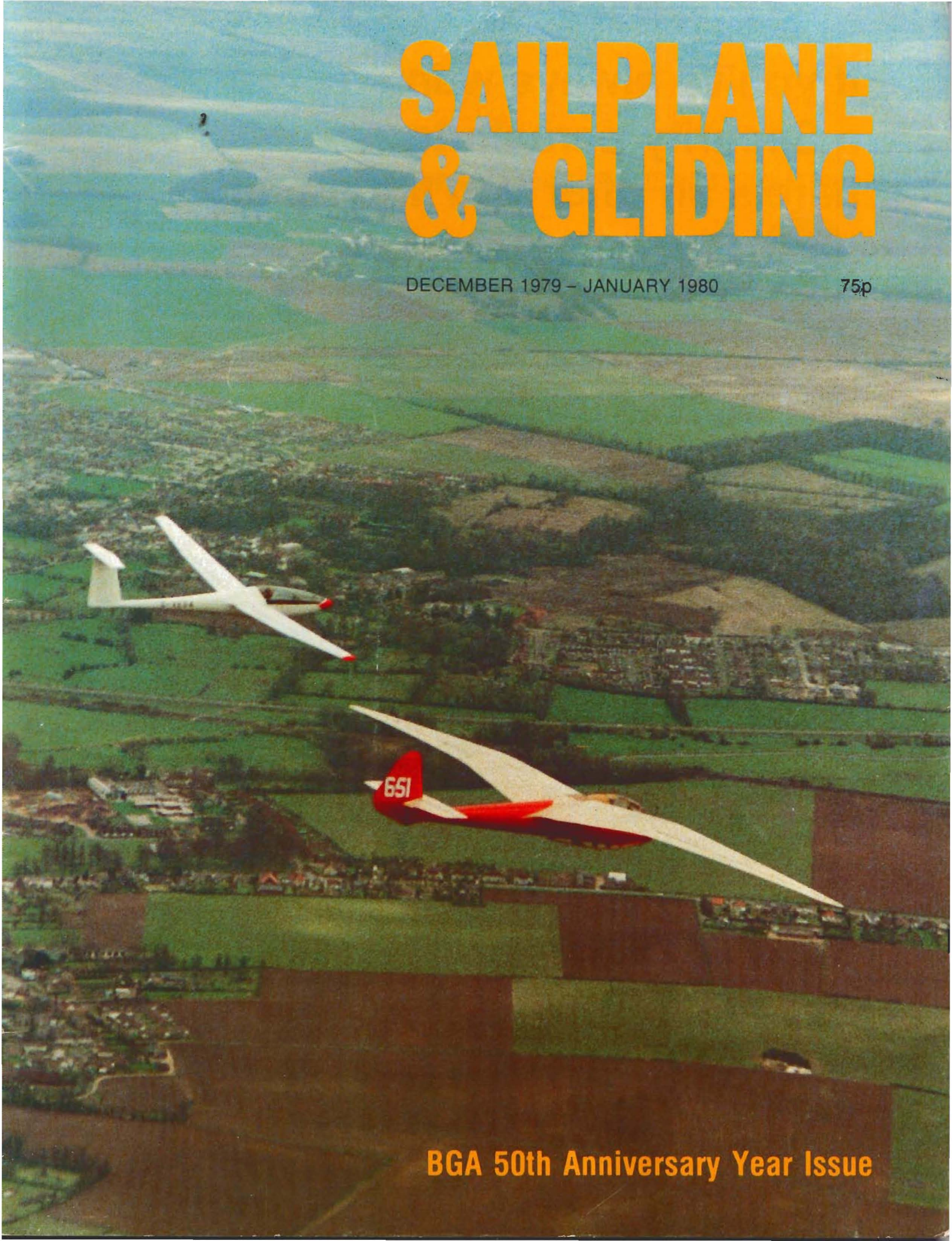
SAILPLANE & GLIDING

DECEMBER 1979 – JANUARY 1980 75p



BGA 50th Anniversary Year Issue

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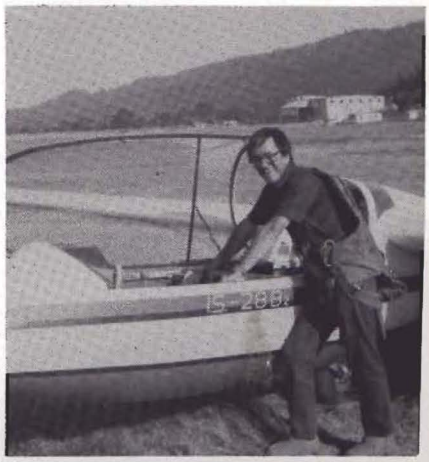
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SAILPLANE & GLIDING

Magazine of the BRITISH GLIDING ASSOCIATION

We have tried to reflect the spirit of British gliding during the half century in this 60 page issue which celebrates the 50th Anniversary of the BGA, though obviously it is impossible to go into greater depth in the space available.

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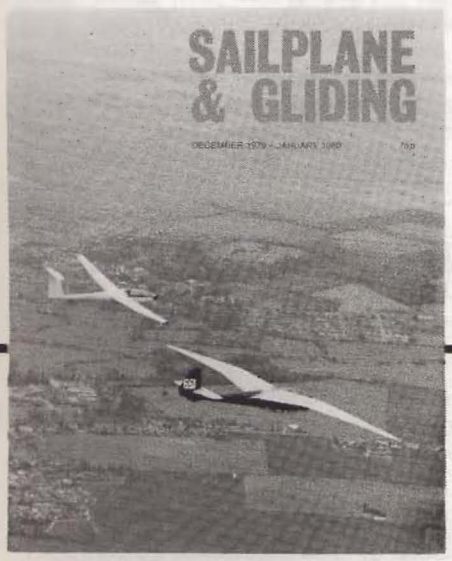
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Cover: An early Slingsby glider and the latest, photographed by John Glossop. The Petrel, owned and flown by Mike Russell, in formation with Vega, flown by Roger Bull, Sales Manager for Slingsby Engineering Ltd, over Duxford airfield.

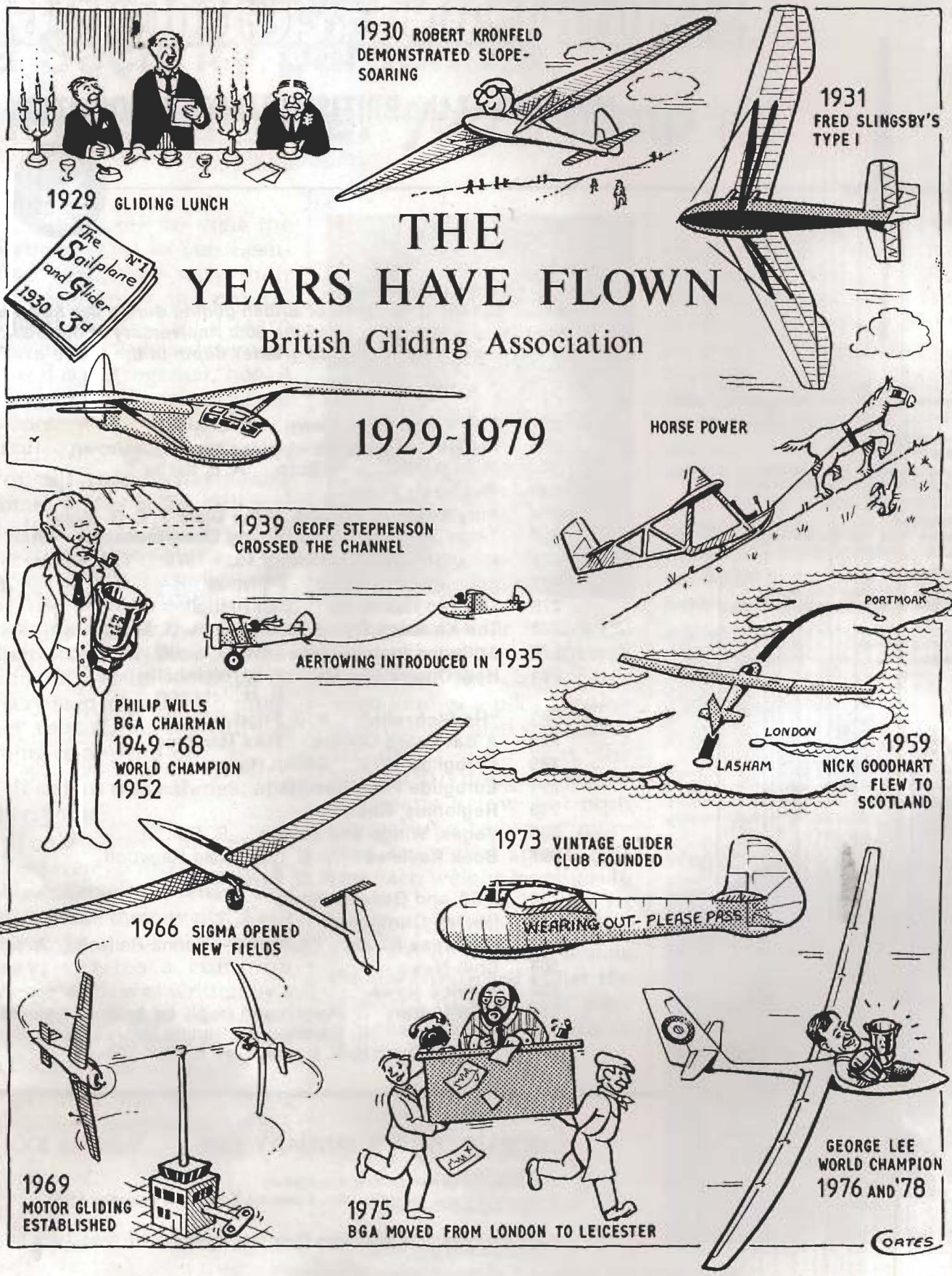


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1929 GLIDING LUNCH
1930 ROBERT KRONFELD DEMONSTRATED SLOPE-SOARING
1931 FRED SLINGSBY'S TYPE I
The Sailplane and Glider N°1 1930 3d
THE YEARS HAVE FLOWN
British Gliding Association
1929-1979
HORSE POWER
1939 GEOFF STEPHENSON CROSSED THE CHANNEL
AERTOWING INTRODUCED IN 1935
PHILIP WILLS BGA CHAIRMAN 1949-68 WORLD CHAMPION 1952
PORTMOAK
LONDON
LASHAM
1959 NICK GOODHART FLEW TO SCOTLAND
1973 VINTAGE GLIDER CLUB FOUNDED
WEARING OUT- PLEASE PASS
1966 SIGMA OPENED NEW FIELDS
1969 MOTOR GLIDING ESTABLISHED
1975 BGA MOVED FROM LONDON TO LEICESTER
GEORGE LEE WORLD CHAMPION 1976 AND '78
COATES

ANNIVERSARY YEAR STOCKTAKING

By BGA Chairman, ROGER BARRETT

"A gliding club was discussed and the seeds laid for a movement which should have far-reaching effects . . ."So *Flight* magazine reported the lunch at the Comedy Restaurant in Panton Street on December 4, 1929 at which the BGA was conceived. And they were right, the effects *were* far-reaching: from 37 members then to more than 10 000 pilots now.

When you get to 50 it is a convenient time (I am told) to do some stocktaking. The pace of change is so rapid it is tempting to forget the past and concentrate on our immediate problems and opportunities. But I think that would be wrong. A glance behind at the lessons from the last 50 years could be useful before the BGA sets course for AD 2029.

A BACKWARD GLANCE

Something normally taken for granted. Occasionally makes mistakes that become public knowledge in less time than it takes to do 300km. Equally occasionally it is recognised to get some important things right. Generally thought to be necessary — if only because any alternative might be a darn sight worse.

A fair description of any democratic governing body? Certainly I believe that is how most glider pilots regard the BGA. And yet it would be silly not to recognise the special status the Association has achieved world-wide and the reasons for this.

"The BGA is like a hippopotamus in a hip-bath . . ."

For the first few years of its life the BGA got it badly wrong. It was run by people who were far from being disinterested — the trouble was their interest did not happen to coincide with that of the gliding enthusiasts of the time, one of whom said "The BGA is like a hippopotamus in a hip-bath, being every whit as cumbersome, top heavy, voracious and inept." Luckily the times brought forth the man, Philip Wills, and the fundamental change was made: gliding from then on was run by active glider pilots for glider pilots. Philip's libertarian philosophy influenced the BGA enormously and his wise views on how the governing body should exercise its authority bear repeating:

"The BGA is in a position to lead, not to drive. Its policy therefore is to delegate authority and responsibility in every field to the lowest possible level. The best point is the pilot himself, and gliding will prosper in direct proportion to the self-discipline displayed by each individual. Any infraction of the rules can best be corrected by the disapproval of a pilot's contemporaries. At the next level, all possible authority should be delegated to the management of each club, particularly to its Chief Flying Instructor. Only in the most extreme cases, where no alternative is available, will the Association take such disciplinary actions as are available to it."

The BGA must continue to govern with a velvet glove; enough to satisfy "Authority" and its legitimate concern for the public interest, but never so much that Philip's basic tenet about self-discipline is eroded.

Some Hopes For The Future

The BGA can only be as strong as its member clubs. And clubs are only as strong as their members make them.

Successful clubs, whatever their size, will, I hope, continue to recognise why someone said "Gliding is not a sport, not a hobby, but a way of life". Being able to fly free of engine noise and with the performance we get nowadays is the basic attraction of gliding.

Gliding Man cannot live by efficient launches alone.

But there is a lot more to it than that. Very soon the new member realises that a gliding club can satisfy a whole variety of additional personal needs. He will see the Escapers (from life or wife), the Ambitious (who go in for badges and competitions), the Constructors (who with luck can be diverted on to club projects), the Teachers (who instruct), the Organisers (who run committees) and the Revolutionaries (who keep the pot stirred). In one way or another gliding clubs can cater for them all rather satisfactorily, which makes our sport an unusual one. The bond that joins enthusiasts can be strong enough to move a mountain (some clubs literally have!); it is undoubtedly stronger than work bonds and is probably second only to family ties. But if clubs, and the BGA, do not recognise this there is a danger that in the inevitable (in my view) swing to professionalism, something very important will be lost. Gliding Man cannot live by efficient launches alone.

There will be another temptation to resist. Before the end of the century a lot of taxpayers money is going to be channelled into sport. Let's use all we can get—but always on our terms. We have already had "strong advice" from the government about entering international competitions. May the BGA never get in the position that gliding is so dependent on government funds that when future political pressure is applied we could not say, in the nicest possible way: "Get lost, we know what is right for gliding and we are not going to follow your line." If we only accept government funds for things *we* consider are necessary, when and if this source dries up, we ought to be able to survive by raising equivalent income from clubs.

"the dire results of allowing worthy, but no longer fully active, participants to take control . . ."

If I detect one major weakness in our present structure it is that despite our best intentions, BGA people do not get adequate feedback from clubs to discover how well or badly we are performing. To help matters it would be nice to think that the number of grey-haired heads around future BGA Executive Committee tables were never in the majority. You have only to look at some other sports to see the dire results of allowing worthy, but no longer fully active, participants to take control. But taking everything into account I am sure any objective assessors would vote the BGA after 50 years a considerable success story. We have avoided becoming excessively bureaucratic and have generally been effective at representing the interests of gliding at national level, our primary task.

TWO CERTAINTIES

There are two certainties about gliding in 2029 when some of you will be celebrating our centenary.

The first is that at least half the present prognostications about the effect on gliding of thermal detection devices, fuel shortage, motor and hang gliding, the increase in leisure time (it used to be called unemployment) and in global travel will be completely and utterly wrong.

The second is that there will still be a BGA with an organisation flexible enough to respond to the quite different demands being made on it then. We have a built-in advantage over many other sports because gliding attracts people who are by nature curious and questioning. Conventional wisdom will always have a rough ride at the BGA.

And apropos my earlier remarks on senility I end with the hope that the Chairman who pens a piece for the celebration issue of S&G in 2029 has not yet been born!

HOW THE BGA WAS BORN or FIFTY YEARS OF BGA

A.E. SLATER

Flights during 1929 which stimulated the formation of the BGA were made in Germany, mainly by Robert Kronfeld, as already related. But two of his main rivals for the 100km failed to survive the year.

Ferdinand Schulz, a colourful character in East Prussia who specialised in duration records and is said to have built his first glider of odd materials like broomsticks and flattened-out tin cans, was performing three successive loops in a light aeroplane when he failed to recover from the third and flew into the ground. Johannes Nehring, famous for long-distance flights among the mountains using only slope lift, lost his life in an accident to an aeroplane on a routine meteorological flight. Günther Groenhoff came in suddenly from powered aviation and set up a two-seater distance record of 30km. Above all, Wolf Hirth had come on fast and was to give devoted service to soaring in many countries besides his own. He made a world's out-and-return record of 13 miles on July 22.

First USA Nationals

In the USA, where a German expert had introduced soaring in 1928, Wolfgang Klemperer, who had emigrated from Germany, set up three National records in one flight on October 7, 1929: 16 miles, 600ft climb and 1hr 10min duration. Hawley Bowlus beat the duration on December 10 with 2hrs 17min. The country held its first Nationals in California on May 4 and 5, with eight entries.

In September the Russians held a contest in the Crimea with 20 entries; and in Poland on November 2, at the newly discovered site at Bezmiechova (later visited by British parties) a National duration record of 2hrs 11min was set up by a pilot whose name was made up of eight consonants and one vowel.

Australia has celebrated the 50th anniversary of its first glider flight, made on August 11, 1929, a month after the creation of the country's first gliding club at Geelong, Victoria: it was on a home-built Zögling. Several more clubs were created in the following months.

Now to the events leading up to the creation of the BGA. It must have happened eventually, but the actual manner and timing of its creation seems to have been decided by the action of three or at most four individuals.

First, a leading photographer of German gliding, Alex Stocker, sent about two dozen photographs of sailplanes to *The Aeroplane*, a weekly magazine founded in 1910, a year later than *Flight*, by Charles Grey, a forceful writer with strong prejudices, such as against aerodynamic research in wind tunnels, and leftish politics, and he attributed the virtues of the Establishment to "breeding". So no one on the staff was quite sure which way he would jump in regard to these photographs. Especially anxious was a junior member of the staff, Thurstan James, then aged 26, who was to start and edit our S&G ten months later.

The best photo of all was put on the front page of the issue of November 6, 1929, and many more on the inside pages, and Charles Grey wrote a not very good editorial, advocating the use of sailplanes for scientific research (they were outside wind tunnels) but playing down their use for sport as rather futile. However, this "gliding number" of *The Aeroplane* brought in a spate of letters, which were handed over by the Editor to Thurstan James to deal with.

The most outstanding letter came from Douglas Culver, a war pilot who had been shot down behind the German lines and lost an arm (which he said did not matter in a glider as there was no throttle). He suggested — a crucial suggestion for British gliding history — that a lunch should be arranged in London to which all interested could come, and eventually this was fixed at the Comedy Restaurant in Panton Street, in London's West End, at 4s a head, provided at least 30 people turned up — in the event 56 did.

I was hoping to publish the text of Culver's historic letter verbatim, but find that it was not published in *The Aeroplane*, but was only quoted editorially. The magazine had no Correspondence section — presumably the Editor had so much to say about everything that little room could be spared for the opinions of others.

Several times in the past I have said I missed this lunch through being too busy reading *Flight;* but now, looking through its 1929 volume, I find this is quite wrong: *Flight* never mentioned the forthcoming lunch at all, and I didn't take *The Aeroplane*, so I should have missed the lunch anyway. The first I knew of the gliding revival was a notice in *Flight* in early January 1930 of a proposed London Gliding Club, giving an address to write to. The reply, from Stanley Bradshaw, gave the time and place of the club's official inaugural meeting in Bloomsbury. But the development of the clubs must come in a later article.

The Lunch

When Douglas Culver arrived at the Comedy Restaurant, in company with C.G. Grey and Thurstan James, he found he was expected to take the chair. Then, when the time came for set speeches, he had to start. He proposed the formation of a gliding club for the Home Counties with a "small subscription", which should find an "easy site" and buy a Zögling primary glider from Germany. This assumption that solo training in a primary was a necessary preliminary to learning to soar took a kind of hypnotic hold on most gliding people for years.

The first speech following this introduction had to be from

someone of status, no less than The Master of Sempill, President of the Royal Aeronautical Society, a terrifically energetic character in the world of aviation who later served terms as Chairman and President of the BGA. He was strongly in favour of a central association to control gliding affairs, an idea disliked by many active enthusiasts who feared it would get out of touch with those who actually flew — and so it eventually proved for the earlier years after the glamour of the first had worn off.

Sempill startled his audience twice over: first by saying that RAeS was thinking of "allocating funds" to help gliding and then by revealing that it had already invited Professor Georgii, head of German gliding, and Herr Stamer, head of the Wasserkuppe Gliding School, to come and lecture to the Society.

One need for a controlling body, Sempill said, was to set up safety standards and see that they were observed.

In contrast to the RAeS, no representative came from the Royal Aero Club, a fact which was the subject of caustic comment afterwards by Charles Grey in *The Aeroplane*. Yet the BGA had eventually to be represented internationally through the RAeC, and for a period before the war it housed the BGA and its Assistant Secretary became the BGA Secretary.

A patriotic note

Next, in striking contrast to the general tone, came C. H. Lowe-Wylde, generally known as "Jimmy" for the sole reason that a famous boxer, Jimmy Wilde, was much in the news at the same time. He "struck a patriotic note", saying that enough was already known in Britain for us to design and build our own gliders. While this may have been true of primary training gliders, it was certainly not true of the highly refined sailplanes being produced in Germany. But although he had already visited the Wasserkuppe, and eventually obtained a C certificate here, it turned out that the over-riding motive for his interest in gliding was in providing air experience for those who could not afford to join a flying club. He developed a method of teaching by auto-towing primary gliders across an airfield at gradually increasing speeds; then he moved from this to high autotows in a two-seater, with which he toured the clubs.

Lowe-Wylde's greatest contribution to British gliding was to turn out a series of glider types, called the British Aircraft Company, starting with the primary "Columbus" with which the Kent Gliding Club was first to get into the air, through to the widely used BAC-7 two-seater, to his only "sailplane", BAC-9, designed for home-building, with which he turned up at a Southdown inter-club rally in Autumn 1931 with the paint still wet, though I never heard of anyone building it. By the end of 1932 he had worked out that, in terms of expense per unit time in the air, it was cheaper to provide air experience by putting a little engine in it. He said so in S&G, much to the discomfiture of its purist readers.

Another speaker at the lunch was R. F. Dagnall, who made such odd things as kite balloons in his factory at Guildford: he offered to make, free of charge, one or more primary gliders and to buy a Zögling from Germany, to help get the flying started. The difference was that the Zögling carried its tail on the end of an open wooden structure dubbed in England a "five barred gate," while Dagnall's primaries were an American modification that carried the tail on the end of four metal tubes.

After the set speeches, the meeting broke up into smaller groups, some of which discussed possible clubs in other parts of England. Especially prominent in the months to come were the founders of the London Gliding Club. But a notable absentee was Gordon England, who was eventually to dominate the BGA for the next four years. Although he had scored at Itford in 1922, its "lesson" from him, as he wrote in an article in S&G marking the occasion of its tenth anniversary, was merely that there ought to be a national gliding school at which "youth" could be introduced to aviation, so this was his conception of the function of the BGA.

Like most gliding clubs, the BGA was formed in two stages, with a tentative committee at the gliding lunch and an official inauguration early the following year. At this, Gordon England was elected Chairman and many of his friends, some from the early flying days, were elected onto the BGA Council. He thereupon proposed that the Council should be empowered to alter the rules without consulting the whole membership, but another pioneer protested that such a rule was unheard of and the proposal was dropped.

This launches me into the beginnings of the gliding clubs but that needs a separate article.

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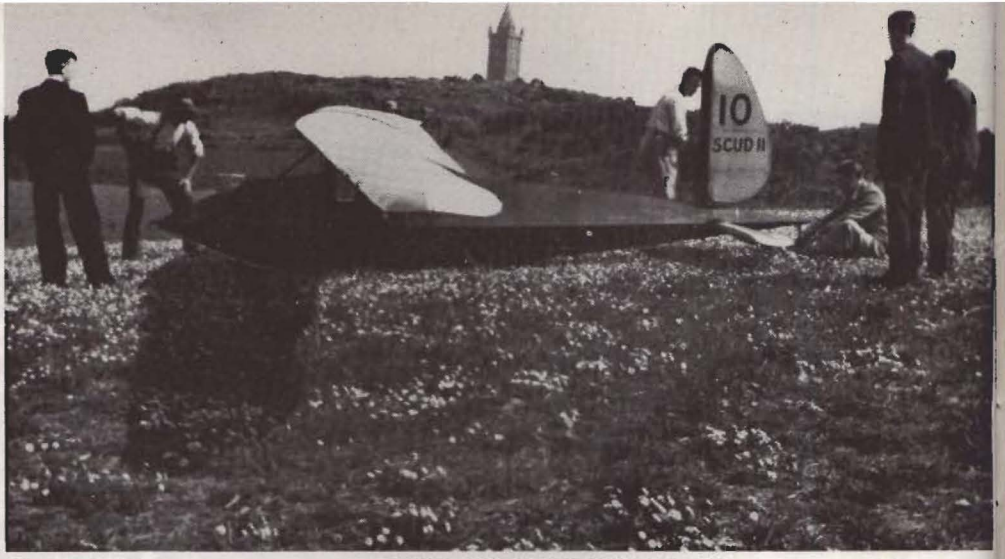
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Dermot Campbell, one of Ulster GC's first instructors, in the Dagling built by the club.



The Ulster GC's Scud 2 ready for bungey launching on Empire Air Day, May 1935. Norman Metcalf, who made the first soaring flight in Ireland on July 11, 1932, is holding the tail skid. The pilot was Jack Mackie.



Christopher Nicholson in a Rhönbussard, July 1935, at the London GC site with the clubhouse and hangar under construction in the background.

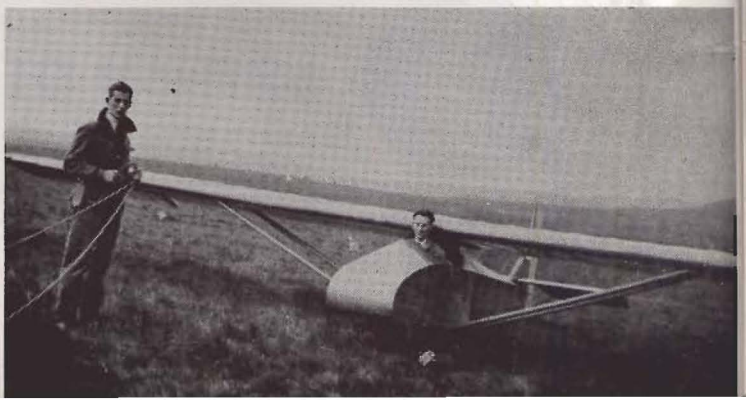
THE EARLY DAYS

Photographs taken by Carl Beck a founder member of Ulster GC and a Midland GC member



Hubert Wynne, CFI of Ulster GC and later the Midland GC, about to be bungeyed in the Kassel 20 on the first glider flight from Benbradagh on August 20, 1933.

C. M. C. Turner's BAC 1V, which was said to have been aerotowed across the Channel, at the BGA Conference and Ilkley GC Rally at Malham in July, 1931.



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FIRST CONFERENCE OF THE BRITISH GLIDING MOVEMENT, ILKLEY, JULY 11, 1931. *From Carl Beck's collection.* *Photo: Walshams Ltd.*

Identities, from Carl's memory, left to right: front row — unknown, Hartley (Ilkley GC), unknown, Waplington, (BGA Secretary), Currin (Nottingham GC), Price (President, Ilkley GC), Gordon England (BGA Chairman), Dinsdale (Ilkley GC), unknown, unknown, Hon Alan R. Boyle (Glasgow GC), unknown, Kekwick (North Kent GC), York Bramble (Southern Gliders' Social Club); second row — unknown, Wall (Newcastle GC), unknown, unknown, Houlberg (Oxford GC), unknown, Beck (Ulster GC), unknown, unknown, unknown (possibly Watson, Ilkley GC), Gardiner (BGA), unknown (possibly Lyttle); back row — unknown, Crabtree (Ilkley GC), unknown, unknown, Turner (Channel GC), Bullivant (Dorset GC), unknown, Whidborne (BGA) and Hodgson (Ilkley GC).



Harald Penrose about to be bungeyed during the 1935 Nationals at Sutton Bank in the Pegasus he designed and made. Mr Laver (Dorset GC) is holding the tail.



The Rhönsperber at the 1937 Nationals at Camphill.

Philip Wills in the Kirby Kite at the 1935 Nationals.

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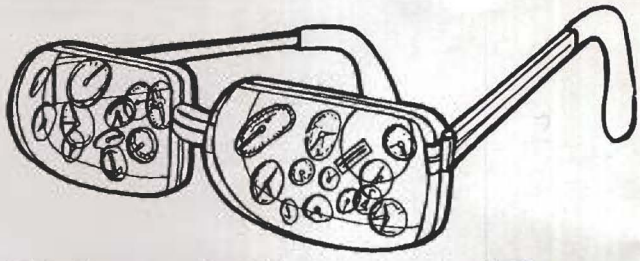
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Reproduced from the 1931 BGA Handbook, kindly loaned by Frank Irving.



Above, the Kassell 25A on Downhill Strand, Magilligan, Co. Derry in 1934. Below, the Midland GC's fleet in 1937.





50 YEARS OF PEERING AT THE DIALS

FRANK IRVING

"Anyone can guess the altitude at which he is, but only roughly" [1]

When those words were written, many a flight was conducted without any instruments at all: height and attitude were observed directly by the eyeballs, whilst the noise and the wind on one's face were a guide to the speed. Indeed, even the present writer has happy memories of learning to fly Kirby Cadets in just that fashion, shortly after the war. Even so, technology was creeping into the cockpit back in 1930. The book of Stamer and Lippisch contains a whole chapter on instruments, which laments the bulk and sluggishness of balloon variometers, the uselessness of pendulum side-slip indicators in fog and the nasty effects of electric influences on the compass. (This is a delightful book: Chapter 1 is full of good advice, such as how important it is for both the glider and sailplaner to carry that universal tool, the combination pliers, as part of his outfit. And it ends with a thoroughly worthy observation: "A good airman can generally hold his own in any form of light athletics".)

