert a 2 in front of the pilot's name, thus signifying that the pilot was flying an aircraft in the League 2 category. Should he be flying aircraft in different categories, then all the committee need to do is put his name down twice—once for his overall score, the second time for his League 2 score with the appropriate figure 2 in front of his name.

I suggest that this form of League 2 is introduced to the Ladder this year. There will be no need to alter the current rules and at the same time it will give the pilots in the lower category an incentive to compete. In this way, the thought that many of them must have, "What's the good of flying a task today, I haven't a hope of beating those fellows with Darts, SHK's, etc.," will be eradicated.

I know that many pilots who fly the lower performance aircraft must have that frustrated feeling. However, to turn the National Ladder into a two-class competition can only be done by popular support, by applying pressure through your Ladder Committee on to the BGA National Ladder Committee. However, not only can pressure come from pilots in the lower category, but also pilots flying hot ships. Let's face it, it can be no great satisfaction to the 90 per cent handicapped pilots to know that many pilots they have beaten haven't a chance of finishing within 500 points of them.

DAMN GLIDING

By RHODA PARTRIDGE

HOW do you feel about gliding? To me it's like a rather difficult love affair. It delights and infuriates, elates and depresses me. I spend a lot of time running my mind over it, and I never seem to manage to get enough of it.

In my brief spinster period (I was a Teenage Bride) I had a neat surgical system for difficult love affairs. I'd sit down with pencil and paper and make out two columns, "Joys" and "Miseries", then I'd balance them carefully and chop or continue the affair according to the result.

Let's try it with gliding.

Miseries

In those halcyon days before I was hooked I could work happily in the garden on a fine summer afternoon. I really enjoyed it; no burning resentment, crook in the neck and inadvertently dug up clumps of peonies. Happy picnics and those pretty white clouds. Not any more. Morose.

Gliding has done terrible things to my driving (never very good)—I drive along, sizing up fields and landing gliders all over the place. "I could just slip her in there if I came in under the power lines." I gaze up through the sunshine roof too. Then there's the financial side. I used (or I like to think I used) to look like a well groomed Prestige Symbol. Not any more. Shaggy and threadbare. I travel by Tube in London because if I appear above ground I get seduced by shop windows and spend good gliding money on clothes. But worst of all is the Dog House.

"But darling, what's the sense in marrying a wife and cooking my own Sunday lunch?" The Man's got a point. "But Mummy, other Mothers don't go gliding at weekends." Rot Other Mothers, the flaming paragons! So I sneak up to the Mynd with a great load of guilt. It's clamped, or the winch is ill, or one 463's in the workshop and some steaming nit has landed the other out, and the Swallows are bulging with dead keen Swallow pilots. Or everyone soars all morning, then I do a circuit, and everyone soars till dark and I go home to the Dog House without even my memories to keep me warm. Oh stop! I'm breaking my heart. Let's do

Joys

You get a good launch, you release, you look around, you hunt, you find, you centre, you reach cloud base and there you blooming are with a great chunk of sky to play with, and you play. The delicious judgment of the approach, the swoop into wind, the round out. The ghastly situations I get myself into and the astonished relief when I get out of them. The people I meet who I'd never have come across in my West Wales farmhouse.

The tingling silence when you contact wave, the shout-for-joy elation when you climb up the buttressed cliff of the roll cloud and the cor-lumme awe when it lifts you clean out of the slot and there are gleaming clouds and slots under a blue sky as far as you can see. Waiting for the dive and lift of a bungey launch as the team run. The cut-the-umbilical-cord feeling when you push off across-country and leave that womb-like site behind. The funny "perched" feeling you have when you get really high. Even the smell of the cockpit. A delicate blend of dope, paint, wood and club members.

I often make out different lists and I often balance them up and I always seem to come to the same conclusion. What would you do, chum? Yes, that's just what I'll do. But, damn gliding!

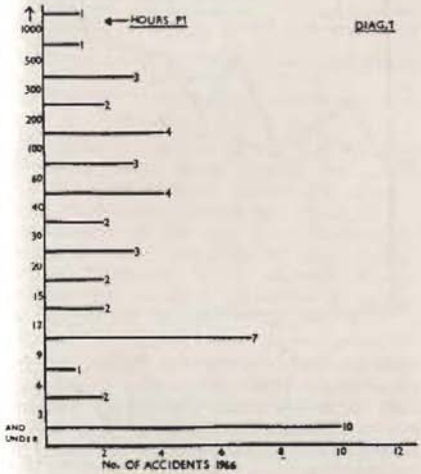
HISTORIC AIRCRAFT

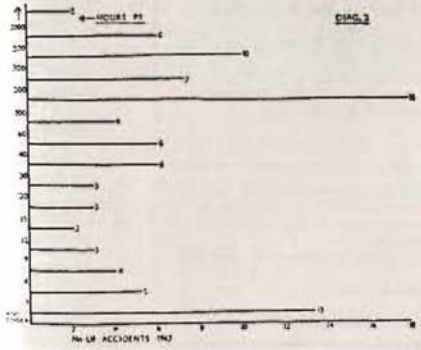
THE Shuttleworth Collection, which includes also some historic material on road transport, is kept at Old Warden airfield, two miles west of Biggleswade, and is open daily from 10 a.m. In addition, Open Days with displays of flying by historic aircraft will be held on Sundays, 31st March (50th anniversary of birth of RAF, flights by contemporary aircraft), 28th April, 30th June, 28th July, 25th August and 29th September. There will also be flying on Saturdays, 15th June and 13th July. On these special days admission is from 11 a.m.

SAFETY PANEL REPORT

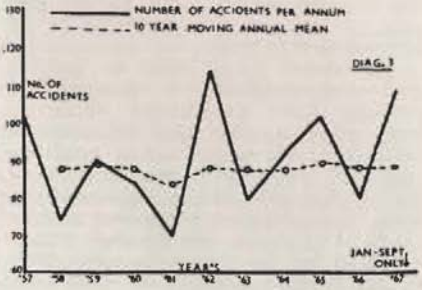
PANEL MEMBERS: R. A. Neaves (Chairman), J. J. Ellis, J. C. Everitt, R. C. Stafford Allen.

THIS year will not go down in the records as one of which to be proud. One-hundred-and-six accidents or incidents have been reported during the nine-month period. Six pilots were killed in BGA clubs and one in the RAFGSA. A particularly disturbing feature of this toll is that five out of the seven were killed in two-seater accidents with instructors in charge, a situation which must be improved at all costs.

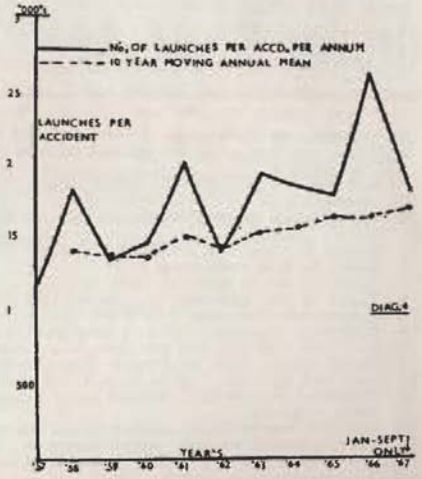




As in last year's report we have produced diagrams showing accidents in terms of the experience of the pilots involved. The 1967 diagram shows that the ten-hour bulge has disappeared, to be replaced by a serious increase at around the 150-hour mark. It is hardly conceivable that the pilots who had their accidents at ten hours in 1966 would have amassed a further 140 hours in the period, so we must look for other reasons why this problem exists!



A new feature is the production of graphs showing the accident rate in

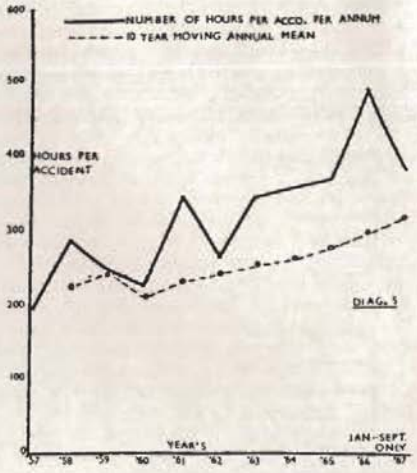


terms of flying achieved. Diagram 3 is a straight plot of accidents against years. As can be seen, the moving average stands at 89 accidents per annum. 1967 accidents are for a nine-month period only (January - September, inclusive). Even so, they are well above the average.

When compared with the amount of flying, the situation does not seem so bad. Apart from the odd fluctuation, diagrams 4 and 5 show a steady increase in the amount of flying per accident, however, the launches per accident line has dropped to the mean for the first time in five years. There must be an improvement in 1968.

The above would seem to indicate that over-confidence is creeping in amongst more experienced pilots. In terms of flying skill, 100-200 hours is really not very much, but it could be said that pilots with this amount of gliding may be getting big-headed. In cases where the instructors were responsible, CFI's might consider their supervision of instructors and the advisability of operating in strong wind conditions. This latter problem is more noticeable at flat sites, where the training value of flying in strong winds is doubtful.

Accidents to pilots with three hours and under have stayed consistent. This is clearly a field in which much improvement must be made. The supervision of the early solo pilot is of paramount importance and the effort has got to be made to allocate instructors to this duty. All too often the only instructor available is fully committed to the two-seater and just does not have the capacity to observe and correct the faults of inexperienced pilots. It is also a sad fact that there are some instructors who do not realise the necessity of this supervision or are unable to spot accidents in the making.



DIAG. 5

TABLE 1—Breakdown of the accidents to pilots with between 100 and 200 hours P1. The capital I in brackets indicates an instructor in charge.

		Type
1.	Undershot into rough ground. Pilot claims he was blinded by the sun. ..	Olympia 460
2.	Dived into ground after final turn. Strong wind and severe wind gradient. Two killed (I)	T-21
3.	Incorrect hill procedure by visitor to site. Low final turn followed by drift landing	Swallow
4.	Undershot in strong wind, landed out and ground-looped (I)	T-31
5.	Mid-air collision	Skylark 4
6.	Unable to cope with crosswind and slope. Hit parked aircraft (I)	T-49
7.	Stalled in from cable break at 20 ft.	Olympia 2B
8.	Glider hit rut at awkward angle (I)	T-21
9.	Visitor to site, undershot in curl-over into corn	Skylark 4
10.	Spun in off final turn. Two killed	Kranich
11.	Undershot. Instructor failed to take over in time (I)	T-21
12.	Late field selection. Hit hay bale	Olympia 460
13.	Fouled second cable on take-off (I)	T-21
14.	Late field selection. Landed in corn and ground-looped	Dart 15
15.	Undershot in curl-over. Selected small emergency field, overshot it and hit stone wall (I)	T-21
16.	Snatched launch. Glider rolled downhill and ground-looped (I)	T-49
17.	Misjudged approach after demonstration at a fete	Olympia 2
18.	Pilot soaring too low on hill, flew into curl-over avoiding other aircraft ..	Olympia 2

TABLE 2—Accidents to pilots with less than three hours P1.

