

# SAILPLANE & GLIDING

February-March 1995

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## **DATES FOR THE DIARY – 1995**

<b>24th April</b>	<b>.....</b>	<b>COURSES BEGIN</b>
<b>27th May – 4th June</b>	<b>.....</b>	<b>TASK WEEK</b>
<b>1st July – 9th July</b>	<b>.....</b>	<b>COMPETITION ENTERPRISE</b>
<b>29th July – 6th August</b>	<b>.....</b>	<b>NORTHERN REGIONALS</b>
<b>26th August – 3rd September</b>	<b>.....</b>	<b>SLINGSBY WEEK</b>

**(HOG ROAST on 27TH AUGUST)**

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**YORKSHIRE GLIDING CLUB**

**SUTTON BANK – THIRSK – NORTH YORKSHIRE YO7 2EY**





Magazine of the  
British Gliding Association

February-March 1995  
Volume XLVI No. 1

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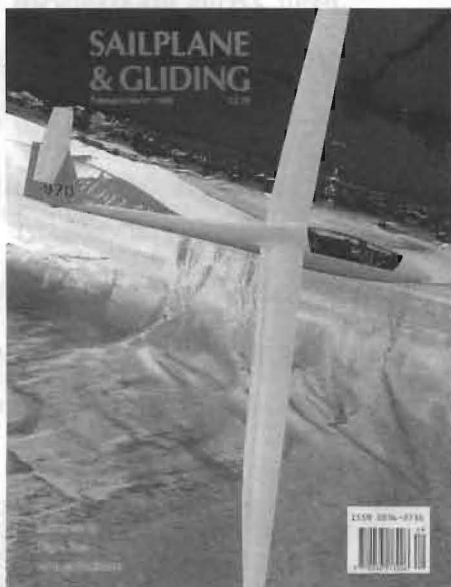
A. W. F. Edwards (Chairman), M. Bird  
M. F. Cumming, B. Rolfe, B. F. R. Smyth

**DEADLINE DATES** – April-May. The main deadline for editorial copy is January 30 with club news accepted up to February 7 and letters up to February 11. The deadline for display advertisements is February 24 and classified advertisements March 6.

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Cover: John Habgood photographed Paul Little flying his Nimbus 3DT with Chris Taylor over the River Severn.