Variometer not mentioned

The best soaring flights of 50 years ago were made by Robert Kronfeld in his "Wien", a machine of about 19.2m span, and very elegant withal. He was one of the foremost pioneers of soaring as we know it today and in 1929 achieved three world records for distance flights, and two for height. (See also S&G, August, "Robert Kronfeld" by A. E. Slater, p158.) In his book[2], he is not very explicit about its instrumentation, but a photograph (Fig 1) shows him sitting in the cockpit with a "dog-collar" fitting so closely that it must have been almost impossible to see anything below the coaming. Two instruments — presumably the airspeed indicator and altimeter — are to be seen almost flush with the top of the fuselage just in front of him. He certainly had a compass and, of course, a barograph. Curiously, there doesn't seem to be any explicit mention of a variometer: this is particularly strange because Peter Riedel[3] credits him with the clandestine use of such an instrument in his Rhöngeist in the 1928 Wasserkuppe Contest. A 1930 photograph[4] shows that the ASI was worked by a venturi. Even until quite recently, venturis providing a large suction — commonly 3.5 dynamic heads — were used to work the ASI, the advantage being that a relatively insensitive and robust instrument would function well at low airspeeds.

Half-a-century ago, some pilots still used cup anemometers. There is a photograph, presumably also 1930 vintage[5], showing Herr Magersuppe consulting the wind gauge of his sailplane before commencing a flight. He is peering intently at a contraption like a very large egg-beater screwed to the top of the fuselage. Equally gross excrescences had not entirely vanished twenty years later, when the occasional Olympia or T-21B was to be seen sporting an enormous venturi to drive a turn-and-slip or artificial horizon. It is difficult to believe that the drag penalty was worthwhile, since the suck was probably inadequate and it would have iced-up when most needed.

Not much later, instrument panels began to look very much like today's. There is a picture (Fig 2) in Wolf Hirth's marvellous book[6] entitled **Dashboard of modern sailplane,** showing a panel with two turn-and-slips, no less, one electric and one driven by a retractable venturi. Also, there are two variometers looking remarkably like the present day type.

We move on to the immediately post-war era, when good practice was exemplified by the gleaming new Olympias of the Surrey Gliding Club. The panels contained an ASI (a very posh new low-range one from Kelvin, Bottomley and Baird, costing — if I remember correctly — the then astounding sum of £14), an altimeter (war surplus, about ten shillings) a variometer (Cobb-Slater[7], an advanced-technology variety with little pistons instead of balls), an electric turn-and-slip and a compass (both war-surplus, perhaps as much as 12s 6d each). It all worked very nicely. except that total energy was still about four years in the future and cloud flying was mainly the province of those who had recently been doing it on behalf of His Majesty. A few clever chaps had electric artificial horizons, acquired in various fashions from the previous owner, the Third Reich. These were large and heavy devices but included a turn-and-slip indicator. Most people mistrusted all these eggs in one basket, so they had a separate T-&-S driven off dry batteries. Happy was the chap who had also ac-

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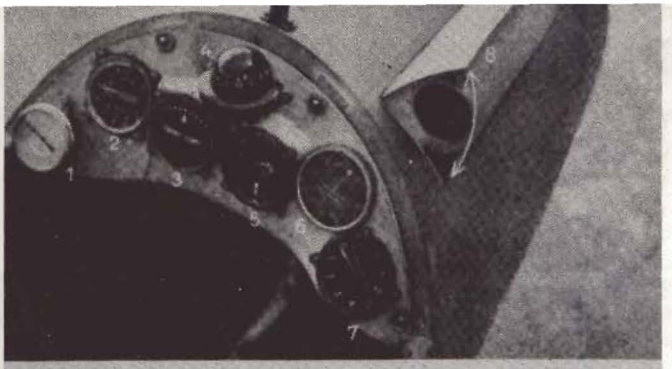
Fig. 1 Robert Kronfeld in the cockpit of the Wien.

quired a miniature T-&-S! The transistor was still a long way in the future, so the AC for the horizon was manufactured by a rotary inverter, also of forbidding mass. The effect of switching on all this machinery was dramatic: a piercing whine from the inverter was eventually joined by a sound like a concrete mixer from the instrument panel. All doubtless inaudible in its original installation in a Heinkel III or whatever, it was a trifle daunting in a glider.

Since then, various instruments have got smaller, lighter, transistorised, and so on. The primary flight instruments have changed little in principle, but there have been three or four really significant developments from the soaring point of view. The concept of total energy[8] was a brilliant idea of Hugh Kendall's in 1952, with a mathematical contribution[9] by myself. Initially, the suction was provided by bulges on the sides of the front fuselage and the initial experimentation was done on the Weihe then the property of the Surrey Club, recently severly damaged at a vintage meeting in Switzerland, alas! The bulges proved very difficult to adjust and were sensitive to yaw, so the present writer devised a venturi[10] which flew in the World Gliding Championships at Madrid in 1952. Philip Wills, who was using Hugh Kendall's bulges, wrote[11] "[Total energy] gave me a secret weapon which helped me greatly to victory . . .". Then came internal capsules to eliminate the drag, followed by re-invented venturis and now sundry types of external tube to eliminate the altitude errors of capsules.

Another brilliant concept was Paul MacCready's "best speed to fly" theory[12] and the associated variometer ring. As it happens, the total energy concept is intimately associated with the more sophisticated versions of MacCready's theory, particularly when one starts to think about dolphin flying[13]. Paul MacCready was also responsible for the concept of indicating air-mass movement on the variometer by using a leak to remove that part of the indication which is due to the sailplane's rate of energy loss. If I remember correctly, Geoffrey Stephenson flew such a device at Dunstable in the late 50s, but nobody seemed particularly interested. The idea was re-invented by Dipl.Phys.E. Brückner and is now —





Dashboard of a modern sailplane
1. Altimeter. 2. Variometer.
3. Turn-and-bank indicator.
4. Compass.
5. Electric turn-and-bank indicator.
6. A.S.I.
7. Variometer.
8. Retractable tube for turn-and-bank indicator.

Fig. 2 Photograph of an instrument panel reproduced from **The Art of Soaring Flight.**

with total energy — an important aid to dolphin flying since it avoids the need to make successive-approximation corrections when changing speed.

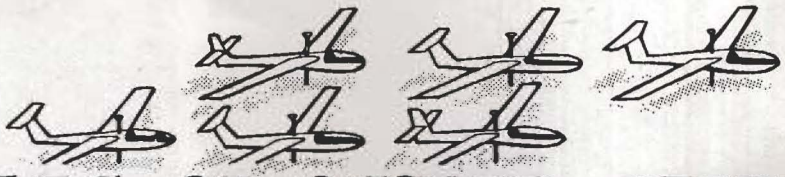
Electric variometers[14] have been another significant advance. Mechanical variometers can provide excellent sensitivity, at the expense of a large lag. Electric variometers circumvent this limitation, to the extent that variable electric damping is often fitted. They also provide an electric output which can work various associated devices such as audios and best-speed indicators. So the modern sailplane is likely to have both mechanical and an electric variometer, suitably equipped with total energy, audio, and a dolphin system. There are, of course, sundry electronic computer devices available at great expense but, even now, there seem to be too many uncertainties for the micro-processor to have supplanted the pilot.

Wolf Hirth, in Ref 6, has a nice little paragragh on the Wireless Set, which he visualised mainly as a means of "enabling pilots to find their bearings". There is also a fine piece of prophecy when he mentions collision avoidance in cloud. In the 1952 World Championships, the British Team was the first to use radio in a really organised fashion. The sets were full of glowing tubes, and it was just as well that the cockpit of the Sky was commodious. They needed the full-time attention of the "Pye-man" to keep them going, but they transformed retrieves in those days of downwind dashes. The transistor has, of course, transformed the whole scene: the few voices crying in the Spanish wilderness in 1952 have turned into today's Babel.

"Whither instrumentation?" we ask ourselves. For 50 years, pilots have peered at analogue displays, mainly on circular dials. Except for slowly-changing quantities, digits are unlikely to take over. But some form of head-up display could be useful. The most longed-for instrument, a remote thermal detector, has engaged the attentions of many an eccentric inventor over the decades, but remains elusive. And, no doubt, those clever little things like black caterpillars will proliferate somehow[15].

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THIRTY YEARS OF WORLD GLIDING CHAMPIONSHIPS



ANN WELCH

ANN WELCH vividly recalls the characteristics and atmosphere of the post-war series, maps the changing attitudes and the advance in sailplanes and techniques, concluding with some thought for the future.

Changes which come little by little into events held only every two years or so are often barely noticeable at the time. Pilots fly in Championships for a while, selected for their skills in contemporary contests, and are then replaced by others either younger or more innovative. In their turn the cumulative effect of minor changes demands new techniques or attitudes of mind, and the scene again alters.

The pressures which cause, or force, change in Championships arises purely from the single-minded desire to win. Demands for better gliders and equipment strongly influence designers, and the superior gliders that come into use modify the form of the competition. As the standard — and the expense — of the whole exercise soars, the rate of change is also subject to acceleration — including acceleration errors; because if the process of change becomes too rapid, or too expensive, it can become self-defeating; some competitors drop out or the Championships may be run less frequently. So far, in gliding, this has not actually happened to any significant extent, and the enthusiasm for top competitions is still great, but warning signs are just as much an indication of change as was the fading of colour from the scene as gliders changed from wood to glass.

Thirty years have now gone by since the first World Championships of the post-war series at Samedan in 1948. It was the first contest with tasks, including closed circuit speed, given as a matter of course and with a scoring system to match. But it is there that the similarities end. Samedan provided essentially mountain soaring for which an enquiring mind, acute observation, and an ability to mentally change gear fast was essential to success — even survival. Launching was a mixture of aerotow and winching. This alone required competitors to think with cunning as the winch was powered from the domestic electricity supply, so the height gained was totally dependent on the number of Swiss housewives cooking at that moment.

Because flights commenced with a working up period on the lower slopes there was no panic to have a 20sec launch rate, so the whole procedure was leisurely. The gliders used were almost all of pre-war German design, though many had been built with modifications in various countries in the late forties, as the quickest way to soar again after six years of deprivation. The Hans Jacob's Weihe and Olympia/Meise in various guises were the popular mounts. Pilots were, with few exceptions, veterans from the thirties, steeped in a love of free distance.

The 1950 Championships in Örebro, Sweden, were still of the picnic party variety, unhurried and friendly with briefing outside on the grass. This time there were 29 pilots from 11 countries as against 28 from eight at Samedan. With all aerotowing and thermal soaring it was a relaxing event except for retrieve crews who invariably found themselves on one side of a 100 mile long lake with their pilot on the other. It was a year of unusual repairs; both wings of Philip Will's Weihe were broken when the trailer went fast over an unsuspected hump-backed bridge, but was repaired the same day by a local artist of a carpenter who did not even need to use a ruler. Then Pete Mallett's canopy fell off and was recovered smashed from a field. All the bits of perspex were laboriously stuck in place, so he looked like a joke jigsaw until a replacement arrived from England. Örebro was one of the few Championships to have been won on home ground.



Philip Wills in Madrid with the Spanish Team's "Chef". Photo: A. E. Slater.

Madrid 1952 brought the first big change; radio which worked. This helped Philip's British win because the telephone system was quite ineffective, and some pilots were not retrieved for days. It was the first hot weather, strong thermal Championship — an even greater delight than had been the Swiss cream cakes to the still rationed north Europeans. But it was those Pye radios that set the scene for the future, certainly not the launching. This was again all aerotowing, but with stronger thermals that started late there was a greater urge to get going, not least because the organisers had a strange reluctance to launch at all. The tug pilots were fine, they wanted to go all right — and did so without waiting for signals, whisking off gliders with wingtips still on the ground into a prop-created dust storm filled with bouncing droppable undercarriages, and crews searching for them in fear of their lives.

It was a convention about this time that the next contest would be held in the last winner's country, and so the 1954 World Championships came to Britain, to Camphill — quickly renamed Damphill because of the incessant rain. There was just enough flying to declare Champions, launching had reverted to winching — for the last time — and many hours were spent in social visits to other team caravans; and in other activities which resulted in a noticeable increase in the gliding population the following year. The only changes were negative; no more winching from hills above cloudbase and above 50°N.



A group at Camphill in 1954. From l to r: Lorne Welch, Wolf Hirth, Frank Irving, Mike Neal and Ann Welch. Photo: A. E. Slater.

Gerard Pierre of France won at Camphill, and so 1956 saw the world trek to St Yan for the first big task Championships. Because of this the towing needed to be well organised and it was, although long tow ropes were still in fashion, which did not help a speedy rate. But now those droppable undercarriages had all but disappeared, and the only pilot to shed anything untoward was a Turkish girl whose rudder fell off on tow. She could not understand why everyone sheared off when she joined them in a thermal. St Yan was a pace-setter contest, but it was also the last in which there was a two-seater Class. Nick Goodhart and the late Frank Foster won it in a Slingsby Eagle (the Beagle).

To Leszno 1958 came pilots who fully understood that speed was becoming vital; the problem was that their cross-country techniques were ahead of glider performance. Wood, with its inability to retain the designer's hopes on shape was putting a stopper on higher inter-thermal speeds. With the exception of the very advanced Yugoslav Meteor, the few metal aircraft were not much better; though for different reasons. But Leszno saw the beginnings of perhaps the biggest single step in competition development, the introduction of the Standard Class. Its great future was not visible at Leszno since there was nothing special in the way of new designs for it, but there was a lot of watching and thinking on what characteristics could be given away and which were essential to retain.



Fettling at Leszno in 1958.

The German HKS-3, flown by Ernst-Günter Haase to win the Open Class, also attracted watchers and thinkers because its sandwich construction, although wood, did provide a much superior surface. To distract possible copiers from this new construction pilots were led to believe that Haase's excellent performance was due to secret thermal snifters in each wingtip. Amateur spies were kept at bay by crews who covered the tips after landing, before hustling the glider into its trailer. Certainly there were snifters on the tips but they did not work. Leszno was a well organised competition.

By now most countries were carefully considering improved methods of pilot selection, because although free distance was still given frequently, the broad based skills it required were no longer so important as those which enabled a pilot to save every second. This, of course, was not a universal view, and the problem of selection was made more difficult because of the small amount of practice, let alone training, that was possible prior to each Championship. Sponsorship, other than by loans of equipment was rare, so it was usually only the previous year's Nationals, entered privately, which could provide evidence of growing, or declining skill. This was still the situation in 1960 when the world went to Butzweilerhof in W. Germany. It was neither an excellent nor a poor Championships, though it was the first ever to set a 300km triangle. The British had the biggest radio ground station, and the last of the fiendish droppable undercarriages was fortunately interred without trace by Tony Deane-Drummond from 2000ft. But change there was with the arrival of the fierce Polish Zefir and the slimline Foka, though it was still an ordinary Skylark 3 which won the Open Class, flown by Hossinger of Argentina, and a K-6CR and its owner Heinz Huth which took the Standard Class honours. The Poles were not dismayed, they had come to learn, and were flattered by the interest their new style gliders had created. Far more interest, in fact, than was attracted to the forerunner to perhaps the greatest future change of all; the first-ever glass glider, named Phönix.



Waiting for launching at the Argentine Champs in 1963.

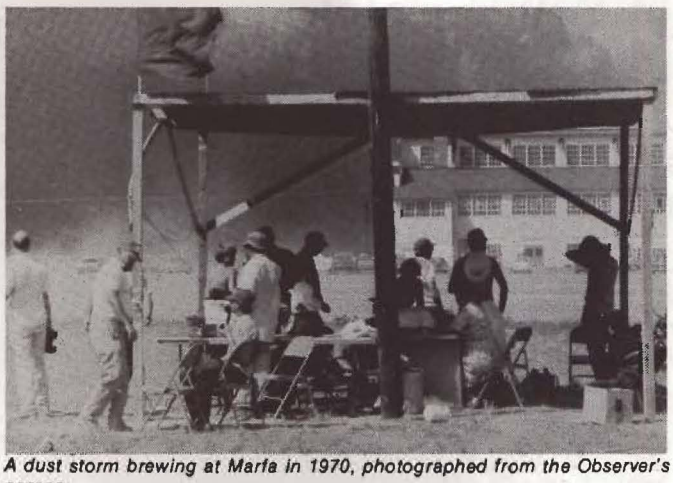
In 1963 the British thankfully left their snowbound homeland for the Argentine pampas and the southern hemisphere summer. At Junin any processes of change were masked by the remarkable differences thrown up by the new world. For a start all retrieving was by aerotow because there were insufficient roads. This made for exciting flying because of the thistles which penetrated tailplanes on landing, and had to be patched with "fablon" before the dramatic tow-off, bounding from one armadillo burrow to another. The tug pilots did not use radio so pilots were armed with heliographs to attract the attention of passing aeroplanes — surprisingly it worked. One unexpected hazard of the aerotow retrieves was that on long tows the tug pilots veered increasingly to the west, presumably being more used to the sun than a compass. One glider pilot was disturbed to see Junin airfield pass out of reach abeam and then disappear astern, until finally the tug ran out of petrol. As it circled down the glider pilot circled up, soared back to Junin and told the organisers where they could find their pilot — and presumably what they could do with him. In spite of all sorts of confusions, including the banks remaining closed until everyone was borrowing beer money from everyone else. Junin was fun. The Polish initiative paid off with their Zefirs coming first and second in the Open Class.

Change reasserted itself with the next Championships in 1965, because the practice of automatically going to the win-

ner's country ceased; and the Championships came to England, to South Cerney. Much of the British Gliding movement helped in the organisation, and with 86 pilots from 28 countries it was the largest Championships so far. It had a sponsor and it made a profit, but the weather wasn't very good. USSR entered for the first time. On this occasion it was the turn of the Standard Class Foka to celebrate — by winning the Open Class, but although it was now five years since the first glass glider had showed its shiny face there was only one entered. But in those same years the sophistication of base radio stations had grown alarmingly, with aerials of immense height and doubtful structural integrity assuming forest proportions. As an aid to retrieving radio was a real benefit to good Championships' flying as it improved everyone's chance of getting a nights' sleep. But the base radio operators were now trying to navigate for the pilot, locate thermals and generally tell him what to do — which no one really believed to be the purpose of gliding Championships at all. So it was FAI who made the next change, when its gliding committee rewrote the rules to prohibit "external aid to competing pilots".

Nineteen sixty-eight saw a repeat performance with the return to Leszno. But of course it was different. This was a contest with a political feel about it resulting from task area restrictions; and a maximum altitude limitation to prevent cloud flying — which finally spelt *finis* to the use of barographs as an effective height controlling mechanism for this purpose. Probably because of these restrictions and rules the contest was somewhat fiercely contested without producing a lot of fun — except for the Italian team who brought a small caravan containing 500 bottles of wine. But it did include glass gliders, no less than 34 of them and all white, though the most numerous single type was the sandwich construction Foka; 28 in a total entry of 105.

The Americans at Marfa in 1970 did not want cloud flying either, and prevented it by prohibiting blind flying instruments. Marfa was a real pilots' competition; good weather, excellent task setting, proper systemisation for the first time of turn point photography, and all the flying over a rough, tough and beautiful desert complete with rattlesnakes. But since nothing in this world is perfect the food had to be terrible and the living accommodation 14 miles distant; so there was little chance for people to get to talk together unless pilots happened to land on the same bit of highway. But there is no question that Marfa, Texas spelt change in a big way. The arrival of the glass glider with its substantial performance jump had resulted, quite suddenly, in gliders now being better than their pilots. There was a real need to catch up on techniques, and Marfa provided the opportunity with its big, strong weather, tasks. It was never more to be a matter of concentrating on staying up, but only of



A dust storm brewing at Marfa in 1970, photographed from the Observer's corner.

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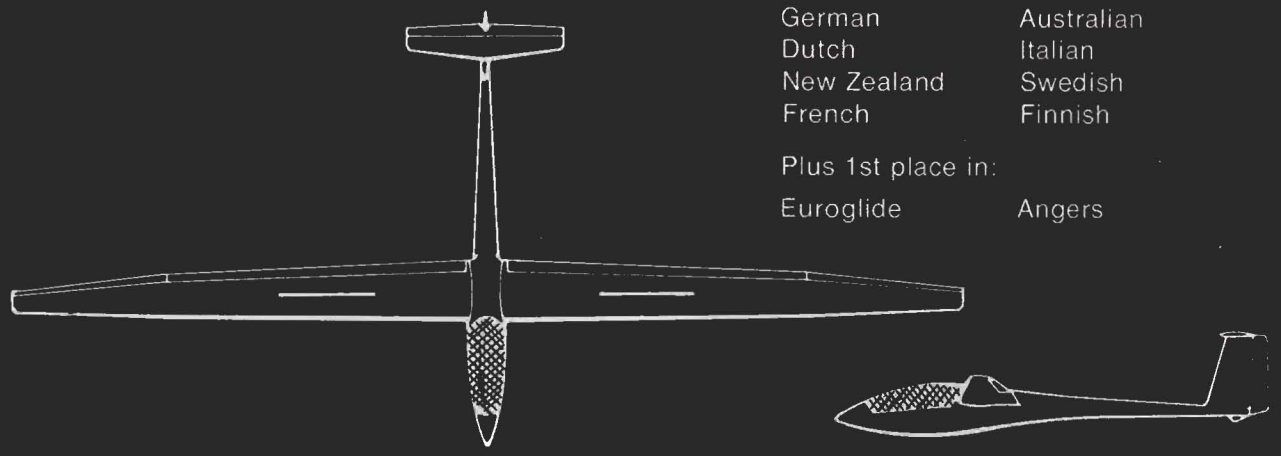
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Two years later it was all quite different again. Vrsac in Yugoslavia produced an inexperienced organisation, and violent thunderstorms. After an accident free decade two pilots were killed and two more collided in cloud. All but three of the 89 gliders were glass.

The second excursion to the southern hemisphere took place in January 1974, to Waikerie in South Australia on the edge of the desert. For two years the Australians had with great pride been cultivating and watering small grass take-off areas. The world arrived to unprecedented floods, caravans floating down the Murray river, and the precious patches lost in a sea of green. But the weather relented and Waikerie became probably the best Championships yet. There were no great innovations, rather a coming together of past experience, South Cerney organisation and Marfa style operations, plus Australian enthusiasm, energy and humour. It was the first Championships to give a 700km triangle — with ten finishers. Moffat and Reichmann repeated their 1970 wins.



Helmut Reichmann (Standard Class Champion) and George Moffat (Open Class Champion) at Waikerie after repeating their wins for the second time.

By the mid seventies World Championships had become remarkably expensive to both organisers and entrants. Grants and subsidies from various sources were needed to provide the site, large numbers of towing aircraft, and all manner of ancillary equipment and facilities such as dark rooms, computers, tape recorders, teleprinters, radar, etc. For competitors the provision of new gliders almost every two years made financial dependence on sponsors almost essential. And such dependence also made for change because, from time to time, the sponsor called the tune. Organisers could be told to exclude certain countries, for example, bringing politics into a sport which had never by itself wished to become involved in them. Räyskala, Finland, in 1976 had this problem — and also the coldest June since records began, so the saunas were popular. For the first time for two decades the British won, thanks to George Lee's consistent, professional flying.

By now not a change, but a conviction, was forming in many minds, and already firmly rooted in some; that with the cost of World Championships in both money and time it was better value to go to good weather, strong thermal parts of the world almost regardless of distance or other inconveniences. Fortunately in 1978 there was no need to go further than central France, to Chateauroux among the great fields of the rolling Loire valley. The only problem was that the weather was so good that large triangles were set and flown to the point of boredom, and the winners became predictable long before the end. George Lee again won the Open Class, and Helmut Reichmann the Standard for the third time. At Chateauroux a Third Class was introduced, so now pilots had the choice of



George Lee, the Open Class Champion for the second time, at Chateauroux with Bruno Gantenbrink (Germany), second, on his left and Francois Henry (France), who was third. Photo: Hans Smit.

Open, 15m Unrestricted and Standard. It was a change that was both successful and popular though the form of the competition remained the same for all — closed circuit racing.

With the next Championships nearly two years away there is time for a pause to look at 30 years of change. Glider performance has jumped from 1:25 (Olympia/Meise) in 1948 to almost 1:50 permitting, and demanding, an entirely different approach to almost every aspect of cross-country soaring; colourful launch points have changed to an uninspiring virgin white; and tasks have changed from exploratory distance to computerised speed. Pilots and crews have changed, though not entirely, from almost pioneer type individuals to organised teams, with standards shifting from uneven amateur to high grade professional. It has all gone a long way and demonstrates magnificent achievement. But is it now more fun, or as much fun? This is, of course, an impossible question to answer because the pilots who flew in the fifties had become highly skilled at using the gliders available to them, and enjoyed the flying suitable to those aircraft. The crews who set off without radio to find their pilot 250 miles away using only such aids as instinct and intuition achieved real satisfaction when it all worked out right, or even enjoyed the challenge — though perhaps only in retrospect — when everything went wrong. Such people may or may not like Championships as they are now, any more than the pilots who will go to Germany in 1981 might or might not have liked the flying of the fifties; but gliding Championships have a lot to offer in terms of human satisfaction to each new pilot who is selected and to the crew who support him. Hopefully the fun will be as great to those who go in the future as it has been to those who can look back and still laugh.

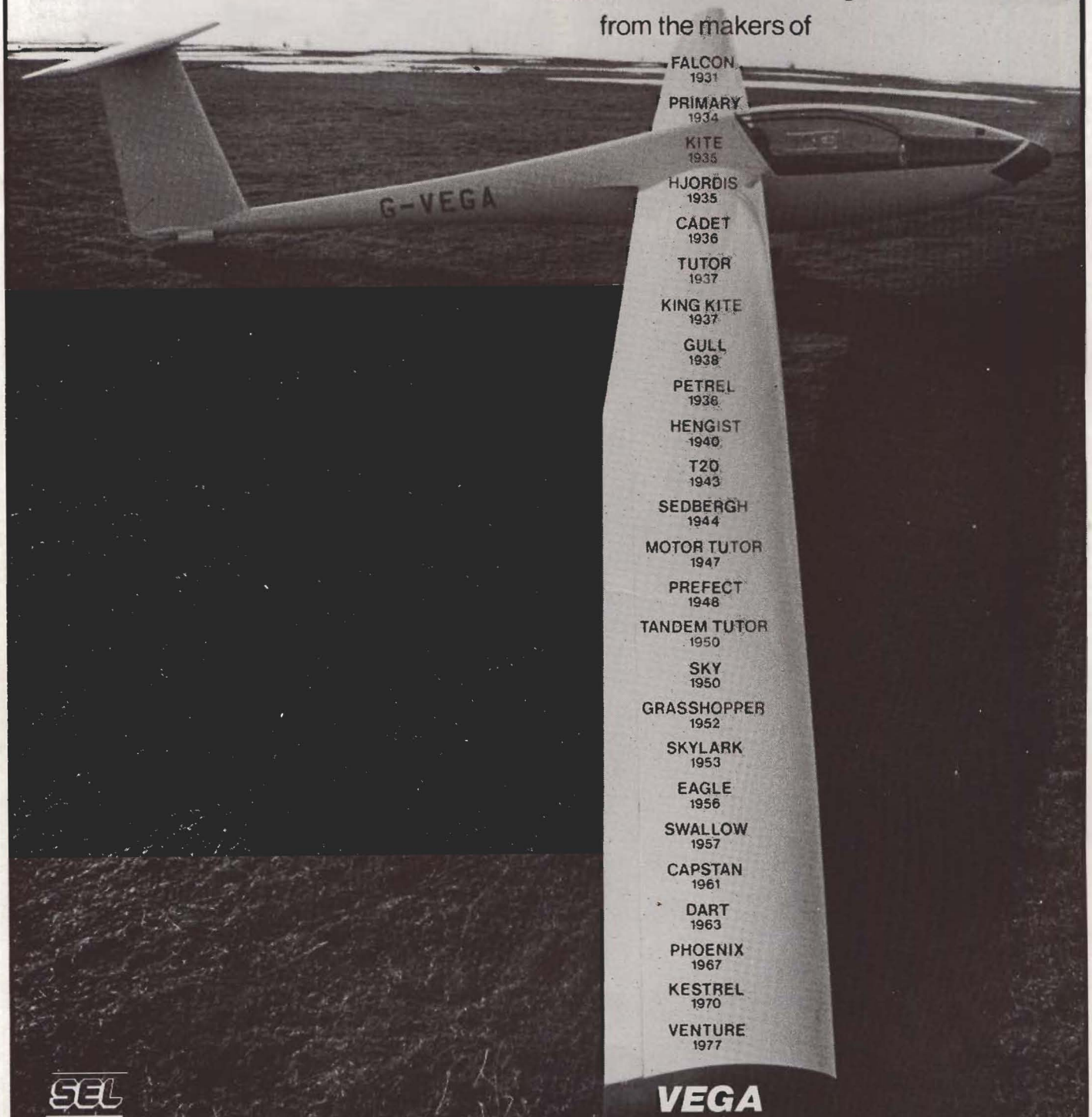
But though change is inevitable it is not uncontrollable. From time to time it may be wise to sit down with a clean sheet of paper and set out what should be the purpose of Championships, and consider how that purpose can best be achieved to the *satisfaction of the pilots who will fly in them*. Are skills perhaps being narrowed too much by over emphasis on closed circuit speed flying, breeding pilots that excel only in this limited field? Is glider performance now good enough to be able to introduce a one-design Class, cheap enough for individuals to enter without subsidies, and with its own Championships and tasks? It is a popular enough concept with dinghies whose fleets grow yearly. Or are we happy with what we have got, and content to leave the processes of change untended?

The uncredited photographs are from S&G's archives.