		Type
1.	Heavy landing with full airbrake. Incorrect briefing	Swallow
2.	Stalled in after short circuit from cable break	Swallow
3.	Assumed steep nose down attitude after cable break. Stalled on violent round out	Swallow
4.	Rounded out too late, mushed into ground	Swallow
5.	Low launch, flew circuit too fast, arrived on base leg too low and did not attempt final turn at all	Swallow
6.	Heavy landing after launch failure. Spoilers fully open	T-21
7.	Low approach followed by a high round out with full spoiler	Tutor
8.	High approach, not enough brake, ground-looped at end of landing run to avoid boundary hedge	Swallow
9.	After three satisfactory solo flights, dived vertically into ground. Killed	Swallow
10.	Brakes unlocked on take-off	Swallow
11.	Undershot and landed out	T-31
12.	Low, fast final turn, no brake, overcontrolled in pitch, bounced then landed heavily	Swallow
13.	Misread altimeter, pulled off tow at 1,000 ft., tried to soar, left field selection too late, hit hedge	Olympia 2B

We think it is fair to say that all the above accidents were caused by poor basic training and/or inadequate supervision. Instructors please take note.

A feature of the less than three-hour accidents is the frequency of appearance of the Swallow. It is instructive to examine the Swallow accidents in more detail.

It would appear that more care is necessary when converting pilots to the Swallow, and that extra training should be given on the use of airbrake on the approach. The type of two-seater in use also has a bearing on the question, because it is of little use to try to teach Swallow-type approaches on spoilered two-seaters. A significant number of accidents has occurred to pilots converting from less modern equipment. The Swallow could be said to be less forgiving than the Tutors and Prefects from which it has taken over. For this reason CFI's are urged to give considerable thought to their conversion programmes.

Clearly more practice in launch failures must be given. In spite of the disruption and delay resulting from simulated cable breaks, they must be considered to be an integral part of training. Reminding a pilot of the correct procedures during ground briefings can do a lot towards reducing this accident rate. Experienced pilots wishing to soar should remember that the launch deserves as much attention as the goal declaration and barograph. It *can* happen to you!

The approach and landing phase has always produced a large crop of troubles.

Our old enemy the blow-over has reappeared in strength, three gliders having been written off in this utterly futile and wasteful manner. In one case the glider blew over while facing into wind with a man on the wingtip only. If a glider is pointing into wind a whole army of wingtip holders will not stop it going over. There must be someone on the nose, in the cockpit or lifting the tail. This type of inexcusable accident can easily be prevented by any club member and instructors in particular must set an example and never, even in moments of stress, relax the highest standards in ground handling discipline.

TABLE 3—Analysis of Swallow accidents/incidents.

1.	Pilot not to blame, or no damage (airbrakes open, etc.)	6
2.	Heavy landings due to misuse of brakes and elevator	12
3.	Dived in vertically possibly after a stall at height. Fatal	1
4.	Canopy unlocked	1
5.	Hit tow rope or winch cable. One fatal	3
6.	Poor judgement by experienced pilot	1
	Total	24

There were only three *reported* competition field landing accidents, but it is possible that there were more. In case those people who failed to report them think they have got away with anything, the underwriters will have the last word.

Instructors have borne more than their fair share of blame this year. Instructing accidents are almost inevitable, but a figure of over 20 per cent of all accidents being due to instructors is not a record of which to be proud. Better instruction and supervision is the only answer to this.

Field landings, too, are a common cause of accidents. These are mainly due to leaving the selection too late, flying a disorganised approach pattern or just plain wrong choice of surface. If pilots continue to land in corn and crops, we can expect an ever-increasing animosity from the farmers, and quite right too. It is no good giving the old excuse: "When I got low there was nothing but crops." If the terrain is unsuitable it should not be flown over.

The six airbrake incidents are annoying, because they were mainly due to improper cockpit checks (a matter of self-discipline for all pilots). Believe it or not, in one case a pilot pulled the wrong knob at the top of the tow, broke the cable on peeling away and then failed to realise the brakes were open all the way to the ground. No further comment about this one!

Of the miscellaneous accidents, the most serious was a case where the pilot dived under the winch cable which then wrapped round the aircraft. This, unfortunately, was a fatality.

There were four known mid-air collisions, one in cloud, but only one involved two civilian gliders.

Two bonded gliders received lightning strikes but the pilots were unhurt. Neither aircraft was damaged substantially but this is not to say that the required bonding is still anything but a pilot protection device.

There have been no accidents that can be put down to structural failures or faulty maintenance, a fact that reflects credit on the BGA inspection procedures. One accident in which there may be a design fault is still under investigation.

TABLE 4—General Accident Analysis.

1. Pilot not to blame	14
2. Blow-overs	3
3. Competition field landings	3
4. Instructors instructing	24
5. Failure to recover from failed launches (not including instructors)	10
6. Poor judgement on approach and landing at site (not instructors)	21
7. Poor judgement in field landings (non-competition)	9
8. Airbrakes open on take-off or on tow	6
9. Miscellaneous: ground handling, damage found on DI's, tow ropes fouling, lightning strikes, mid-air collision, etc.	18
Total	106

To sum up, in most cases the accidents that have happened could have been avoided. It is beyond the terms of reference of this Panel to alter existing methods of training or impose restrictions and it is right that this should be so. We can, however, make recommendations and we do urge the Instructors' Panel and all CFI's to continue to strive to improve instructing standards. Nothing must be skimped or taken for granted. Solo pilots who are beyond the supervised stage should try to realise their limitations and play the game to the rules of airmanship. Always set a good example by your own flying, rigging, inspecting and ground handling. The pupil who copies you may just not get away with that last turn in weak lift behind the downwind boundary. If everyone tries that extra bit harder, we will not have so much work to do next year.

Finally, no report such as this would be complete without reference to the splendid work of the BGA office in coping with the stream of accident reports and correspondence. Club Safety Officers have eased the job considerably by the conscientious way in which they

have carried out their tasks. Their efforts are much appreciated. Our relations with the Board of Trade continue to be mutually beneficient and it is safe to say that the BGA is highly respected for the way in which clubs report and investigate accidents. Mr. M. Langman, of the Flight Safety Branch, BoT, has been most helpful in providing information from other countries and in many other ways.

We can only continue to earn respect by the way in which clubs conduct their affairs. We are sure that all members of the BGA would prefer to be self-managing rather than have a form of bureaucracy imposed from outside.

R. A. NEAVES, *Chairman*

TOO FAST

By H. R. LASCH

THE plane, BS-1. The location, Baragwanath, Johannesburg. The day, 16th December, 1967. The time, 13.50. Sky, 6/8 Cu.

I get airborne at long last after having had two tow-rope failures, and say to myself, "Third time lucky", and this story will show how wrong one can be.

I release at 2,000 ft. in nice 2-metre lift, and after it peters out, at an additional 2,000 ft. I leave towards the east for a good-looking cloud, which promises to get me up to the top storey. I reach the cloud and as soon as I have centred it begins to rain, which, I say to myself, is a mean trick.

I notice that the clouds are beginning to seed everywhere and I see the best-looking sky towards the north. As I leave for it the sky around me is rapidly closing in and I have my time cut out to get ahead of the shadow, which is everywhere.

I run back into sunlight about 20 km. to the north from where I left, and as I am getting hungry for altitude I am quite happy to pick up and use anything as little as 1 metre.

Your rate of progress under these circumstances is not very much, but after 50 minutes Rustenburg comes into view; however, as I am getting very low, I am beginning to have a feeling of discomfort, for not only is your bird out in the veld far from home with all the ensuing circus of having to organise a retrieve, there are also your poor friends who have to come to drag you back.

There is a platinum mine near Rustenburg, and with the mine, dumps which produce lift. This mine dump is within reach, and when I get to it I sniff all over for lift. Sure enough, there is some which has me, 40 minutes later, back at a respectable altitude.

My best bet from here is to try to get back to the airstrip at Randfontein. I cannot quite reach it, but if I find some lift on the way I should be able to make it, and I therefore set off towards Randfontein.

Flying at best gliding angle, the distance to Randfontein soon gets shorter, especially after picking up another 1,500 ft., and I know for sure that Randfontein is in the bag. This is not so far from home with hangarage for the bird. Worries are gone and forgotten.

I now cruise towards Randfontein, and after the struggle for the last 1½ hours I run into really juicy 3 metres. This time it does not take long to get up right under cloudbase—and, Dear Reader —you can guess twice, this means I can go straight home even at full bore.

The snag is that between me and base a storm is descending with lightning and all the trimmings, and to my right, about 6 km. away, the same spectacle. Many of you will have seen a rainbow from above, which, of course, is upside-down and looks like a large bowl, and here I have this rare phenomenon of two rainbows reaching each other, and I fly between the storms through the inverted "V" of the rainbow under an arch of tremendous lift.

I can cruise at a good 200 km./h. and lose no height—a most wonderful sensation, and after a run of about 10 minutes I emerge at the back of the storms in clear air with sunshine, and, as

you know, air after rain is velvet smooth.

I check my time: it is 16.35 and I am anxious to touch down at 16.50. To port, the cooling towers of the Orlando Power Station appear below me, the first visible landmark from which I can orientate myself in relation to the airfield, and it comes into view behind the storm.

As I have 3,000 ft. to get rid of in 15 minutes if I want to land at 16.50, I increase my speed, and while doing so I scan the airfield for traffic and for parked sailplanes, but the field is empty. I suppose everyone must have gone in when it rained.

After a good look at the airfield I begin to pay attention once more to my office, and as I begin to read my instruments I see my total energy variometer reading "minus 6 meters". In the right upper corner on my ASI I have a small table with many figures giving best speed for final glides. The ASI reads up to 400 km., but the hand disappears at 280 km. under the label, and as I see no hand I begin to check my speed.

The strange thing if you fly a plane in which you lie on your back, and which is well sealed, is that you have practically no change in noise level at various speeds, and you also have, lying down, no impression of change of attitude of the plane. All this is perhaps the reason why I was not particularly perturbed by the high speed at which I was flying.

As I had flown the plane up to 360 km./h. on a previous occasion, I knew that everything was fine within these limits. When I check the plane at high speeds I ease the stick gently back with two hands, not because of any forces which are involved, there are none on an all-flying tail, but one can be much finer and more sensitive with two hands; and this I had done for a few seconds when I heard to starboard a small noise like a rat gnawing at some timber, and looking out I see my right wing folding back like a jack-knife.

What ensues is an extraordinary sensation. Your nose drops, and with it you turn topsy-turvy, at the same time, having one wing still working, you also begin a corkscrew motion simultaneously.