# SAILPLANE & GLIDING

<p><b>9</b></p> <hr/> <p><b>11</b></p> <hr/> <p><b>12</b></p> <hr/> <p><b>13</b></p> <hr/> <p><b>14</b></p> <hr/> <p><b>16</b></p> <hr/> <p><b>17</b></p> <hr/> <p><b>18</b></p> <hr/> <p><b>20</b></p> <hr/> <p><b>21</b></p> <hr/> <p><b>23</b></p> <hr/> <p><b>24</b></p>	<p><b>YOUR LETTERS</b> S. J. Redman, M. Breen, M. Shailes, H. Morris</p> <hr/> <p><b>BOOK REVIEWS</b> Platypus, The Arm-Chair Pilot, Diana King, Anne Stotter</p> <hr/> <p><b>WAY OFF TRACK</b> Penguin I LEARNED SOMETHING THAT DAY P. Baldwin</p> <hr/> <p><b>VINTAGE GLIDER CLUB'S INTERNATIONAL RALLY</b></p> <hr/> <p><b>SUMMERS – GOOD AND BAD</b> T. A. M. Bradbury</p> <hr/> <p><b>WHAT PRICE A DIAMOND?</b> C. Milner</p> <hr/> <p><b>CLUB FOCUS</b> D. Triplett, A. Adams</p> <hr/> <p><b>WORLD RECORD</b> P. A. Wills</p> <hr/> <p><b>BARRON HILTON</b> Platypus</p> <hr/> <p><b>IMPRESSIONS OF SUMMER AND TURBO GLIDERS</b> J. Marshall</p> <hr/> <p><b>NI-CADS</b> D. V. Foster</p> <hr/> <p><b>TAIL FEATHERS</b> Platypus</p>	<p><b>26</b></p> <hr/> <p><b>28</b></p> <hr/> <p><b>30</b></p> <hr/> <p><b>32</b></p> <hr/> <p><b>33</b></p> <hr/> <p><b>34</b></p> <hr/> <p><b>36</b></p> <hr/> <p><b>37</b></p> <hr/> <p><b>38</b></p> <hr/> <p><b>39</b></p> <hr/> <p><b>40</b></p> <hr/> <p><b>44</b></p>	<p><b>COMPUTER VARIOS</b> D. A. Smith</p> <hr/> <p><b>THE XK10 "CLUB" AUDIO VARIOMETER</b> A. D. Piggott</p> <hr/> <p><b>FLYING THE NIMBUS 4DM</b> I. W. Strachan</p> <hr/> <p><b>ORLICAN</b> A. Harris MOTOR GLIDER TUGS</p> <hr/> <p><b>MOUNTAIN EXPERIENCE</b> G. McAndrew</p> <hr/> <p><b>ANNUAL STATISTICS</b></p> <hr/> <p><b>BGA &amp; GENERAL NEWS</b></p> <hr/> <p><b>OBITUARY</b> J. S. Sproule by Ann Welch</p> <hr/> <p><b>GLIDING CERTIFICATES</b></p> <hr/> <p><b>BGA ACCIDENT SUMMARY</b> D. Wright</p> <hr/> <p><b>INTERNATIONAL GLIDING COMMISSION</b> T. S. Zealley</p> <hr/> <p><b>CLUB NEWS</b></p>
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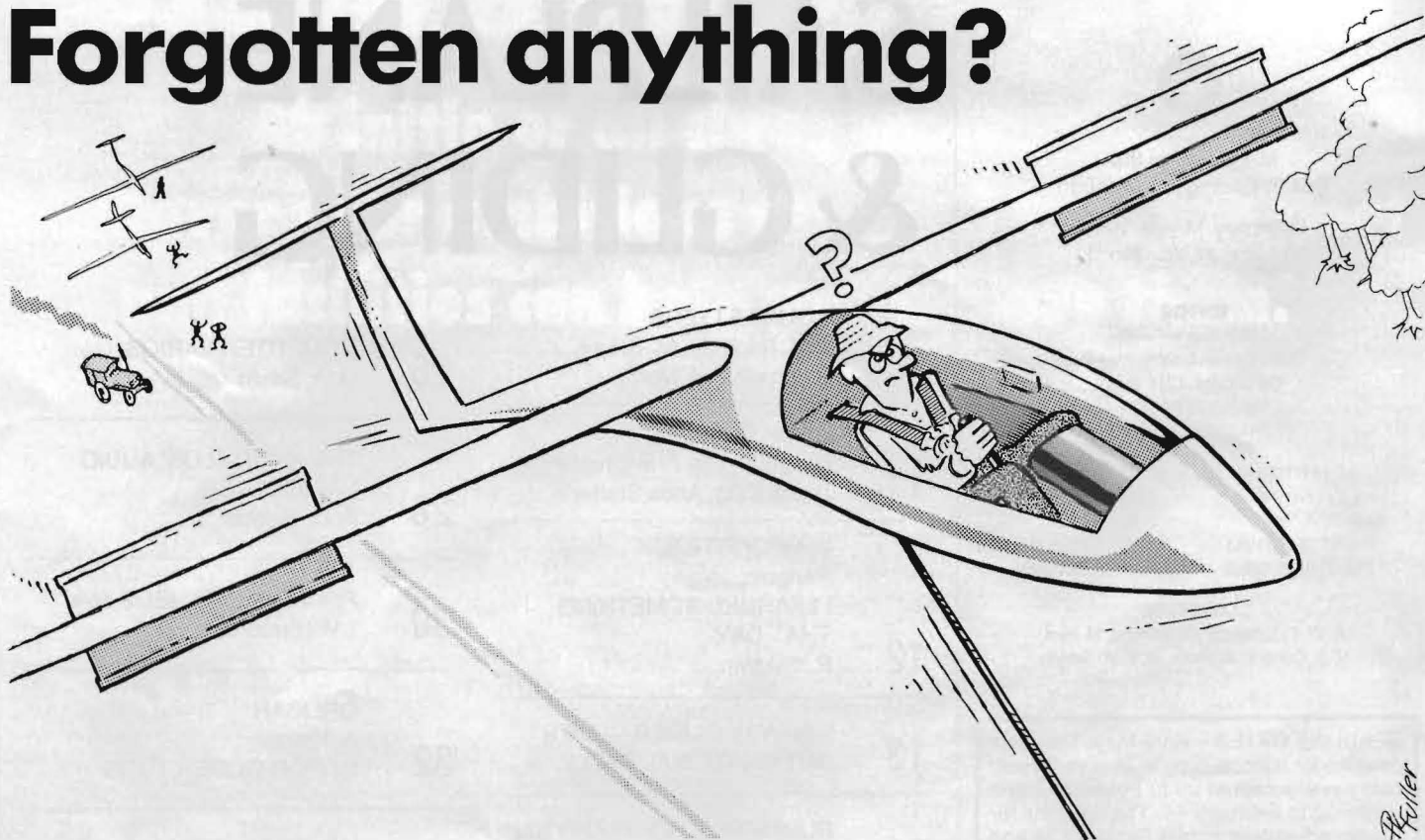
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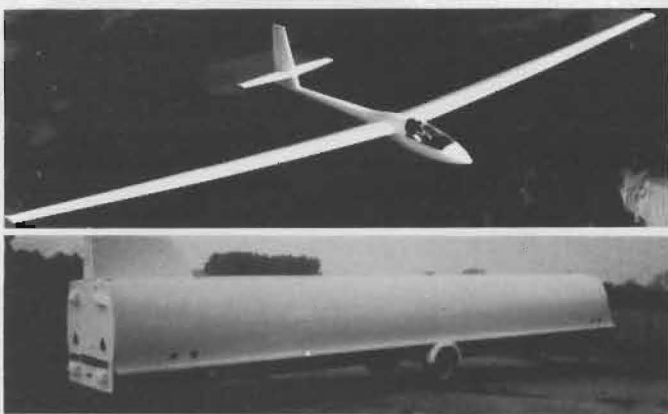
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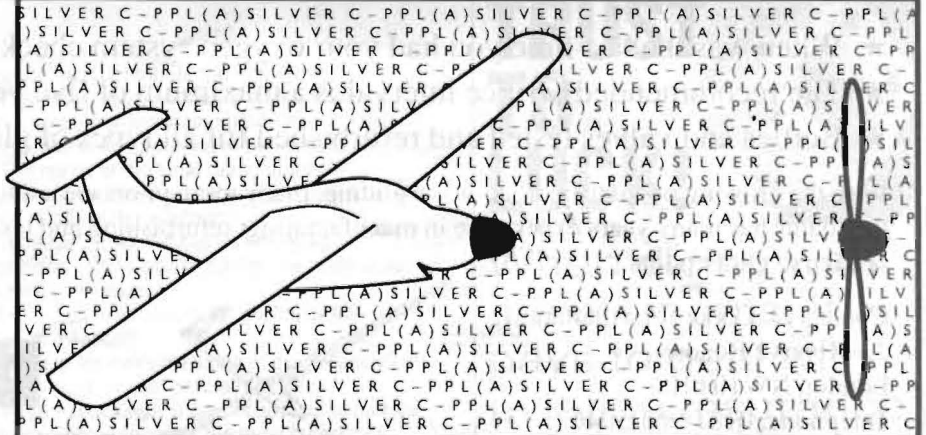