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50th Anniversary

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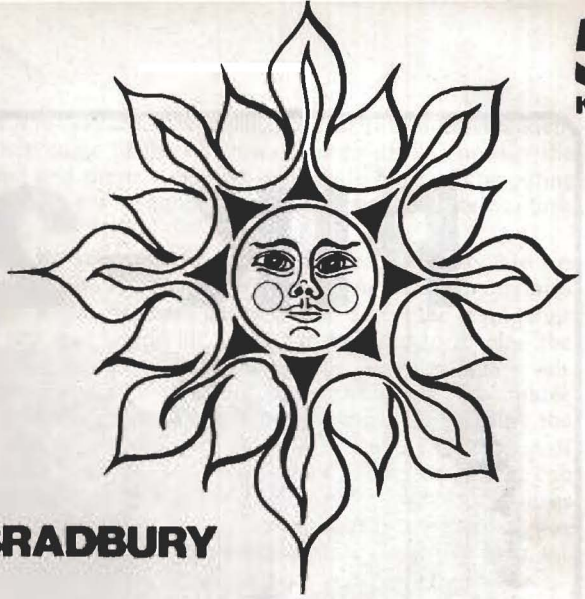


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METEOROLOGY AND GLIDING 1929 TO 1979



T.A.M. BRADBURY

Early days. It is just fifty years since glider pilots first started to use thermals for long cross-country flights. At that time few meteorologists (with the exception of Professor Georgii at Darmstadt), took much interest in the aspects of the weather which most affected soaring flight. It was difficult to obtain enough data to analyse the major weather systems; until this problem was solved few countries were prepared to spend money on research into small scale features. Economy was so important that one director remarked that although he had a fund of £2000 available for research "he hadn't had to use it".

Although the nature of convection was understood meteorologists had no data on the size and strength of up-currents, so it is not surprising that one meteorologist should say that he doubted if thermals could be used by anything larger than a bird. Regular temperature soundings of the upper air were few in number and limited in height. Most measurements were made from single-seater biplanes which had large thermometers strapped to the struts. Upper winds were calculated from theodolite observations of "pilot balloons" and little was known of the upper winds on cloudy days.

500km achieved by 1939

Glider pilots had to teach themselves how to use the energy of the atmosphere. In this they were remarkably successful. By 1939, when the war stopped private gliding, pilots had learnt to fly more than 500km (downwind), and climb to above 5km in lee waves. High climbs had also been made in cumulonimbus clouds, occasionally with disastrous results.

Wartime developments. Although sporting gliding had ceased there was an immense growth in other aeronautical activities and the meteorological services expanded in step with the various air forces. Radar and radiosondes made it possible to chart the upper atmosphere in any weather. Long range Met reconnaissance flights were introduced to replace the reports from ships and land stations which had fallen silent, and in doing so added far more information than had ever been available in peace time.

Growth of research. After the war a general desire to make flying less dangerous made it relatively easy to obtain funds for research into problems such as icing, thunderstorms, mountain waves and also a number of less hazardous phenomena such as sea breezes and thermals. Nearly all these studies used powered aircraft (there were lots to spare then) but later a few gliders were also used.

In the early days of flying regions of heavy sink were popularly known as "air pockets". Such an unscientific term had to be replaced but when the new terminology used phrases such as "the spectral density curve of the vertical component of turbulence" the simple pilot was not much wiser. It became clear that large, heavy and fast flying aeroplanes were not ideal for exploring single thermals, although they did provide a mass of figures for the stress analysts.

It was nearly a quarter of a century before the instrumented powered glider became available for more delicate studies of thermals. Meanwhile meteorologists with an interest in gliding tried modelling "thermals" in a glass-sided water tank.

Meteorology in a water tank. One cannot carry out controlled experiments into real weather systems in the laboratory, the processes cannot be scaled down, but there is much that can be learned by observing fluid motion. In the early experiments cupfuls of a relatively dense salt solution (made visible by a white precipitate) were released into the water tank. A dense liquid sinking through water moves in a very similar manner to a volume of buoyant air ascending through the atmosphere. Photographs of these watery "thermals" look remarkably like pictures of inverted cumulus clouds. The experiments were described by R. S. Scorer and Betsy Woodward who first plotted the detailed motion in and around a thermal bubble. Although the bubble theory of convection which was developed from the experiments is not universally accepted it does explain many of the features observed in real thermals.

Water tanks have also been used to demonstrate some of the simpler features of lee wave flow and sea breeze fronts.

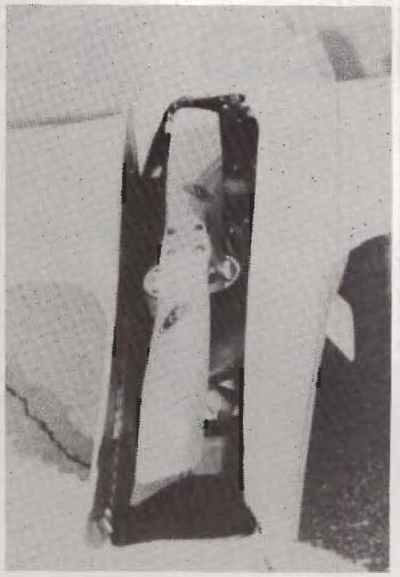
Mathematical models. Neither observations of laboratory models nor studies of processes in the real atmosphere are sufficient unless they make it possible to describe the developments by a series of equations which can later be used to make predictions. Before the existence of fast electronic computers it was seldom possible to solve these equations in "real time". Now it is possible to write complicated mathematical models of many atmospheric processes and programme the computer to produce a sort of time-lapse film showing how major weather systems develop and move round the northern hemisphere of the world, or how a single cumulus cloud can grow into an enormous thunderstorm. Fairly accurate predictions of the development of major weather systems have already been filmed. Models of cumulus clouds and sea breezes (in three dimensions) have only been produced by the computer after the event but in both cases the film of the model bore a satisfactory resemblance to the events which actually occurred.

In 1949 R. S. Scorer published his theory of waves in the lee of mountains. His equations provided a basis for calculating the streamlines of the air flow over and to the lee of a mountain ridge. Wallington used similar equations to show the effect of different sizes, shapes and spacing of mountains on lee waves.

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However it is very difficult to calculate the flow in three dimensions (when some of the air flows round rather than over the mountains) and there seems no immediate hope of computing real waves over a complex topography such as the Scottish Highlands.

New kinds of observations. Aircraft measurements are no longer the only way of observing how the air moves in thermals and waves. Radar has been developed to detect the boundaries between dry and humid air. This can be used to display the pattern of thermals or detect the size of waves at high levels even in the absence of cloud, provided that there is a suitable moist layer aloft. Pulsed Doppler radar which can measure the velocity of drops of water in a cloud has revealed the pattern of up and down currents in a way which no other system can match. Thermals have also been studied by Lidar (which works on radar principles but uses a laser beam); the thermal was identified by the extra dust carried aloft which outlined the shape even before any cloud formed.

Problems of communication. Glider pilots may feel that little of this new information reaches them in a form which is useful to non-mathematicians. The three editions of Wallington's **Meteorology for Glider Pilots** have covered most of the well established features of the weather. The flood of new research has yet to be condensed into a simple text book for all to read. This is a handicap to soaring pilots. Few people can recognise the many different types of lift unless they already have some mental picture of the different processes which exist. Knowing what to look for is a big step towards recognising what is seen.

Uncertain how to exploit lift

The early glider pilots were so obsessed with ridge lift they were slow to recognise thermals. This failing still seems to exist. Next the idea of circling in a thermal delayed the recognition of wave lift. An erroneous theory that waves and thermals were mutually exclusive left pilots uncertain how to exploit the lift they ran into just outside some cumulus clouds. It may be that Albatrosses are not the only creatures which can stay aloft by dynamic soaring although Ingo Renner's account suggests it is a strenuous way of flying.

The need for more comprehensive weather data. Even the most knowledgeable pilot can be helped by good weather information, yet this is difficult to obtain at most gliding clubs. Major Met centres handle a vast amount of information, the traditional observations are amplified by satellite, radar, and various kinds of computer generated pictures and charts. It is impossible to do justice to this by means of written forecasts and so much Met data is broadcast by facsimile. The visual picture conveys so much more than the written or spoken word that the gliding movement should consider joining the growing number of facsimile users. (But don't forget that a licence is needed. See the last issue of S&G, p251. ED.)

Television is only just beginning to be used as a means for providing information when the user wants it rather than when the broadcaster feels able to transmit it. CEEFAX, ORACLE, and the GPO's PRESTEL are just the beginning. At present they can only handle large letters and the most primitive kind of charts but they do allow the user to call up many pages of information. If the micro-chips revolution promised by the technical press comes about perhaps we will eventually be able to call up satellite pictures and detailed weather charts on our TV sets.

If contributing to S&G, please send all copy to the editorial address: 281 Queen Edith's Way, Cambridge CB1 4NH.

IMPRESSIONS OF DOC



by Platypus

Doc Slater is 85 this month. His crowded and active life cannot be condensed into any article. Here are just some of my personal recollections and images of a remarkably happy man.

In the summer of 1961, when cumulus still seemed to blossom effortlessly all day and when any worthwhile flight ended in moonlit retrieves along winding roads before motorways were invented, we rumbled in through the gates of the Derby and Lancs Club close to midnight. In the little square of light which was the courtyard of the farm, an impromptu concert was in progress. A young Camphill member, wrapped around a cello, was making a brave and pretty successful attempt at sight-reading a handwritten score, while the bar piano resounded and shook under the attack of ten large outspread fingers. Light glinted on massively thick spectacles through disordered strands of waving white hair. It is not my first memory of Doc, but it is my most vivid.

Reward for Concentration

I was delighted to discover that Doc's enthusiasms were the same as my own — gliding, photography, model aeroplanes, astronomy and always music. What they have in common is that they are all beautiful, but the beauty can only be enjoyed as the reward for concentration, continual practice and patient analysis of one's mistakes. Only a fool says "But that's *work!*" I define work as *wishing you were somewhere else*. Total absorption in doing something which, if successful, is beautiful and satisfying is never work.

In a 16-millimetre film that is not merely a magnificent piece of almost professional cinecamera work but a priceless historical document, Dudley Hiscox recorded the visits of early British gliding enthusiasts to German gliding sites in 1931. In addition to the elegant new soaring machines, we see a tall young man, serious and light-hearted at one and the same time, launching tiny paper gliders of unorthodox aerodynamic form down the slopes of the Wasserkuppe. Yes — across half a century one recognises Doc Slater, and the audience gives an affectionate cheer for the most loved figure in our movement today.

Doc's Box Brownie — succeeded by a Leica in 1935 (which I remember him using at least 25 years later) — took hundreds of irreplaceable pictures of every aspect of early British gliding, the pilots, the designers, the machines, the workshops, the instruments, the wreckage, but above all hills and clouds and great expanses of ever-changing sky. People today have forgotten how to use a yellow filter and black and white film. Doc's skies remind us what gliding is about: the freedom and the mystery and the never-being-the-same of the sky.



Doc on one of his frequent walks with his dog, Major. Photo: Michael Manni.

Understanding the Sky

What makes S&G in the 1930s an exceptional magazine still worth reading today (and not just for nostalgia's sake) is Doc's intense curiosity and truly scientific interest in every aspect of gliding weather. The articles "Queer soaring at Dunstable" (a title unlikely to be used nowadays) are a classic of devoted observation and analysis. Doc's articles make it clear that it is simply not the case, as we sometimes think today, that standing waves were a mystery in the 1930s. Predicting them and using them was difficult, but the principles were well understood.

Doc's Rogues' Gallery

Doc's easy-going and amiable temperament has not prevented him from expressing furious scorn for a fair number of knaves or fools: leaving individuals aside — though there are some whose names, long since forgotten, still provoke scathing references to BGA battles of long ago — the categories who felt the lash in the pages of *Sailplane and Glider* in the 1930s would have to include:

- — most power pilots, especially whenever they leapt gaily into a glider and shortly afterwards stepped, or crawled, ruefully out of the remains; Doc would really make their ears burn.
- — popular newspaper journalists, whose ignorant banalities and inept sensationalism on the subject of gliding were pilloried with a mixture of loathing and glee.
- — people who wanted to exploit and misuse gliding, whether as a "youth movement" or as a source of notoriety, money or power.

Doc is a *true* Victorian; not one of the stuffy repressed 19th century figures which the 20th century wrongly imagines the Victorians to be, but lively, creative and often eccentric *doers* with their strong belief in Reason, Science and Progress, in the spirit of Brunel and Darwin. He despises the pseudo-science of pulp writers of the **UFO, Bermuda Triangle** and **Visitors from Space** school, the astrology and the superstition into which so many of the present generation have retreated.

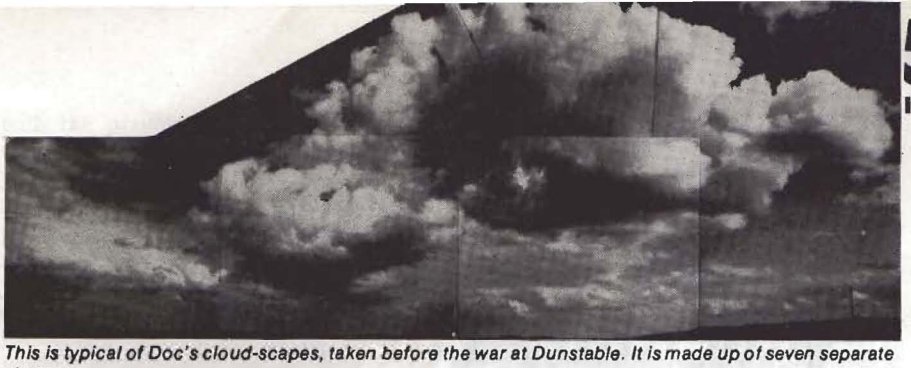
"Final thought, there have never been enough hours in the day".

The man who in the same day could compose a piece for piano, voice and any of 12 different wind instruments (all of which he could play), perform a tracheotomy to save the life of a child, design a flying wing that would do aerobatics under and over the hospital beds of his young patients, edit a magazine, formulate a new meteorologi-

cal theory and observe an occultation of a planet by the moon, has only one serious deficiency — he doesn't know the meaning of the expression too often heard among today's young "I'm bored."

Doc — Some Milestones

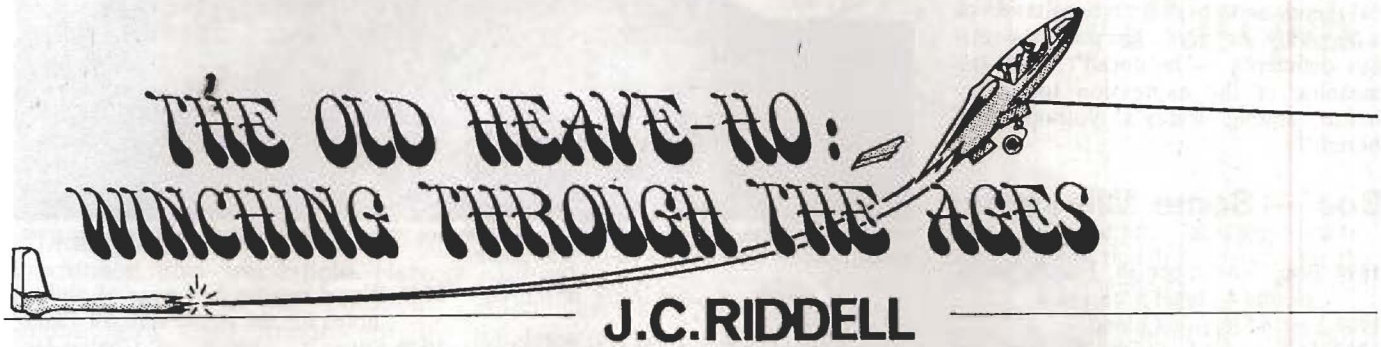
1894 Born November 18. Family background — legal profession.
1900 Started learning piano.
1903 Discovered Solar System (in school atlas).
1905 Was given 2¼in refracting telescope.
1905 Abbotsholme school (forerunner of Gordonstoun).
1908 Started collection of 100 steamship postcards. Didn't stop; now has 3000.
1912 Three months in Dresden studying piano: nearly became professional.
1913 Started gauge 1 model railway with double mainline 200 feet long. Made own rails from wood. Invented method of telling time by the stars (Sirius and Vega) published in Boy Scouts' handbook. Went up to Cambridge to study maths and music.
1917 Started cello sonata.
1919 Student doctor at St Thomas's Hospital, London.
1921 Wrote music for St Thomas's Hospital Christmas shows and continued till 1938.
1921 Diploma for midwifery for helping out with post-war baby boom.
1922 Passed qualifying medical exam on second day of Itford Gliding Competition. Dashed to Itford in time to see wreck of Aachen low-wing glider. Rode 4200 miles on bicycle during the year: longest distance in 24hrs, 132 miles. (Averaged 3700 miles a year for seven years at this time.)
1923 Started photographing clouds; now has collection of 1000 cloud pictures.
Started designing tailless models (*ie* fin but no stabiliser) of laminated stiff paper and seccotine fishglue on Weiss/Dunne pattern.
1924 Worked in fever hospital till 1936. Had song published and broadcast on wireless. Royalties £2 0s 6d.
1925 Finished cello sonata.
1926 Bought 2¾in telescope. Saw markings on Mars (no canals!) at closest approach of planet.
Model glider soared Ditchling Beacon (four years before Kronfeld) for over 1½ minutes.
1927 Observed total eclipse of sun from chartered Imperial Airways plane at 5000ft. (Upper haze obscured corona.)
Soared model glider out of sight at Himmeldankberg.
1929 Missed Gliding Lunch — busy writing pantomime music for hospital. Performed on single occasion on tin whistle, ocarina, guitar, xylophone, bicycle bells, one-stringed fiddle etc.
1930 Joined London Gliding Club at official inauguration in February. Six ground hops in March and April. Got A at Rossitten Gliding School; missed B by seven seconds. First British *ab-initio* to get a gliding certificate.
1931 Visited Germany again, filmed at Wasserkuppe by Dudley Hiscox. After continual frustration finished B in high wind at Dunstable.
1932 Took share in Kassel 20: got C. Flew at first BGA Nationals at Furness.
1932 BBC show "General Post". Doc's biggest musical work; in which broadcasters did each other's jobs (to music) *eg* prima donna broadcast a commentary on a football match.
1933 Took over editorship of *Sailplane and Glider*.
1934 Bought Blue Wren.
1937 Attended and reported on first World Championships. (Only person in the world to have attended every World Championships up to 1974 inclusive.)
First aerotow. First thermals.
1940 Returned to medicine.
1941 Transferred from fever hospital work to mental hospital service.
1942 Joined Royal Meteorological Society. Put on Council. Selected speakers for Gliding Symposium (Philip Wills, Geoffrey Stephenson, Dudley Hiscox, Ann Welch).
1943 Started series of piano concerto evenings (orchestra was second piano).
1946 Joined British Interplanetary Society; edited its Journal. On Council till 1973.
Became officially world's first "Gliding Correspondent" for *The Times*, although had written for it since 1937.



This is typical of Doc's cloud-scapes, taken before the war at Dunstable. It is made up of seven separate shots.

1947 Wrote regular half-page of gliding notes for the *Aeroplane* till 1962.
1949 Silver C altitude at Challes-les-Eaux. Missed Silver duration with 3¾hrs on another flight.
1950 Sang in drag for BGA Ball (repeat of earlier act representing own hospital, before Queen Mary and Princess Mary at Coliseum in 1922).
1952 Gave first of series of papers to International Astronomical Federation (Stuttgart). Paper on likely physiological problems of weightlessness in spaceflight.
1954 Observed total eclipse from 16 000ft between Iceland and Shetlands from chartered plane — on oxygen.
1955 IAF (Copenhagen): paper on "space-gliding" meteorology — problems of a winged spaceship descending through the turbulent ozone layer.
1955 Joined editorial board of *Space-Flight* (Editor Patrick Moore) and wrote articles.
1957 IAF paper showing improbability of evolution of homo sapiens developing (*not* popular with those seeking civilisations elsewhere).
1958 Organised first ever International Symposium on Space Medicine.
1965 Obtained 6in telescope (transported to Whipsnade in glider trailer).
IAF paper showing improbability of *any* life (even *less* popular than 1957).
1966 Moved to Cambridge.
1967 Awarded FAI Paul Tissandier Diploma.
1968 IAF Congress paper planned for Prague, but Russians invaded, so no Congress. The paper was on the theme "intelligent life doesn't necessarily lead to civilisation"!
1971 Elected Vice-President of BGA.
1974 Reported on World Champs in Australia.
1975 Cello sonata first performed in public at Cambridge 50 years after completion. (Audience halved by unexpected competition from Mozart opera on same evening).
1979 Awarded Silver Medal of Royal Aero Club.

THE OLD HEAVE-HO: WINCHING THROUGH THE AGES



J.C.RIDDELL

The method of launch has been a significant limitation to the development of soaring flight. The Egyptians evidently made models of gliders, one bearing a strong resemblance to Nevil Shute's Airspeed Tern was discovered in a Pharaoh's tomb. It was reported to have flown quite well when launched from the hand. It has always seemed to me that the great size and shape of the pyramids has never been satisfactorily explained. Perhaps present day research may reveal that they were built to launch gliders in those far off days. The presence of a tomb at the centre is really only evidence of the builders prudence and that, even in death, he had no wish to be far from his favourite sport.

However, that is conjecture. What we do know is that Leonardo da Vinci is well known for his remarkable series of drawings of a flying machine. However, current thinking suggests that these ideas did not necessarily originate with Leonardo, for he was included in an information network of the scholars of the age, and as a result the most interesting ideas would be referred to him as a leading man of his time. It may be that these drawings are just his record of the ideas that took his fancy over the years.

The desire to fly was never far from men's minds. The first record I have been able to come across is that of one, Verazio, a Venetian, who in 1617 constructed a "crude parachute contrivance", leapt from a tower and landed unhurt. The purpose of this leap is not known and there is no record that he tried again.

The challenge was then taken up by the English, for in 1648 John Wilks, then Bishop of Chester, built a steam flying machine, thus anticipating the long line of non-flying machines that amateur constructors have built since, for there is no record that it ever flew.

The first record of a successful glider flight is that of the Marquis de Bacqueville. In 1742 he constructed a flying machine where the surfaces of the aeroplane were fastened to his arms and legs. However the redoubtable Marquis succeeded in making a long glide from the window of his Paris mansion, across the gardens of the Tuileries to land in the Seine without being hurt. It is not clear what the ultimate objective was for this event; some say he had amorous intentions elsewhere. He did not try again, perhaps because he found, as with all first time fliers, that the landing was not as he expected and somewhat below the dignity of a Marquis.

The early experimenters in flight did not appreciate the importance of wings being convex on the upper surface. Many tried to fly with the wing surfaces curved the other way. It was not until Sir George Cayley made his celebrated observation on the matter that progress in the design of flying machines became possible.

The soundest foundations

To me, the great achievement of the Wright brothers was that they took nothing for granted. They built their own wind tunnel, and tested every piece of theory that they could find. In this way they built their "Flier" on more sound foundations than any man before them. Their logical training as mechanics gave them a pragmatic approach to each problem they came across.

The method of launch was an example of their quality of thought. The sand dunes of Kittyhawk were not an easy surface from which to fly so they therefore built a short railway on which the craft accelerated to get in the air. The method of propulsion was by a simple form of catapult where a cable attached to the glider passed over a pulley at the top of a tower and was fastened to a substantial weight held there. The weight was released and allowed to fall the height of the tower, thereby pulling the glider into the air.

The added confidence the success of the Wright brothers engendered, stimulated a number of new ventures. One Professor Montgomery of Santa Monica, California, designed gliders and carried them up to 4000ft beneath a balloon. The glider was then released and allowed to glide down to earth. We are told that the descent time for the pilot and his craft was twenty minutes and that they covered eight miles in the flight to a soft landing with "no perceptible jar". This represents a glide angle of 10:1 which is better than some hang gliders today.

The Inkpen meeting of 1922 and the demonstration flights of Robert Kronfeld in 1930 stimulated considerable interest in gliding in this country and really marks the start of the modern gliding movement. The movement at this time related to hill soaring, and thus aircraft were designed to be light to soar in light airs, and to fly slowly so they could be easily launched. As there was no fixed equipment, if you wanted to fly off a local hill you carried your launching gear with you. Often this was a rubber bungey rope where some eight men could catapult a glider and pilot with a high expectation of success. The Long Mynd, Sutton Bank, Camphill Farm, Hartside and Dunstable were all used in those early days.

However the need to travel long distances to the northern hill sites to take part in the sport, first stimulated the London Gliding Club at Dunstable, and there a search for alternative forms of launch to the rubber bungey. Light aircraft had not been developed to the stage of today and were expensive, although occasionally used for aerotow launch as Phillip Wills did in his record breaking flight of April 1938 when he flew from Heston to St Austell. The motor car was pressed into use. The low speed long-stroke engines of that time in the more expensive cars of W. O. Bentley and others, were well suited to use as winches for their engines delivered a high torque at a low rotational speed.

Usually the rear wheel was removed and a cable drum substituted. The cable was then fed forward through a box of rollers and thence to the glider. The problem of quick release was not overcome until John Furlong devised the Otfur hook with Otley Motors in the late 30s. Even so the necessity for cable chopping facility exists until this day.

At the hill sites, the bungey continued to be used because of its simplicity and low cost. The Yorkshire Club developed this system by employing a horse. This faithful beast was first employed to bring the gliders back off the field. It became so adept at this that it required no command from

the duty instructor, but started on its way when it saw the glider come to rest. It was not long before the horse's undoubted skills were further extended. It was asked, and it agreed, to pull the bungey. Its harness was attached to a rope that passed around a pulley in the ground and thence to the bungey. This worked well and was recognised as a great step forward. An even greater step was achieved when the rope broke one day. The horse was never seen again.

In many areas of technology the 1939-45 war stimulated the development of much that had been done in the 1930s. The two needs of the barrage balloon defence of our cities and the need to train our Air Cadets brought about the winch made by M. B. Wild of Coventry. A larger number of these machines were built and after the war some came on to the surplus market where they could be bought very cheaply. Jack Rice, a pre-war gliding man, had a small trailer business in Leicester and he saw the opportunity of adapting balloon winches to small two-wheel trailer winches powered by a Ford V8 petrol engine of some 60hp. They worked very well for a period and they had a simple intimacy for the driver between the sky and the earth. We had one at Sutton Bank and I remember taking it up to Hartside in 1960 to fly the helm wind.

One of the earliest attempts to build a specialised two-drum winch for glider launching was made by David Martlew and David Clayton in the laboratories of Cambridge University. When I got there it was working well and was known as the "Brute". The two drums were powered by a Ford V8 engine of some 83hp and the drive could be taken to the road wheels or the winch. The basis was a long wheel base Army chassis.

I got to know it well. For, as a tyro, I quickly learned from observation, that several hours winching on duff days always gave you an advantage on the flying list when the thermals came. In many ways the "Brute" was a thing of beauty, reflecting the elegant necessity of war time cubism with the pragmatic logic of engineering students of the time. It travelled far and wide for many years as the club held camps annually at the Mynd and Camphill. On these journeys it towed a glider and trailer as well.

The late Gerry Smith designed and built a static winch set up on the west face at Camphill. A Gardner diesel engine was set with an electric transmission in a very gloomy brick shed. The cables were led onto the drums through a series of metal mushrooms set in the grass. I understand that it was not used for some years but more recently it has come back into use. It required a certain skill to drive it.

The swivel pulley

The Germans, who had a tradition of gliding as a national activity, produced the commercial answer in the Pfeiffer and Tost winches. Several have been brought into use in this country over the years. The first that I saw was at the Mynd where a Commer 6cyl petrol engine was fitted to the winch chassis. The result was a very reliable machine and was used for many years. The innovation that had most impact was that of the swivel pulley lead on gear. This overcame the abrasion and fatigue that small rollers induce in the launching cable. This design set the pattern for many subsequent club winches.

In the 1960s, the new affluence and cheap fuel brought with it an increased demand for gliding. The old diesel bus chassis was available as fleets were renewed by the bus companies after their re-equipment after the war. These machines had fluid flywheel transmissions which gave a much improved launch. It was Les Muncaster at Doncaster who adapted one of the first.

The abundance of power gave much latitude to the constructor in the design of the gear. Much less attention to detail was required to achieve an acceptable result than was asked of the designers of the Brute a decade earlier. We now entered the 'don't get it right, get it stuck together' period. The welding rod was King. These machines sufficed for a time. As one engine wore out, the machinery of the winch was transferred to another chassis.

It was in these vehicles that man's inhumanity to the machine is seen in stark reality. Some of these winches can best be described as poetry of the grotesque. The driver was required to cow the machine by demeaning it with wire and string to make up for those details of design forgotten in over hasty assembly. The machine fights back: clothes are torn, levers stiffen and bend, brakes fail and become inoperative. Transmission drives are so badly aligned that the out of balance forces turn the thirty seconds of the launch into an experience that only the most manly can endure. Cables snarl and tangle on the drum so that valuable flying time is lost in the best time of the day. It is a war of attrition, one in which the self-destructive machine will win. Sooner or later it is relegated to the back of the hangar to reflect on past glories.

A number of capable people have come forward and taking heed of the service experience of these earlier attempts at winches of these hasty contrivances. The Woodspring winch and the Saltby winch are both made on robust proportions. By using new engines and transmissions and taking more care to match drum size to engine output, cable tension and cable speed have been set to achieve maximum efficiency.

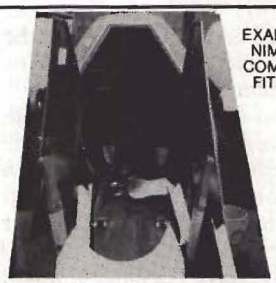
A fluid flywheel

A concensus is being reached. A diesel engine of 125hp or so is being used. The power is passed through a fluid flywheel to the cable on a drum whose inside diameter is 3½ft. Cable speeds rarely exceed 55kt. The engine and transmission are flexible enough to accept variations in wind speed over the range of operations. To a certain extent the greater flying weights of modern gliders have been offset by the refinements in design of the airframe.