It is a pity that one cannot sit there quietly and analyse details, because it is now very clear that it is time to go. I

pull my canopy release and the canopy is gone in a flash. The rush of wind is fantastic as one hurls towards the earth. The pressure on me from the harness straps is enormous and I turn the knob to release. At this moment I shoot out of the cockpit as if fired by a gun; hitting the air, I feel myself slowing down, and I now look round for wreckage, which seems to be all around me. I see that I am clear of it and pull my ripcord. A strong yank on my body; I look up, the 'chute is open and the silence after the incredible noise and commotion of a moment before is indescribable. I now float serenely through the air and watch with fascination below me the fuselage with one wing attached milling round like a boomerang, the other wing twirling like a leaf towards the ground, and also my head-rest cushion tumbling away from me, and even my sun-glasses in their case slowly gain distance on me.

I now inspect the ground below me, which is no longer far away, and say to myself: "Looks as if we land in the trees just like a bird except with more noise," as I swing to and fro. I try to steer the 'chute with the straps, but no response. I have since learnt that you can only steer special 'chutes and there was nothing special about my ex-American Navy Service 'chute. I hold my straps tight and push my legs below me, and touch down with my heels first and then fall most inelegantly on my backside and elbows; and there we sit, in a lovely small meadow surrounded by trees just big enough to take me and the parachute.

I undo my straps and see the remains of my plane 50 yards to my left, and I go towards it wearing only one shoe, as I lost the other. As I get to the wreckage I find my second shoe, and I am very pleased about this and put it on; and as I have come down next to a main road, hundreds of people stream towards the wreckage and ask me eagerly where the pilot is, and I tell them that he must have gone away to escape the thousand-and-one questions which would have followed.

A man steps forward out of the crowd and says to me, "Aren't you Mr. Lasch?" "Yes, I am", and he asks me if he can help or take me back to the airfield. I tell him it would be a great help if he could telephone my friends at the airfield and tell them where I am, and to bring my trailer for the bits and pieces of my beautiful bird.

My friends soon arrived, and we tidied up efficiently, and we are soon back at Baragwanath in the bar. The bill for the liquid refreshments wasn't too bad either!

One usually learns from an accident, and this certainly applies to me on this one. There is usually a combination of contributory causes, and this was also the case here.

1. I have had many hours of flying in or near thunderstorms and it has been my experience without exception that, once rain has fallen on the ground, no further turbulence exists. On this particular day it was still relatively early—16.35. Sunshine had re-appeared, and after inspecting the ground carefully over which I had flown, I found several patches of rock. This must have dried more quickly, and as the sun was still high in the sky, thermal activity must have restarted; and, flying at maximum limits, this was too much for the bird to take.

2. In scanning the airfield during the speed-up, which is very rapid, I was absent for too long from the office and ASI.

3. A mistake and a pity that part of my ASI was covered by a label. I therefore don't know at what exact speed I broke up.

I hope that some of you who will read this will profit from my mistakes. The new BS-1 has a speed limit of 250 km./h., and had I flown within these limits my beautiful bird would still be alive.

OBITUARY

ROLF KUNTZ

THOSE who knew Rolf Kuntz of Germany will be sorry to hear that Rolf lost his life in a tragic accident in a helicopter crash on the 10th January.

He started flying in 1943 but, working as a ground crew, he never saw action as a pilot. In 1954 he joined the Akademische Fliegergruppe Braunschweig, though he had managed to get some flying with the British allies during the period that gliding was still prohibited in Germany. Braunschweig at that time were the proud owners of an SG-38 and a Grunau Baby 3; he flew his Silver C on the latter. Later on, when they had finished rebuilding a Weihe, he completed his Gold C distance in it.

In 1957 he flew an HKS-1 to fourth place in the Nationals at Oerlinghausen, and by 1958 he was flying his first World Championships in Poland. He also flew in 1963, and in 1965 he came third in the Open Class. This year he had again been selected to fly in Poland in a Cirrus.

As a gliding instructor he was thought of very highly by his colleagues and pupils alike. He was extremely modest and always ready to help others—even in competition he was only too willing to help others out.

The loss to the German gliding movement of this talented pilot, who was liked by everyone who met him, must be immense. R.H.

LORD KEMSLEY

DEAR to the heart of Lord Kemsley, whose death took place on 6th February at the age of 84, was his encouragement of private flying. He believed that to ensure the future safety of the country and the advancement of air communication, airmindedness, particularly in young people, must be fostered in practical ways. He put his belief into practice in 1947 by the creation of the Kemsley Flying Trust, endowed with the substantial sum of £100,000. The primary object of his fund was to assist with the provision of aircraft, flying sites and equipment essential to the promotion and development of flying and gliding clubs.

In his wisdom Lord Kemsley insisted that money from the fund could only be dispensed by loans, and only to those clubs able to show their ability for self-help. The Trustees appointed to administer the Trust were permitted to use their initiative in the widest possible interpretation of the terms of reference on which it was founded, and because loan repayments could be used for further loans, during the 15 years of operation of the Trust loans approved were just double in value to the amount of the original fund, and losses by default were minimal.

The gliding clubs were quick to avail themselves of the facilities of the fund. No less than 13 of the secured sites were developed with the help of the Trust. Almost every new gliding club formed since 1947 was assisted with the purchase of gliders and essential equipment. More than 50 clubs received one or more loans as well as numerous private syndicates. Considerably more than half of the total value of loans made during the life of the Trust were to gliding, and the healthy expansion of the movement was in great measure due to facilities afforded by it.

Lord Kemsley had on more than one occasion told of his happiness that his fund had been so successful and that it has so well fulfilled its intended purpose. In no better way could the flying and gliding clubs have shown their appreciation than by the conscientious manner in which they have honoured their commitments, and now that Lord Kemsley has passed on, there remain many memorials to his foresight and generosity.

B. A. G. M.

CORRESPONDENCE

THE NEW RATING LIST

Dear Editor,

I have just heard the details of the new Placing List to replace the Rating List from 1969. I am lost for words to describe my astonishment that the BGA Council could have concocted such an absurd scheme. (I am presuming that the BGA Council have had the courage to go to print in this issue explaining the system.)

A basic assumption has been made that all Regionals contain a similar cross-section of pilots. The results of some of last year's competitions make the folly of this assumption abundantly clear. Dec./Jan. S. & G. shows that in one Regional, the fourth man scored 62.4 per cent of the possible points. In another Regional, no less than ten pilots achieved higher percentage scores. Yet six of these would be excluded from even being *considered* for the Nationals under the new scheme. Both competitions, incidentally, had seven contest days, so the luck factor was minimised in the results.

Another objection immediately springs to mind. One day missed in a competition through, say, sickness would put a pilot completely out of the running. A Nationals pilot missing a year would have to start right at the bottom again. Not really the way, I feel, to cater for the pilot who is occasionally forced to miss a competition (e.g. the Service pilot posted overseas).

And then, of course, it would be possible to qualify for the Nationals in a three-day Regional. Are three days really sufficient to establish a pilot's potential?

Again, consider the case of the Dart Regionals. Naturally, Dart pilots want to test their skill against other Darts, as the result should be a true measure of pilot performance. But with the new scheme, it will not be in the Dart owners' best interests to compete among themselves—too many good pilots fighting for a few places.

Of course, once in the Nationals, even a mediocre performance will ensure a place the following year. But I suppose that this splendid system has been devised by "The Boys" for "The Boys". And before it is thought that this letter is plain "sour grapes" on my part, I should point out that I have been fortunate to join "The Boys" in the Nationals in the nick of time.

The only merit in the scheme is its simplicity. But we have already thrown out the Wallington system for contest scoring as being unworkable, and unfair, yet here we are about to introduce what amounts to a Wallington system of entry into the Nationals. I am convinced that most pilots would far rather put their faith in a complicated system, which they might not fully understand, but which they know to be fair, than in a system which is so manifestly unjust.

RAF Manby, Lincs. JACK HARRISON

ROGER BARRETT (not, he regrets, one of the "in" Boys mentioned) writes:—

Details of the new scheme are on page 135. Taking the more important points raised:

(a) Let's be clear that all we are trying to do is to promote the currently most successful Regionals pilots into the Nationals Classes. No one is going to pretend that the pilots who get in are *all* better than those who do not. However, the system should certainly meet our objective of ensuring that all potential National Champions are flying in the Nationals Classes.

(b) The examples Flt.-Lt. Harrison has taken are, unfortunately for his argument, not comparable. The Regional with the large number of good scoring pilots was RAF GSA Bicester "Open Class", where the pilots were specially selected. For Service reasons entry had to be restricted to more experienced pilots. (We are at the present time discussing with the Services how they can organise their competitions in future to fit into the new system). And remember that we are not taking equal *numbers* from each Regional but an equal *proportion* of pilots (see Rule 4).

(c) Potential Champions who miss out in one year—for Service, sickness,

prangery or other reasons—will now have a good opportunity to get back into Nationals after just *one* year in Regionals.

(d) It starts getting complicated again if we introduce weightings for seven-day Regionals, three-day ones . . . and four-day ones . . . and two-day ones. . . .

(e) If it is obvious that mediocre pilots are being retained in Nationals, it will, at last, be a simple job for the BGA to get the precise amount of interchange that is required (this has never been possible up to now).

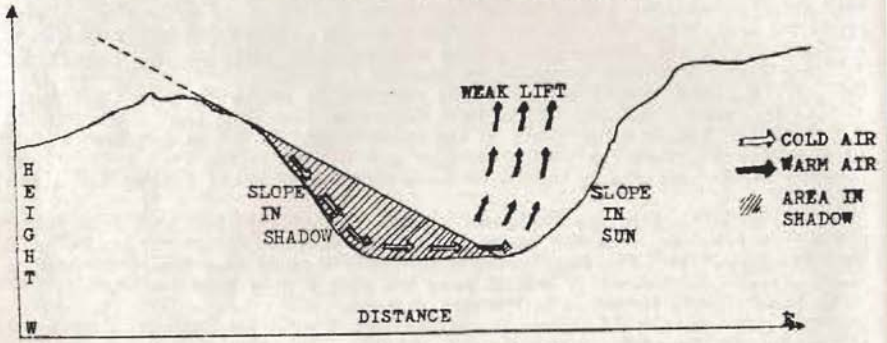
(f) *Fairness v. Simplicity and Clarity.* If, indeed, any of our past rating systems had been generally regarded as even 95 per cent "fair", there might be a case for keeping a complex system. This was not the case, however, and the split into two Nationals Classes would have caused more anomalies if we had retained a two-year rating system.

EVENING THERMALS

Dear Sir,

With reference to the comments made by yourself and Mr. Bulukin on the reality of the "evening thermal" (SAILPLANE & GLIDING, Feb.-Mar., 1968, p. 77), perhaps the following suggestion may be of some interest.