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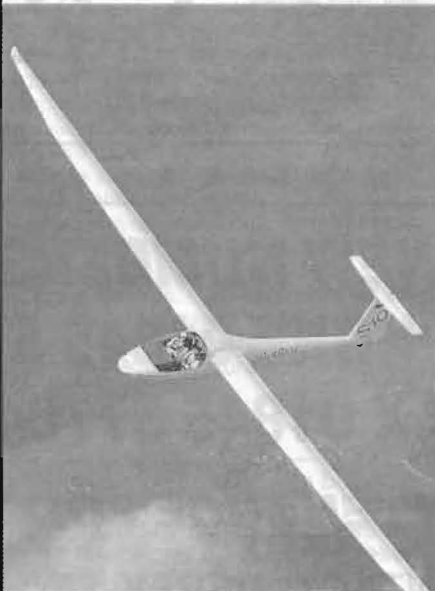
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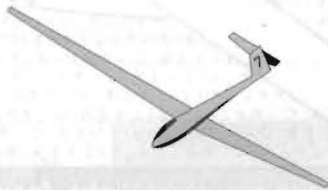


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# YOUR LETTERS

## COMPETITION SCORING SYSTEMS

Dear Editor,

In his inimitable way Platypus makes a serious point in the October issue, p258, concerning the disinformation produced by some competition scoring systems. This does not apply only to handicapped competitions. In the same issue, p266, distances allegedly flown on tasks in the 15 Metre Nationals were published and these were rubbish. For example on the last day the advertised distance was 350km whereas the correct figure was 263km.

It does not have to be like this and scores produced by the excellent Crabb computing system (as used at the Cambridge Regionals and other well known competitions) produces comprehensive and accurate information including real distances for each leg, real speeds and very interestingly start times.

Please could the BGA Competitions Committee stipulate that others should do likewise or perhaps Plat would like to come to Gransden Lodge this year?

SIMON REDMAN, *Cambridge*

## A LOOK AT INSTRUCTORS

Dear Editor,

Is instructing a black art or is it a combination of talking like a parrot, attending endless courses and jumping through a number of metaphorical hoops? Every gliding club has its own instructors' panel, not I hasten to add the officially sanctioned ones. I mean the group of students discussing their progress and talking about who they do and do not like flying with. It is a sad fact that some instructors try to intimidate their students. They shout and insist on ridiculously high standards.

This type of instructor has little or no understanding of his or her student's ability to learn, yet they could equally be the best soaring pilots in the club. Clearly the best instructors are not necessarily the best pilots. They do tend to be pleasant, helpful people, just the sort who turn up on a really good day and sit in the back of a two-seater all day instead of going on a 500km attempt.

Many small gliding clubs have two or three such "good" instructors and sometimes a few of the other sort.

At the end of the year at renewals time, who is it that can look in his or her logbook as they fill in their form and say - "Cross-country kilometres, thousands. Solo hours, hundreds"? Rarely the good instructors!

MARTIN BREEN, *High Wycombe, Bucks*

## COMBINED AMMUNITION

Dear Editor,

Aston Down Farms is the company which deals with matters concerning the land owned by the Cotswold GC and we are interested in the possibility of combining efforts with other gliding clubs to minimise the rates payable to our respective local authorities.

If we can obtain the information listed, I am prepared to produce an analysis of the material, which could be useful to all clubs in making representations to their local authorities and which would carry greater weight when comparisons with similar organisations could be made. A copy of the analysis would be sent to

all clubs who contribute the information.

The information needed to make a reasonably comprehensive comparison is:-

1. The name and address of the airfield.
2. The name of the local rating authority.
3. The approximate acreage of the airfield and brief details of its buildings.
4. Whether or not the club is wholly voluntarily organised or a business run for the profit of its owner/shareholders.
5. Is the field exclusively for gliding or for general aviation?
6. What is the rateable value of the property?
7. How much is paid annually in rates?
8. What percentage, if any, is applied to reduce the rates payable under the local authority's discretionary power to reduce payments in respect of sports clubs? Have you applied for such relief?
9. Do you have any charitable status, *eg* a junior flying scholarship scheme, and have you received any reduction in rates to allow for the charitable status?
10. Any other information you feel should be taken into account.