But what of the future? Will the changing pattern of energy costs be reflected within our equipment? Will we accept the electrical winch fed from the national grid? Or will we use yet more solar energy to charge batteries during the week for our weekend launch? Will the technology of water power with which Industrialisation started be put to use? Are horses or Wright's pulley more appropriate? And perhaps most of all, is the hand launch the answer?

Of one thing that I am certain, the energy and imagination that have been the driving force in the development of gliding and soaring will not be beaten by these changing circumstances. Even if we have to build our own pyramid, we will fly somehow.

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THE KEMSLEY FLYING TRUST

BASIL MEADS gives the history and some of the many achievements of this charitable Trust created by Viscount Kemsley in 1947 for the encouragement and development of private flying in Great Britain

It all started in 1935 when Terence Horsley, a journalist in the employ of a chain of provincial newspapers, was learning to fly at Woodford. By way of diversion he paid 6d for a flight in a two-seater BAC-7 glider and from that experience became deeply interested in gliding. He joined the Derbyshire and Lancashire Gliding Club and other provincial clubs, quickly gaining the experience which earned him the reputation as a knowledgeable and skilful soaring pilot. He became aviation correspondent to his newspaper group and turned out a great deal of propaganda for the movement. He was able to persuade his employer — Mr James Gomez Berry, later to become Viscount Kemsley, that gliding and flying was to be encouraged, and gifts of a Gull and a Falcon 3 glider were made to the Camphill Club.

When the war came in 1939 Terence joined up with the RNVR Air Branch. I was never quite sure of the nature of his duties although he flew around the country visiting RN Air Stations. Our ways crossed on several occasions and our talks inevitably turned to the after war prospects of private flying and gliding. From 1935 to 1939 the flying and gliding clubs received subsidies in one way and another. The gliding clubs were given £5000 annually, awarded on a points basis, the money to be used primarily for the purposes of site development.

Urgent need of finance

At the outbreak of war the gliders and major equipment were requisitioned and paid for on acceptable terms by the Ministry, which meant that some clubs had some resources in 1946 which enabled them to recommence activities, though in restricted ways, and no further subsidies were to be given. It became apparent that without substantial financial assistance private flying and gliding would be unable to get back to that state of development already achieved up to 1939, and to advance from that. There was urgent need of finance to bring about a quick revival and growth.

After the war Terence resumed his journalistic activities and produced his first gliding book, **Soaring Flight.** He approached the now Lord Kemsley on the need for financial help and was listened to with patience and sympathy. The Royal Aero Club, The Association of British Aero Clubs and the British Gliding Association were invited separately to give their considered opinion on the future of the flying and gliding clubs and what would be required financially and in other ways to ensure the success of a properly planned future. Each of these organisations responded quickly and in prepared statements emphasised the need of substantial funds being available at once for the purchase of aircraft and ancillary equipment, storage facilities, club buildings, development of aircraft and the general encouragement of air-mindedness.

Money dispensed as loans

On the matter of finance, it was emphasised by those concerned that the matter must be considered a national problem. These facts in detail were placed before Lord Kemsley who at once expressed interest. He asked how much money was required. Terence said £50 000 which was countered by Lord Kemsley who said he would make it £100 000 and insisted that the money should not be dispensed in any other way than by loan. The loans were to be made available to any member club of a constituted central organisation concerned with private aviation in whatever form.

From then things moved rapidly — as asked, the Royal Aero Club submitted the names of seven Trustees with practical experience in private flying acceptable to Lord Kemsley and the formalities of a Trust Deed were completed by September 1, 1947, a Secretary was appointed and the first loan to the Bristol Gliding Club was approved only five weeks later.

Subject to the guidance of the Terms of Reference, the Trustees were able to approve loans on terms at their absolute discretion. The main requirements were that an intending borrower club must be incorporated as a private limited liability company, have reasonable financial stability, be prepared to meet an agreed portion of the cost of assets to be purchased by a loan, and have security of tenure of an approved airfield or site. The loan applied for must be approved by the central organisation of which the intending borrower was a member. With these conditions wholly or partly fulfilled to the satisfaction of the Trustees, loans approved could be granted for repayment over a period of years by annual instalments with interest as low as 1% on outstanding sums. In most cases the loans were documented by a simple form of loan agreement. The Trust was an immediate success as proved by the number of applications and inquiries which flowed into the office.

And now the saddest part of this story must be told. It concerns the death of Terence Horsley only two years after the creation of the Trust in a gliding accident at Camphill while flying his own Olympia sailplane. His loss was a grievous one not only to his family and business colleagues, but to the flying movement which he loved and served so well. My office was next to his in Kemsley House and this enabled him to pop in almost daily to offer advice and very often criticism. By that time he had risen high in his profession being the Editor of a Sunday newspaper.

Here summarised are the details of loans dispersed during the 15 years of the KFT:

Loans to	
Gliding Clubs	£93 410 — 64 loans
Gliding Groups	£17 347 — 44 loans
Flying Clubs	£28 845 — 41 loans
Flying Groups	£20 949 — 34 loans
	£160 551 — 183 total loans

Loans for National Air Races	
National and International Gliding Contests	
Society of Model Aeronautical Engineers	
Popular Flying Associations	
Grasshopper Helicopter design, Dart Kitten Prototype, K-1 Glider etc.	£38 483
	£199 701

For the purposes of this article it is intended to refer only to the funds used for gliding interests.

It must be seen from these figures that the BGA clubs took the lion's share of the facilities available. This was undoubtedly due to the enthusiasm for progress which characterised the mood of the gliding movement which resulted in its

steady growth. In 1947 the BGA had 39 full and associate member clubs owning 94 gliders and with a membership of 1101. By 1960 when the Trust was forced to cease operating because of the retirement of Lord Kemsley and the sale of his newspaper and publishing interests, the number of clubs had risen to 45, owning 337 gliders and with a membership of 4749. It would, of course, be idle to suppose that the growth was due entirely to the help afforded by the Trust but there can be no doubt that it assumed a very important role at a time when it was most needed — the provision of training gliders and major equipment. Fifteen clubs received loans for site development, four of which were for the outright purchase of land.

The ever-growing need for training gliders for several years after 1947 was met by Fred Slingsby with his useful range commencing with open Primaries, Cadet, Tutor, Swallow to mention a few at prices which seem today to be so very cheap. His famous type T-21 was introduced in 1948 at £780, and the Gull 4 in the same year at £625. Horace Buckingham was early off the mark with his Olympia which met the demand for advanced performance at the initial price of about £500. Unhappily neither of these two good men are with us now but we will long remember them for their contribution to the revival and growth of the gliding movement after the war.

With that quick and rather sketchy look into the past my story is at an end. I only want to add how happy I was in those years as Secretary and Trustee of the Kemsley Flying Trust. It was always great fun and brought me into contact with so many nice people whose friendship in so many cases remains to this day.

ATTITUDES TO ACCIDENTS

W. G. SCULL, BGA Director of Operations

The Editor asked me to write something about the changes in gliding in the twenty five years that I have been involved in the sport. Having thought about it I think it more appropriate to write about what has not changed.

Years ago as a new member of the Safety Panel I was talking to someone at the Accidents Analyst Branch who was later to become a good friend and reliable councillor. In a discussion of accidents he said something about "irreducible minima", a level of accident occurrents which, no matter how hard one tried, could not be reduced. I took him to task, quite vehemently (he will recall), but when you think about his statement it is patently obvious that you cannot stop all accidents unless you lock the aircraft away in hangars. So his statement was true and what I was disagreeing with was the mental state that such an attitude implied — "If they can't be prevented. why try!" This is obvious, be he CFI, instructor or pilot.

So what is a realistic attitude to take in accident prevention terms?

The anwer is best illustrated by the attitude not to take. I have had only one "proper" accident, give or take a heavy landing or two which are almost inevitable when instructing (there you are, even that statement speaks volumes!). My accident was in 1955. The endorsement in my logbook states (in red — can you imagine):

(Flight No. 235 Skylark 2, duration 4mins.)

"Final turn on S-turn approach carried out at too low an altitude. Starboard wingtip struck ground and aircraft ground looped. When carrying out an approach on this site all turns must be completed at 150ft. Stick to the instructor's pre-flight briefing please and choose a touch down-point which lies well into the field (CFI Avro GC).

Sackcloth and ashes

My total experience at the time was 235 launches and 19 hours. It was my tenth flight in the Skylark with previous solo experience confined to the Tutor. I still have the Flying Sub-Committee's report. I was suspended from flying the Skylark for six months provided I remained active as a member. I can still remember the mortification and the fact that I wore sackcloth and ashes for six months. In fact I did not fly for six months. In retrospect, of course, one can think of lots of excuses. My recollection is that I was just trying to do an approach like the one the CFI had just done, but the really relevant factor was that S turns were no longer necessary but had become havit in the Tutor (as I recall neither the T-31 nor the Tutor had spoilers!).

But enough of the excuses you will be thinking. The messages were (and are) obvious. The only message not learned at the time was regarding the mental attitude. It was my mistake; learn from it and don't do it again!

Since that time there have been a lot of launches and accidents. In the last few years I have found myself acting as investigator and analyser and frequently thinking, "Surely that could have been prevented or avoided". My belief is that many accidents could be prevented if more pilots had better imaginations and understood themselves a little bit better and that is why I have written so much and talked to so many people. Accidents can be prevented — not all of them but some.

Right Mental Attitude

The starting point is a good imagination. Consider the accidents you have heard about and look at them in the light of your own experience. I can assure you that if you do you will fly more conservatively and practise more assiduously.

The worse case of the wrong mental attitude is someone who will not accept that an accident is anything to do with him (or her). Rarely are accidents an Act of God — ask your insurance company how often they happen. The pilot, or occasionally a third party, might just have contributed slightly. In general, accidents in private (as opposed to commercial) aviation are virtually all down to pilot error. The fact that pilots do not accept this is due to a number of psychological factors — embarrassment, natural reluctance to admit one's mistakes or fallibility etc. *What I find intolerable is the mental state which rejects all possibility of some degree of pilot error.*

In some circumstances it may be acceptable to allow this state of mind to prevail. After all, who can put himself into the position of a pilot or instructor who in his heart knows that he may have contributed in no small part to someone's death. It has

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got to be difficult to live with and the mental adjustment to absolve oneself is probably a subconscious process.

Time after time, though in less serious accidents you will find that "nobody is to blame". Maybe the psychology centres on this element of blame and the extent to which a pilot will accept some or all of it. The problem is that the connotation to blame is guilt and this everyone finds difficult to live with. The more positive, analytical, approach is to ask one's-self — "What have I learnt from this accident and what can I do to prevent others making the same mistakes?" Only by exposure of one's own mistakes can other pilots be educated. Even with any message passed freely and frankly it will still be necessary for a pilot to educate himself. This he will only do if he flies to his limits and in doing this there is a risk of going beyond them — but more of this later.

The first essential ingredient for an improved accident record is a genuine acceptance that the pilot is to blame (Oops — sorry! has contributed by his error to the accident). Once this is accepted the other contributory factors can be rationalised.

Some Examples.

"You will see that the club has bought an Astir. I was not happy about this as I knew it would be broken — it has been!"

Surely if the prediction was so confident the possible causes could be considered and some effort made to prevent it.

"I don't see how I could be held responsible at all" — said of a mid-air collision. Not even in the slightest degree? Surely!

(One instructor to another watching a Dart 17 "scratching".)

First: *"That Pilot is flying his aircraft as if it were a Skylark 4. Have you talked to him?".*

Second: "Yes, I've tried but don't seem to be able to get through to him."

Three weeks later the pilot in question was dead, — a spin-in when thermalling low down.

"Our attitude" as they affect ourselves and others warrant close examination. Becoming casual or hardened to accidents may be inevitable on the basis of "familiarity breeds contempt". Of course the biggest single factor to combat is complacency to which we are all prey. As changes in attitude are insidious we perhaps do not find out about them until it is too late — hence the need for the highest standards and watchfulness for any sign of them slipping.

One factor amid these psychological ones is the effect of an increasing number of private owners who for the most part do not need to be controlled. But pilots become private owners with much less experience nowadays and the need for supervision and further training is evident. How significant this is in terms of the number of accidents is being researched and will be the subject of a future article.

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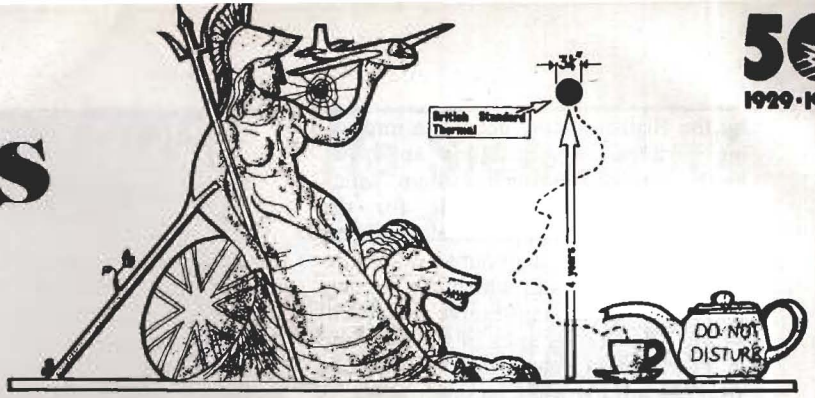
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HOW OTHERS SEE US



THROUGH THE EYES OF A CENTRAL EUROPEAN

FRED WEINHOLTZ Translated by G.S. Neumann

Barely ten years after gliding as a sport was born on the Wasserkuppe, the British dared to found their British Gliding Association. No one had quite believed that a sport that is so dependent on the weather would prosper on this Island with its peculiar meteorological conditions.

Well, in Central Europe it has been known for a long time that the British are seldom quick in reaching a decision, but when they do start something they tend to make a good job of it. Six months after the Association had been founded, Robert Kronfeld showed that one can even fly cross-country in Merry Old England. This marked the beginning of the steady advance of the BGA which has become such an important part of world gliding in spite of the typical British peculiarities, or perhaps even because of them.

Always a welcome guest

Our worldwide sport has profited a lot from our British friends. This is, of course, primarily due to personalities who are known and recognised all over the world. Let me mention the unforgotten Philip Wills, Doc Slater, Rika Harwood and Ann Welch as representative of many others. However, the good reputation of the BGA also rests on the ordinary British glider pilot, sometimes described as a little eccentric, but always reliable, co-operative, and a sportsman through and through. He is a welcome guest on any airfield, no matter in which part of the world.

Wherever on this earth glider pilots pursue their hobby, you will undoubtedly find a copy of *Sailplane & Gliding*. I don't know what the circulation is, but if the number of countries in which the periodical is read is a criterion, then it should come out on top. It is this blend of sometimes touchingly unimportant club news and valuable, highly scientific articles or the subtle philosophies of an Arm-Chair Pilot and elaborate programmes of advanced soaring or training, always seasoned with interesting and topical news items, which gives this magazine its particular attraction and explains its popularity.

Often copied, but surely never matched, is British club life. Occasionally one gets the impression that social events, from a midsummer dance to the Christmas dinner, are more important than flying gliders. But then one is amazed by the flying performance of these clubs, and by the tremendous effort that goes into the flying activities. The BGA is to be envied for its clubs. They form the strong backbone of gliding in the UK.

What I consider a little dangerous is the strong yearning the British have for private ownership. As opposed to gliding overseas, where the clubs are often primarily associations of private owners, gliding in Europe is very much based on the club principle of "all for one, and one for all". I fear that the enthusiasm especially of the young, not yet affluent glider pilots might be a little damped by the large number of privately owned sailplanes (68%, according to S&G). Lasham, for instance, is 27% below the total average with a mean flying time of 60hrs per sailplane, in spite of its intensive training activities. There is no comparison with the 216hrs average of the Surrey & Hants Club which has no private owners at all. I am not criticising, but I must confess that I have been studying the BGA statistics since 1972 and I think I have learned a lot from them. In the Federal Republic of Germany the urge to become a private owner is also very strong. However, we still manage to preserve the efficiency of the clubs to a large extent by integration of the private owners.

In general the British are credited with a strictly conservative attitude. Be that as it may, glider pilots on the Continent and overseas must be grateful to our friends on the Island for the way in which the BGA is cultivating tradition and the old timers' movement which had, and still has, such an impact.

Every foreigner is very impressed by the organisation of the BGA. There is a small, but adequate band of full-time staff — about one person per thousand glider pilots — and there are honorary committees and sub-committees. The various tasks are cleverly assigned and carried out in a superior fashion because everybody, paid or unpaid, takes his task seriously. For the gliding people in other countries it is particularly refreshing to see how independent the BGA is.

Responsibility with members

This shows particularly in the context of "gliding as air traffic". If one comes from a country in which the legislators and executives of the state have been responsible for our sport for many years, then one can hardly believe that all regulations pertaining to gliding can be contained in a small booklet. This is where the famous "common sense" comes in, which leaves the responsibility with those that are really responsible, as long as they do not harm the public, and there is no risk of that with the gliding people of the BGA.

They are aware of their obligations. For instance, there is a place where the gliding club collects, as a matter of course, considerable landing fees from large jet aircraft which share the runways with the gliders because the airline is a tenant on the gliding site and has a workshop there. Where else in Europe would such a thing be possible?

However, in spite of all this matter-of-factness and freedom, the BGA does not isolate itself from progress and its constraints. Crammed as the airspace over the British Isles may have become, our gliding friends who live there have managed to maintain their place in the sky because they wisely compromised when it could not be avoided, but also defended their position with persistence when they could see themselves within their rights.

A progressive attitude is also shown

by the British gliding people in improving performance. Based on an excellently designed training system which provides sufficient latitude for the instructor to give his personality and his abilities full play, a pyramid of performance has been built which has become more and more impressive in recent years. The shining apex of this pyramid is the National Team, with George Lee who has been World Champion twice. A well functioning system of competitions, from club contests to Regionals and the National Championships, the handicap list, designed and first used in England, which helps to permit a comparison of flights, and finally the fundamental attitude towards sport of the British, who consider competition in all walks of life as a natural thing, have borne fruit. The last word in this development is the recently introduced BGA British Team Training System.

The first 50 years of British gliding have passed. An important era has come to its conclusion, with great success, in my opinion. Let us hope that our friends on the Island will make an equal success of the second half-century which they now enter, with the same enthusiasm and the same tenacity, for their own good and that of gliding worldwide.

AN AMERICAN'S IMPRESSION
RICHARD . H . JOHNSON

Weaker thermals and a limited size of soaring perimeter do not deter a strong British soaring spirit. Cheerfully accepting these limitations, the British pilots and their equally important supporters make the most of their varied but less-than-booming environments. Indeed, learning to glide well under the more challenging conditions does hone true skills to a much sharper edge. The Goodharts, Lees, and two generations of Wills' have championed many foreign competitions, usually by soaring well under marginal conditions where their competitors could not fully cope. Almost anyone can look good in strong large thermals, but the "boys" get scraped off in small weak ones.

The strong British club spirit and the unselfishness with which many of their people give their time and energies is their greatest strength. Such dedication is rare in the USA, and it is viewed with envy worldwide. Many contributors do not fly at all and most will never fly through a contest start gate, yet these altruistic individuals are the very heart of your fine gliding movement. Training, repairing, designing, planning, organising, and just plain hard work are all essentials for a healthy gliding club society. I sincerely wish we could achieve more of this spirit in our all-too-few American clubs.

Sensible airspace allocations

Lastly, I would like to express our admiration for the strong and effective organisation of the BGA. Surviving advantageously with governmental bureaucracy is an essential art. The success with which the BGA has been able to accomplish this has been truly remarkable. As a pilot, I envy most the sensible airspace allocations and cloud flying freedoms that you continue to enjoy. As an engineer, I can see the advantages of the excellent BGA glider licensing system where all important decisions are made, without unnecessary delays, by people highly qualified to do so.

Congratulations on a commendable first 50 years for the BGA, may the following be even better.

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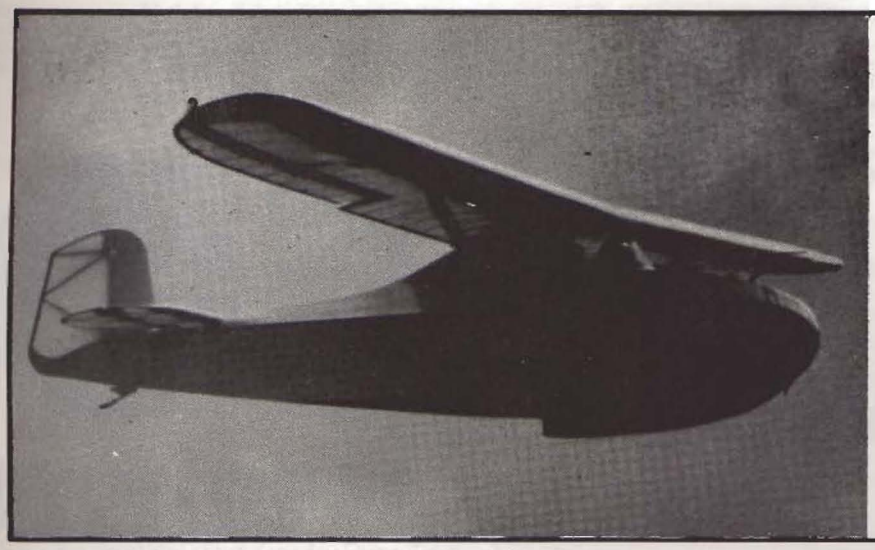
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"Ha Siebzehn"

KEN J. FRIPP

While the 50 years has brought tremendous developments in glider design, there is still a love and appreciation of the early sailplanes and a keenness to restore them whenever possible. The strength of the Vintage Glider Club reflects this interest but this story is of one man's enthusiasm for a particular glider which has stayed with him for nearly 45 years.

The H-17 on its first flight with Derek Piggott at the controls. Photo: Ken Fripp.

The love affair started in July 1935 when I opened my copy of *Sailplane & Glider* and there on p101 was a description of "The H-17: An Austrian light-weight design." The article carried a three dimensional drawing and several photographs of a delightful little glider, 15ft long and just under 32ft span, not unlike a Grunau Baby in miniature, and one of the pictures depicted a man carrying a wing by himself. The claimed performance was the same as the Grunau and I was hooked. However my financial position was, at the time, circling in a strong overdraft and I could do no more than look longingly at the design and hope that some day, some how . . .

In 1978 I had a strong yearning to carry out some slope soaring once again, before I got too old, and decided that as I had obtained some H-17 drawings we would start to build. Before we had got beyond making a few metal fittings, fuselage frames and wing ribs, the H-17 built by the late Don Campbell came up for sale and I went to see it at Aston Down Aerodrome.

Glue failure in advanced stage

The day was cold and a persistent drizzle made the scene miserable. I remember my heart sinking as the ramshackled trailer was opened and I could hear the ominous dripping of water over the casein glued structure. Opening up the fabric at various strategic places confirmed that glue failure was present in a fairly advanced stage. It was obviously going to be a pretty expensive task to save her, but the tenuous links with my youth proved to be too strong and after friendly haggling she was mine.

The first thing, when we got her back to Lasham, was to burn the awful trailer which had been responsible for her near demise, and build a new one. The aircraft had been substantially modified with a landing wheel, "Sky"-type divebrakes, an enclosed cockpit and a heavy metal fin strake to increase the fin area. During a visit Andy Gough told us he thought it was rather dangerous to fly, but I feel this might have been due to the fact that she was certainly over modified and grossly overweight. It was decided that all these "improvements" must go and we would restore her to the 1935 drawings in order to see what the designer was trying to achieve.

Without a creak or groan

The restoration work went ahead with much tender loving care and although we were saving weight wherever we could we strengthened the fuselage when we discovered the two top longerons had been fractured for years; as Frank Irving drily remarked "Its amazing how strong thin plywood is in tension". When rebuilding the wings I was more than a little concerned about the strength of the structure and so I decided to proof load and Frank gave us a figure to achieve. The great pile of ballast looked frighteningly large, but the wings took it all without so much as a creak or groan, and the deflection at the wingtip was only 1½in. After 823hrs of hard work she stood rigged in the paint shop ready for her first flight for many years. The wings and tail unit were covered with Aerolene Ultralite fabric, which my firm markets, and clear varnished, while the rest of the aircraft was painted with a cream and brown colour scheme in an effort to make her appear longer and less tubby.

When eventually reweighed we found we had made a saving of some 50lb, which was quite an achievement in so small an aircraft. At the same time she looked so much more attractive now that she was restored to the original design and we felt that her performance and handling would also show improvement.

Owing to a persistent illness lasting four and a half months and the hospital doctors withdrawing my C of A, Derek Piggott kindly consented to carry out the test flight. On a sunny June 5 he was off on aerotow, the H-17 looking ridiculously small behind the Piper Cub. He pulled off at 1500ft and shot like a cork to over 3000ft. After checking the stall and spin characteristics he descended with a series of mild aerobatics, making a final climb from 600ft before coming into land. I've seldom seen Derek so enthusiastic and he said he hadn't enjoyed a flight like that for years.

Next off was Bill Scull who enjoyed a pleasant half hour singing at the top of his voice and shouting to other pilots sharing his thermal. After landing he said "You know, we seem to have lost something over the years and that is flying for sheer fun," and every member of the Vintage Glider Club knows exactly what he meant.



Doc Slater took this photograph of an H-17 in flight at Dunstable in 1939.



A BACKWARD GLANCE

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1929·1979

Extracts from *Sailplane and Glider* and *S & G* selected by RIKA HARWOOD

with illustrations by PETER FULLER

SOME FIRSTS IN UK

Certificates

1930 First A and B issued to C. H. Lowe-Wylde (Kent GC)
First C issued to C. H. Latimer-Needham (London GC)

1934 First Silver C (created in 1931) issued to G. E. Collins (London GC)

1938 First Gold C (created Jan 1, 1938) issued to P.A. Wills (London GC)

1955 First triple Diamond (all three Diamonds created in Jan 1950) issued to Nick Goodhart.

(John Williamson was the first pilot to fly all three Diamonds in this country, he completed his badge 6 on the register, on 7.8.1961.)

1930 Oxford GC were the first to try autotowing following an article on this method carried out in America. A Zögling was used with about 450ft of rope to give launches to approximately 250ft.

February 15 was the first occasion when two London GC members soared at the same time.

Mr Mole is believed to be the first pilot to carry out a soaring flight (since Itford, 1922) when he flew the Scud for 1hr 02min at Dunstable.

The first British autotowing school was started by C. H. Lowe-Wylde (it was regarded as a rather dangerous innovation, and many pages on the pros and cons were written on this subject).

The first BGA Conference was held at Ilkley on July 11. Eighteen clubs were represented.

The first BGA Handbook was published.

1933 July 29. Philip Wills mentioned for the first time in *Sailplane & Glider*.

Slingsby Sailplanes advertises for the first time.

1934 Yorkshire GC at Sutton Bank held their opening weekend on August 4-6.

1935 First Nationals on equipped site held at Sutton Bank.

Slingsby's first side-by-side two-seater Falcon flew on April 21.

1937 On March 21 the first two-way radio tests were successfully carried out.

Ann Welch flew her A, B, and C in August.

The first cross-country from a flat site (Cambridge GC) relying entirely on thermal currents. A notable event as the club has no hill for soaring.

A marking system is developed for National Contests.

1938 Ten gliders attended the opening weekend of the (later) Surrey GC at Reigate.

FAI goal and return records created.

First club to club flight of 77 miles in a Kirby Kadet flown by S. C. O'Grady from Rothbury (Newcastle GC) to Sutton Bank on 3.4.1938.

September 29. The first Air Ministry/BGA Glider Engineers certificate issued to Miss Dorothy Spicer a well-known aeroplane engineer.

FAI Lilienthal Medal created.

1939 Geoffrey Stephenson crosses the Channel in a Kirby Gull on Saturday, April 22. Dunstable to Le Wast, France, 203km. (At the time there were only 50 Silver C's and one Gold C pilot in this country.)

September 26: Restrictions on flying imposed by Air Ministry. Weather forecasts stopped in October. Advice on storing sailplanes while restrictions are on. Petrol allowances reduced — 100 gallons per month for London GC. *Sailplane & Glider* to continue but reduced in size. (It stopped with the Nov/Dec issue of 1940.)

War broke out the day before the new Slingsby factory was opened and all orders had to be cancelled.
During early 1940 some restricted gliding still took place at various clubs throughout the country.

1946 With great difficulties club flying restarted during 1946. Draft proposals reconstituting the BGA were agreed in principle by the 28 clubs represented.

On December 10, John Leach successfully baled out from a glider. It is believed to be the first time in UK.

1947 The BGA became independent of the Royal Aero Club on January 24. There were around 1100 flying members with 12 Primaries, five Secondary, 12 Medium, six High performance, six Two-seaters and 30 Privately-owned gliders.

First nylon tow ropes become available to clubs.

Lord Kemsley makes £100 000 available. Basil Meads is the Secretary of the Kemsley Flying Trust.

June. The first post-war Nationals are held at Bramcote.

October. Petrol rationing makes gliding more difficult than ever.

1949 Army Gliding Club Formed.

1950 RAFGSA was founded by Air Commodore Christopher Paul.

1952 Tony Goodhart claims first 100km triangle flown in UK.

Philip Wills becomes Britain's first World Champion in Spain. (There were only nine Gold C pilots, and five Diamonds for goal issued in this country at the time.)

1953 Triangular courses and goal and returns are now allowed for claiming Diamonds.

1954 Nineteen Nations took part in the World Championships held at Camphill (Derby & Lancs) in dreadful weather conditions.

1955 HRH The Duke of Edinburgh has graciously consented to become Patron of the British Gliding Association. HRH opened the National Championships in 1957 and 1963 and visited the Championships in 1961 and the World Championships in 1965 at South Cerney. On May 15, 1957, he flew for the first time – in Peter Scott's T-42 at the Bristol Gliding Club.

1956 Nick Goodhart and the late Frank Foster became the two-seater World Champions in France.

1957 League 1 and League 2 created for the National Championships.

Tony Deane-Drummond claims first 300km triangle flown in UK on 19.4.1957 in a Skylark 3.