During the afternoon the slopes which face east or north are in shadow, and, in



conditions of light winds, such as found in anti-cyclonic or "col" conditions, these slopes will be colder than those slopes which face west and south, which have been in direct sunlight during the afternoon.

In the evening the katabatic winds would flow down these east- or north-facing slopes earlier than on the warmer slopes, and may even begin before sunset. After a day with thermals, it is possible that the air over the warm slopes is still slightly, or nearly, unstable, and only needs some trigger action to set off weak lift. The cold air flowing down the opposite side of the valley would undercut this warmer air and may well provide the necessary trigger action. Depending upon how soon before sunset this happened, it could well be that the cold air, after undercutting the warmer air, may be re-heated enough for the next pulse of cold air to set off a further area of lift, thus providing some form of continuity. In some of the deeper, steeper-sided valleys, it is possible that the katabatic flow may well begin one or two hours before sunset, thus giving the colder air time to be re-heated at least once.

The ideal situation for this sort of thing is a deep valley lying north to south, but it could occur in any valley where the one slope is in shadow during the afternoon and evening, and the other is in sunlight. Light winds seem almost an essential for this sort of lift to occur, as stronger winds would lead to mixing of the warmer and colder air masses, and strong winds may also hinder the formation of a katabatic wind.

Coleshill, Warwicks. B. B. BISHOP

RED FACES DEPARTMENT

Sorry, our sliderule slipped! On pages 14 and 15 of the last issue John Fielden's rating position should have been 88th (not 158th) with 371 points and Charles Dorman's position should have been 120th (not 148th) with 326 points. Apologies to both.

ROGER BARRETT

THE KATZMAYR EFFECT

Dear Sir,

Everything, so they say, comes to him who waits. I have waited for 15 years to see an article on the Katzmayr effect in an English gliding journal, and at last John Inglesby has obliged. Thank you, John!

I first became interested in Katzmayr when looking for an explanation of some mysterious weak lift reported by a number of pilots at London Gliding Club when low-level hill soaring was far more frequently practised than it is today. Experts whom I approached were not very encouraging, but pp. 159-161 of Edward P. Warner's "Aerodynamics" (First Edition, McGraw-Hill, 1927) gave the confirmatory references mentioned in John Inglesby's article and NACA Technical Note No. 214 in addition. At that time it seemed to me that, so far as the airfoil is concerned, the Katzmayr effect is produced entirely as a result of a systematic variation in the angle of incidence, and it was therefore surprising that none of the experimenters had attempted to reproduce the same results in a steady airstream by varying the effective incidence with some form of oscillating camber-changing device or flap system. The energy required to operate these would, of course, have to replace the energy extracted from the oscillating airstream used in the various Katzmayr experiments. If the frequency required is not too high (and the evidence is not very precise upon this point), may we not find a more elegant solution to the problem of man-powered flight than the awkward contraptions produced so far?

It also happened that when this matter was very much in my mind a number of articles appeared in scientific journals drawing attention to the "power paradox" that had been observed in the cetacea. These animals were known to travel at speeds, the power for which, calculated from the drag of a carcase, was in excess of that assumed to be available from considerations of their anatomy and physiology.

Perhaps Katzmayr has the answer to that, too.

Ilford, Essex

CHARLES ELLIS

OLYMPIA 2. Excellent condition. Price, with instruments and well-built trailer, £690. May be viewed at London Gliding Club. Contact Box No. S.G.287.

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PILOTS! OWNERS!

PILOTS! OWNERS! Artist (pilot) will produce attractive water colour of your own sailplane or light aircraft from a coloured photograph, which will be returned. Unframed 14 in. x 20 in., 5 gns. C.O.D., including postage. Jeeves, Bristol Gliding Club, Nympsfield, Stonehouse, Glos.

WITHOUT VISIBLE MEANS OF SUPPORT was written for your enjoyment. See review in February S. & G. Available from BGA for 25s. (2s. p. and p.).

T-21B in good condition. Offers to Kent Gliding Club, Challock, Ashford, Kent.

SINGLE DRUM WINCH. Carefully designed diesel winch, fully mobile and easily towed by large car. Hydraulic clutch and disc brake. Simple and economical to operate. Excellent heights achieved on test— T-21 to 1,450 in light wind. For sale, with or without 1,500 yards of cable. Full details and photo on request. D. E. Schofield, "Crantock", Mill Lane, Swindon. Tel. 22355.

SLINGSBY Swallow, basic instruments, completely re-covered and resprayed. C. of A. valid until March, 1969. £850 o.n.o. Wycombe Gliding Centre, Wycombe Air Park, Booker, Marlow.

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DART 15R, 1966, £1,850 (converted to 17R, £200 extra). Comprehensive panel, latest type parachute, Bantam radio, ply trailer on Flexitor axle. Undergoing C. of A. now. Lionel Alexander, Woodhurst, Pear Tree Lane, Shorne, Kent. Tel. Shorne 2257. Or George Whitfield, Ashdown, Basingstoke Road, Spencers Wood, Reading. Tel. Reading 883672.

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Available immediately — ANTONOV A-15 all-metal sailplane, in immaculate condition, with (full panel) instruments, oxygen and trailer. Price £1,800. Aart Dekkers, Noltheniusstraat 5, Utrecht, Holland.

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ONE TUTOR, one T-31B, one diesel-engine Wild Winch (prime mover). Apply to A. Procter, Silverdale, Little Milton, Oxon.

SWALLOW (Penguin), the Swallow with the better performance. Full instrument panel, parachute, barograph and trailer. Very good condition, £900. Apply J. K. Pigg, Liverton Grange, Loftus, Saltburn. Tel. Loftus 616 (evenings).

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AMERICAN and Canadian Buyers have cash waiting for good used Pye Radios, Barographs, etc. State price and details. Box No. S.G.286.

WANTED. Old model aircraft engines, any type, any condition. J. W. Law, 46 Beech Avenue, Newark, Notts.

SAILPLANE. Manufacturer wishes to purchase a design or obtain the services of a designer for the purpose of manufacturing an all-metal sailplane. Hart, Son, Peard & Co. Ltd., Ryland Street, Birmingham, 16.

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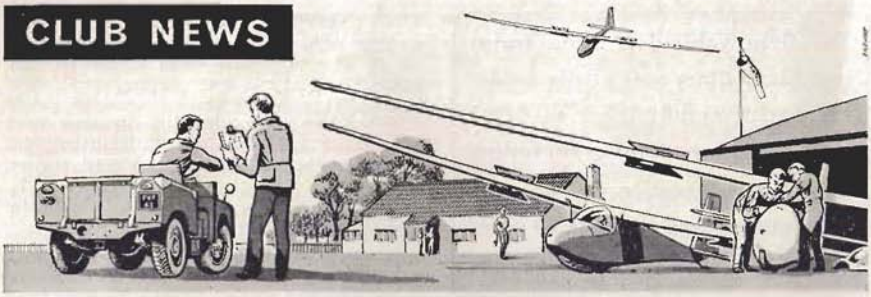
FINANCE for your glider or aircraft purchase can be arranged by telephoning or writing to Colin Donald (B.G.A. Instructor), Burghley Finance Company Ltd., 50 Burghley Road, Peterborough. Ring Peterborough 5787.

PERSONAL

If any experienced crewing types would like to visit the World Championships in Poland, at their own expense, and crew for Canada, please write to T. R. Beasley, 173 Leslie, Dollard Des Ormeaux, P.Q., Canada.

CLUB NEWS



AFTER the closures due to the foot-and-mouth epidemic, most clubs have started operating again and are looking forward to the coming soaring season. News for the June-July issue should reach me not later than 16th April, and that for the August-September issue not later than 12th June. All news should be typed double spaced on foolscap and sent to 14, Little Brownings, London, S.E.23.

14th February

YVONNE BONHAM (MRS.),
Club News Editor

BATH AND WILTS

WHEN we obtained the use of our site about five years ago, we inherited the derelict shell of the old control tower which was due to be bulldozed along with all the other buildings.

Thanks to a tremendous amount of hard work on the part of our early members we transformed a stinking hole (literally) into a very habitable building. We put in over 120 panes of glass, hung a front door, thus making the building weatherproof, unblocked the drains, replaced a smashed lavatory pan, obtained a water supply by a somewhat ingenious method, wired the place for electricity and installed our own generator.

Shortly before Christmas the girls decided it was time to redecorate the clubroom to liven the place up for our Christmas party.

Hardly was the paint dry than the Ministry of Defence said, "Thanks very much, chaps"—or words to that effect—"We need our control tower again."

In spite of all the money we have spent, quite apart from the labour involved, we have absolutely no redress. The Ministry of Defence refuses point blank to provide us with a suitable portable building from the many sites which are closing down.

The operative clause in our licence is . . . "the property must be handed back in the same condition as it was taken over". It's a good job our members are not small minded enough for the obvious!

John Graves with the Auster has made our early soaring much easier this year. The first weekend in February saw a good northerly blowing to make the Westbury ridge work well and a cloud street stretched for many miles from it for most of the afternoon. A number of members took advantage of a tow to ridge or street and thermal climbs to 5,800 ft. were recorded. The best thermal soaring we have had for the time of years since our formation.

K.N.S.

COVENTRY

IT is with the deepest regret that we have to start by recording the sudden death in hospital after an operation in January of Doreen Gardner, wife of our Instructor, Ron Gardner. Doreen was not only just a "gliding wife", she was a very popular club personality in her own right. Whether helping in the kitchen or timekeeping in the field she always had a good word to say for everyone and she will be sorely missed at Husbands Bosworth for a long time to come. Our deepest sympathies are extended to Ron and the two boys.

Lou Glover's workshop is now proceeding apace, and we hope to institute very shortly the next stage of our development by the opening of a fairly substantial bunkhouse to accommodate course members and weekend visitors.

Flying recommenced on Saturday, 10th February, and much to our delight, after a very damp and dismal morning, we had a good day's flying, with even some little patches of lift here and there.

Check flights were the order of the day after the foot-and-mouth winter pause in operations, but we hope to get quickly back to normal.

One rather dismal fly in the ointment was to learn that our Skylark 4 had been crashed whilst on loan to Portmoak, and we are now anxiously awaiting the rebuild and return of this aircraft.

B.F.

DERBY AND LANCASHIRE

ALAS, we are still cast into the outer darkness of lowland flying, as our revered hill remains unclean—yet.

We have acquired a Dumper truck to use for aircraft retrieval on the field, a single-cylinder air-cooled diesel, with no electrics whatsoever, and a large shining starting handle. This sounds like the perfect vehicle for Camphill, and its flexibility of use and theoretical economy and toughness should prove it so.

The building fund grows slowly, and our baths, showers and W.C.'s still look rather distant, though one feels that they must come ultimately. It may be that the long-promised television set may appear before long.