With forthcoming changes in rating we feel it is important to use our combined energies to ensure that the gliding movement operates in the most efficient way possible for the benefit of all our members and the co-operation in this matter may prove useful to us all. Please send your replies to me at 62 Teanford Lane, Upper Tean, Stoke on Trent ST10 4EN. Daytime tel/fax 01782 260800, evening 'phone 01538 723433.

MIKE SHAILES, *Aston Down Farms Ltd*  
*treasurer/director*

## CHANCE OF A NEW BRITISH GLIDER

Dear Editor,

I am designing a glider with the intention of production to compete in the two-seater training/soaring market. The project is being run in conjunction with Manchester University and the facilities at the university will be used to reduce the development costs.

Those involved in the project are experienced in gliding and design. However, the project requires outside help, both technical and financial, for the design to be put into production.

The question is: - Is there anyone out there who wants to help revive the British glider industry? For more information contact me at The Simon Building, Brunswick St, Manchester M13 9PL.

HENRY MORRIS

**We welcome your letters but please keep them as concise as possible and include your full name, address and telephone number. We reserve the right to edit and select.**

Nick Goodhart is moving house and won't have room for his collection of S&Gs going back from 1973 to 1950 when it was called *Gliding*. If anyone would like to make him an offer for them, tel 0626 779790

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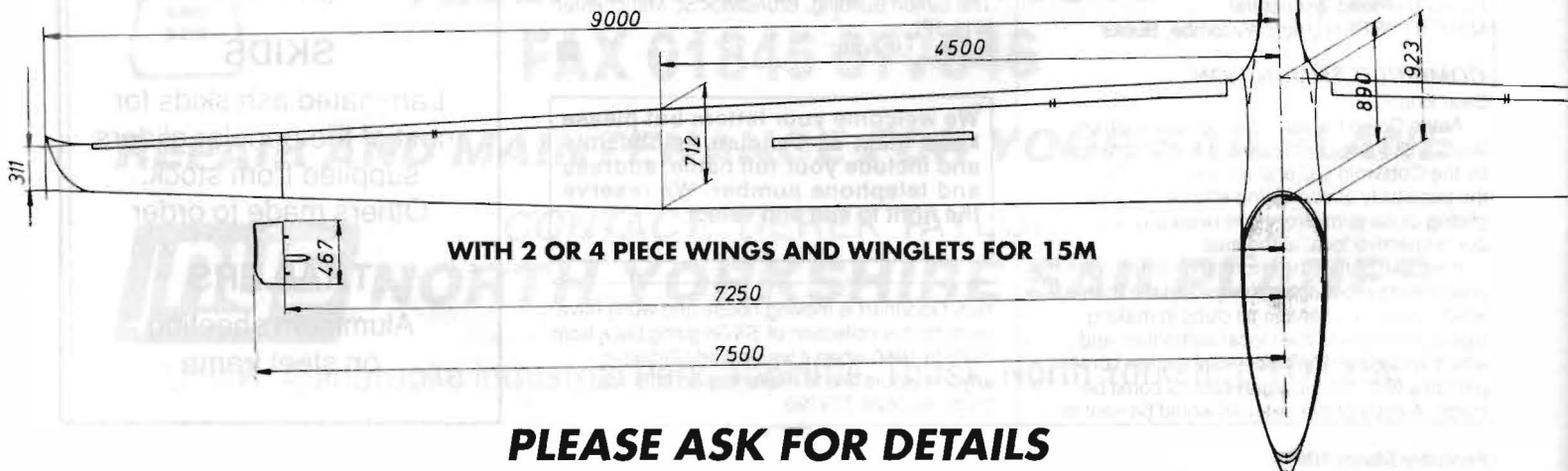
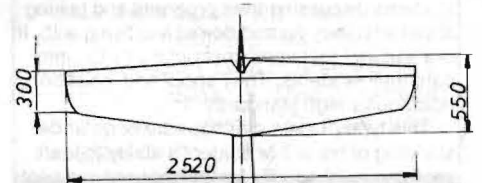
Soar ahead of the rest. In series production. Already delivered to the UK.

#### Technical Data

Span	m	(ft)	15	(49.2)	18	(59.1)
Wing area	m <sup>2</sup>	(ft <sup>2</sup> )	10.68	(115.0)	11.81	(127.1)
Aspect ratio	/		21.07		27.42	
Fuselage length	m	(ft)	7.025	(23.0)	7.025	(23.0)
Fuselage height	m	(ft)	1.434	(4.7)	1.434	(4.7)
Empty weight	kg	(lbs)	256	(564)	262	(578)
Wing loading with 80 kg payload	kg/m <sup>2</sup>	(lbs/ft <sup>2</sup> )	31.4	(6.42)	28.9	(5.92)
Waterballast wings	kg	(US.gal)	120	(31.7)	or 174	(46.0)*
Waterballast fin	kg	(US.gal)	6	(1.6)		
Max. speed VNE	km/h	(kts)	270	(146)	270	(146)
Stall speed 80 kg payload	km/h	(kts)	66	(35.5)	63	(34)
Max. weight	kg	(lbs)	525	(1157)	525	(1157)
Max. wing loading	kg/m <sup>2</sup>	(lbs/ft <sup>2</sup> )	49.2	(10.1)	44.5	(9.10)

#### Gliding performance

Best glide ratio at max. weight	/		over 1:45		over 1:50	
at	km/h	(kts)	116	(63)	110	(59)
Min. sink (W = 350 kg. 772 lbs)	m/s	(ft/min)	0.55	(108)	0.47	(92)
at	km/h	(kts)	75	(40)	71	(38)



**PLEASE ASK FOR DETAILS**



# BOOK REVIEWS

**Stories By Great Glider Pilots Part 2** by Erik Berg, published by Airborne Publishing and from the BGA at £25 including p&p.