1958 Nick Goodhart claims first 500km (straight distance) flown in UK.

1961 December. The first Pilot Rating system for National Championships was accepted by the BGA Council.

1962 John Everitt was appointed as the first Coach in what was known as "Coach and Capstan" (forerunner of our National Coach system).

1965 Britain holds the World Championships for the second time. South Cerney, May-June.

1967 BGA National Ladder created.

Photographic evidence in British competitions will now be accepted.

Last League 1 and 2 Nationals held. From 1968 it will be Open and Standard/Sport Classes.

1968 Brennig James claims first 500km triangle in UK.

1969 Radio becomes mandatory for competition flying.

1971 First 500km goal and return in this country claimed by Alf Warminger on May 18 in a Phoebus.

1972 First 500km triangle in K-6E, Alan Vincent of the Essex GC on June 28.

1973 In Nationals/Euroglide relights will not be permitted after outlandings.

First International Vintage Rally held at Husbands Bosworth and Vintage Glider Club of Gt Britain started. Founder member, Chris Wills, becomes its first President.

1974 *Sailplane & Gliding* changes to present-day format.

Competition Enterprise, brainchild of Philip Wills, comes into being.

1975 BGA offices move to Leicester on March 24.

UK records for Standard Class gliders have been agreed in principle. (Changed to Restricted Class Records in 1976.)

British National and UK records for goal and return speed over 300 and 500km, and UK only, speed over triangular courses of 600, 700, 750, 800, 900 and 1000kms implemented.

1976 George Lee, ASW-17 after seven contest days, becomes World Champion Open Class at Räyskäla, Finland. George Burton, PIK 20, is third in the Standard Class after five days.

Startline held (on a trial basis) for the first time at Euroglide contest at Dunstable.

Justin Wills claims the first Restricted Class record on 24.4.1976.

On July 9 HRH Prince Andrew flew solo in a T-21 and gained his A and B Certificate.

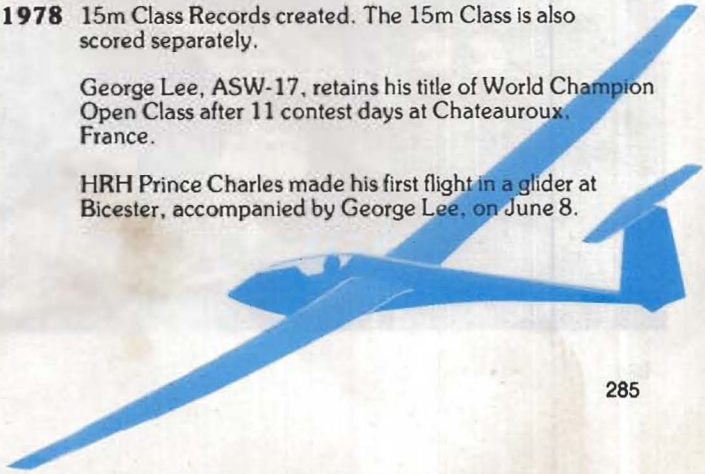
After a lapse of 15 years, three cross Channel flights were made on August 1. Justin Wills (Std Libelle); Mike Carlton and Brian Spreckley (Calif A-21) and Mike Pope (Kestrel 19).

1977 Held startline becomes mandatory for Nat/Euroglide contests.

1978 15m Class Records created. The 15m Class is also scored separately.

George Lee, ASW-17, retains his title of World Champion Open Class after 11 contest days at Chateauroux, France.

HRH Prince Charles made his first flight in a glider at Bicester, accompanied by George Lee, on June 8.



SOME FIRST HOLDERS OF RECORDS FLOWN IN UK

Single-Seaters

1932 Distance	21km	G. M. Buxton Falcon 1	4.9.1932
1933 Height	545m	G. E. Collins Professor	19.8.1933
1939 Goal and Return	109km	W. B. Murray Rhönbussard	7.4.1939
1946 Goal Flight	181km	P. A. Wills Weihe	27.6.1946
1950 Absolute Height	6450m	A. W. Bedford Olympia 2	24.7.1950
1952 100km Triangle	35.66km/h	G. A. J. Goodhart Olympia 2	17.8.1952
1957 300km Triangle	51.5km/h	A. J. Deane-Drummond Skylark 3	19.4.1957
1968 500km Triangle	53.8km/h	D. B. James Diamant 18	9.6.1968

(A 750km triangle was flown by Hugh Hilditch in a Nimbus 2 from Lasham on 28.4.1976 but could not be claimed as only a verbal declaration was made. The longest flight to date is the goal and return flight of 801.3km flown by Chris Garton in a Kestrel 19 on 22.7.1976.)

Two-Seaters

1934 Distance	74km	G. Collins and W. Exner Kassel	18.3.1934
1946 Height	1150m	J. Furlong and E. Johnson Kranich	5.7.1946
1947 Goal Flight	188km	C. Nicholson and P. Blake Kranich	17.6.1947
1949 Goal and Return	124km	J. Pringle and J. Grantham Kranich	12.8.1949
1955 100km Triangle	31.8km/h	L. Welch and F. Irving T-42	1.8.1955
1963 300km Triangle	48.2km/h	W. Kahn and B. Davey T-42	27.7.1963
1964 Absolute Height	5800m	P. Saundby and B. Roberts Blanik	7.6.1964
1975 500km Triangle	88.4km/h	J. Jeffries and Gillian Case Calif A-21	31.5.1975

(The late Barrie Goldsborough was the first pilot to exceed 100km/h in this country on a 100km Triangle in a Kestrel 19 on 29.4.1973. Ralph Jones in a Nimbus 2 can lay claim to the 300 and 500km triangles at 105.45 and 106.9km/h on 29.5.1974 and 31.5.1975 respectively.)

Duration records were abolished in 1955. It was the duration record by W. B. Murray and J. S. Sproule who flew for 22hrs 13min 35sec in a Falcon 3 on 9.7.1938 which gave Britain its first world record. FAI speed records and triangular distance records of 750 and 1000km were created in 1975, but have not yet been claimed in UK.





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1929·1979

BGA CHAIRMEN 1930 - 1979

Douglas Culver	*early 1930*
E. C. Gordon England	*1930 – 1933*
Master of Sempill	*1933 – 1934*
C. E. Hardwick	*1934 – 1934*
Various Council members took the Chair at Council meetings until April 1935.	
David Brunt	*May 1935 – 1946*
Dudley Hiscox	*1946 – 1949*
Philip Wills	*1949 – 1968*
Peter Scott	*1968 – 1970*
Ken Wilkinson	*1970 – 1972*
Chris Simpson	*1972 – 1976*
Roger Barrett	*1976 –*

FROM THE CLASSIFIEDS

1931 For sale £45, secondhand Dagling in first-class condition.

1939 Viking 1, single-seater to clear with trailer, ex works, £300.

1949 EoN Olympia, full instruments, droppable undercarriage, C of A, £500.

1959 Minimoa, Glide angle 1 : 26, First-class condition, £400.

1969 K-6CR with competition instruments, excellent condition, £1200. Trailer extra.

1970 Skylark 4 under 250 launches, with basic instruments, £1000.

1971 Skylark 3B with F canopy, full panel, trailer, 10yr C of A, £975 . . . 1971 (December) Skylark 3F, £1500 . . . 1972 Skylark 3F £1750 . . . 1976 Skylark 3B with F mods £3500 . . . 1979 Skylark 3F etc, etc £4500.

1974 Kestrel 19, all latest mods, with excellent trailer, £6800.

1979 Kestrel 19, etc, etc £10800 . . . Mini-Nimbus, hull only £10800 . . . Std Libelle complete outfit £6600.



WHAT THEY SAID

1930 "Quite frankly, we think that to offer a BGA prize for the fastest time over a closed circuit is straining the bounds of possibility. It seems unlikely that this country will produce such skilled pilots for some time." *Thurstan James*

1931 "Last Sunday (January) we went to Totternhoe and saw gliding of a kind of which a year ago we only had visions. An *ab-initio* trained B pilot soared for nearly two minutes." *London GC News*

"I am perfectly convinced that as long as we hop around on Zöglings we shall get nowhere." *Geale Dickson*

"All types of gliders can be obtained at Selfridges on most satisfactory terms — also insurance can be effected through the aviation department at the store." *Thurstan James*

"We are one of those optimistic clubs who believe they can survive on an annual sub of 25s per member . . . but this has to be supplemented by social activities, we are therefore postponing the purchase of a BAC V until after the New Year." *Imperial College GC*

"At the first soaring demonstration organised by the Lyons Tea people at least 700 cars and 4000 spectators came to watch the spectacle." *Thurstan James*



1933 ". . . Surely a variometer could be designed to give an audible signal instead of a visual one." *Doc Slater*
"It is possible that cross-country sailing flights will become as common as power flying is today." *Latimer-Needham*
BGA Dance, 631 guests attended and it was only due to the epidemic of influenza which was raging at the time that at least another 150 persons were prevented from attending. Amy Johnson was the guest of honour. *General News*
". . . Then there is the puzzle of Cross Fell where the air moves in a mysterious way, but we are confident that the solution will some day be found." *Doc Slater*
". . . Everybody flies in circles these days. Right hand circles are easy, left hand ones are not so funny unless one has plenty of room. It is queer!" *Doc Slater*
"Nothing was quite so interesting as these cloud streets, yet we can't quite see how they may be utilised for distance flights unless one hopped across from street to street." *Furness GC News*

1934 "I should be surprised if there are any more than a dozen serviceable gliders in England." *Editor of Popular Flying*

1936 "With the new advanced sailplanes a new factor of some importance is introduced that is cruising speed . . ."
". . . One of the first sensations of a cabin machine is the heat — on the first few flights I nearly died of apoplexy." *Philip Wills*

1937 "Pilots wishing to be considered for the Internationals at the Wasserkuppe must produce a certificate that they have done at least ten aerotows. (After contest) . . . the standard of pilotage in this country can and must be improved." *Philip Wills*
"Dudley Hiscox was the discoverer of the extraordinary zone of lift . . . in fact, the phenomenal smoothness of the air was remarked upon by all the pilots who flew. It was as if there had been a wind blowing up the hill instead of down it . . . it remains for this extraordinary phenomenon to be explained." *Doc Slater* (on what must have been the first lee wave noticed at Dunstable)



1938 "I convinced myself, especially in the last thermal, which was dead smooth, that I could detect the breakers round it caused by hitting the inversion. It was calm in the thermal and pretty rough round it . . . It is the first time I've ever caught a thermal off the winch." *C. Nicholson*

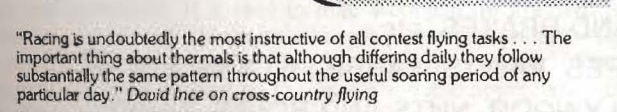
April. "Aeroplane towing at Leicester the first meeting of its kind ever held in this country produced 126 aerotows . . . the realisation of pilots new to aerotowing is that the process is the pleasantest means of mechanical launching yet invented. . . . A large number of German pilots have been taught aerotowing . . . and in England several members of the Cambridge Univ GC, whose surroundings are notoriously devoid of hills, are in the same position . . ." *Doc Slater*

1939 Nov/Dec. "As I sit reading by the light of a candle, stuck in a bottle — empty, I regret — in a deserted farmhouse in France, my mind often goes back to Dunstable Downs and the happy days spent there . . . When I received my October issue of S&G I was simply delighted." *(from a letter to the Editor by a London GC member)*

1947 "I believe in an illustrious future for liquid-rocket launching — in fact to the ultimate exclusion of the much more unwieldy and uneconomical aerotow method." *L .P. Moore on the trend of sailplane design*

1949 "It came as a sobering thought, that within every hour of soaring flight, one has to gain a total of some 10 000ft of height." *Lawrence Wright on his 87 mile flight in a Gull 4*
"I thought there was a good chance of getting Gold C distance despite the necessity of travelling partly across wind — a thing I found from previous experiences, not nearly as difficult as most people believe it to be." *Lorne Welch*

1952 "Nobody would dare to suggest we know half the possibilities of gliding. You can enjoy the best possible sport, learn something useful, be an explorer, satisfy your ego, and thrill yourself to bits." *John Furlong on having the gliding bug*
"When the thermals are of the order of 10ft/sec or better, then a measure of adipose tissue, oxygen, gyro devices, lead, sand or what-have-you is an aid to greater cross-country speeds." *Nick Goodhart*



"Racing is undoubtedly the most instructive of all contest flying tasks . . . The important thing about thermals is that although differing daily they follow substantially the same pattern throughout the useful soaring period of any particular day." *David Ince on cross-country flying*

"In my opinion, the final Glide is quite the most exciting part of soaring." *Tony Deane-Drummond*

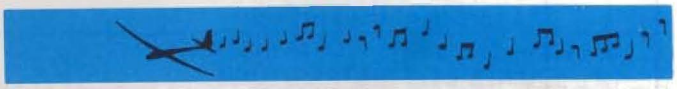
1957 "It will do no holder of a Silver C credit if, forgetting that he was once a beginner, he does not appreciate the early triumphs of a solo pilot." *Anthony Edwards on a beginner's approach*
"The importance of practising cross-countries under less than ideal conditions cannot be overstressed for all pilots who want to reach a high competition standard." *Nick Goodhart*

1958 "No doubt in time we shall receive tasks such as a race with a declared time of arrival, with loss of marks for being early or late. Competitors would have to pay much more attention to flight planning than is customary." *John Neilan*

1959 ". . . Fortunately no one told me that flying was scrubbed at the Nationals at Lasham because the weather was no good!" *Stan Armstrong on his Diamond goal flight from Camphill to the south*
"Handicapping, once started, will be here to stay, and it is essential that firm foundations be laid now for a system which will last for many years and during which developments may take place which are undreamed of today." *First report by BGA Handicapping Committee*

1961 ". . . I would fall two miles short of the magic 500km. I needed 300ft more. At 800ft above ground came the thermal with the Diamond in it. The vital 300ft were agonising. I was tired, I was weary, but it was the greatest climb of my life. Just 300ft." *John Williamson on his Sea Breeze Diamond*

1963 "I was so low over the BMC motor works that I ordered my new car, and they accepted the order . . . then I flew home." *Wally Kahn after flight during the Nationals*
"Alex" Orde (former BGA Secretary) commenting on the pilot's attitude in the Foka — "It is like reading in bed."
"I am now convinced that a 15m glider is infinitely more fun to fly than these great big 18/19m aircraft . . . All we want is a few more people to take the Standard Class seriously." *John Delafield after winning the Standard Class Nationals*
". . . Would John Willie, who had started before me, have arrived? Five gliders were on the ground, one was a red Oly with white wings . . . it wasn't John Willie's. This discovery must rank among one of the "golden moments" of my life." *Peter Scott in "A most agreeable competition"*
"Nationals bring out the worst in the Coarse Pilot . . . Simply to see his rival flop to earth below is pure nectar — it is one of the few occasions on which the Coarse Pilot will break out into song as if intoxicated. (The only other occasion is when he is intoxicated.)" *Mike Bird on the art of Coarse Gliding*



1964 Lament: "As I was flying through the air,
I found some lift that wasn't there.
It wasn't there again today —
that's twice I've had to land away."
J.M.P.

1965 "No, that patch of cloud will be of no significance to this task — it's not there according to our charts . . ." *A Met man at South Cerney, 1965*
"I thought of the very large element of luck that affects competitions . . . Mike (Slazenger) and Nick (Goodhart) were on the ground and I was leaving them, we might all have been on the ground — or all in the air, when very low it is luck to hit lift at the last moment." *Paddy Kearon on winning a no contest day*

1968 "I landed at 8.40pm having taken 9hrs 25min of low flying and high adventure. I hope my account of all the difficulties will discourage anyone from trying to do it again." *Brennig James on the first UK 500km triangle*

1970 "To those who have never experienced a final glide after a long goal flight, it is difficult to describe the excitement when it is realised, that the thermal you are now in is going to get you home." *Bernard Fitchett*
"World Championships are essential to the well being of world gliding, but they must be the servant and not the master. Everyone knows what happens when the tail wags the dog — the unfortunate creature becomes unstable." *Ann Welch on World Championship's Classes and Rules*
"The amount of time spent in the air is not necessarily a measure of the effectiveness of instruction." *Bill Scull*

1972 "Time was when gliders had only one useful configuration — rigged. Then there was a long period when they had two — brakes open and shut. Now we have flaps and undercarriages, and a fair amount of cockpit work is involved in ensuring that one is correctly configured." *Frank Irving*

1973 "I worked like Hell to get out of the valley, eyes glued to the instruments. If I collide with anything at this height it will be with a bus not a glider." *Ralph Jones on winning the Nationals*

1974 "Whereas in the air a person may make good decisions and behave responsibly, on the ground he may feel that each move is being watched and criticized by the other members. This will make him less decisive and may inhibit him against taking charge of the situation." *Derek Piggott on pilot responsibility*

1975 "Such is the infinite number of combinations of lighting, weather conditions and cloud that every flight presents a totally different sequence of changing atmospheres: watery, smoky, icy, harsh and freezing. The luminous colours that appear and fade over a flexing wingtip are for me some of the real pleasures of gliding." *Rodney Tibbs*

1976 "The hours of flying achieved at nearly every contest I go to nowadays have been lessened by the restrictive practices which are year by year being progressively tightened in the drive to make the friendliest Regionals directly comparative to actual World Championships . . . Is it better training for 25 pilots to sit on the ground all day because pilot-selected take-offs are banned, whilst a visitor rolls up and flies 500km? . . . And the justification for this is to make the biennial task of selecting four pilots for the next World event slightly easier." *Philip Wills*

1977 ". . . Perhaps most important of all, these courses seem to have restored the element of excitement, enjoyment and fun to many under-confident, previously largely unassisted post-solo pilots . . ." *John Jeffries on Cross-country courses*

1978 "For me there is nothing to compare with the wonderful joy of mountain flying. I am always conscious of the very great privilege of being allowed to see such wonderful sights which only we glider pilots can enjoy." *Humphrey Dimock*



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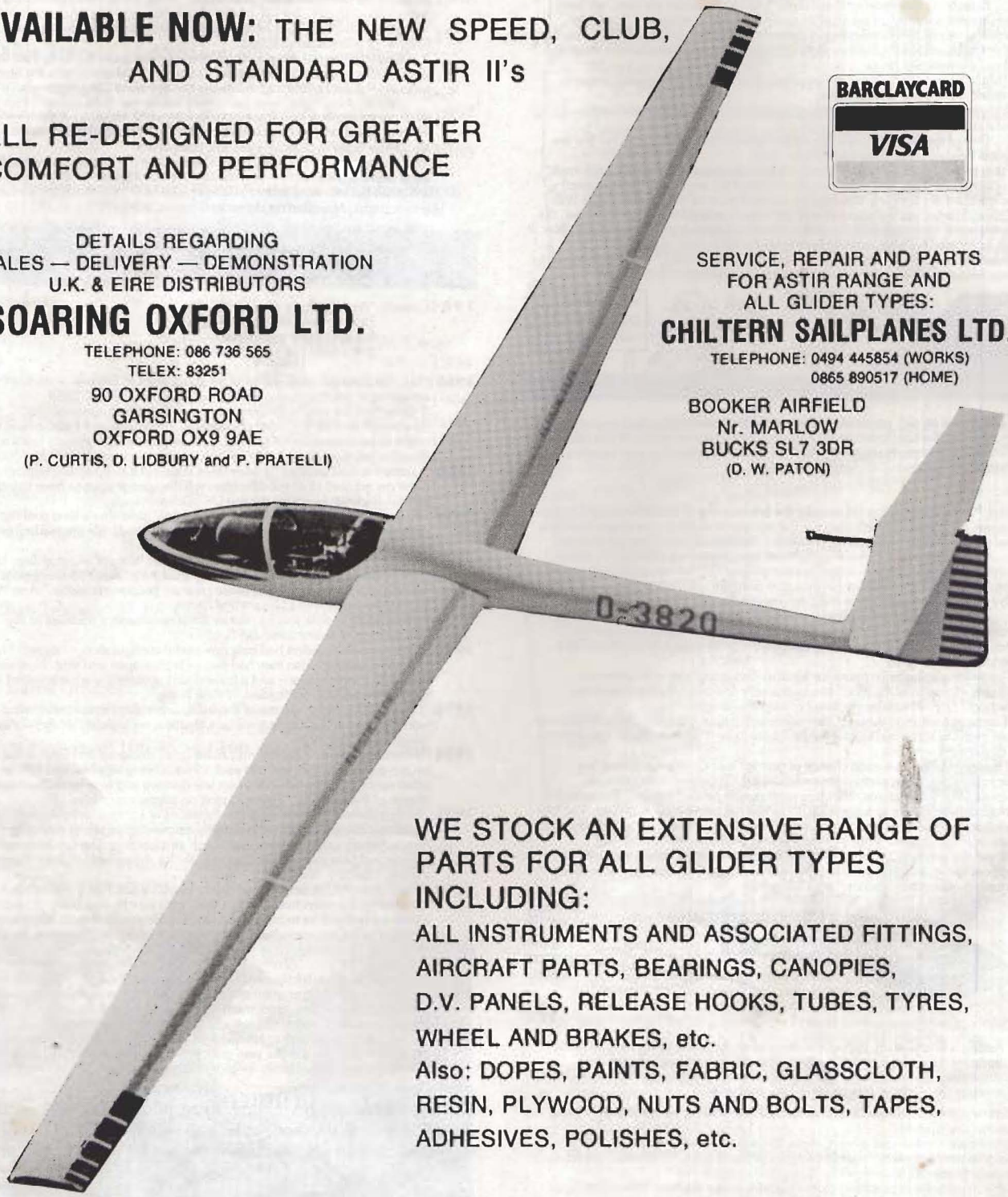
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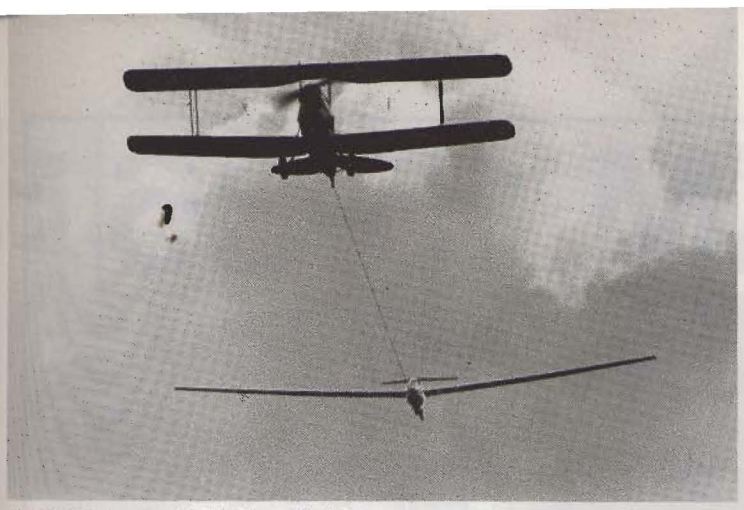
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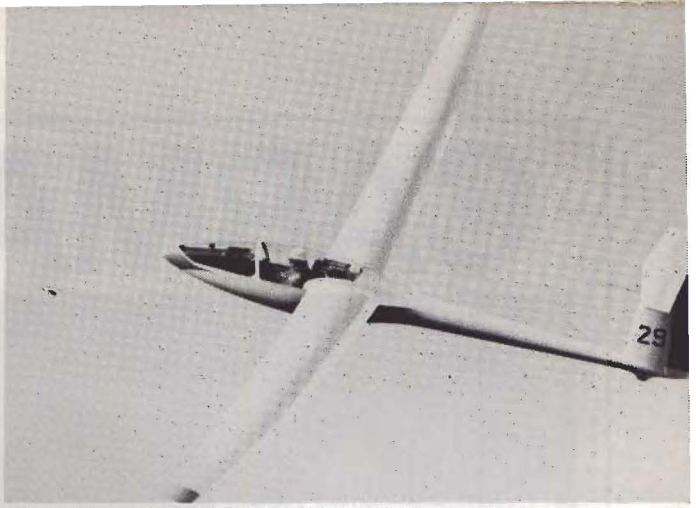


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A nostalgic touch with this Tiger Moth tug.



John Glossop (Kestrel 19) in close-up. Both photographs by Hans Smit.

EUROGLIDE 1979 — Husbands Bosworth, August 18-27

GILLIAN HOWE

After a wet and windy Nationals in May Euroglide *must* be better, the optimists thought, as Dickie Jeeps, CBE, holder of 24 Rugby caps for England, opened the contest at Husbands Bosworth on Saturday, August 18. But despite the best efforts of Met man David Robertson, Nagrafax machine at his elbow, and assorted sacrificial offerings of 49 contestants, we remained dogged by a succession of depressions with their attendant upper cloud, stratocu and small troughs: HB seemed like a magnet, drawing them relentlessly on and holding them stationary.

Eventually, of course, they did move on, but several days had to be flown in rather chancy conditions. So we had none of the standard August hot, blue and still weather — there was even a dearth of that faithful August get-you-home, the stubble fire. What fires there were seemed to be of rape, and, as one knowledgeable farmer remarked to a glider pilot who had been seduced to a column of thick white smoke, only to land shortly after: "Ar. I knew you was going to come down when I saw you in the smoke. Rape don't burn hot, see. She burn cold."

Husbands Bosworth is always a good place (even if the mushrooms did let us down this year!), and the organisation led by Claude Woodhouse worked with just the right amount of informality to encourage one to think for oneself and use common sense rather than wait to be herded by numbers. It never ceases to amaze me how many nice, capable people are willing to give up a week of their own holiday (when surely they'd rather be gliding) to ensure that the maximum number of competition pilots can have their fun. Dickie Jeeps, at the opening ceremony, observed that, although everyone was trying their hardest to win, the prime objective of any contest was for participants to have fun among friends, away from the stresses of everyday life.

Judging by the tantrums that some pilots indulge in this vital point frequently seems to be overlooked, and it is to Coventry Gliding Club's credit that all contest officials remained calm and courteous throughout the Competition, even when under criticism and complaint. It is easy to take a contest for granted: to assume that there will always be someone prepared to run it — for no reward and fewer thanks. But the continued success of our competitions must depend on the realisation and appreciation of the effort and goodwill put in by the host clubs. It is noticeable that our World Champion is never seen to be involved in such exhibitions; perhaps the cultivation of suitable temperament is a prerequisite for ultimate success.

There were two welcome contestants from Europe: Ingo Andresen from Germany, flying a DG-200, and Baer Selen, World Standard Class Champion from Holland, flying a Mosquito. Hopefully they enjoyed their visit and will come again — it would be nice to see more foreign pilots at Euroglide, if only so that there is an opportunity to reciprocate the kindness and hospitality given to British pilots abroad!

As for the competition itself, the final results speak for themselves: seven contest days in the Open and 15 Metre Classes, of which only two were 1000pt days, and five contest days in the Standard Class, also with only two 1000pt days. Tasks were modest; often the task setters were trying to fit something into a predicted "slot" in the weather, and a 316.9km quadrilateral was the biggest task to be completed by some pilots in all three Classes.

In the Open Class George Lee proved himself again a worthy Champion, winning the two longest tasks by a substantial margin.

A vital second task

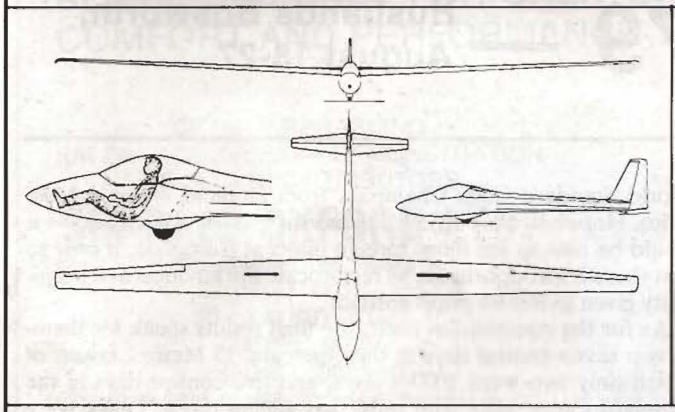
In the 15 Metre Class the results were largely determined by the outcome of the second task: a small shallow triangle with its first leg directly into a strengthening wind and weakening thermals, which eventually made further windward progress impossible. However, Brian Spreckley and Andrew Davis managed to reach the turning point at that critical moment, and thereafter were swept merrily downwind to the second turning point. They ended up first and second overall.

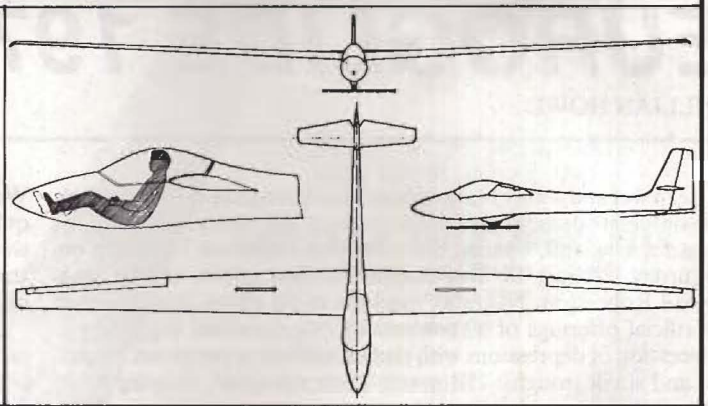
In the Standard Class the main feature was the lack of entrants. It looks as if this trend will continue, at least until the advent of successful variable geometry in the 15 Metre Class, when their expense will presumably drive many back to the Standard Class. Perhaps the admission of 15 Metre aircraft into the Standard Class, providing their flaps are locked, as in the USA, would strengthen the Class now, and prepare it for the future.

Finally, just a few of the hard luck stories: Chris Garton got caught on the wrong side of a storm on Day 4 and scored only 34pts. Baer Selen scored zero landing near Corby on Day 5, just as conditions were improving and most pilots went on to complete the task. Justin Wills thought he had won Day 6 easily until it was discovered he had photographed the wrong canal bridge at Hungerford, thereby losing 860pts. And last of all, every contest pilot's nightmare: J. P. Gorringe, within five points of the leader in the Standard Class on the final day, landed out.