During our enjoyable sojourn as guests of the Doncaster club, full advantage has been taken of their aerotowing facilities. About six people have been checked out for aero-tows, and Ernie Brown was sent on his first solo at Doncaster by John Eckersley, a Doncaster instructor, CFI Eric Boyle and Chairman Bernard Thomas have put a few hours in as "fan drivers".

R.H.

DEVON AND SOMERSET

OUR annual Dinner and Dance was supported by about 45 members and a good time was had by all. About that time, our technical officer, Brian Weare, was presented with a son. But such is devotion to duty that he still had the presence of mind, as he dashed off to the hospital, to shout to the riggers of our newly modded Dart—"You can't fly that till I've reweighed it."

F.J.M.B.

DONCASTER

IN the last few months, gliding activity at Doncaster Airport has been much increased, due to the presence of large numbers of Derby and Lancs. members, orphaned by the foot-and-mouth epidemic, which has improved the normally dismal winter launch statistics, and done wonders for the beer consumption figures.

CFI Gordon Mealing of the Bath & Wilts Club briefs John Greaves at the controls of the beautifully re-furbished Auster. All his own work!

Photo J. Richards

Our new K-13 was collected from Dunstable early in February and was test flown by the CFI, John Stirk, with the new Chairman, Don Westerside, as P.2. Both pilots were well pleased with the aircraft, as were most of the members who subsequently flew it.

The new cross-country season was inaugurated on 11th February, when Bob Plane and Tony Cook, in the Blanik, were towed into cloud and had to release. After breaking cloud at 1,200 ft. with snow on the canopy, and the airfield embarrassingly distant, they were forced to land uphill in a small sports field at the local (Maternity) Hospital.

There has been a steady decline in the number of instructors over the last year, but this situation should soon be improved, as an instructors' course is now in progress under the supervision of John Stirk, and several other members are booked for one of the Lasham courses. One of the latest instructors to depart, and one of the "hard core" of regulars, was Mike Usherwood, transferred to York by his firm. The Committee have expressed their appreciation of Mike's long record of service to the club, and have unanimously elected him to Honorary Life membership.

R.P.H

KENT

THIS certainly has been a bad winter weatherwise, with too many non-flying weekends. Things did brighten up, though, on Sunday, 4th February, when we had a thermic-cum-ridge day and several flights of over one hour were achieved.

A "hangar floor fund" has been started by Geoff Avis to collect £4 each from 100 members, which, with £60 from club funds, will enable the hangar floor to be levelled and concreted. Apart from the obvious benefit this will give to packing in the ever increasing number of gliders on site, it will also help eliminate dampness during the winter. To date, we are halfway to the target and should have reached it by the time this is in print.

The ground fleet has just been augmented with a splendid MF tractor—no more push starts, we hope!

An extraordinary meeting was called on Sunday, 11th February (soon known as the "Moan-In"), to give members a

chance to air their views on the club and put forward suggestions, whilst the Committee took note as well as gave explanations. It was very worth while, as the majority went away with a better understanding of not only what was being done, but also how far the club has come in its five years at Challock—the 1967 club statistics in the last S. & G. well illustrate this.

The final chapter, we trust, in our mice story came with a visit from the local "rat catcher", but not before two more nests had been built in one of the Skylark 4's!

M.H.

LONDON

THE winter has been quiet, but a lot of flying has been done on the hill and some thermals have appeared already to add interest to life. We've lost count of the number of visitors who have borrowed our built-in updraught, and indeed some of them seem to have established themselves more or less permanently. On 19th November the east wind wave put in a welcome appearance, and several machines sailed about for several hours at 2,000 ft. above an almost complete stratus cover. The trough of the wave created a hole in just the right place for the site to remain usable, but when it showed signs of filling in at about 2 p.m. there was a fairly swift descent by all.

Another reason for the quiet time has been the temporary cessation of the gulley-filling operation. The contractor who was doing this ran into some sort of difficulties and his lorries no longer grind up and down the hill. Fortunately the club has been able to fix up a new deal, and out of this should be able to get a flatter field and also a new access road to replace the old one, which shows signs of decay. Also, in time for the new season, the power cables which obstruct the south-west corner of the field will be buried.

John Jeffries, when he can escape the paper work, Keith Chard and Johnny Morris have been slogging away at instructional flights whenever there has been light to see by. Johnny, we are sorry to say, is leaving us shortly to go to another post. His cheerful face will be much missed, but we welcome his replacement, Len Norman, and hope he will enjoy working for the club. Meanwhile Mike Till has been on an extended working-ski-ing holiday in Austria.

Preparations for the Sport Class Nationals are going ahead. It is now certain that 40 gliders will be competing, and volunteer helpers are still being sought. It is exactly 30 years since the Nationals were held at Dunstable. (In 1938 there were 28 gliders.) We don't really see why the London club should have to wait another 30 years before being host to the Nationals again, but, of course, everything will depend on the quality of the organisation and the general success of the competitions. This in turn will depend on the willingness of helpers to help!

A sight for which everyone is waiting with great interest, not to say bated breath, is the appearance of the long-awaited hot-air balloon which will be operated from the site by a group of members who have recently formed the London Balloon Club. The idea seems to be, first generate a thermal with a d . . . great big gas stove, then catch the thermal in a d . . . great big polythene bag, and then soar in semi-uncontrolled fashion to a downwind landing somewhere in England. Or somewhere else if the wind's blowing the other way. They say it's even quieter in one of those things than it is in a glider —except that you can't hear yourself speak for the roaring of the gas burners.

M.S.

MIDLAND

AT the time of writing the foot-and-mouth restrictions are still in force; it is now over three months since anyone flew from the Mynd, although we are hopeful of a resumption before the end of February.

This lay-off, longer than that of the hard winter of 1962/63, will, when flying is resumed, necessitate very many check flights which will fully occupy our instructors, although they themselves will first need to convert to the club's new AS-K13 two-seaters.

The first AS-K13 arrived in December and, because of the restrictions, spent several weeks in Bobby Neill's garage, where the instrumentation was carried out. The second AS-K13 is now on its way from Germany

During the last few months the C.'s of A. have been carried out and equipment has been overhauled. The retrieve winch has been mounted on a new non-invertible chassis.

Let us hope that we are flying again soon and enjoy a good season to make up for what we have missed during the winter. K.R.M.

NEWCASTLE AND TEESSIDE

WE have had a nice tantalising amount of hill and wave soaring. Just enough to whet the appetite and keep the conversation going. Barry Brighton has taken over as Chairman of the Club. The annual Dinner and Dance, which was held at Middlesbrough, was very enjoyable and we were pleased to welcome the Mayor and Mayoress of Middlesbrough, Mr. H. Salisbury, Chief Constable of the North Riding of Yorkshire, and Mrs. Salisbury, and the Vicar of Carlton-in-Cleveland.

We also managed to surprise Ian Paul with a small presentation by way of a "thank you" from all the members.

The workshop is almost completed and stood up to the recent gale very well. We were fortunate in not having too much damage; at least we were able to cope (repair holes in the roof) and fly. The site is a soggy bog in a few places, but a few dry days will fix that.

The newly-formed Social Committee are slaving away thinking up new ways of making money and entertaining us. So far they are doing very well, as the attendance at the Pie and Pea Supper and Film Show proved.

T.S.

NORTHUMBRIA

AT last we have reached agreement with the National Coal Board, and have secured a long-term lease on our site at Hedley Moor. We have also fulfilled all the conditions for our grant and we hope work will start on our hangar shortly.

Site levelling is also on the programme so that aerotows will be possible. Congratulations to instructors John Clark and Jack Little on their solos on Victa Airtourers. We should have no shortage of tug pilots when the time comes. R.S.

OUSE

IT is not uncommon, on Saturday and Sunday mornings, for the hangar doors to be slung back at 7.30 a.m. And invariably the first half-dozen names on the list are from Leeds, Bradford, Otley, Huddersfield—all over 20 miles from the launching site. Ice and snow, rain and blow, make no difference; the enthusiasts are there on the dot.

They are closely followed by pilots from other parts of Yorkshire. To arrive after 9 a.m. is only to hope to fly! The enthusiasm and team spirit of club members is constant; it is not surprising that there is a waiting list of would-be members.

Last year our on-site launches increased by 24 per cent to 5,112. On-site flying hours increased by 37 per cent to 547.

Our 16-20 page quarterly News Letter, "In the Wind", has a regular flow of entertaining contributors, including a member who is a psychologist, and is writing a series of articles on "Gliding as a psychologist sees it". He states that the trainee pilot is, in many ways, an ideal subject for psychological study. Why do we fly? He gives explanations that go deeper than the normal one, "Because it is a challenge". When our wives ask us why we fly, we do not now say, "Because we're barmy", but "It fulfils our need for personal significance; there is a sense of adventure, of risk-taking, of personal achievement". It sounds good!

Peter Ramsden in the Swallow.
Photo R. Bowhill.

Our social events and monthly meetings are well attended. There is an eagerness to attend lectures. We all want to learn and to do better. Some of us older chaps may never reach Gold C level—though we shall never stop trying. But we have many youngsters who, it is obvious, are going to hit the heights. We are proud of them, and of our club. And we are proud to be playing an active part in the gliding movement—the most satisfying and exhilarating of all sports.

A.H.S.

OXFORD

NEVER before has there been so much flying during the bleak mid-winter; our new AS-K13 is gratifyingly massing launches every weekend. The luxury of a closed cockpit two-seater is unknown in the history of the club. Kitty Laurie has been busy with nimble fingers to produce an excellent much-needed canopy cover. Recently, time well spent has transformed the jerky movement of the control system to a really silken quality by the removal of excess paint from the nylon block universal couplings.

Following a long period of cable breaks and "snarl-ups" we have changed the cable and narrowed one drum by one third to reduce the paying on sweep angle. With the testing showing such a marked improvement the second drum will be modified immediately.

The long-standing consecutive competition numbering of several of our club and private machines has been broken by the sale of Dave Robert's white and sun-blest yellow Olympia 2B, No. 170, to a syndicate at Husbands Bosworth. His enthusiastic participation in regional competitions over the years, in spite of a good handicap, has not produced the required results, so he seeks something to go places.

With the unfortunate timing of devaluation and increased insurance, the end of this financial year has left us with considerable "red ball", and therefore the AGM in March will be presented with proposals that winch launches, entrance fees and annual subscriptions be raised; all very reluctant moves to start the year but undeniably topical.

C.J.T.

SCOTTISH

DESPITE the dearth of visiting sailplanes and pilots we are having quite a rewarding wave season. Z. Goudie gained Diamond height on Christmas Day, whilst Laurie Smith and Erik Andren each recorded a Gold.

The intrepid Charlie Ross has made ten wave trips in consecutive weekends —which clinched the Club Points Championship for him in 1967 and gives him a good start this year. He was also awarded the Alan Boyle "up" Cup, plus the C. B. Sutherland out-and-return Trophy at our annual Dinner-Dance in January. That left T. P. Docherty to receive the Parker cross-country Trophy and Valerie Peddie was presented with the Thorburn Service Salver.