If you enjoyed Erik Berg's first book of **Stories by Great Glider Pilots All Over the World**, you'll love his second book, which is a great advance on volume 1. There is one fly in the ointment, or one bug on the leading edge, which is the piece by me, where the computer has gone berserk - a fine old Scandinavian word, by the way, which means exactly what it says - and has for instance assumed that the innocuous first person plural *us* is short for *United States*, so *us* becomes disconcertingly US throughout. Platypus is not a great glider pilot either, as everyone will rush to proclaim, Platypus himself leading the rush, if only to avoid getting trampled underfoot. I wanted Eric to call it *Great Stories by Glider Pilots All Over the World*, or better still, *Tall Stories by Short Pilots All Over the Place*, so that I could qualify with a clear conscience. While we are picking at the little factual points, the GPS trace in the book belongs not to me but to Robin May, who did the same 758km task on the same day, but quite a lot faster, and the flight took place in 1993, not 1937. I was scarcely capable of riding a tricycle then.

The 41 stories in the book are not all about huge distances in expensive modern sailplanes. There is a refreshing variety, from the Wright Brothers onwards: thus Derek Piggott entertains us with his hair-raising account of how he sort of flew the replica George Cayley machine on the original Yorkshire site in 1975, and again in Kent in 1994. If an aeronautical device can be flown by anyone, Piggott can fly it. The fact that he could only barely manage Cayley's flying-boat - and that is what it was - greatly enhances our respect for Sir George's coachman, who in 1853 found himself persuaded by the great scientist to make a daring bid for immortality in the distant future - not to mention almost certain mortality in the immediate future. That Derek and the coachman both walked away from the same scene proves that miracles can happen not once but twice, though only to people of spotless virtue.

The illustrations are also more interesting and helpful than in the first edition. Thus there is a fine 1933 picture of Richard duPont, aged only 22, in the Bowlus duPont sailplane, a lovely machine (based on Lippisch's Fafnir, but with struts) in which duPont is wearing a radio headset and microphone. *Does anybody know what the first use of radiotelephony (or Morse for that matter) in soaring flight was? Write in if you think you know.* Besides an account of a pioneering two-week expedition to the Virginia ridges in 1933 that I shall certainly re-read when venturing there this spring, there is a three-view drawing of the sailplane in which he flew 122 miles (200km), and a biography of the talented duPont, who was

killed at age 32 while testing a Bowlus military glider in 1943, the middle of World War 2 - a fate, and a date, uncannily similar to that of Robert Kronfeld

It is this sort of visual and verbal detail (What were those aircraft like? What happened to those people?) that enriches any book on soaring.

Thank you Erik; I am already looking forward to **GGP3**.  
PLATYPUS

**Sea Breeze and Local Winds** by John E. Simpson. Published by Cambridge University Press at £29.95.

My logbook entry for June 13, 1971 (Sport/Club Class Nationals at Husbands Bosworth) reads: *Triangle, Oundle, Olney. Landed at Oundle: 40km after 100km detours because of clag.* Sixteen others landed there as well, all of us foxed by an extraordinary "Pseudo sea breeze front" which turned photographing Oundle church into a low level bombing raid. This particular front is immortalised in John Simpson's new book, along with hundreds of others from around the world.

John is the Cambridge Club's first Silver badge (1937) and in the 1960s he was busy investigating sea breezes at Lasham. Since 1974 he has been back at Cambridge and, active as ever, has now written what will become the standard monograph on sea breeze fronts and related phenomena.

This is primarily a scientist's book, but of a highly readable variety, with plenty of diagrams and photographs. Serious weather-conscious pilots should study it; the rest of us can simply enjoy a good read.

THE ARM-CHAIR PILOT

**Know the Game - Gliding**, a new edition written by Ann Welch and published by A&C Black in collaboration with the BGA. Price £4.29 including p&p from the BGA.

The **Know the Game** series is designed to introduce newcomers to the basics of a sport - to give an overview, how to find out about it and take it up, and what is involved, particularly in the early stages of training. Despite its low cost, it is attractively presented and lavishly illustrated with good quality photographs. The result is to show gliding at its most scenic and beautiful, which should catch the eye of anyone looking for a sport with aesthetic appeal.

The book starts as any modern introduction to gliding - or should we say soaring? - should, with an outline of the latest achievements and an emphasis on cross-country soaring. It goes on to describe how to find out about gliding clubs, what to expect in the early lessons and a run through the pre-solo syllabus. A remarkable amount of information is contained in this section with many points illustrated by simple line drawings and diagrams. A matter of fact, rather than appetite-whetting, description of the post solo possibilities follows, with explanations of the badges system, cross-country flying and types of soaring.