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	15.34 (Kit)	15.36A (fixed wheel)
Wing span	15 m	15 m
Wing area	11 m2	11 m2
Aspect ratio	20.4	20.4
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Cockpit width	.58 m	.60 m
Cockpit height	.90 m	.90 m
Empty weight	225 kg	200 kg
Gross weight	335 kg	310 kg
Gross weight with water ballast	—	390 kg
Wing loading	30.5 kg/m2	—
VNE	220 km/h	240 km/h
Best glide angle at 90 km/h	36	36:1
Min sink at 75 km/h	.64 m/s	.62 m/s
Stalling speed	63 km/h	62 km/h

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	Glass fibre wings complete	25,272 Francs	
	Water ballast optional extra		64,044 Francs
	Retractable wheel optional extra		69,012 Francs
DELIVERY	Fuselage and tailplane kit	6/8 weeks	
	Wings	3/4 months	
	Production model 15.36A and 15.36AR		Jan 1980

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EUROGLIDE FINAL RESULTS

Open Class

No.	Pilot	Sailplane H'cap	Day 1.19.8 147.1km ▲ Melton Mowbray, Olney	Day 2.20.8 172.8km ▲ Thame, Olney	Day 3.21.8 282.7km ■ Northleach, Bicester, Caxton Gibbett	Day 4.22.8 403.8km ■ Ross on Wye, Bloxham, Duxford	Day 5.25.8 187.6km ⇄ dogleg, Uppingham, Winthorpe, Uppingham	Day 8.26.8 318.9km ■ Thame, Hungerford, M50/A417 junction	Day 7.27.8 158.7km ▲ Toddington, Stratford on Avon	Points
1	Lee, D. G.	118 ASW-17	430	358	1000	700	959	1000	746	5193
2	Lysakowski, E. R.	118 Nimbus 2	452	589	801	769	974	919	625	5129
3	Fitchett, B.	118 ASW-17	536	557	808	667	639	960	794	4961
4	Garton, C.	118 Nimbus 2C	430	694	841	34	637	817	639	4092
5	Kay, A. E.	118 Jantar 2	450	124	714	472	549	795	649	3753
6	Roberts, D. G.	114 Kestrel 19	317	242*	671	379	765	756	472	3602
7	Camp, G. W. G.	119 Nimbus 2C+	369	76	710	439	454	707	610	3365
8	Pozerskis, P.	118 ASW-17	290*	201	739	0	682	685*	518	3115
9	Cockburn, D.	114 Kestrel 19	317	313	434	61	575	707	653	3060
10	Glossop, J. D. J.	114 Kestrel 19	221	567	727	236	0	657	615	3023
11	Jones, R.	118 Nimbus 2C	430	0	32	439	844*	41	482	2268
12	Clarke, R. W.	118 Nimbus 2	0	486	619	34	568	518	DNF	2225
13	Docherty, T.	114 Kestrel 19	0	76	650	0	0	364	835	1725
14	Mason, E. J.	118 Nimbus 2	0	0	604	220	0	218	78	1120
15	Herringshaw, G. H.	116 Kestrel 20	0	0	367	0	6	0	270	843

+ = span extended by approx. 0.5m.

15m Class

No.	Pilot	Sailplane H'cap	Day 1.19.8 147.1km ▲ Melton Mowbray, Olney	Day 2.20.8 172.8km ▲ Thame, Olney	Day 3.21.8 282.7km ■ Northleach, Bicester, Caxton Gibbett	Day 4.22.8 363.5km ▲ Ross on Wye Caxton Gibbett	Day 5.25.8 167.6km ⇄ dogleg Uppingham, Winthorpe, Uppingham	Day 6.26.8 316.9km ■ Thame, Hungerford, M/50/A417 junction	Day 7.27.8 158.7km ▲ Toddington, Stratford on Avon	Total Points
1	Spreckley, B. T.	108 ASW-20	317	557	1000	523	914	997	876	5184
2	Davis, A. J.	108 Nimbus 15	281	529*	913	311	967	762	885	4648
3	Campbell, D. R.	108 ASW-20	317	290	692	277	923	991	934	4424
4	Watt, D. S.	108 ASW-20	107	134	912	517	973	993	657	4293
5	Wills, J.	108 Mosquito	397	162	911	405	937	140	994	3946
6	Selen, B.	108 Mosquito	177	333	832	523	0	1000	872	3737
7	Redman, S. J.	108 LS-3	122	0	960	50	1000	719	882	3733
8	Wells, M. D.	108 Mosquito	295	109	803	30	617	990	836	3680
9	Rollings, C. C.	106 PIK 20D	317	254	793	0	860	620*	804	3648
10	Andresen, I.	108 DG-200	215	0	741	148	977	711	672	3464
11	Crouch, R.	108 ASW-20	75	0	599	469	536*	747	943	3369
12	Aldous, R. F.	108 Nimbus 15	317	153	764	10	912	692	313	3161
13	Miller, A. S.	108 ASW-20	276	0	363	255	961	669	576	3100
14	Hood, L. S.	108 Nimbus 15	230	84	895	7	511	717	631	3075
15	MacFadyen, T. E.	108 Vega[1]	209	0	74	356	826*	790	680	2915
16	Farmer, A.	108 Nimbus 15	267	151	341	0	516	984	303	2562
17	Stone, A. J.	108 Nimbus 15	33	154	882	0	DNF	676	738	2483
18	Cook, I. R.	108 Nimbus 15	49	0	612+	54	582*	626	547	2470
19	Tanner L.E.N.	108 Vega[2]	0	307	554	356	516	110	568	2411
20	St Pierre, A. N. G.	106 PIK 20B	0	71	631	19	226	444	648	2039
21	Cowderoy, R. I.	114 Speed Astir	0	0	645	60	516	306	345	1872
22	Sheard, P. G.	108 Nimbus 15	212	54	483	28	363	695	DNF	1835
23	Murdoch, I. M.	108 Mosquito	0	412	761*	39	0	140	341	1693
24	Dimock, H. R.	108 Mosquito	317	0	8	0	0	453	496	1274
25	Burton, A. J.	108 Vega	214	0	40	0	226	0	DNF	480

[1] = flew SHK after Day 4; [2] = flew different Vega after Day 4.

Standard Class

No.	Pilot	Sailplane H'cap	Day 1.19.8 147.1km ▲ Melton Mowbray, Olney	Day 2.21.8 195.7km ▲ Chipping Norton, Oundle	Day 3.25.8 134.6km ⇄ dogleg Uppingham, Bottesford, Uppingham	Day 4.26.8 316.9km ■ Thame, Hungerford M50/A417 junction	Day 5.27.8 110km ⇄ Stratford on Avon	Total Points
1	Smith, G. N. D.	101 Std Jantar	32	1000	547*	816	951	3346
2	Hackett, N. G.	101 Std Jantar	0	232	666*	1000	683	2581
3	Forsey, L. K.	98 ASW-15B	134	833	0	803	779	2549
4	Gorninge, J. P.	100 Std Cirrus	188	863	526	813	68	2458
5	Blackmore, R. H. J.	101 Std Jantar	0	836	551+	870	159	2416
6	Ellis, C. A. P.	94 Dart 17R	10	689	0	840	788	2327
7	Jury, A. R.	100 Std Cirrus	64	0	480	384	980	1908
8	Walker, R. B.	96 Std Libelle	69	613*	0	55	784	1521
9	Lombard, W. C.	100 Std Cirrus	11	771	0	389	245	1416

* = 5% photo penalty; + = 10% photo penalty; DNF = did not fly.

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REGIONALS' RESULTS

ENSTONE REGIONALS — **August 4-12**

Sport Class

No.	Pilot	Sailplane H'cap	Day 1.4.8 195km ▲	Day 2.5.8 168km ■	Day 3.7.8. 120km ▲	Day 4.10.8 191km ▲	Day 5.11.8 207km ▲	Total Points
1	Warminger, A. H.	112 Kestrel 19	1000	615	550	944	980	4289
2	Watchorn, T.	112 Kestrel 19	894	743	513	1000	860	4010
3	Heames, C.	108 ASW-20	0	922	492	936	1000	3350
4	Elliott, B	99 Astir CS	816	470	586	550	575	2997
5	Stevens, L.	112 Jantar 1	783	336	DNF	878	869	2886
6	Hoy, S. L.	108 ASW-20	169	1000	175	885	535	2764
7	Cook, R.	99 Astir CS	723	669	9	782	491	2674
8	Evans, B.	99 Astir CS	927	—	0	—	478	
	Green, T.		—	681	—	558	—	2642
9	Corkell, I.	106 Vega	763	—	—	0	DNF	
	Whitt, P.		—	473	67	—	—	1303
10	Morley, A.	106 Vega	139	514	0*	352	0	1005
11	Duffin, Earle	108 Speed Astir	0	—	0	—	374	
	Duffin, Eric		—	221	—	324	—	919
Hors Concours								
	Hall, R.	102 ASW-19	DNF	DNF	(1st)	(2nd)	DNF	

* = No claim made.

Club Class

No.	Pilot	Sailplane H'cap	Day 1.4.8 169km ▲	Day 2.5.8 154km ■	Day 3.7.8 120km ▲	Day 4.10.8 147km ▲	Day 5.11.8 151km ▲	Day 6.12.8 79km ▲	Total Points
1	Forrest, B.	84 Skylark 3F	872	1000	188	507	840	750	4157
2	Forrest, R. G.	84 Skylark 3B	851	492	0	1000	1000	729	4072
3	Marshall, B.	98 Std Libelle	817	370	23	951	401	566	3128
4	Lees, P.	96 Std Libelle	460	667	0	209	661	612	2609
5	Giles, E.	94 Foka 5	801	419	6	217	671	0	2114
6	Hughes, B.	97 Twin Astir	75	—	20	—	835	—	
	Cockett, T. F.		—	268	—	205	—	0	1403
7	Moxon, M.	86 Skylark 4	0	360	153	DNF	534	191	1238
8	Potter, C.	70 Olympia 2B	0	560	0	373	193	0	1126
9	Peck, D.	88 Olympia 419	457	DNF	6	85	427	141	1116

DNF = did not fly.

NORTHERN REGIONALS — **August 4-12**

Open Class

No.	Pilot	Sailplane H'cap	Day 1.4.8 167km ⇐	Day 2.10.8 307km ▲	Day 3.11.8 108km ■	Total Points
1	Christey, R. B.	108 ASW-20	975	531	490	1996
2	Hunt, S.	98 Std Cirrus	1000	630	290	1920
3	Mainwaring, A. J.	100 SHK	968	642	198	1808
4	Bleaken, L.	118 Nimbus 2	929	525	204	1658
5	Austen, D. C.	106 DG-200	938	588	123	1649
6	Clemo, R.					
	Cockburn, D.	114 Kestrel 19	921	550	118	1589
7	Ramsden, P.	112 Kestrel 19	904	535	135	1574
8	Taylor, J. R.	98 Std Cirrus	748	723	25	1496
9	Taylor, K.	100 SHK	338	642	492	1472
10	Carr, S. L.	102 Cirrus 17	668	620	71	1359
11	Grainger, J.	Std Jantar	367	720	245	1332
12	Spink, E.	106 DG-200	659	543	87	1289
13	Young, W.	96 DG-100	337	687	133	1157
14	Russell, F. K.	112 Kestrel 19	530	512	0	1042
15	Hulme, A. J.	106 PIK 20D	827	317	57	1001
16	Lloyd, K.	101 Std Jantar	30	599	248	877
17	Robson, R.	108 Kestrel 17	0	541	220	761
18	Mortimer, R.	114 Jantar 1	203	484	0	687
19	St. Pierre, A. H. G.	106 PIK 20B	0	607	0	607

Club Class

No.	Pilot	Sailplane H'cap	Day 1.4.8 127km ⇐	Day 2.10.8 211km ▲	Day 3.11.8 100km ▲	Total Points
1	Hart, J. E. B.	84 K-6CR	382	999	441	1822
2	Hayes, D. M.	96 Std Libelle	412	771	167	1350
3	Bond, M.	82 Pirat	411	692	148	1251
4	James, P.	96 Std Libelle	368	681	155	1184
5	Hutley, C.	86 Skylark 4	98	1000	46	1144
6	Milner, C.	72 K-7	227	806	72	1105
7	Mills, R.					
	Rodgers, N.	82 Pirat	0	679	203	882
8	Fox, R.					
	Durman, J.	96 Cobra	352	517	0	869
9	Stott, B.					
	Waudby, M. A.	82 Olympia 463	314	550	0	864
10	Jackson, R.	88 Dart 15	0	519	198	817
11	Beck, J.	96 Club Astir	40	533	176	749
12	Nash, S.					
	Beale, B.	84 K-6CR	48	481	213	742
13	Corbett, G.	96 Std Libelle	40	501	195	736
14	Norrison, P. R.	84 K-6CR	0	560	140	700
15	Jeffries, M.	76 K-13	DNF	624	DNF	624
16	Townsend, A.	88 Dart 15	0	519	0	519
17	Swannack, J.					
	Rice, J. W.	96 Std Libelle	0	504	0	504
18	Taylor, C.	SD-135	0	244	148	392
19	O'Niel, B. V.					
	Kirbitson, R.	96 Pilatus B-4	0	340	0	340
20	Houghton, J. L.	78 Skylark 2	DNF	244	31	275
21	Chaplin, D.	92 Pilatus B-4	0	0	4	3

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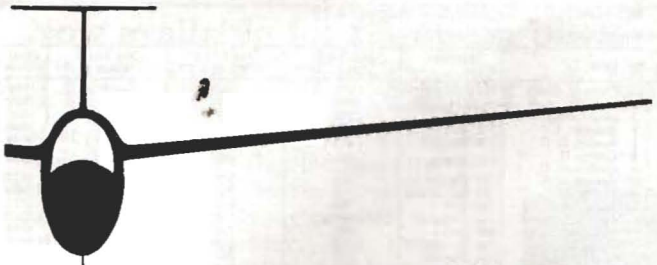
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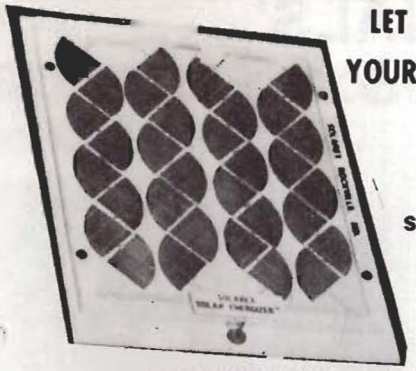
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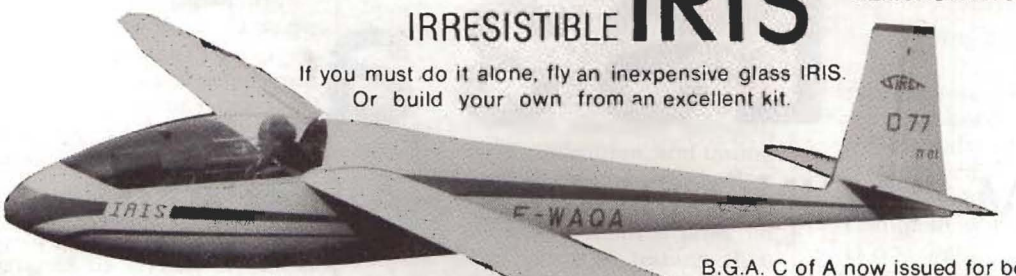
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VEGAS and WINGS and THINGS

ROGER BULL, Sales Manager of Slingsby Engineering Ltd.

During the Italian Championships held this year in the mountains at Rieti a Vega flown by Baer Selen broke up in mid-air during its final glide. The pilot parachuted successfully and was unhurt. The weather at the time was reported as fine with some cumulus, base 3000m, ground temperature 30°C+, thermal strengths around 10kt. The accident occurred at 2200m whilst flying straight and level at 120kt in moderately calm air.

The aircraft was recovered and returned to the factory at Kirkbymoorside for investigation. In discussions with the pilot, and on investigating the aircraft, it was apparent that the port wing had broken off ½ metre out from the root end. However the mode of failure was not obvious — possibilities included bending, torsion or shear. We therefore decided to carry out a full scale investigation on all aspects of the strength of the wing.

Previous testing completed

Calculations were re-checked, and a completed pair of wings were taken out of production to repeat previous testing. The first series of tests was to be the three primary design cases from the flight and gust envelopes:-

1) Maximum negative g $-3.3g$
2) Maximum positive g $5.3g$
3) Maximum torsion occurring at $-2g$ at 150kt.

The first test, negative g, was OK. However during the second test, just as we reached $+5.3g$, a loud bang was heard but with no apparent effect. However on derigging, it was found that both wing tang spigots had fractured.

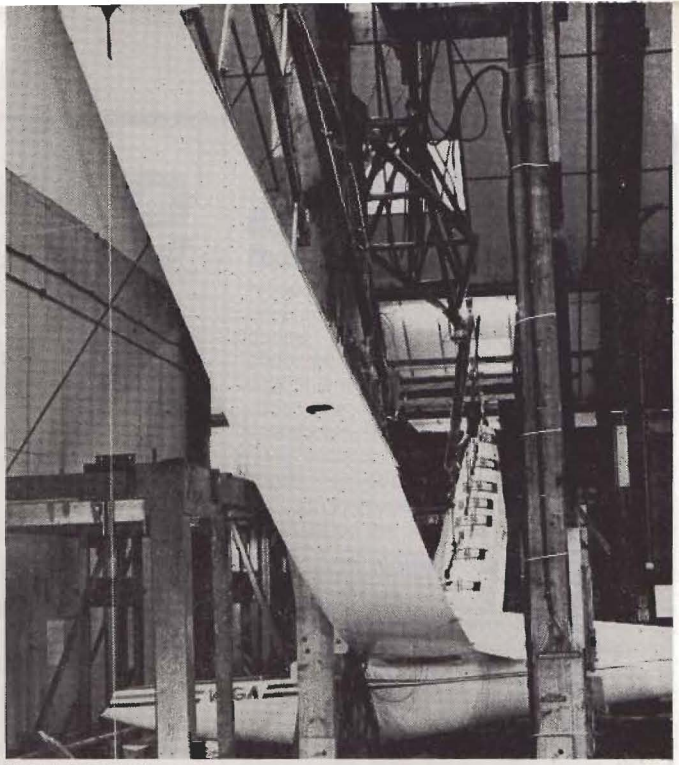
We immediately grounded all Vegas and carried out separate tests on these spigots. We soon discovered that one batch was sub-standard. The subcontractors, who have completely admitted their liability, had failed to heat treat this steel, but had carried out the final nitriding process which gives a very hard non-wearing surface, thus masking the soft untreated steel core.

All aircraft with affected spigots remained grounded, whilst aircraft unaffected were re-cleared for flight. The Italian aircraft was one of the latter, and its spigots were undamaged after the accident.

Having got that red herring out of the way, we returned to our investigation. On the third test minor externally visible damage occurred just at maximum torsion.

Since we had so far found no obvious reason for the accident, we turned our attention to the possibility of flutter. We held discussions with British Aerospace, who together with RAE Farnborough and ourselves had carried out the original flutter analysis. These calculations had shown that the flutter speed was unaffected by waterballast, and was predicted at 173kt. We had previously flown to 153kt to establish freedom from flutter, and nobody in their right minds goes much closer than that! So far then, we had shown that the wing would stand the flight loads in both positive and negative bending without damage, in torsion with only minor damage, and would not flutter at 120kt unless the torsional stiffness of the wing was degraded to half its normal value in some way. Although the minor damage in torsion was beginning to give us a clue to the cause of the accident, we nevertheless decided to continue the tests to ultimate loads.

The negative g ultimate design load (*ie* the load at which the structure should just not break) was satisfactorily achieved. However the positive design ultimate load was not quite achieved, which was "bad news", but could not be considered the cause of the accident, since it occurred in comparatively calm air.



Vega wings under test

We are left with only one explanation which fits the facts. The pilot reported that in an earlier phase of the flight, after crossing the startline he encountered a strong negative gust. The wing from the "Italian" Vega was, apart from the main failure, damaged in the same position as the test wing in the torsion case. A sufficiently strong negative gust would cause torsion loads similar to those we had imposed on test. Now, once damage to the wing had occurred, the further three hours flying in rough air would cause that damage to extend, and the net result of the extended damage would be a severe reduction of wing torsional stiffness, which in turn would allow the onset of flutter at a speed much lower than the normal flutter speed of 173kt. Now the accident happened on the first occasion during the flight at which the pilot increased his speed to 120kt after crossing the startline at 130kt.

We must therefore conclude that the aircraft had been subjected to flight loads of the same order as the maximum for which the aircraft is designed, and the accident was only made possible by further hard flying. We then turned our attention to the other results of the test programme. The remedy for the minor damage caused by torsion was simple, but the reason for the wing failing in bending marginally below the positive design ultimate load was not immediately apparent.

Highly complex problem

There followed many hours of finite element computer analysis to try to determine the discrepancy between the test results and the original calculations. Although a glider is basically a simple structure, the problem proved to be highly complex, and involved the relative stiffnesses of the spar web and caps (be they made of carbon or glass-fibre).

In support of the computer analysis we made and tested 11 structural test beams, plus a number of stub wings, and a further two pairs of complete wings with a number of minor modifications. We achieved very good correlation between the test results and the computer analysis. After all this work the modifications required are relatively minor — just a local beefing up of the spar web near the root.

Vega must now be the most extensively tested glider in production, and the level of confidence in its safety is correspondingly high. Personally I can't wait for my demonstrator to be modified, since the rest of you won't get a look in when it is!

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BOOK REVIEWS

Soaring Across Country by W. G. Scull, published by Pelham Books. Price £7.95, available from BGA at £8.25 including p&p.

Soaring Across Country has filled a gap in the books available on gliding training, between those concerned with *ab-initio* basics and those which concentrate on the "go faster" competition material.

The subjects covered are all of those required by the up and coming pilot whose first priority is to remain in the air and gain flying experience, whilst he attempts his badge and closed circuit flights with a greater chance of success.

That one third of the book is devoted to navigation probably reflects the author's opinion that there is a considerable need for improved competence in this skill if we are in the future to be able to be responsible in the ever pressing airspace context.

I most of all enjoyed the early chapters on the practical flying subjects. In particular those concerned with accuracy which are very well explained.

I believe this book will not only help the newly soloed pilot but may give instructors food for thought in establishing those post-solo priorities.

V. C. CARR

For those of our readers who have a knowledge of the German language there is a number of recently published German books which are well worth having. Some of these are now available in this country from Solent Sailplanes, 10-11 Carlton Place, Southampton, Hants.

Die berühmtesten Segelflugzeuge (The most famous Sailplanes) by Georg Brütting, published (1976) by Motorbuch Verlag Stuttgart, obtainable from address above. Price £11.72. Format 9¼x10½in, 220pp, 270 illustrations.

This book describes the most famous sailplanes from 1920-1976, their history, origin, development and some of the pilots who flew them. If one takes into account that the pioneers not only had to build gliders but had to teach themselves how to fly them it is amazing how quickly they reached a high standard of performance. The book provides a mine of information, is well written and illustrated with some fascinating photos, GA drawings and of course technical data. It shows clearly how much the students of the various German Universities (known as Akaflieg) contributed to the development of sailplanes — a tradition which still continues today.

Die Entwicklung der Kunststoff Segelflugzeuge (The development of "synthetic" Sailplanes) by Dietmar Geistmann, published (1976) by Motorbuch Verlag Stuttgart, obtainable from address above. Price £14.91. Format 9¼x10½in, 200pp, 213 illustrations.

The development of "synthetic" sailplanes deals with the era of sailplanes which came about in the early 1960s. The Phönix was in fact the first sailplane constructed entirely of man-made fibres and was a development of the Akaflieg Stuttgart FS-24 which first flew in 1957; but it was well ahead of its time and although it did well and won a contest neither manufacturers nor pilots were ready for it. Then in 1964 the Phoebus had its maiden flight and quickly showed what could be done with the new materials now available, and by 1967 when the Glasflügel Libelle series started it cornered the market. The various Akafliegs and leading manufacturers' designs and constructions are well described and illustrated and the book is full of information.

Mit dem Wetter Segelfliegen (Flying with the Weather) and **Wolken Wind und Wellenflug** (Cloud Wind and Wave Flight) both by Manfred Kreipl, published by Motorbuch Verlag Stuttgart, Postfach 1370, D-7000 Stuttgart, West Germany. Price DM28 and DM45 respectively plus P&P. Format 9¼x10½in, 148pp, 119 b/w illustrations and 9¼x10½in, 148pp, 114 illustrations of which 25 in colour.

Manfred Kreipl, a professional meteorologist who glides as a hobby, has been closely connected with the German gliding movement for some years. Apart from accompanying the German Team to Chateauroux his advice is eagerly sought by competition pilots and those who are planning to fly higher, faster and further.

His first book **(Flying with the Weather)** first published in 1976 needed after its immediate success a second edition a year later. It explains in easy to understand language, photos and diagrams what any glider pilot ought to know about meteorology. It is aimed to provide basic knowledge about the weather in general and more specifically the use thereof for gliding.

His second book **(Cloud Wind and Wave Flight)** just published and containing colour photographs to make your mouth water is, as the sub-title on the cover indicates, a meteorological guide for high-performance flying. It is of course true that flying technique and tactics are of little use to a pilot if he is unable to interpret the weather in which he is flying, whatever the excellence of his particular glider may be. It is this type of information (based on continental weather and mountains) that the author has gathered together, after long discussions with pilots who fly in these conditions. This book will enable others to set about their flight planning with a greater understanding of the weather and thus greater chance of success.

RIKA HARWOOD

Vintage Aircraft Directory, compiled, edited and published by Gordon Riley. Price £1.25 and distributed by Battle of Britain Prints International Ltd, 3 New Plaistow Road, London E15 3JA.

For anyone interested in vintage aircraft, and a number are still being used as glider tugs, this is the book to buy. Details are given of ownership, where they are based and their condition. This is the fifth edition and like its forerunners the presentation is concise and made attractive by the generous use of photographs.

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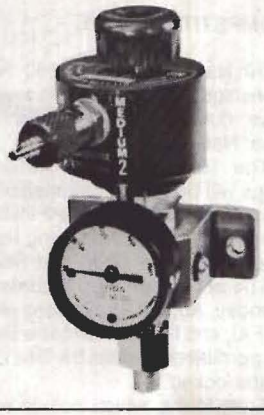
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BGA AND GENERAL NEWS

NATIONAL LADDER RESULTS

This year, following the custom in the French inter-club competition, participating clubs in the National Ladder have been placed in scoring order. The score for this purpose is arrived at by totalling the points scored by all a club's members and dividing by the number of flying members in the club as published in S&G. (Annual statistics, p24, February issue.)

David Lilburn of the Yorkshire GC comes top of the Open Ladder to win the Enigma trophy; Chris Rollings of Airways heads the Club Ladder for the L. du Garde Peach trophy and Coventry are the leading club. So far there isn't a trophy for the top club but perhaps, in this 50th anniversary year, a generous person might like to donate a trophy.

Open Ladder

Leading pilot	*Club*	*Pts*	*Flts*
1 D. W. Lilburn	Yorkshire	7012	4
2 L. Beer	Thames Valley	6317	4
3 A. E. Kay	Thames Valley	5654	4
4 J. Cardiff	London	5578	4
5 N. Hackett	Coventry	5546	4
6 J. M. Scott	Cambridge Univ	5450	4

Club Ladder

Leading pilot	*Club*	*Pts*	*Flts*
1 C. Rollings	Airways	5677	4
2 G. Metcalfe	Surrey & Hants	4261	3
3 Lovell	Surrey & Hants	4022	4
4 Alison Jordon	Imperial College	3911	2
5 C. Evans	Thames Valley	3601	4
6 J. Jeffries	London	2800	2

Leading Clubs	*Pts per member*
1 Coventry	220
2 Cambridge Univ	191
3 Cotswold	186
4 Yorkshire	149
5 Oxford	128
6 Wycombe (Airways & Thames Valley)	115

COMPETITION NEWS

1980 Nationals. The 1980 National Championships will comprise two events, each of ten days' duration. There will be no Euroglide or other National-level contest.

The 15 Metre Class National Championships will be held at Dunstable from Saturday, May 24 to Monday, June 2 inclusive (note that the last day is not the Spring Bank Holiday this time), whilst the Open and Standard Classes will be at Lasham from Saturday, August 16 to Monday, August 25. Classes will be as defined by FAI, and flapped 15 metre sailplanes will not be permitted to enter the Standard Class with "flaps locked".

Entry forms, which include entry details and fees, are obtainable from the BGA office. Pilots may enter one or both events, and eligibility for all Classes will be determined by the Priority and Promotion Nationals Qualifying Lists, copies of which are obtainable from the BGA and will be published in the next issue of S&G.

1980 Regionals. Applications are invited from organising clubs. Preferred dates to avoid overlaps are: May 10-18; June 7-15; June 21-29; July 5-13; July 19-27 and August 2-10.

World Championships. Mike Carlton has been appointed British Team Manager for the next World Championships which will be at Paderborn, West Germany, from May 17 to June 7, 1981.

Gordon Camp,
Chairman, BGA Competitions Committee.

1980 COACHING PROGRAMME

At the time of going to press the details of the coaching programme have not been finalised. However, points of interest which you may care to note are the introduction of a new course for soaring and cross-country flying and short courses to help assistant instructors preparing for the full rating test.

The soaring and cross-country courses have evolved from the task weeks of previous years and the "John Jeffries' Style" escorted cross-countries.

The number attending will probably be limited to 12 and they will be open to pilots and instructors, with preference given to the latter, since they will pass on what they learn. The demand is likely to exceed the places available so if you are interested write to the BGA for details.

The weekend courses to help assistant instructors prepare for the full rating could also be regarded as refresher courses for anyone who has been instructing for a few years and feels the need to up-date or to confirm that his methods are along the right lines. Your CFI will have details of these and other events; alternatively get in touch with the BGA.