Plans are currently afoot for an expedition to " a place beyond the Cairngorms, considerably to the north" involving a Dart, Tutor, SHK, Olympia 460 and the Tiger.

M.B.R.

SOUTHDOWN

AT long last there are visible signs of our new clubhouse, a Terrapin building. The contractors have laid the foundations and carried out all the necessary excavations for connecting the water supply, etc. By the time this appears in print the whole project should be complete and Southdown will be able to boast a clubhouse as good as any. We are very grateful to Peter Henderson, who offered his professional services to the club and drew up the plans, schedules, etc., and negotiated with the local Council and contractors.

Having been prevented from flying for about eight weeks by the foot-and-mouth epidemic, flying recommenced in mid-January, only to be bogged down by rain and low cloud. However, spring is just around the corner and we are busy planning cross-country flights. Despite the lack of flying during November-December the total number of launches and hours for 1967 were well up on the previous year.

Our new winch, a converted double-decker bus, is nearing completion and when in operation will mean more efficient launches (we hope) and more comfort for the winch driver, sitting in his centrally-heated cabin.

P.C.

SOUTH WALES

WE have done precious little gliding of late; just one flight in wave to 4,000 ft. by the Skylark, and in January the only thing that flew was . . . the clubhouse, the resulting landing was a write-off! A more substantial building is being erected together with a new winch house.

Our efforts to obtain a new site near the Black Mountains are beginning to bear fruit. Apart from aerotow offers from Shobden we have permission to use 700 yards near the base of the hill and 700 yards as an aerotow strip some three miles away. Together with a bungy point nearby it looks as though we will be flying there this summer.

We have a permanent task to soar from our site to the Black Mountains and back. So far our ridge soaring out-and-return record is only 24 miles, which leaves 20 miles to go.

I.S.

STAFFORDSHIRE

AT our recent AGM Boris Clare was elected Chairman for the third year running, Ken Sherriff as Vice-Chairman, Norman Bartlett as Secretary and Peter Felthouse takes on the duties as Treasurer.

The CFI presented a tankard and the Instructors Cup to Mike Johnson for the best ab-initio performance during the year. Lt.-Col. Naomi Christy was elected an Hon. Life Member in recognition of past services to the club.

R.B.L.

SWINDON

DOWN in Wiltshire nothing very much has stirred, other than our several successful film shows; special thanks due here to our hard-working projectionist and his crew, also to those who organised the Christmas and Twelfth Night parties.

The winch, which was mentioned in our previous newsletter, has now been tried out and proved a success. This will be a great asset when using the local ridge, which until now could only be reached by areotow.

The club fleet has been improved by the addition of a Skylark 4, which we hope will be put to good use in the coming season.

E.J.W.

TRENT VALLEY

WELL, at last we are operational again after voluntary inactivity due to foot-and-mouth. We are now getting into gear for the soaring season.

The Chairman is having a "whip round" for the cost of another single-seater with surprising success. This is to appease an increasing number of Olympia pilots. This additional aircraft will fill the gap created by a faster turn round system due to change from the tractor winch to pully launch.

Our pully is bolted to the back of the winch and the winch itself is now only used in emergencies. Launching is now carried out very ably by an automatic jag.

Occasionally we are visited by the power boys and we all curl up when a friendly Luton Minor does a copy-book approach to our 1½-mile-plus east-west runway. It must take him all of 20 minutes.

There has been a steady stream of Olympia conversions, resulting in a stream of C Certificates. We hope to convert this progress into a sprinkling of Silver C's this year.

A.B.

UPWARD BOUND

UPWARD BOUND is not a gliding club in the ordinarily recognised sense. Its reason for being is to give as many of the youth of Britain as possible a chance to participate in an adventure course. A course which demands both teamwork and self-reliance, introduces young people to the sport of the age and, possibly most of all, is priced at a level that they can afford.

Unfortunately, when a pupil reaches solo proficiency our present resources usually demand that he or she must make way for another aspiring aviator. We like to think, however, that the gliding movement should be interested in the young people who discover through us that gliding is their sport. We plan one day to offer more advanced training to our more apt pupils.

Upward Bound is a Trust. Sir Frederick Hoare, Lady Hoare and Brigadier George Chatterton are Trustees. Their tremendous efforts away from the airfield ensure that the Trust will con-

tinue to be a dynamic forward-looking organisation.

Down at Haddenham the operational staff and instructors are, almost without exception, ex-pilots of the Glider Pilot Regiment and present-day members of their very active Regimental Association. For many of them their first serious gliding involved piloting the Horsa and Hamilcars which transported men and materials into Normandy early on D-Day. Today they still intensely enjoy engineless flight and gain much satisfaction in passing on their skills to the younger generation. Almost regardless of the weather, each Sunday throughout the year sees these men busy with our T-21, T-31 and Blanik. This year it is planned to give them some additional types to operate.

Our pupils mostly come from the villages and towns around Thame and Aylesbury, but some make journeys of over 30 miles to report in each Sunday morning at 9.30. Young women as well as men are welcomed on the courses. However, the queue of aspirants means that the waiting period between applying for and starting a course can often stretch to three months. This year we hope to take steps which will lessen this problem.

If any of you glider pilots are essaying a cross-country and pass our way, feel the thermals deserting you and spot below our converted and checkered bus flying control, lecture room, canteen and what-have-you, please drop in. We will be pleased to stand you a cup of tea, and give you a winch launch on your way home again.

V.W.J.

SERVICE NEWS

BANNERDOWN

THE departure of the Hastings and the end of regular motorised flying have given Colerne a degree of quiet unknown since it first became operational in 1941 but the "ill wind" dictum applies. We have lost our own met. section and thus miss the benefit of on-the-spot mini-briefings with the aid of charts, ascents, tephigrams *et al.* On the other hand, the prospect of regular weekend and even mid-week flying is encouraging, while the switched-on are already thinking about improved club facilities which may be available in more commodious premises. Any improvements possible in that direction should greatly help to attract — and keep — increased membership.

The Colerne Cup was won this year by Bill Bailey for the best flight of the year, the Novices Cup was awarded to Pat Cleeve.

P.H.

BICESTER

AS expected, the centre programme this year contains extra task weeks and application to attend these should be made well in advance. Instructor courses from now on will be of two weeks' duration and will cover a wider syllabus, including a number of films.

Soaring got under way on the 3rd February and one flight of 46 minutes was recorded. We are going to pay more for our flying this year, however, as owing to rising costs the Committee has been forced to increase aerotow charges.

Having completed their tours overseas a number of keen gliding types have rejoined us and with the membership apparently on the increase their help will be invaluable.

A.E.B.

FENLAND

APPROXIMATELY 50 members attended the AGM held during November, the first at our Marham site. For the second year running the Members Trophy was presented to Malcolm Wilton-Jones and the Fenland Cup was won by John Whitworth for his Diamond goal flight to Merryfield.

Postings are taking their usual toll of members. "Hank" Hancox has left us for the Gulf and in March our CFI, Colin Elliot, leaves for Germany. It is hard to imagine the Fenland without Colin and Hank and they will be sorely missed. Roger Stains will be taking over the CFI's reins.

The club "workers" have got on well with the usual crop of winter jobs and with the addition of our long-awaited

Ka-6E we will be ready to launch at the first hint of lift this year.

An expedition to the Long Mynd is planned for March with two aircraft and about a dozen members.

R.G.J.

FOUR COUNTIES

THE statistics show that the number of launches and hours were nearly doubled in 1967. This has been partly due to more efficiency on the flying side and the two new diesel engines for the winches played their part in this.

The Baldwin Trophy was presented to Steve Hart at our AGM in December for his Diamond goal flight which completed his Gold C. The trophy is awarded for the most "notorious" flight of the year. Sir John Baldwin, who presented the trophy to the club, is our new President and we all welcome him as an active member. He first came into contact with gliding in 1927.

To relieve the ever-increasing load on the T-21 we are shortly to add a Bocian to our fleet.

We regret to announce that "Paddy" Whelan lost his life in a recent Vulcan crash. He will be remembered by us all.

I.G.S.

MENDIPS

NINETEEN - SIXTY - SEVEN was a very trying year for the club and nearly saw its extinction when we had to vacate our hangar. However, we set to and after a lot of hard work we built and completed a new hangar. Our flying activities were curtailed while construction work was going on—a clubroom had to be virtually rebuilt, too—but we still managed to just top 1966's launches and hours, and we won the Aspirants Trophy for the second time.

During the re-housing the fleet had to be re-organised and we now have a T-21, Tutor, Grunau Baby, Olympia and a Ka-6 and we are awaiting the arrival of a Bocian.

Having the sea about half a mile from our doorstep, we get a fair share of the sea breeze and it is most tantalising to see the clear sky above us and the cunims just that much too far away to be able to reach them.

A power flying club has started operations alongside us, so the ATC do left-hand circuits, we do right-hand ones and the power boys go up and down the middle. Things run very smoothly, although it means some restrictions.

F.S.R.

RPE (Westcott)

HAVING survived our first year of struggle to become a firmly established club, we can pause to reflect and write to S. & G. about it.

By the end of last season, about a dozen pilots had soloed and the flight list for our one and only glider (CISAVIA'S Kranich) was so long that if one didn't get here early, it wasn't worth coming at all. A second glider was needed desperately but we hadn't sufficient funds to buy one. CISAVIA'S fleet was all tied up on hire elsewhere and talk of forming a syndicate was not only viewed with suspicion in the club but was flatly vetoed by our main sports club, to whom we owe our existence. Things looked black until the RAE club heard of our plight. The effort they made to help us was one of those friendly gestures so characteristic of gliding types. We could borrow one of their Olympias for a few months while we sorted our problems out. They even delivered and rigged it for us! As Westcott is a flat site there has not been any soaring during the winter, but spirits have been high and our optimism has been justified in that the latest news is that both CISAVIA and our sports club have offered to supply a glider when we have to return the Olympia we have grown so fond of.

A flying visit by Godfrey Harwood in the Motorfalke provided great interest and an opportunity for some to sample the joys of motor gliding.

R.E.

WREKIN

A NUMBER of changes in facilities, equipment and personnel have taken place. Jim Pignot, Geoff Collins and Sq. Ldr. Geoff Young have all been posted.

Sq. Ldr. Russel has taken over as Deputy Chairman and a warm welcome is extended to him.

The "Wrek Inn", the club bar, has undergone a major refit and was re-opened on the 13th January. The bar

was re-built during the period we were banned from flying because of the foot-and-mouth epidemic.

We hope to operate four more aircraft this summer. They are a Grunau Baby 2, a privately-owned Skylark, Ka-6E and a Bocian-E. This brings the fleet up to nine aircraft.

The club celebrated its second birthday on the 10th February, the candles on the cake being blown out by the only two original members still with us. They are Malcolm Allison and "Jake" Jacobs.