The clear, no nonsense text is unfortunately let down by some poor layout: many of the dia-

grams are positioned on a different page to the point which they illustrate, a significant weakness in a book intended to be simple and easily assimilated. Sloppy editing is also revealed in some confusion of section headings and rather muddled planning of the text. As one example, it is confusing to find radio, cloud flying, aerobatics and waterballast all bundled into "Navigation", and interrupting a description of field landings and cross-country planning.

It is disappointing in a semi-official BGA book to find an out of date description of circuit planning, although no doubt the lead time for production is the cause of this. Given the wide experience of the writer, it is also surprising to find the description of club management and operations biased towards larger and more professional clubs: this could raise false expectations for the beginner approaching a much smaller club.

Despite these weaknesses, the overall presentation is attractive and informative and the style is readable, easy to understand and reassuring for the complete novice. For the price of a winch launch it would be a good present for anyone thinking of trying gliding.

DIANA KING

**The Marshall Story: A Century of Wheels and Wings** by Sir Arthur Marshall. Published by Patrick Stephens Ltd at £19.99.

Everyone connected with aviation will find this autobiographical account of the origins and growth of the Marshall Company of Cambridge fascinating, but it is particularly recommended to all those past members of the Cambridge University GC who trained and soared at Marshall's Airport in the years the club was stationed there. Without the generosity and encouragement of Arthur Marshall the club might well have foundered, and the post-war British gliding scene made immeasurably poorer.

THE ARM-CHAIR PILOT

**25 Walks: Deeside** by Robert Smith, Published by HMSO at £6.95.

Even on a good year during those club expeditions to Aboyne there may be the occasional easterly wind when the most single-minded glider pilot might consider going somewhere other than the Deeside GC clubhouse. After a couple of days with no wave, some might even consider physical exercise. It was with this in mind that I sent off for this book and two of us tried it out this September.

We set off, following the indicated tracks, noting the ease with which the correct path could be identified from the concise but easy-to-read text. And then we got lost. We couldn't work it out and had to return to base.

Later, on a beautiful, windless day, we tried again. We took the lat and long of key points on the route from an OS map and entered them into the Garmin 100. This allowed us to find a crucial, tiny, uphill path along a fence. Cracked it. The view from the top was spectacular with not a breath of wind, reassuring us that we weren't missing wave.

ANNE STOTTER



# WAY OFF TRACK



## Sadly - loosely - mis-filed

**M**y first visit for some years to the Mynd, where I was a member for nearly two decades, was a deeply saddening experience - although the Midland GC management is probably in no way to blame.

It was on November 24, when I was hurtling southward from Stranraer to Gloucestershire. Passing through Church Stretton at nightfall I couldn't resist the temptation to turn up the Burway and find the club shining like a beacon in the thick nocturnal fog. Despite several parked cars I encountered only two living souls about the place, in the workshop.

The saddening experience came in the loo. Lying abandoned, thrown opened side downwards in one of the cubicles, was an August 1983 copy of *S&G*. I picked it up to find written boldly on the contents page: *From the Robin Bull collection. Please return.*

Fortunately, the journal was undamaged and had avoided surrounding damp so I returned it to the deserted lounge where I hope it fell into good hands.

Robin Bull was a lovely man whose death had occurred since my last full flying visit to the Mynd. It was from this gentle wartime Lancaster pilot I learned all I have ever known about the manufacture, use, care and maintenance of bungy ropes. Similarly, acrylic canopies too - and all imparted with the utmost courtesy and warmth during my understandably irregular visits to the Mynd during 19 years of membership.

He was a MGC stalwart who passed on his enthusiasm for gliding to countless others, including his two daughters, during a long career. It was typical of Robin to have bequeathed a collection for the benefit of fellow enthusiasts and my sad discovery raised in me a question as we

drove on gingerly through the fog and descended Asterton Hill.

Just what kind of mindless lout would throw away archival material on the floor of a WC - or, for that matter, abandon anything there that was left for the benefit of all?

Perhaps the fact that, thrown down alongside the *S&G*, was a copy of *The Sun* gives a clue. But what on Earth are they doing at a gliding club?

## Sleuth's GC

One must commend farmer/owner CFI Tim Wilkinson for his unique way of funding a gliding club which I read with intense, if initially frustrated, interest in the last issue, p334. The frustration came from being unable to find even in what general part of the UK, let alone what county, it is.

Tim's article gave not a clue: the name Sackville Farm GC could be anywhere. Club Notes gave the site as Riseley; my big **OS Road Atlas** lists two Riseleys, in Cheshire and Derbyshire.

I remembered Steve Longland's club map in the last *S&G Yearbook* issue, p52, where the accompanying club directory gives the site at Riseley. Back to the atlas again, and there are two Riseleys too, in Beds and Bucks. So now we have four counties which are possibilities.

To Steve's map again, to see whether we can spot the magic marker, 73 - they are dotted over the map apparently willy nilly, rather than in numerical order, say, north to south.

"Phone code", think I, slamming into my A-drive a disc which a clubmate said would geographically locate any UK 'phone code, only to see the dread message *Incompatible file format* appear on screen. At this point my knowledge of PC operation dropped stone dead.

Back to scouring Steve's map again and I eventually find No. 73 nestling somewhere between Peterborough and Bedford, so presumably it was Riseley, Beds, all along.