W. G. Scull,
BGA Director of Operations.

SIGMA FUND

The BGA Executive Committee is delighted to announce the establishment of a fund to further technical aspects of gliding. The Directors of Operation Sigma Ltd have given nearly £6000 to the BGA for this purpose and the money is to be known as "The Sigma Fund".

As a first step the Executive Committee has decided to make prize money of £3750 available from the Sigma fund for a Home-Built Sailplane Competition. Details of the competition will be announced in the next issue of S&G and entry forms are now available from the BGA office. Alan Yates, Chairman of the BGA Technical Committee, has been appointed as Chairman of the Judges Panel. Preliminary proposals from entrants must be submitted to the BGA by March 31, 1980. They will then be reviewed by the Judges Panel and a short list of entrants will be invited to submit full and final proposals before December 31, 1980.

ANY ADVANCES

After the Blackpool & Fylde GC club news correspondent mentioned in the last issue (p242) that their member, Stan Race, held an A Certificate No. 1944 and asked if any club could boast a lower number, we have heard from Geoff Vaughan of the Dowty GC.

He holds the old British Empire (Royal Aero Club) Certificate No. 1076 which is endorsed for the A, B and C Certificates in August 1938 when he learnt to glide at Sutton Bank in company with Amy Johnson.

Geoff, who is 78 years-old, got his Bronze C this August and still flies regularly.

"NON-SPILL" BATTERIES ONLY

Lloyd's Aviation Department have asked us to promote a campaign for "non-spill" batteries to be fitted in all gliders, not least of all plastic ships. As Dick Stratton, BGA Technical Officer, stresses, the latter are just as vulnerable to acid as the others.

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BGA WEEKEND 1980

March 15-16 is the weekend to mark in your diaries for next year — the big gliding social and business event for 1980 will be the BGA Weekend to be held at the Post House, Rugby. The price will be £11.00 a ticket for the dinner, dance and party, and accommodation at the hotel will be at the special rate of £9.50 single or £14.00 double per night. All bookings will be through the BGA office on registration forms which will be available shortly. We hope to make this a special occasion to celebrate our Golden Jubilee in style, and as space is limited at the hotel we urge you to make your bookings early. Incidentally, there is a "helipad" at the hotel but it doesn't look big enough to land a glider on!

PHILIP WILLS MEMORIAL FUND

The Trustees of the Philip Wills Memorial Fund thank the following for their donations received up to October 4.

Doncaster GC
Dowty GC
R. Faix
R. Jarvis
R. Knight
A. J. Lambert
A. M. Rose
D. M. Shadrach
J. M. Staley
Vintage Glider Club
A. C. White
N. White
Yorkshire GC

OFFICIAL OBSERVERS

The 1980 edition of the FAI Sporting Code is due for issue in the New Year. All current Official Observers registrations will then be invalidated.

Renewals will involve a small fee to cover the cost of the new code and revised BGA Notes. It is therefore suggested that in the meantime clubs restrict applications for appointment to those where there is a real need, so avoiding the payment of two sets of fees within a few months.

S&G PRICE INCREASE

We regret that S&G will be increased to 85p per copy from February-March issue. The annual subscription, which includes postage, will be £6.25.

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1979
98	G. W. G. Camp	Bicester	16.9
99	A. R. Hancock	Bannerdown	5.8

DIAMOND DISTANCE

No.	Name	Club	1979
1/156	A. R. Hancock	Bannerdown	5.8

DIAMOND GOAL

No.	Name	Club	1979
2/929	L. Brown	London	14.7
2/930	R. J. Baker	Cambridge Univ	10.7
2/931	D. K. Gardiner	SGU	30.6
2/932	S. B. Marshall	SGU	30.6
2/933	J. M. Luke	SGU	30.6
2/934	D. M. Chalmers	Airways	5.8
2/935	C. Brock	Narrowmine	13.3
2/936	P. R. Pentecost	Surrey & Hants	7.9
2/937	R. B. Walker	Cambridge Univ	14.7
2/938	K. R. Taylor	Humber	15.9

DIAMOND HEIGHT

No.	Name	Club	1979
3/411	S. G. Olender	Clevelands	16.9
3/412	R. J. Washer	Clevelands	16.9
3/413	I. Hewitt	Clevelands	16.9
3/414	G. S. Forsyth	Clevelands	16.9
3/415	K. R. Buckner	Clevelands	16.9
3/416	G. W. G. Camp	Bicester	16.9
3/417	J. M. Benson	Yorkshire	16.9
3/418	P. Warmstrong	Clevelands	18.9
3/419	K. Mitchell	Humber	18.9

GOLD C COMPLETE

No.	Name	Club	1979
723	D. K. Gardiner	SGU	30.6

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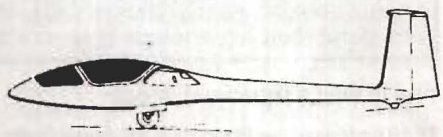
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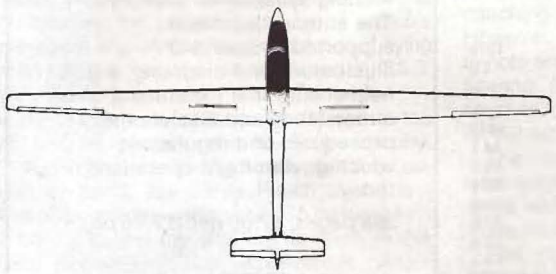
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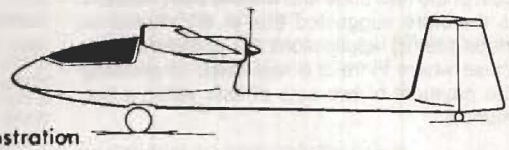
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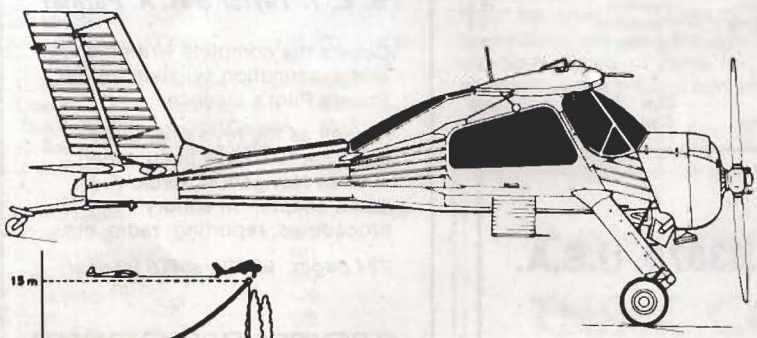
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729	D. M. Chambers	Airways	5.8
730	C. Brock	Narrowmine	13.3
731	A. Clarke	Humber	18.9
732	K. R. Taylor	Humber	15.9

GOLD C HEIGHT

Name	Club	1979
D. Bryan	Usk	7.5
J. Bottomley	SGU	17.7
L. C. Cameron	SGU	18.7
R. G. Forrest	Enstone	29.7
P. Newmark	Derby & Lancs	1.7
R. H. Walton	Northumbria	2.9
F. W. Chapman	Bicester	10.9
P. Clay	Yorkshire	16.9
A. Clarke	Humber	18.9
P. Warmstrong	Clevelands	18.9
K. Mitchell	Humber	18.9
Yvonne Washer	Clevelands	16.9
N. A. C. Norman	Cairngorm	29.8

GOLD C DISTANCE

Name	Club	1979
R. Brown	London	14.7
R. J. Baker	Cambridge Univ.	10.7
D. K. Gardiner	SGU	30.6
S. B. Marshall	SGU	30.6
I. B. Reed	Culdrose	22.8
C. Bailey	Two Rivers	19.5
J. M. Luke	SGU	30.6
D. M. Chalmers	Airways	5.8
C. Brock	Narrowmine	13.3
P. R. Pentecost	Surrey & Hants	7.9
K. R. Taylor	Humber	15.9

SILVER C

No.	Name	Club	1979
5327	J. Shanley	Yorkshire	27.6
5328	R. Gibberd	Surrey & Hants	26.6
5329	M. A. Parker	Bicester	15.7
5330	D. Beechey	RAE	14.7
5331	A. J. Lloyd	Hereford	15.7
5332	A. J. Queen	Anglia	19.5
5333	R. Arnall	Wrekin	15.7
5334	V. J. Teague	Midland	18.6
5335	R. V. Brain	Bannerdown	15.7
5336	G. D. Wilburn	Doncaster	15.7
5337	Anne Crowden	Airways	15.7
5338	S. A. Clemens	Bannerdown	15.7
5339	L. J. Smith	Cambridge Univ	5.7
5340	F. Paradie	Phoenix	23.6
5341	E. J. Alway	Buckminster	26.6
5342	R. P. Hubbard	Buno-Bonnevaux	28.6
5343	B. F. Hughes	Thames Valley	19.5
5344	Christine Potter	Enstone	21.7
5345	Viviene Goldstone	Oxford	14.7
5346	T. Low	Hambletons	14.7
5347	A. J. Verney	Bristol & Glos	21.7
5348	M. Brocklehurst	Avro	15.7
5349	B. Holburn	Northumbria	27.7
5350	M. Astley	Coventry	27.7
5351	R. J. S. Knight	Eagle	21.7
5352	H. Chapple	Kestrel	27.7
5353	P. M. Mason	Coventry	27.7
5354	J. F. Cawrey	S. Yorks & Notts	27.7
5355	P. F. Platt	Stratford	19.5
5356	J. R. Greig	Cairngorm	28.6
5357	C. D. Stainer	Buckminster	31.7
5358	A. S. Roder	Dowty	4.8
5359	R. W. Spiller	Chilterns	14.7
5360	R. D. Welsh	Bicester	5.7
5361	R. Boor	Bath & Wilts	1.8

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OVERSEAS NEWS

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OBITUARY

HANNA REITSCH

Born on March 29, 1912, at Hirschberg in Silesia, near the future Grunau Gliding School (all these names are changed now), Hanna Reitsch has died at the age of 67. Her flying career was so prodigious and varied that it cannot be fully covered here: but her first mention in S&G came on July 14, 1933 with a report of an exciting cloud flight in a Grunau Baby in which she was heaved up to 10 000ft, tossed about violently and deposited on the Schnee Koppe mountain to the south. Wolf Hirth flew over and dropped a bungey with which she was launched on a return flight to the Gliding School.

On the way she passed over her native town of Hirschberg, where her father ran an ophthalmic clinic and was anxious that she should take up medicine. Throughout her childhood she was madly devoted to aviation, which her father did not like at all, but she had an idea, which came to nothing, that she might combine the two by becoming a flying medical missionary in North Africa. But she never completed the medical course.

Came to the Nationals

Hanna's only visit to England was during an "Anglo-German camp" at Dunstable in 1937, when she and Wolf Hirth flew over, and then went off to Camphill for the first weekend of that year's Nationals. Her favourite building on this visit was the London Club's flashy bar, but Hirth's was the cowshed which served as Camphill's dining room.

Hanna Reitsch had already taken part in the first Internationals on the Wasserkuppe, in which a British team competed. Philip Wills wrote that on one day he decided to follow Hanna Reitsch: he was successful until "I thought I saw a better cloud and went to it." He was soon down. (But he made up for it three Championships later.)

An early start was made by Hanna in breaking feminine records. Durations 5hrs 30min in the autumn of 1932 and 10hrs in August, 1933, at Kossitten; distance: 160km in 1934, 210km in 1936 to 351km in 1937 (from Wasserkuppe to Hamburg). These flights included the needed ones for her Silver C: she obtained No. 25 in the international list on May 16, 1934, just a day before Eric Collins, whose No. 26 was dated May 17.

Perhaps the most spectacular of all her flights was the crossing of the Alps from Salzburg in a Sperber Junior specially designed for her by Hans Jacobs. Pilots in this competition had to carry survival kit. Though no British pilots took part, it was claimed to be the first true international competition, preceding the one on the Wasserkuppe by a couple of months. It was won by Hanna.

Hanna Reitsch must have learned to fly aeroplanes soon after gliders, for she flew one to England in 1937, though she damaged the undercarriage in an awkward landing at Camphill, and the German members of the Anglo-German camp had to repair it in the club workshop.



Carl Beck took this photo of Hanna Reitsch at the 1937 Nationals. Joan Price is on the left with Wolf Hirth nearer the camera.

By 1938 she was on helicopters, and gave a famous indoor demonstration in Berlin's Deutschlandhalle, which must have been something like the Albert Hall, for she climbed repeatedly from the floor to the roof. An unexpected snag was that the warm air breathed out by the spectators was too thin for the helicopter blades to get a grip on, so before each take-off a blast of cold air had to be wafted from outside.

The war was approaching, but could a mind obsessed by aviation find any room for politics? A clue is provided by Betsy Woodward, who holds the world's feminine altitude record of just 6ft less than 40 000ft. During a prolonged stay in England around 1954, she took the opportunity to make a flying tour of Germany, and there met Hanna Reitsch, whom she described as "a most extraordinary person." Hanna told her of an incident when she was being driven to the Gliding Research Institute (DFS) near Darmstadt. Passing through a town, she saw a collection of uniformed Nazis beating up a Jewish funeral. She was horrified, and naively demanded that her male companions should get out and try to stop it: but they drove on. After arrival at Darmstadt they took her aside and told her, for her own good, that she had better not concern herself with such matters.

When the war came, she got a job as test pilot at Rechlin, which was early interrupted by a severe attack of scarlet fever with rheumatic complications. (Wolf Hirth sent this information, along with news of other leading German pilots, in a letter in disguised handwriting from Belgrade, and I put it in S&G.)

Her work at Rechlin included testing rocket-driven aircraft, and she had some nasty accidents. While in hospital recovering from one of these, she received a letter from Himmler, enclosing some chocolate and asking her to come and see him after she had recovered. She and her mother, who had given her a religious upbringing, examined his letter with misgiving because, she said, they regarded Himmler as a sort of antichrist because of his attacks on the Bible: but decided that it seemed quite a nice letter, so she might as well go. On seeing him, she launched into complaints about his attacks on religion but had not been trained how to answer his replies. They had a long talk, including her futher complaints about his racial policy.

Just before the end of the war came that notorious story in Hitler's bunker by the Reichstag in Berlin. What started it was Goering's defection. Hitler dismissed him from his position as head of the Air Force, using a telephone line with which he could still communicate with the outside world. He decided to replace Goering with Ritter von Greim; but instead of doing so by telephone, Hitler ordered him to come to the bunker to receive the appointment, with the result that von Greim very nearly failed to live to take up his duties.

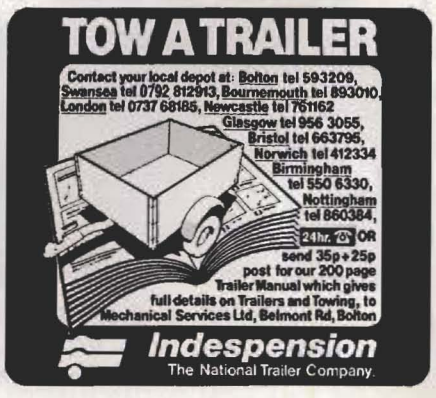
Hanna Reitsch was chosen to fly von Greim in to Berlin; but another story is that another pilot did the flying, and that Hanna was included so that she could transport von Greim by helicopter from the aeroplane's landing place to the bunker, which could only be reached that way.

Then an aeroplane had to fly to Berlin to take the two of them out again, but one after another they were shot down by the Russians. Then, two days before the Russians broke in and all the occupants had to commit suicide, an aeroplane got through and Hanna and von Greim were saved.

Then, when the war ended, Hanna was arrested and imprisoned by the Americans for over a year because, according to one story, they thought she had been "Hitler's private pilot." The story was widely believed in England: when Betsy Woodward doubted it in the London GC's bar she was met with an angry outburst from the men at the bar.

Hanna's post-war activities were back again in gliding, and she put up more feminine records, the last one being a 801km out and return. She had completed her three Diamonds in 1970. And in 1972 she was made an honorary member of the Society of Experimental Test Pilots in the USA.

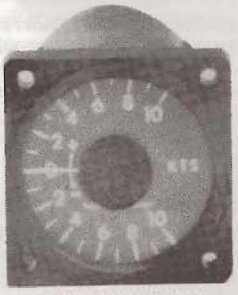
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CLUB NEWS

Copy and photographs for the February-March issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 47725, to arrive not later than December 4 and for the April-May issue to arrive not later than February 12.

October 10, 1979

GILLIAN BRYCE-SMITH

BORDERS (Milfield)

We have managed a fair amount of soaring this summer and the ladies have done particularly well with Sandra Calder. Cathy Booth and Frances Wright going solo. We are now looking forward to hill soaring and our super wave which always provides our best flying.

A.J.B.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)

We have bought a new K-13 to help ease the serviceability problems with our Bocian and Blanik, now giving the club three two-seaters and three single-seaters. Bad luck prize of the year must go to the old 657 syndicate who, having waited almost 18 months for their Vega, had it grounded for mandatory modifications the day after collecting it. Another exotic ship has appeared on site, an ASW-20 from Germany.

Our recently commissioned automatic winch, whose performance has already confirmed the sound design and excellent performance, ground to a halt. It is now being repaired with a few modifications thrown in to avoid a repetition.

R.A.R.

CAMBRIDGE UNIVERSITY (Cambridge and Duxford)

Hours, launches, cross-country kilometres and badge legs are healthily up on last year yet we seem to have flown on far fewer days.

Our first September camp at the Long Mynd for six years was a great success. We flew in every known type of lift, with wave in evidence almost every other day — not to great heights, but far enough for a hugely overdone Silver C gain of height of 7000ft *and* duration by Janet Garnett in the Olympia 2B. It was a great pleassure to be bungeying again — so civilised, though not without its hazard, as we proved.

At the end of September Ray Haddon and Colin Dews gained Diamond heights at Aboyne. Colin now has all three Diamonds.

S.N.L.

COVENTRY (Husbands Bosworth Airfield)

With the addition of the Supermunk we now have about the best tug fleet in the country. Our thanks to Arthur Carrington and his team for a wonderful job in converting one of the Chipmunks to take the 180 power unit.

Due to the indifferent season the total of cross-country kilometres is disappointing. The mini courses have been well attended, resulting in a clutch of solo pilots.

Our winter social programme started in October with a "Thank you" party to our farmer friends to be followed by the annual dinner and prizegiving on December 8 in the clubhouse.

One of our four Bocians will be at the Long Mynd during the autumn for our members who wish to sample the delights of that site. Our thanks to the Midland Club for their hospitality.

There will be further tree and shrub planting this autumn to continue the landscaping plans for the non-flying areas in an effort to blend the caravan parks with the surrounding countryside.

We welcome Allan Kangurs to our team of instructors having completed his course.

B.R.

DEVON & SOMERSET (North Hill)

We were all saddened by the tragic death of David Silverlock. He was a much loved and respected member, who will be missed by us all. We extend our sympathy to his family.

Mike Fitzgerald, our CFI, with the help of our stalwart band of instructors, has instituted an advanced training scheme which is gaining momentum. We welcome John Burrows, Chris Miller and Tim Parsons as assistant instructors who will help relieve pressure on their senior colleagues. Terry Jenvey and Vivienne Fitzgerald have gained their Full Category ratings and Terry has been appointed deputy CFI.

An air of adventure and competition has developed and the number of Bronze and Silver legs reflect this. Our two task weeks have fostered this, with visitors adding edge to the competitiveness. Over 9300km were achieved and there was a good batch of Silver claims. Both task weeks ended with an excellent party.

On June 24, a maximum launch day was arranged, which helped swell club funds, provided some new interest and taught us lessons for next time. With this, an article in "Devon Life" about the Club, and possibly a programme from strikebound "Westward TV", we hope that further interest in the sport will result.

I.D.K.

DONCASTER & DISTRICT (Doncaster Airfield)

The best news recently was that the Super Cub has been repaired by Bob Maclean and resprayed in wasp flavour by Dave White. Its reconditioned engine has arrived and it should soon be dragging our gliders into the air.

After a few teething troubles and the appropriate fine adjustments, the new twin drum winch is giving very good launches.

Pundits after the 100km triangle trophy have been racing round the countryside. Graham Singleton and John Stirk have been hot on the heels of David Hessey (Kestrel) whose time is 68min.

We have decided to sell a Swallow as well as the Oly 460 and bring in a K-8 to update the club fleet a little. The annual dinner is at the end of the month.

E.T.R.

DUMFRIES & DISTRICT (Falgunzeon)

Bob Roger's attempted Silver distance in the club K-2 was the first cross-country from the site.

A new beasty has arrived in the form of a Super Gnat by John McIver and Co. This is being used for pulling out winch cables and avoids cutting up our runway due to its low loading and wide tyres.

Unfortunately our K-2 was extensively damaged in September, the fin and rudder breaking off after an incident on take-off. Luckily the aircraft remained stable and the instructor managed to land without rudder control, the glider killing a rabbit as it ground looped, breaking the fuselage in two.

F.S.S.

DUNKESWELL (Dunkeswell Airfield)

We are pleased the following have gone solo — Jane Butland, Dennis Gosling, Mark Spedding, Richard Rampton and Richard Harris, the latter also gaining a Bronze leg. Tim Stirgiss and Dave Spedding gained their certificates and Ray Busuttil has both Bronze legs.

Congratulations and a warm welcome to Ron Perry on his Full Instructor rating.

We have had more cross-country flying this year than ever before and the courses have been well supported.

To cheer us through the winter, we are planning a big dinner-dance at Christmas and an expedition to Portmoak early next year.

V.C.

ENSTONE EAGLES (Enstone Airfield)

The tone of our club has changed considerably this year from our determination to get as many *ab-initios* "up round and down" in one day as possible, to the more advanced mood of cross-country soaring. Our efforts culminated in our first ever Regionals which was voted a success by all.

Congratulations to Alf Warminger for winning the Sport Class and to our own Richard Forrest who won the Club Class and added to our crop of Diamonds. Congratulations also to Christine Potter on her Silver C, passenger rating and on entering her first competition this year.

Our recent open weekend produced six keen new members whom we will launch with our home-built towcar.

S.G.

HEREFORDSHIRE (Shobdon Airfield)

Charles Boucher collected our Twin Astir from Germany and was very impressed by the Grob

factory. Club members worked hard with instruments etc and had her flying one day after arrival. There was great demand and a lot of mutual flying. Depending on demand we are considering special Twin Astir courses (for the richer pilots) next season.

We've had a lovely autumn with wave and thermals. There was a good barbecue in late September.

The pilots who soloed early in the season are flying competently now. Denis Johnson passed his instructors' course at Booker and is mustard keen. Charles Boucher has joined the Maitland/King syndicate waiting for their Mini Nimbus. "Carbon Broomstick" (the Mini Nimbus that arrived late July) is a tremendous success.

There is a BGA wave expedition late October with Brian Spreckley and John Williamson and the Dunstable expedition with John Jeffries early in November. Our fantastic site is getting properly exploited.

R.P.

LONDON (Dunstable)

We are all very pleased for Graham Smith who won Euroglide, Standard Class, perpetuating the tradition of the Pundit Smiths of Dunstable. A celebration barbeque was held at the LGC during which large quantities of food, drink and my trousers were consumed.

On a more modest scale congratulations to Andrew Humphries who soloed on his 16th birthday. He was soon off in his syndicate Grunau Baby.

Tom Quigley also soloed recently but his first flight lasted so long that he almost forgot how to land properly; so back he went into the K-13 before re-soloing to amass an indecent number of hours all on the same day.

Back among the pundits, Richard Brown has cruised around a very flat 300km triangle; while on October 5 John Jeffries streaked down to Lasham in the Caproni to check on a report that they'd pawned The Plate.

F.K.R.

NORFOLK (Tibenham)

The "mini task week" was won by John Ayers, who won one of the four flying days on handicap in a K-13. President, Alf Warminger, competed in a Skylark 2 having forgotten to bring his Kestrel 19! This event looks like developing into a second full task week by next year.

Ridgewell, Essex, has been the scene of two more events, the presentation of a tin of condensed milk to officially declare Ridgewell as a Silver distance milkrun from Tibenham, and a "sling flying and barbecue weekend" when Norfolk members enjoyed the pleasures of winch launching in an open T-21.

A second open weekend provided good weather for nearly 200 visitors, 86 of whom had experience flights. We could do with a few more new members.

Ernie Cunningham was presented with a magnificent cup when he competed in Rouen Gliding Club's task week, though he doesn't know why. Five of our French friends visited Tibenham and l'ainé — Maurice Sieurin — joined our "Doc" Dorothy Souper in a two-seater flight where the total age of P1 and P2 was 151. Is this a record?

M.T.B.

NORTHUMBRIA (Currock Hill)

Despite a poor summer we have had many more badge claims than usual due to excellent wave on two or three occasions. On September 2 John Greenwell, CFI, climbed to 19 000ft for the best height of the year. Rick Walton and Graham McAndrew went to 13 000ft for Gold height, also getting five hours; Gordon Ridley with 11 000ft and Lyn Greenwood with 8500ft claimed Silver height and our Chairman, Jack Little, got his Gold with a flight to 13 000ft in the Vasama. On the same day Brian Holborn gained his Gold and five hours, he completed his Silver C at Saltby.

The new clubhouse bedrooms have been christened and the showers and toilets will soon be in operation.

We have had a good influx of new members but are sad to say goodbye to Rick and Trish Walton. No doubt some lucky southern club will benefit from Rick's engineering skills.

J.W.

NORTH WALES (near Holywell)

We have only been operating for 18 months and although we have had our teething troubles we are quite proud of our performance so far.

Last year was real pioneering stuff including trial runs with untried equipment on a local beach, (not to be recommended as the owner of the Grunau we used is still finding sand in his glider). The club was then formed and our first site was found at 1300ft asl overlooking the Conway Valley. This had very pretty views but the benefits of a possible ridge and wave site were soon outweighed by the persistent orographic cloud which prevented flying on many of our weekends. We were, however, very grateful to the site owner for giving us, the only private gliding club in North Wales, a start in life.

At the beginning of this season we were lucky to find a 900m long field nearer sea level and things have really progressed. Our CFI, Ken Payne, has never missed one weekend as our only instructor and our thanks also go to Ray Bancroft for loaning, modifying and maintaining most of the ancillary equipment. We are now having visiting instructors from other clubs and it won't be long before we have a regular assistant instructor to give Ken a breather now and then to fly his syndicate Dart.

We still only have one two-seater, a Bocian 1E, but our launch average is becoming a regular 25-30 a day with our two drum winch. A back-up training/solo machine would be a great boost if we can afford one before next season.

When we started 18 months ago we had one solo member but quite a few have either been sent solo this year from scratch or re-soloed on our site after some years away from the sport. Our Christmas social was an overwhelming success.

The weather has indeed been good to us this year but training has left little chance for experimenting with the full possibilities of the site. Next year should see us go from strength to strength.

A.E.

OXFORD (RAF Weston-on-the-Green)

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nearly a disaster due to problems with the RAF. Unknown to us they had arranged sport parachute courses and were not keen on letting us anywhere near the airfield. If we had been aware of this in advance we could have organised visits to other sites, but this sort of operation is very difficult on midweek days at short notice.

However by the second week a compromise had been worked out and we only missed two good days (weekends were not affected) but the incident reminded us that our long-term security here at Weston is non-existent.

Our relationships with the parachutists are improving socially but the situation is not helped by infringements of the DZ by strange gliders. On one occasion two flew through it in formation while a drop was in progress. OK, so it is only an advisory danger zone on the map but you are thereby contributing to the restrictions placed upon our operation. We are not discouraging visitors at weekends (the notice on the board at Lasham is a bit pessimistic) but don't overfly the DZ sandpit at any height and stay on the downwind side of the field and away from the hangar if you are low. Aerotow retrieves will not be allowed (RAF ruling).

Vivien Gouldstone, Gordon Craig and Martin Nickolls have completed Silver badges this year. Martin flew 46km at the first attempt but then succeeded two days later. Pete Darnborough has also flown 50km. The summer crop of first solos includes Nick Adderley, Peter Bayliss, Martin Hastings, Alphonse Rapp and Clive Woods. One 300km flight was made this year (Richard Hall) which was one more than last year, and a total of 5500km was logged in the cross-country book.

Fourteen members flew in seven competitions this year, the most utilised aircraft being Astir 914 which flew in three Regionals and Enterprise. The best result was Jane Randle's third place at Lasham.

P.H.

PETERBOROUGH & SPALDING (Crowland Airfield)

Despite foul weather and airfield floods, progress is being made on the clubhouse. We are grateful to the girls (mostly painting while the men fly!) for all their efforts.

A recent trip to Portmoak produced several new solo pilots and a couple of members gained Silver legs. We are planning to go there again in the autumn.

Our thanks to friends at Northampton and Bedford for the loan of a Tiger Moth plus pilots to keep us flying while our tug was out of action. Unfortunately the privately owned Rallye was being serviced at the same time, so without this help flying would have stopped.

A.E.G.

RATTLESDEN (Rattlesden Airfield)

This has been a relatively good year for our young club with membership reaching the 50 mark, even though we only have a T-21 for training and a Swallow for early solo pilots.

Arthur Parrott, our CFI during the club's struggle to achieve stability, has resigned due to business promotion and a move from the area. We are deeply indebted to him and wish him every success in the future. Colin Hitchman has taken over with his usual determination.

Plans for the new hangar have been passed. September saw our first flying week and it was a great success with the majority of members sampling aerotowing for the first time. Our Chairman and landlord, Roger Watts, gave several members soaring flights to be remembered when he fired the stubble on various of his farm fields at strategic intervals. Our thanks to the Cambridge University GC for the loan of their tugs and Humphrey Chamberlain for the use of his K-7.

Congratulations to Dave King, Jack Pratt, Janet Smith, Humphrey Chamberlain and Charles Portway for going solo, Tony Emmerson (Oly 2B) for Silver height and Brian Griffiths (K-8) for his second Bronze leg.

R.W.

ROYAL AIRCRAFT ESTABLISHMENT (Farnborough)

Despite a relatively mediocre summer we have excelled ourselves in terms of our cross-country flying, mainly due to the gentle, if persuasive, encouragement given to our Bronze and Silver pilots by our CFI, John Stone. We have had a host of solos and Silver legs and the Compton Abbas — Bicester 300km triangle has been completed twice.