N.M.

CRUSADERS (Cyprus)

AS is usual with overseas Service clubs, there is always a constant turnover of members. Since Doc Saundby left in November, Tim Oulds has taken over as CFI with Tony Simms as his Deputy. One of Doc's main contributions to gliding in Cyprus must be the way he showed us how to get the greatest utilisation from our aircraft in the sea breeze fronts. Len Barnes has also left, but we welcome Chris Gildea and two Australians, Bob Austin and Bob Stewart.

Our club hangar at Akrotiri has been dismantled and we are anxiously awaiting a new one to be erected at Dhekelia.

We are planning a test based on the "Win a Swallow" competition, with a trophy as the prize.

Any gliding types passing through or posted to Cyprus will be made very welcome and they can be sure of good gliding.

J.A.S.

OVERSEAS NEWS

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

AUSTRIA

NATIONAL RECORDS.—As at the end of 1967, single-seater national records were: Johann Fritz (Std. Austria), 491.4 km. Free Distance; same pilot in Libelle, 423.4 km. Goal Flight; Dr. Alf Schubert (Diamant), 640.11 km. Goal-and-Return; Kurt Bernhard (L-Spatz), 7,530 m. Height Gain; Hans Resch, 9,780 m. Absolute Altitude. Speeds round Triangle: 100 km., Frank Ulbing, 93.74 km./h.; 200 km., Guido Achleiner, 70.53 km./h.; 300 km., Ulbing, 86.76 km./h., all in Std. Austria; 500 km., Dr. Schubert in Diamant.

The feminine Distance record is still held by Emmi Roretz (now Mrs. Hanmann) with 194 km. in a Rhönsperber on 4th July, 1937, during the first International Contest. *Austroflug*

BELGIUM

RECENTLY three sailplane pilots landed on the Liège-Biersel aerodrome without previous authorisation. The authorities have been content this time to "addresser un avertissement" to the three "contrevenants", but will not be content to do so next time.

Conquête de l'Air

CANADA

WINTER, the time this is being written, is hardly the time for much club news, being the season for shop work, social events and, of course, the AGM.

The past season has been a very active one in Canada, with several new clubs having been established and several of the older ones having had to close membership lists. Similar high degree of activity can be forecast for 1968. There are now over 30 clubs in the country, with a total membership approaching 1,000.

On the subject of shop work, midnight oil has been burning in various parts of the country. One of the most active home building centres is around the capital, Ottawa, where little hammers have been hammering away at two or even three HP-14's, all trying to get ready for the spring. One or two HP-11's are abuilding around Toronto, as are one or two wooden sailplanes—we don't talk about them. . . .

Moving farther west, the most active spot is the prairie province of Alberta, where Frank Holman and Dirk Zutter are doing some improvements to their Zephyr, and another member, Walt McKinnon, is well along the way with his much modified Tern.

At last year's Nationals there were only two or three sailplanes without a radio, and there is a likelihood of at least one club equipping the club fleet with radios — single channel only, of course. Being able to talk to your thermal companions would add much to the enjoyment and safety of soaring. This may be a reality by the time you read about it.

ONTAERO.

SALES TAX EXEMPTION. — Only if gliders or equipment are acquired for "flying training" are they exempt from sales tax. To qualify for exemption, a club must "possess permanent classroom facilities with a prescribed curriculum of studies relating to the teaching of the theory of flight". The Air Cadet League possesses these qualifications, so has been allowed to import "technical equipment of a class or kind not made in Canada" in the form of three Schweizer 2-22E sailplanes. Also the Saskatoon and Melville clubs have each qualified to import a tax-free Schweizer 2-22 trainer.

Free Flight.

HOLLAND

DURING the winter season our pilots visited more wave centres than ever before. They all came back full of enthusiasm, although not everyone had been successful.

Of the various groups who visited Innsbruck, only H. Slierings completed his Gold C in the latter half of October. During the Christmas holidays the gold diggers claimed: D. Teuling, at Fayence, Gold C height; J. Wijma and S. Blaisse, Gold C, and J. van Leeuwen, Diamond height, at Jelenia Gora, Poland. J. Smit, Diamond height, at Gap-Tallard, France; and Issoire produced a Gold for R. Hoogvliet and a Diamond height for C. Munnig Schmidt.

Peter Seton, flying a Libelle in the South African Nationals, set up a new Dutch record for the 500-km. triangle at an average speed of 96 km./h.

The Dutch team for Poland have now chosen their machines: Ed van Bree, Foka-4; Dick Reparon, Ka-6E; Joop Jungblut, Phoebus; and Grandpa Aart Dekkers a Diamant-18.

J. Th. v. E.

IRELAND (Dublin)

AT the recent AGM the following officers were elected: Chairman, Ken Mellor; CFI, Gerry Connolly; Ground Marshal, Colm Curley; Treasurer, George Tully; Secretary, Ian Hood. A big drain on club funds has been removed by the sale of the Terrier, which was not utilised enough to justify its retention. It will be missed, however, when the wave is working.

The 1967 club flying statistics show a considerable improvement over 1966, for which better equipment maintenance and earlier starts are mainly responsible. Launches were up 20 per cent to 2,052. An increase in training flights from 850 to 1,150 accounted for all of this improvement. Flying hours increased 16 per cent to 551. The average flight times were very encouraging, showing 11 minutes for two-seaters, 20 minutes for the Ka-8 and 25 minutes for the Ka-6.

Of seven first solos recorded, four of them went on to C. Two Silver C's were completed (Dave Hooper and Graham Liddy) and three Silver C legs (Colm Curley, height and duration; Ian Hood, height).

It was a disappointing cross-country year. In the first National Championships at Kells there were only two competition days, and no champion was named. This did not deter Stanley Dunne from making the outstanding flight of the year at Kells, a 113-km. triangle on a day that nobody else got away.

R.H.

ITALY

LAST August, a party of members from the South Wales and Swindon clubs spent a holiday in Northern Italy.

The obvious attraction of "Varese" caused an early phone call requesting "Could they cope with a coach full of visitors?" An immediate "Certainly, tomorrow if you wish" resulted in early breakfast and a 100 per cent attendance of our 21 members.

We arrived at 10.30 a.m. and received a warm welcome.

Those who have seen their magnificent clubhouse and well-built hangars will know the feelings of envy experienced by every one of us, only to be further stirred by the sight of Sig. Orsi's Cirrus and the Phoebus.

The remainder of the day was spent flying in the club's Bonaventura and Bocian, all club flying being suspended to fly our members (a few "blackleg" types were seen to be flying in the Dornier).

A very deep impression of the kindness of our Italian friends, and a grand day's flying, will be the most lasting memory of a splendid holiday.

J. GULLIVER,
Swindon G.C.

THE following pilots have been selected to fly in the World Championships in Poland: Giorgio Orsi and Walter Vergani in the Open Class, and Nino Perotti and Leonardo Brigliadori in the Standard Class. The Team Manager will be Professor Alberto Morelli.

SMILIAN CIBIC.

NEW ZEALAND

NATIONAL CHAMPIONSHIPS.—These, the fifth to be held, took place at Wanaroa Airfield, Matamata, from 5th to 17th February. The meeting turned out to be a tussle between the top seeds —but with a newcomer, Doug Yarrall, of Wellington, making a showing in the top placings for the first time. Eleven competition days were flown, making this the longest competition yet held in New Zealand.

Conditions were generally medium to weak, although the first day and the last three days were good, with strong thermals—up to ten knots. Ross Reid, following a winning streak at the last Auckland Provincials (he won all seven days), started well and ended up Open Class Champion, some 800 points ahead of the second place getter. There were 20 competitors.

Daily tasks and leading results were:—

5th Feb.: 160-km. Triangle. R. Reid (SHK), 81.3 km./h.; A. Fowke (Ka-6E), 71.9 km./h.

6th Feb.: Free Distance. P. Heginbotham (Phoebus), 191 km.; R. Reid and G. Hookings (Skylark 4), both 183 km.

7th Feb.: 165-km. Triangle. R. Reid, 56.6 km./h.; A. Fowke, 57.7 km./h.

8th Feb.: 157-km. Triangle, which no one completed. B. Kosoof (Ka-6CR), 155 km.; D. Wright, 149 km.

Overall placings at this stage were: R. Reid, 3844; G. Hookings, 3303; A. Fowke, 3042.

10th Feb.: Twice round a 75-km. Triangle. P. Heginbotham, 42.5 km./h.; D. Yarrall (SHK), 37 km./h. Reid was the only other one to finish.

11th Feb.: 140-km. Out-and-return Otorohanga. R. Reid, 55.6 km./h.; A. Fowke, 50.5 km./h.

12th Feb.: 157-km. Triangle. Blue thermals up to 4 kt, but for some small cu. Yarrall, 49.5 km./h.; A. Fowke, 33.9 km./h.

13th Feb.: Out-and-return Bombay (near Auckland), then Free Distance; nobody completed the out-and-return. D. Wright (Ka-6CR), 204 km.

14th Feb.: 100-km. Triangle (after passage of cold front). P. Heginbotham, 76.1 km./h.; A. Cameron (Ka-6CR), 74.3.

At this point Reid was leading overall

with 7783, and Fowke had 7070. Next day, a rest day, brought strong thermals.

16th Feb.: 165-km. Out-and-return. A. Fowke, 63.8 km./h.; D. Yarrall, 61.0 km./h.

17th Feb.: 200-km. Triangle; 14 got round. R. Reid (SHK), New Zealand record at 67 km./h.

Final leading placings

Open Class		Standard Class	
Reid	9713	Fowke	8883
Fowke	8883	Heginbotham	7936
Yarrall	8870	Kosoof	7840
Heginbotham	7936	Cameron	7305
Kosoof	7840	Wright	6900
Hookings	7578	Gatland	6262

There is no doubt that this has been the most successful championship yet held in New Zealand. The next National Championships will be at Omarama, in the South Island, in January, 1969.

New Inter-Club Contest.—An innovation in New Zealand gliding is an inter-club contest run over three weekends, each at a different club, a trophy having been donated by Mrs. Helen Vint. The first, on 7th-8th November at Upper Valley Club's airstrip, was rained out and postponed; so the first contest day was 14th November at Paraparauma airport, Wellington, with 11 aircraft, the number of pilots per aircraft being unlimited, enabling many to get their first competition experience. Peter Heginbotham completed as well as setting the tasks, the first being a 128-km. out-and-return, which he won in his Phoebus. Low cloud prevented a task next day, but John Upton reached 8,000 ft. in a wave.

Normal airport activities caused no interference, the gliders and tugs operating from the grass and doing right-hand circuits.

Ross Macintyre

SOUTH AFRICA

When John Inglesby, a British participant in the South African Championships at Tempe Airport, was forced to land on an airstrip near Jagersfontein, in the southern Free State, he landed himself in some difficulties. For the airstrip—the only one in the area, according to his map—is in a diamond field, a restricted area.