I had been about to inveigh against "Traditionalists" who, on the last letters' pages, had griped about long-established clubs like Blackpool & Fylde changing their names to reflect, more accurately in this case, its location for the past 20-odd years in the Forest of Bowland.

But perhaps, for all the wrong reasons, old Traddie has a point - although I'd still be browned off to drive to Blackpool's Golden Mile to find its gliding club is about 25 miles away.

Anyway, Tim, congratulations on coming up with such an interesting way of financing a vibrant gliding operation on what is, presumably, set aside.

And I bet if anyone undershoots while landing at Sackville Farm into those acres of greenhouse, it will make an awfully pretty tinkling noise. ✕

**Please send all editorial contributions to the Cambridge address and not the BGA office.**

# I LEARNED SOMETHING THAT DAY

## Paul, an AEI from the Norfolk GC, hopes others may gain from his unfortunate experience

**I**t was to be my third trial lesson flight of the day in the K-21. I had recently met all three pupils so everything was quite sociable but none of them had flown before in a glider. My passenger, Fran Griffith, was calm and relaxed and looking forward to the flight.

The take-off was normal and with 2 to 3kts thermals around we were looking for a decent flight. At about 1000ft I suggested Fran followed through on the controls. The tug pilot pitched erratically several times which I put down to some strong thermal activity and because of this I was reluctant to give her complete control of the aircraft.

At 1500ft the rope snapped (tug end) springing back at the cockpit giving Fran quite a shock as it made a terrific bang on the perspex, though thankfully not breaking it. It then proceeded to wrap itself around the port wing three times and, yes, over the control surface.

Having pulled the release and with aileron movement slightly restricted, I first reassured my passenger that we were in no danger (I hoped) and that I would be undertaking a few manoeuvres to release the rope.

Thankfully she had nerves of steel. I later found out she was an experienced mountain climber and as far as I am concerned anyone who does that sort of thing is a darn sight braver than me.

My first manoeuvre was a stall turn to the left in the hope that gravity would take care of the rope and it kind of worked. One loop of rope fell off but I paid the price in height. We were now down to 900ft and I was considering landing with the rope attached but for obvious reasons would rather not.

So I had one last try.

I increased the speed to 80-85kt over a field and with a bootful of left rudder and loads of air going from root to tip, the second loop fell off, speed decreasing, and the third loop just fell off and I thankfully landed.

In conclusion plan two (the bootful of rudder tactic), should have been my first, but then hindsight has always been a wonderful thing. Full credit to my passenger who at all times kept calm and confident and went up again with me later that afternoon. ✕





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## Vintage Glider Club's International Rally

We are always happy to have an excuse to use colourful photographs of vintage gliders. These were taken by Peter Warren during the Rally at Lasham in August when 94 gliders from Europe and the USA flew on most days. This year the Rally will be at Oberschleissheim, Munich from August 6-16. The photos are: 1. Graham Saw's 1938 Petrel. 2. A 1936 Rhönspërber. 3. A Goevier 2 two-seater entered by Paul Serries from the Muenster Old Timer Club, Germany. 4. The Kirby Kite 2B restored at Lasham by Frank Irving, Bill Tonkyn and Ralph Hooper, who previously owned it in 1950. It was the first post war production glider built by Slingsby. Only three are still flying. 5. A collection of some of the entries. 6. The Rhönbussard restored and formerly owned by Ted Hull of the London GC.



3 1 4 1



5 1 6 1





It has long been remarked that England does not have a climate, it just has weather. In summer 1989 it turned out so good that one pilot said "If this is global warming I am all for it; hand me another can of aerosol". Another summer the soaring was so miserable that a frustrated competitor remarked that bringing a sailplane to England was as sensible as taking skis on an African safari.

# SUMMERS - GOOD AND BAD

Just what kind of soaring season can we hope for this year? In this article by Tom we may get some clues by looking back on previous summers

## The makings of a good summer

Essential factors for good soaring weather are lots of sunshine, little rain (making for dry ground), and light winds. These conditions occur when high pressure settles down near the UK often enough to show up on the monthly averages. Averages conceal some of the very good days but they are a useful guide.

Even a poor summer may bring a few magnificent soaring days but these too often occur mid-week when most pilots are working. In contrast the good summers have many days when cross-country flying is possible. It is difficult to compare soaring seasons but one way is to count the number of days when badge flights were listed.

## Past summers

Table 1 shows the number of badge days each year compared to the hours of sunshine and millimetres of rain reported at Birmingham and London. These places were chosen because they give a reasonable picture of central and southern England's weather and are far enough from the coast to escape most sea breeze effects. The majority of long thermal soaring flights have to cross central England at some stage. Scotland (I am sorry to say) had to be left out of this weather record, partly because the weather there is often the reverse of that in England and partly because many of their flights are in wave.

The last two columns marked "max-min" show the spread of temperature between night minimum and next day's maximum. The max-min range is a guide to the dryness of the air. The figure is high when nights are clear (allowing a big drop in temperature) and there is a fair amount of sunshine by day to boost the maxima. A low value for the max-min range suggests cloudy days and nights. A spread of more than 10°C indicates a good soaring day. Averages hide the full range but if the average exceeds 10 there must have been a lot of good days during the season.