The club has also made great strides in competitive flying this year. We have been represented at the Inter-Services, Enterprise, Lasham Regionals and at Euroglide. Belated congratulations to Pete Harmer (789) on his achievement in winning the Inter-Services.

C.G.

SCOTTISH GLIDING UNION (Portmoak)

The last two months have been fairly quiet. Work continues on the retrieve winches and the new aerotow runway is bedding in well. The two most recent 50kms have been done by girls, a trend one hopes will continue.

The Board was almost totally re-elected at the recent AGM, Kenneth George being the one new member.

The Lasham young are with us again — hopefully they will work their usual magic on the weather.

R.H.

SOUTHDOWN (Storrington)

Following hard upon the heels of the arrival of the club K-6CR we are glad to have another K-6CR on site, this time a syndicate aircraft and also in immaculate condition. Recent changes in our flying hierarchy have seen Keith Mitchell appointed as deputy CFI.

Our farmers' party was the usual gastronomic occasion and much enjoyed by all. It's become an annual event looked forward to by many farmers in our vicinity — long may our pilots land out.

Flying achievements include the following: Tony Unwin gained Gold height at Portmoak in one of their club aircraft, Dave Felix completed his Silver whilst Jane Turner and Richard Bragg both achieved Silver distance. On one of his first flights John Ward managed to contact a thermal low down and took it high enough to gain his Silver height, quite unwittingly, for it wasn't until the next pilot inquired about cloudbase height that anyone realised what John had achieved! Finally Steve Turner managed five hours in his new Astir.

B.A.B.

SOUTH WALES (Usk)

The topic on everyone's mind at the moment is the purchase of the field. It seems essential to take this opportunity as it may be our last chance to secure the future of gliding in this area.

We have a new Speed Astir and the Skylark is flying again with a new syndicate. Unfortunately the K-13 needed repairs after a heavy arrival. Meanwhile the other club K-13 took an enjoyable holiday at North Hill.

We are grateful to Malcolm Uphill for repairing our winch. Our cross-country output is gradually increasing and there are plans to improve our annual task week.

P.A.C.

STAFFORDSHIRE (Morridge)

To raise money for club amenities we have started a lottery called "The 100 Club". At present we have 30 subscribers but hope to increase it to 100 in due course, from club members, their families and friends. It costs £1 per month with six months paid in advance. Each month 50% is paid out in prize money (£10 — 1st prize and £5 — 2nd prize) and 50% for club amenities (toilets, water supply, etc).

At the end of July and the beginning of August, some members accepted the kind invitation of the Shropshire Soaring Group to join them at Chetwynd near Newport, Salop. The weather was not too good but Gordon Brocklehurst and our Treasurer, John Graham, were both obliged to land out after a local soaring flight because they had drifted too far downwind to return.

Tony Knight of Blackpool GC started our winter lectures with four excellent tape slide presentations. Geoff Davies has just finished installing flush toilets. We are now almost civilised!

P.F.F.

STRATFORD ON AVON (Long Marston)

Months of work on the clubhouse and adjoining buildings have not deterred some from winning badges to keep the club in the charts. Congratulations to Sue Edwards and Richard Newton on their five hours, to Chris Roberts, John Simonite, Nigel Sims and Don Birks on completing Silver Cs and to Tony Edlin, Sonja Linnegar, Fred Haines and Richard Newton on gaining their Bronze Cs.

The courses were a great success thanks to the hard work by instructors and club members who gave up their holidays to ensure everyone had an enjoyable time. These will certainly be repeated next year and become a regular feature. Air experience evenings have proved very popular and local advertising added new impetus to increasing membership.

H.G.W.

SURREY & HANTS (Lasham Airfield)

Better late than never, September relented a little allowing some good soaring albeit on shorter days. One notable success was Roy Pentecost's 300km triangle on September 7 in the club Kestrel. He went to Northampton and Devizes with much encouragement over the radio — probably annoying everyone else! October 5 was an astounding day. The entire

K-8 fleet except one (which doesn't fit the trailer!) set off for Silver distance and landings in the Parnham area were reported as this is being written. This day gave cloudbase over 5000ft and 4-6kt thermals, no wind and 50km visibility - where was it in the summer?

Our annual trek to Portmoak has been very poor so far with persistant south-easterlies and sea fog. The week before though a group of members took an Astir to Aboyne and Richard Thorley collected his Diamond height.

C.L.

ULSTER (Bellarena)

An unmemorable year was trailing off into a wet and dreary autumn by mid-October but, nonetheless, we'd logged a reasonable amount of flying despite having fewer aircraft on site and more unflyable days than last year. A short winter close-down is scheduled to start on November 18.

The biggest disappointment has been the red tape which has delayed erection of a hangar and with winter almost upon us, it still isn't going up.

On the flying front Chairman Gordon Mackie's Pik-20E self-launcher is due imminently and the two SHK syndicates are also changing type. One has already been sold and the other is in England awaiting a buyer. Glass replacements are in view. Similarly the club Skylark 2B is in England to be sold to reduce the overdraft. For the immediate future our only club single-seater will be the Queen's University Skylark 3F, to which the UGC has limited user rights.

One club threesome, comprising Alan Sands with the Pik-20D, together with Billy and Mary Craig, sampled gliding in Germany in July but ran into the rotten weather which afflicted everybody else. Secretary Bob Rodwell went west to get out of the European gloom: tacking a holiday onto a US assignment he scrounged the loan of a Slingsby Vega, picked it up in New Mexico, towed it 1200 miles to Minden, Nevada, and logged 30hrs' flying in seven flights, including two 300km triangles and a failed 500km triangle attempt. By their standards, the weather was rotten in Nevada too — but not so much that a European would notice very much.

R.R.R.

WELLAND (Careby)

We have had one of our most successful seasons. Despite the late start the improved weather, allied to members' enthusiasm, gave us a summer to remember. Our Bergfalke and K-4A and the syndicate Swallow and Skylark 2 have spent little time on the ground.

Our Chairman, Ray Clark, and Dave Olney have acquired a Dart 15 and Ray brought us some rock from Skegness when he returned from completing his second Silver leg. Dave completed his Silver C earlier in the year. Steve Brown also gained his second Silver leg and Ray Hill and Dave Gittens have Bronze legs. Peter Hilton has his C and Gloria Conway, Stan Baggley, John Hytch and Don Martin have gone solo. No doubt our highly successful flying week contributed much towards these achievements.

Members have visited a number of clubs who well deserve our appreciation for their hospitality and in particular we are grateful to Andy Ward, CFI of Portmoak.

E.C.

WOLDS (Pocklington Airfield)

After a slow start to the season the two weeks were successful; Les Cooper achieved our first Diamond, a 300km goal; Malcolm Gibson and Chris Price claimed Silver legs and Bernie Svenson, Alan Hunter, Moni Chana, Grant Johnson and Heather Norrison have completed their Silver Cs.

The latest addition to the club fleet is a Motor Falke which is kept very busy. There have been several first solos, not to mention Bronze legs, so there should be a few candidates for the Bronze C lectures this winter. The flying evenings have again be very popular and we had a "Crew Do" on October 5.

Five gliders entered the Northern Regionals and our K-7 flown by Colin Milner and crew came sixth in the Club Class. The same K-7 flown by Bill Young and Co won the two-seater prize at Competition Enterprise.

Pete Norrison and Alan Hunter survived instructors' courses recently. Our syndicate K-6 has just returned from a rather uneventful trip to Portmoak but plans are underway for a club expedition in the spring.

H.N.

YORKSHIRE (Sutton Bank)

It has been a fantastic end to the season with thermal and wave flights swelling the ladder board beyond recognition. Three weeks of consistent wave gave 13 climbs of over 15 000ft from September 2-18. Dick Bourne and Mike Benson both went to over 20 000ft and David Lilburn did a fantastic climb to 30 200ft from a 900ft launch. Climbs around 14 000ft during this period were common place. David's climb was done in light summer clothing and was only terminated, although he was still in lift, because of intense cold. His last 2000ft were in cloud! Link this climb with one of 29 500ft from the winch in 1976 and one can see that the potential of Yorkshire is not fully recognised.

Congratulations to Julian Garrewal and Judith Mountford on going solo, Judith under the all-seeing eye of TV cameras; Fiona Spink, Jack Horner and George Lumley on gaining Bronze C and to Norman Cook on completing his Silver C. Fiona did a 60km Silver distance attempt the day after completing her Bronze but, unfortunately, was 4km short in view of height differentials.

E.S.

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SERVICE NEWS

BANNERDOWN (RAFGSA)

After a slow start to our season, 1979 has closed with a record number of launches and a strong membership. Badge flights have increased, but we are still waiting for someone to fly a Gold distance from Hullavington to really establish us in our new home.

We have been sad to lose two good members; Pete Bloomfield to Germany and Steve Clemens to Lossiemouth, but they both managed to achieve their Silver distances before leaving us. Tom "YaYa" Eagles has carried on his astronomic rise in the gliding world by becoming an instructor, and now leaves the single-seaters alone for others to fly occasionally!

We were pleased to welcome Steve Hymers into the club in June and into the Mosquito syndicate. Andy Hancock returned from a long holiday in France and Germany with his 500km claim, to become the only known "Bannerclown" with a full Diamond.

Other notable flights were Colin Masters, who broke through the circuit barrier and soared his Skylark 2B for at least an hour, and Jackie Hancock, who achieved a Gold height in the Mosquito during an expedition to Dishforth.

J.H.

BICESTER (RAFGSA Centre)

Our congratulations and best wishes for a happy future together to CFI Andy and Audrey Gough who were married in early October.

In August we said farewell to another of our American friends. Rick Horst, and recently welcomed back Bill and Michelle Tootell. We were visited by Service pilots from many parts for an instructors' course in early September when Bicester members on the course were Vic Carter and Dave Lorraine.

We have had a fair amount of cross-country flying but few long distances. On August 28, despite a low inversion, Peter Saundby hopefully set a 303km triangle and flew the ASW-20 for 7½hrs to show how it could be done detouring if necessary *via* towns, a sea breeze front and stubble fires. Over 200 pilots enthused about flying of a different sort when the Primary was out on line. They included John Delafield who, in the absence of the Nimbus (being flown by Gordon Camp at Euroglide), had his first circuit in a Primary, and Myrtle Scanes who last flew one as a young WAAF in Germany. Another rare aircraft being flown here was Tim Ould's Geier which he extensively refurbished after bringing it from Germany. The Grunau is also in immaculate order after its time in the workshop.

About 15 people have gained qualifications recently including Don Loucks jun and Mike Sandy who completed their Silver Cs and Messrs Gleeson, Hardwick and Swales who did their five hours. Frank Chapman gained Gold height in early September when he accompanied Ken Stephenson taking the Std Libelle on

its annual trip to Aboyne. Both reached 15 600ft and enjoyed magnificent views of NE Scotland.

J.W.

CRANWELL (RAFGSA)

Our CFI, Richard Meyer, has had to stand down due to other commitments and we thank him for his stint of leadership. Bruce Tapson has taken over and we wish him every success. We welcome Ken and Meg Fyffe and family who have joined us from Laarbruch.

The soaring season has had a pleasant sting in the tail with a revival of some good weather. This has seen "Biff" Baillie, Steve Buckland and John Rogers go solo. John Harrison (K-8), John Ibbitson (Prefect) and Dave Inwood (Prefect) have Silver distance and John Renshawe (K-8) Silver height. Both Derek Beaney and Alwin Grimley have done their five hours to complete Silver C.

One of our winches has been mounted on a prime mover and the Austin Gypsy has been renovated and gives sterling service cable retrieving. Our star attraction is our new bus, superbly kitted out by George Barber and helpers. We can now enjoy warmth, comfort and super cuisine throughout our flying days. The bus was welcomed into service with an excellent barbecue.

P.S.

CULDROSE (RN & RMGSA)

The lack of flyable weather during the first week of the summer course looked like making this a non event. An active airfield, with fixed and rotary wing involvement with the Fastnet Race brought further complications. However, improved conditions and lots of hard work resulted in achieving ten A and B certificates — one student gaining both Bronze legs. Our thanks to George Collins for making the BGA Twin Astir available during the latter part of the course.

Other achievements include Bronze C for Nigel Martin, Silver height by Alan Joyce and Ian Reed's flight to Didcot in the Dart to complete his Gold Badge.

J.G.K.

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EAST MIDLANDS (RAF Wittering)

The weather and the summer season of air displays have both helped to keep our activities at a lower level than we would like. Being the nearest Service airfield to both the East of England showground and the Leicester area has meant that we get many visiting aircraft, for which we are temporarily grounded. Over the August Bank Holiday weekend this limited us to only about six hours flying each day.

This handicap, however, did not prevent solos by Paul McLean and Al Baker, our hang gliding expert. Dick Cadd completed his Silver with a flight to a ploughed field near Marham, to be followed a few weeks later by our youngest pilot, Jerry Parr. Stu Hoy, our CFI, drove to Dishforth to check out an ASW-20 he was to fly in the Enstone Regionals, and climbed to over 14 000ft for his Gold height in the process.

Plans are well in hand, at the time of writing, for a club expedition to Sutton Bank in mid October.

I.M.G.

FENLANDS (RAF Marham)

Five members competed in the Inter-services Regionals. Ben Benoist, our CFI came second in the Open Class, and was the top Inter-Service pilot. Jed Edyvean came third in the Club Class and Pete Griffiths obtained his Gold distance. Barry Elliott was fourth in the Enstone Regionals.

Barry Elliott and Graham Headey have obtained their Full Cat Instructors' Ratings, and Phil Morgan, Terry Mitchell and Dick Murray their Assistant Cat Ratings.

It has not been good weather for cross-country flying, the nearest we got to a Gold distance from Marham was 270km by Tony Steel. We did achieve several 100km triangles though, and Pat Higgins gained his Silver C. We also had quite a number of solos, Bronze Cs and Silver legs.

We had a thoroughly enjoyable "longest day", managing over 220 launches and finishing off with a fine barbecue.

Our warmest thanks go to Gp Capt Doc Bramwells, our retiring Chairman, who has been posted to Harley Street!, for all the work he has done for the club over the years, and to welcome Wg Cdr Smith who is taking his place. We are also sorry to say goodbye to Dick Murray, Ian Smith and Andy Elliott who have been posted to Germany.

A.J.M.

FOUR COUNTIES (RAF Syerston)

The latter months of summer have been expensive and disastrous. Our K-18 was a complete write-off just before the August task week when a Bronze C pilot chose an unsuitable field on a Silver distance attempt. Fortunately the pilot was unharmed. Then the T-21 was damaged and is undergoing considerable repair. Our congratulations to Tracy Stingemore on going solo and for soaring for 15min for her C test.

We welcomed the use of the K-8 from Lindholme during the task week. Andy Penswick "test" flew his DG-200 and was accompanied by two visitors from Milfield with their DG-200.

There have been several Committee changes. Trevor Allsop has gone to Finningley

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and so Stu Mulholland has taken over as deputy CFI for *ab-initio* training. Phil Wilsher has Stewart's previous responsibilities as Field Treasurer.

L.R.B.

FULMAR (Kinloss)

The late summer has given us a flood of Bronze legs and John Garrett, Mark Bonthron and Steve Ustianowski gained Bronze Cs. Bob Lloyd has had our only good wave flight so far this year with a climb of 12 000ft.

We are sorry to say goodbye to John Burn, Field Treasurer, who is going to Finningley and to Steve Stevenson, deputy CFI, who is leaving the RAF and going to Saudi with BAE. We thank them both for their efforts and our best wishes go with them.

Congratulations to Mark Bonthron on a Silver height and duration, also to Ron Jackson and Roger Hanson on gaining their Assistant Cats. Roger also achieved his five hours whilst at Bicester.

R.H.

HUMBER (RAF Lindholme)

We have had a good two months since we last went to print. Clare Hayward went solo after spending every weekend of her summer holidays with us and Andrew converted to the K-8. Steve Wilson, yet another member of the family, converted to the Sky and on the first flight gained a Bronze leg. Vic, the head of the clan, gained his Silver height. Keith Taylor flew 300kms to complete his Gold C on September 15 and the following weekend Alan Clarke completed his with a height gain at Dishforth, along with Keith Mitchell who went one better and also gained a Diamond.

The Beer Tray trophy between Kirton Lindsey and Lindholme has been flitting backwards and forwards with Derek Wilson and John Rice being the main contenders! Unfortunately it ended up back at Kirton Lindsey, but we will be over for it at the first opportunity.

Our K-13 will be given a Cof A this winter and our AGM is in November.

K.M.G.

KESTREL (RAF Odiham)

Jackie Pobjoy has completed her Silver badge and Ann Benson has flown solo. Ann and her parents organise our catering. so we are particularly pleased that she has found time to fly. Another recent solo is Ron Snape whilst Mark Wynn has his Bronze.

Dave McCarthy and Pete Andrews recently visited Dishforth for a weekend and returned with Gold heights to complete their Gold badges, but bemoaning the lack of oxygen equipment which limited their climbs.

Lastly we welcome Nigel Kidd to the club. Nigel has just returned from Germany bringing his K-6CR with him.

P.W.A.

PHOENIX (RAF Brüggen)

Two exceptional weekends in late September have helped to boost our list of achievements this year. Throughout the summer claims were sparse, then in a four day rush they came in fast and furious. Steve Wilcox and Dave Kent have Bronze legs; Sue Banks and Keith Mackay have both Bronze legs and Steve Wall, John Duncan and Glen Connor flew from Brüggen to Norvenich for Silver distance, Glen completing his trip in 45min using only two thermals. After a hard earned five hour flight in thermal over the local area Al Stacey has completed his Silver C.

Congratulations are also due to Mick and Carol Simmonds on obtaining their Full Cat instructors' ratings and again to Mick on becoming temporary CFI while our instructor situation is in a bit of a turmoil.

A visitation by several members of the Laarbruch GC resulted in quite a jolly evening and a reminder to Two Rivers that Phoenix held the "Wandering Pot" and were waiting for someone to fly down to collect it. Dave Wood promptly retaliated the next day by landing at Brüggen in the Twin Astir but his request for the trophy was denied as Pete Haig had arrived over Laarbruch in the ASW-20. Shortly before Pete left to fly back to Brüggen, John Harris arrived in the K-18 on a 50km attempt but unfortunately Laarbruch is 5 or 6km short.

Club T-shirts and sweatshirts designed by the Paradie family are very much in evidence on the airfield and will no doubt advertise the Phoenix at the expedition to Vennebeck Ridge with the Pegasus GC in October.

P.H.

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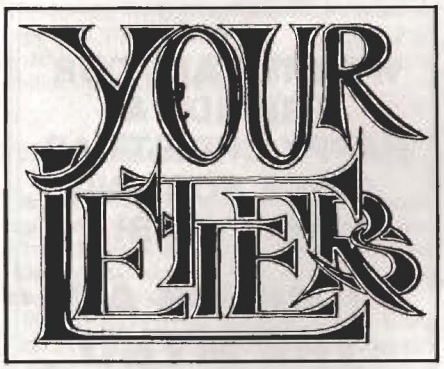
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MORE ON SPEED-TO-FLY

Dear Editor,

I am writing about Richard Fortescue's letter in the April issue of S&G, p88 ("Reichmann on Speed-to-Fly"). First, let me say that all of us who are interested in gliding theory wish for a good international atmosphere of co-operation such as I have myself experienced with people from countries like the UK, USA, Switzerland, Australia, France, and eastern European countries like Poland. It is a pity that sometimes good and essential articles are forgotten, or only read by a small percentage of the people round the world who are interested in gliding.

I regret that it needed the letter from Richard Fortescue to make me aware of the article Anthony Edwards published in 1964. His theory had in fact been published in German in my **Streckensegelflug** in 1975, but attributed to René Comte, even though Edwards mentioned in his 1977 article that it had never found its way into the books. Comte, to whom I have sent a copy of the 1964 article, says that he also has not seen it before.

Who in the (western) world knows that the essential basis of the best-speed-to-fly theory had already been published in 1938 in Poland by Szwarc and Kasprzyk, or that the exact calculations were published by the German Karl Nickel in 1949 in the *Swiss Aero-Revue* before the well-known American Paul MacCready added his inventions of the speed-ring in the same magazine?

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I want to congratulate Anthony Edwards on his excellent articles and I hope they will be read by everyone interested in gliding. I regret not having known about the "standard theory" which he published in 1964 until Comte published his similar article in 1972 (which was rather new when I wrote the first edition of my book in 1972-74).

HELMUT REICHMANN, **Saarbrücken, W. Germany.**

Anthony Edwards replies:- I am grateful for Reichmann's comments, and reciprocate with congratulations on his admirable book. I am glad, too, that the correspondence column of S&G is contributing to the international atmosphere of collaboration which he mentions!

It is very timely that we should sort out the origins of best-speed-to-fly theory. As a matter of fact, I knew that some Poles had published the theory before the war, because I asked Doc Slater only a few weeks ago, and he knows everything. What appears not to be known, however, is that none other than Philip Wills published the optimising calculations under the pen-name "Corunus" in an article called "Cruising Speeds" in the March-April issue of *The Sailplane and Glider* for 1940 (Volume 11, No. 2. p22). He wrote "Up to now pilots have simply had a a general notion that it was a good thing to crowd on a bit of speed between thermals. Clearly, however, *v* is capable of reasonably exact determination, and varies from day to day". The theory became common property in England through its inclusion in A. C. Douglas' 1947 book **Gliding and Advanced Soaring** (London: John Murrey), but we all then forgot its origin. Whether Philip got it from the continent before the war will now, alas, have to remain a matter for speculation. Perhaps some reader remembers?

ENJOYABLE ENSTONE

Dear Editor,

Portmoak to Enstone is a long way to tow a Std Libelle for a Regional competition, particularly to a new, untried site. However, being no pundit, I was looking for a contest which was not too highly powered, at a location which promised a good chance of reasonable cross-country weather.

Arriving on a deserted airfield in the dusk and rain on the Monday preceding the contest was not an auspicious start, but things could only improve. Sure enough, they did. We were quickly made to feel at home the following morning by David Wilson, the deputy director, who assured us that there was a runway out amidst the acres of wheat. The runway, in fact, looked capable of handling a 747 without much difficulty, and any misgivings competitors may have initially had about the ability of the site to accommodate twenty or so gliders plus tugs soon disappeared.

The organisation, under the enthusiastic direction of Gordon Herringshaw, succeeded in producing a most enjoyable and challenging Regionals. John Halford's skill in tailoring tasks to fit the weather windows resulted in six contest days for the Club Class and five for the Sport. The social programme included a car treasure hunt (on a non-flying day!), a film show, a dance with disco and buffet, not to mention visits to Brize Norton Air Traffic Control and USAF Upper Heyford.

The Enstone Eagles GC are to be congratulated on the success of what is an immense undertaking for a small club. I for one hope to be at the head of the queue for their next Regionals.

(We print this extract as this is the first time Enstone Eagles have organised a Regionals.)

BRUCE MARSHALL,
Scottish Gliding Union.

PERPLEXED BY ARTICLE

Dear Editor,

I have read and re-read the article by Keith Nichols in the last issue ("A Psychological Perspective on Gliding", p219) but with increasing perplexity. As far as I can judge from the content of this and his previous article (S&G, April, p65), the author flies solo but is not very experienced, so aims his advice at pilots at or before that stage.

During more than 20yrs as an instructor I have come across, and I hope helped, many pupils who were *initially* nervous or lacked confidence, but this is something quite different. If a pilot after considerable training, or incredibly, some solo flying, is so fear-ridden, introspective, not to say neurotic, as to need 2½ pages of closely printed advice on "anxiety management" from a psychologist, one wonders what his motives are for continuing to fly.

He would be better off taking up some less hazardous pursuit. It would be the instructor's duty to tell him so, as kindly as possible of course.

M. RANDLE, **Cassington, Oxford.**

Keith Nichols replies: There is no denying the accuracy of Mr Randle's assessment of my flying experience. Against his impressive 20 years as an instructor I trail hopelessly behind with a lowly 120hrs, Silver distance and recent PPL. Set against this discrepancy, however, my judgment is that Mr Randle may yet have a little headway to make in his understanding of people.

The aspect of his comments which I most regret is the apparent revulsion towards "fear ridden, introspective, not to say neurotic" people and the implication that a person who might need to look for some advice by a psychologist should feel obliged to retire from sight. This is a very antique attitude. Psychology, like medicine, is a science which attempts to systematically and honestly expand knowledge of our functioning. The spirit of today's psychology much emphasises the development of human potential. This knowledge is relevant and available for all people. To put oneself beyond it is equivalent to putting oneself beyond medicine.

Clearly we are not two nations, one of petrified neurotics and the other fearless. There is an evenly distributed gradation between the two extremes. The article on anxiety management was directed to those people (probably between five and ten per cent) who are compulsively drawn to gliding, but find their progress hampered by a nervousness which resists extinction. The message for these people is that they should strive to develop their potential and master the problem, not as Mr Randle

suggests retire defeated; that approach belongs to the past.

My view therefore, Madam, is that it was completely the right decision to include anxiety management as a topic relevant to this journal. A decision which, incidentally, received unexpected support last week when the Editor of *Pilot* asked me if he might use an adapted form of the article, since he felt it was relevant to a good number of power pilots.

NOT QUITE SO FAR AWAY!

Dear Editor,

It was gratifying to see a new gliding club, Altair, come into being, especially in such an unusual location. May I ask a few questions before I visit it?

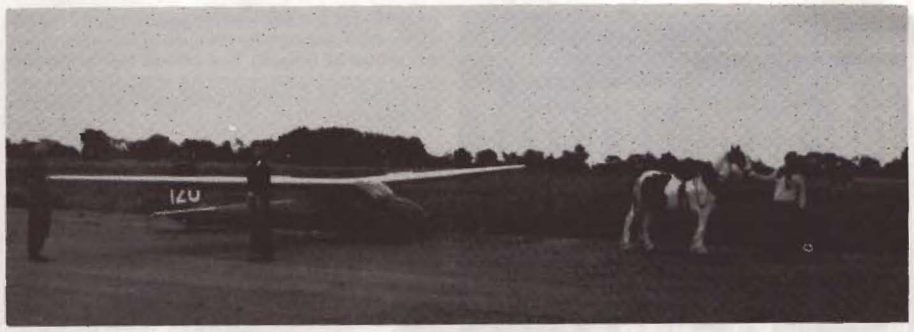
1. Would a triangle from the site with turning points at Timbuktu and Hombori give me a Diamond goal?
2. If I had to land out to the west of you would I be eaten by (a) crocodiles, (b) cannibals or (c) mosquitos and if I escaped, could I rustle up enough natives to transport me and my glider back to your exotic site?
3. If I landed to the east, could I get the glider onto the Niger ferry; does it run on Sundays?
4. If I landed out to the north would I succumb to desert madness? Is waterballast compulsory for this direction?
5. If I landed to the south would the colourful people of the Upper Volta welcome me in my hot ship? (I hear they prefer wooden aircraft to make houses, spears,etc. Perhaps they would be interested in GRP spears.

With the above in mind I suggest that only local soaring should be encouraged and that topees should be worn at all times.

H. T. BROOKES, **Detmold, W. Germany.**

PS. 15°58'N 1°51'W is 130km south-east of Timbuktu in Mali. For 15°58'N read 51°58'N?

(Thank you Mr Brookes for spotting the mistake in the last issue, p242, and for putting it right with such humour. Ed)



Norfolk GC's answer to the fuel crisis

FUEL PROBLEM SOLVED

Dear Editor,

Having recently taken over as CFI from Joe Podolski, who during his 18yrs in the job took the club from bankruptcy to the healthy state we enjoy today, I knew I had to go some to follow him.

Almost immediately things started to go wrong. Fuel costs rocketed. Supplies were reduced. Flying costs were obliged to go up. The poor soaring conditions were also held to be the responsibility of the new CFI.

I am now, thank goodness, back in favour, thanks to my introduction of the "One horse power winch". This must surely be one of the cheapest forms of launching available and requires much less manpower than the bungey.

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In time it's hoped it can be trained to whinny at the Chairman, kick the Treasurer when on one of her collection rampages and shy at members who have not paid their subs.

On non-flying days we can take it in turns to ride with the local hunt. With shafts fitted to an open trailer it provides pub transport without fear of the Breathalizer. The end product has allowed us to grow roses around the clubhouse door.

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ROY WOODHOUSE, CFI, **Norwich.**



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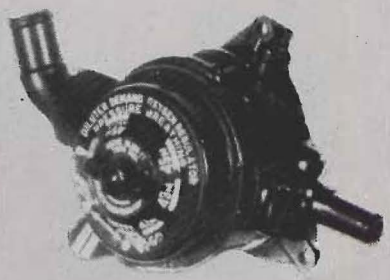
A8A Regulator

MASKS

SK-6 mask, with tubing, flow-indicator, and connector; for use with A8A regulator $15.50

SK-24901 mask, professional quality, with inhalation/exhalation valve, A13 type facepiece, tubing, flow-indicator, and connector; for use with A8A regulator $54.50

Sierra 659 "Posifit" mask, with inhalation/exhalation valve, for use with A14A regulator; includes hose and MC-3 connector for H-2 bail-out $108.50



A14A Regulator

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Volume	Weight	Length	Diameter	Price
7 cu. ft.	5 lbs.	17 in.	3½ in.	$62.50
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22 cu. ft.	12 lbs.	22 in.	5¼ in.	64.50
22 cu. ft.	16 lbs.	30 in.	4¼ in.	99.50
30 cu. ft.	15 lbs.	20 in.	6¾ in.	81.50
38 cu. ft.	18 lbs.	23 in.	6¾ in.	87.50
H-2 bailout, complete				88.50

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A14A	With pressure gauge and flow indicator blinker	$172.50

CONTINUOUS-FLOW SPECIAL

A8A regulator	$ 64.50
22 cu. ft. cylinder	64.50
High-pressure line	26.50
SK-6 mask	15.50
List:	$171.00

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Add $39.00 for optional SK 24901 mask.

Add $8.50 each for cylinder mount brackets, if required.

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High-pressure line	17.50
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List:	$484.00

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