On the afternoon of 4th January he set off on a 500-km. flight to De Aar and back. But he had to battle with a strong headwind all the way, and the first 100 km. took him 3½ hours. Realising he had no chance of completing the course, he decided to land at the only landing ground in the area, the airstrip mentioned.

After touching down at about 4.30 p.m. he had to stay in his glider for two hours on account of the strong wind. When the wind eased off and he thought it safe to leave the sailplane, he started walking towards what appeared to be a town. But the track he was following ended in a closed gate, so he retraced his steps and started walking in another direction.

"By this time I was getting a little worried," he said. "I hadn't seen a soul, it was getting dark, and my water was running low.

"Eventually I saw the lights of some cars, and climbed a barbed wire fence that must have been every bit of 10 or 12 ft. high on to a road. Then I went to the only house I could see, intending to phone through to Bloemfontein. The only people in the house were three girls ranging age from about 13 to 6, and an African servant. None of the girls could speak English — they were Africaans—but they were very sweet and gave me some tea and let me use their phone."

After getting through to the security office of the diamond field, he was able to contact his team at Tempe Airport and arrange for them to pick him up.

The Friend, Bloemfontein.

SOVIET UNION

EAGLE ATTACK.—The helicopter can now be added to the types of aircraft, including sailplanes, which are liable to attack by eagles.

In the Tien Shan mountains, Uzbekistan, two Golden Eagles "dive-bombed" an MI-1 helicopter. The pilot instinctively banked the machine and "the birds slid along the main rotor plane, avoiding the blades". They then chased the helicopter till it left the vicinity, which was a rocky canyon of the River Chatkal known as "Eagle's Nest". Eagles have attacked people there.

Novosti Information Service.

U.S.S.R. NATIONALS. — In our Dec./Jan. issue the 1967 regional contests in the Soviet Union were described. These were followed by the Nationals, held at the ancient Russian town of Orel.

On the first day, when the task of a speed race twice round a 100 km. triangle was set, Ushangi Korganashvili (Georgia) went round the course in the sensational time of 2 hours 48 mins. Of the women, Tamara Zagainova (Russian Federation) set up the second best time, 2 hrs. 55 mins.

The second task was an out-and-return of 152.5 kms. done twice. The first lap was cross wind, the turning-point was obscured by pouring rain, and overdevelopment caused lift to deteriorate. Marina Afrikanova not only beat all the women but all the men as well by achieving the 305 kms. in 5 hours 18 mins. Chuvikov took 3 minutes longer.

On 15th July a hurricane went over the airfield, tearing off roofs, uprooting trees and knocking people off their feet. The aeroplanes and gliders were securely in hangars, yet some of them were damaged. It seemed as if disaster threatened.

However, after a day, flying started again. The women were set a 100 km. triangle. Weather was good; 22 pilots crossed the start line. Marina Afrikanova did well; she picked the best moment and went round the course, passing all her rivals, to finish first in 1 hour 12 mins. (84 km./h.). No one could improve on this time.

The men were set the 100 km. triangle a day later in more complicated weather. Clouds were at 1,700-1,800 metres, with 3-5 m./sec. lift. For the third leg, pilots had to fly directly into wind. Critical calculation was required for the last glide. Most of the pilots got home and crossed the line at between 5 and 10 metres altitude, but Inga Korshilova (Kirov) confounded the judges by arriving on the airfield boundary and bouncing her Blanik to the finish line, which it crossed at 50 cms. altitude. Valentin Tororoshchenko (Rostov helicopter factory) gained the lead, completing the 100 km. triangle in 1 hour 24 mins. Tororoshchenko has made great progress this year and is listed as the 6th best soaring pilot in the USSR.

The last and deciding task was set. The women had to fly through two turning-points to a goal, 155.5 kms. On the first leg, the girls had to fly against a strong wind. Only nine finished. Marina Afrikanova covered the distance in 2 hours 37 mins. Her victory won her the Grand Gold Medal of Absolute Champion (among the women) of the Spartakiad.

The men were set a 300 km. triangle. The weather was for once really fine, with active cumuli, a light wind, and lift of 3-4 m./sec. and occasionally 5 m./sec. By midday all 46 competitors were on course. After four hours they started to return in groups; 43 completed the course. Such mass fulfilment of a complex flight was not only the highlight of the meeting but also one of the greatest moments in the history of Soviet gliding. The times were close. V. Chuvikov (Russian Federation) took 4 hours 9 mins. 36 secs., and won the day. The Ukrainian Valery Vachasov took 73 seconds longer, the Lithuanian Vidas Czukas only 45 seconds longer than Vachasov.

The performance of the Moscovites Kuznetsov and Zaitsev was extremely interesting. For the last three tasks they flew as a team, often finishing wing-tip to wing-tip. During the 300 km. triangle, they took no risks and finished in 7th and 8th places, 8 minutes behind Chuvikov. Their tactics paid off and Kuznetsov (3825 pts.) became Absolute Champion of the Spartakiad. Zaitsev was 2nd (3794 pts.) and Chuvikov 3rd (3758 pts.). The success of Kuznetsov and Zaitsev brought victory to the Moscow team (10,210 pts.). In 2nd place was the White Russian team (9895) and 3rd the team from the Russian Federation.

Of the women. 1st was M. Afrikanova, RSFSR (3937 points); 2nd L. Kyuyeva, Latvia (3395 pts.). 3rd was O. Manafova, Moscow.

Many Republican records fell this year at Orel. Glider pilots from Georgia, Armenia and Moldavia, where gliding has only recently got going, have already shown their metal. The final meeting of the 4th Spartakiad revealed many young hopes. An important change is coming for the veterans.

Condensed from translation by C. WILLS *from Krilya Rodiny*

TURKEY

HISTORY OR LEGEND? — H. F. Jacques sends us a letter published in *The Chartered Mechanical Engineer*, written by Alper Shevket, of Bartin, Turkey, commenting on an historical article by Ronald Holmes. Mr. Shevket writes:—

"While reading the article by Ronald Holmes in the October issue, I was disappointed by the omission of the first successful manned rocket flight in the 1630's in Istanbul.

"Hazanfer Ahmet Celebi, an Ottoman Turk, invented the world's first glider, probably made of silk. He announced that he would cross the Bosphorus by gliding from the top of the Galata Tower on the European side to the Anatolian side. He achieved this, but only just.

"Lagari Hasan Celebi, another Ottoman Turk (Celebi means 'sage'), only a few years after the glider demonstration, built a similar glider and also manufactured a rocket, propelled by solid fuel, a paste of gunpowder. He then bundled together seven rockets, containing 150 lb. of fuel to propel his glider.

"He asked permission of the Sultan to give a demonstration. The Sultan, curious enough but a little careful about possible reaction from religious circles who might regard it as collaboration with the Devil, ordered the demonstration to be held in secret and after midnight.

"Lagari joked, as he mounted the rocket-propelled glider, that he was ascending to Heaven to take the Sultan's greeting to the Prophet Jesys. He then took off at a very great speed, reaching a great height, and then vanished in the darkness.

"However, he arrived at the Palace the following morning, still joking that he had brought greetings from the Prophet. He was granted a purse full of gold but was immediately exiled to the Crimea, never to return."

WEST GERMANY

WORLD RECORD.—Klaus Keim, who put up a world record in South Africa on 28th December for two-seater out-and-return, describes the flight in a letter to his parents. The machine was a Kranich 3 and his passenger was a young Swiss, Rudi Bachmann. They were launched at 11.15, in a tempera-

ture of 38°C (100°F), with 60 kg. lead ballast (132 lb.), giving an all-up weight of 650 kg. At 12.15 they could still see the starting-place, then the thermals picked up. After two hours they neared the turning-point, but got held up by a strong headwind, overcast and rain, and downcurrents to 9 m./sec., and did not round it till 15.45. In 7 m./sec. lift they got up to icing level at 7,000 m. (23,000 ft.) without oxygen, and were back home before 18:00, having averaged 105 km./h. The distance was 625 km., beating the previous record of 543 km., set up in Poland. *Der Adler*

FORTHCOMING EVENTS.—The National Championships will be held at Oerlinghausen from 26th May to 8th June, organized by the Nordrhein-Westfalen Region of the German Aero Club. They are preceded by a "German Gliding Contest" at Roth in Bavaria from 12th to 26th May.

Cologne regional contest is at Butzweiler from 11th to 25th May, and Lower Saxony (place not stated) from 23rd May to 2nd June. The Cologne meeting, the eighth, will have international participation for the first time.

Hahnweide, Kircheim-Teck. 3rd International Contest from 17th-23rd May. Visiting pilots with Silver C and aerotow experience welcome. Write for details as soon as possible to Fliegergruppe Wolf Hirth, c/o Heinz Dietrich, Krebenstrasse 61, 7312 Kircheim-Teck, W. Germany. (Closing date for entries, 31st March.)

The motorized sailplane rally, with international participation, is at Burg Feierstein/Obr. from 7th to 13th September. *Aerokurier*

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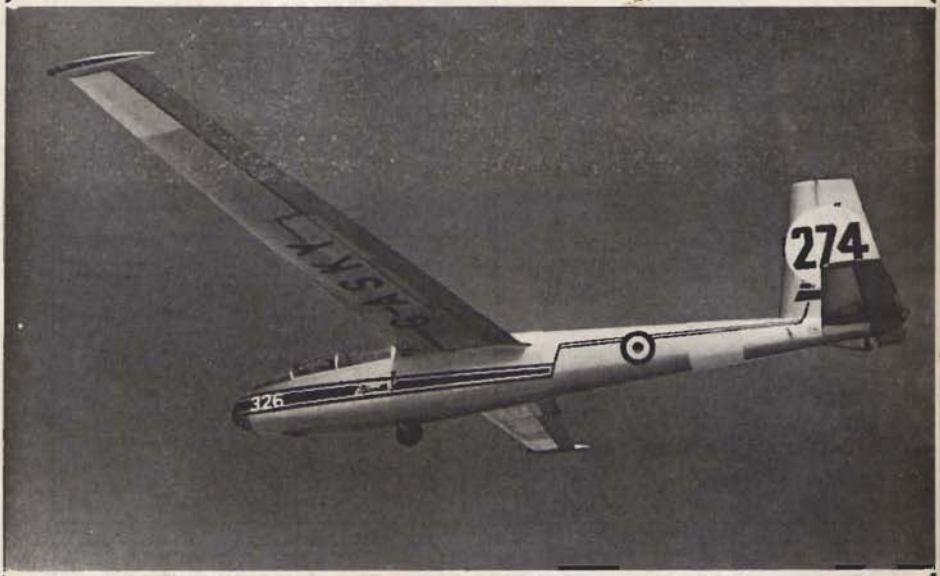

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