The list of Gold and Diamond distance days in 1994 was incomplete at the time of writing, hence the gap.

Badge days were taken from the whole year but the "summer" sun and rain are just for the months May to August when the majority of flights took place.

The official summer excludes May but it has been included here because it is often a good month for cross-countries.

**TABLE 1**

This shows the number of days each year with badge flights of 300km or more compared to the average sunshine and rainfall figures plus the range between max and min temperatures.

BIRMINGHAM		LONDON		BHM	LON		
Year	Days	Sun	Rain	Sun	Rain	Max-Min	Max-Min
1974	26	688	225	848	183	7.6	9.5
1975	24	835	133	945	123	9.1	10.9
1976*	43	884	160	1053	68	9.7	12.5*
1977	17	715	224	727	219	7.5	8.6
1978	13	620	231	731	230	7.3	9.1
1979	15	647	260	735	294	7.7	9.2
1980	20	659	258	783	279	9.2	9.2
1981	24	613	191	631	221	8.8	8.7
1982	26	700	275	720	221	9.6	9.7
1983	15	728	204	793	146	10.3	9.8
1984	28	829	182	813	174	10.7	9.6
1985	14	679	272	759	248	8.5	8.7
1986	11	695	262	737	191	8.9	9.1
1987	13	584	290	679	258	8.6	8.8
1988	16	677	253	719	223	8.7	8.6
1989*	40	1006	197	1111	140	11.6	10.9*
1990*	37	864	136	973	77	11.1	10.7*
1991	16	686	206	735	216	9.1	8.6
1992	17	788	352	845	265	9.9	9.1
1993	21	781	225	795	135	9.3	9.4
1994	//	804	158	871	147	9.7	9.5

These results are shown graphically in Fig 1. Notice that the rainfall figures are plotted from the top down.

## Comments on the exceptional years (marked with asterisks)

In 1976 badge days reached the high figure of 43. There was a 16 month drought from 1975 up to September 1976. The severity was unequalled in the previous 250 years. There is nothing so good for soaring as a prolonged drought. Although 1976 gave exceptionally good soaring weather the season did not start particularly well and it was July before the number of badge days really took off. From mid-June to mid-July there was a hot spell unequalled for 150 years. For much of this time the UK pressure averaged some 5mb above normal and the jet stream approaching the UK was displaced some 6-10° north of its usual position.

## Jet streams stay well away in good summers

Jet streams are apt to break up a fine spell if they approach the country. During the summer of 1976 the SW jet from mid-Atlantic headed up across the Faeroes and by late summer had moved further north to lie across Iceland. The long drought finally broke down in September when the air started cooling over Canada. The new Atlantic jet then turned towards the Bay of Biscay and exceptional rainfall broke the drought. The change was dramatic. From mid-September to mid-October we had the highest rainfall since 1871.

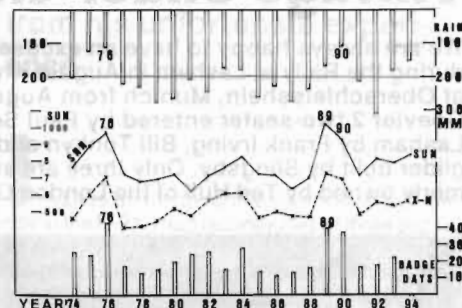


Fig 1. The number of badge days compared with the summer sunshine, rainfall and the max-min temperature spread.

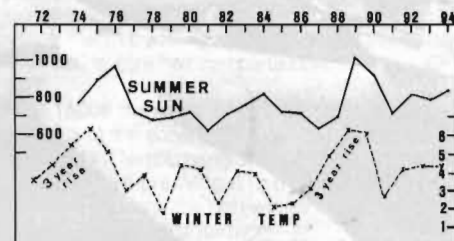


Fig 2. Showing how warm sunny summers are often preceded by mild winters.

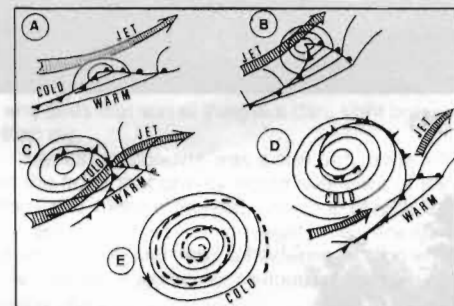


Fig 3. Five stages in the evolution of a cold vortex from a frontal wave.

## The 1989-90 summers

The next outstanding years were 1989 (40 badge days) and 1990 (37 badge days). From 1988-1992 there was another spell of drought starting in spring 1988 but with some wet interludes. By the end of the spell the press were printing photos of dried up rivers and empty reservoirs. From the latter half of 1988 for some





Photo A. An infra-red satellite picture of a cold vortex showing a spiral swirl of cloud. This is an early stage when the low was beginning to wind up over the Bay of Biscay.



Photo B. A visual picture a day later when the spirals had begun to lose the original clarity.

44 months the rainfall was the lowest for 130 years. In contrast Scotland had the wettest four years since 1869.

**Preludes to summer**

1. A warm dry winter often precedes a good summer. The odds in favour are 8:1. Fig 2 compares the winter mean temperature with the following summer sunshine.

In the run up to the exceptionally fine summer of 1976 the average winter temperature rose for three years in succession. A similar three year rise preceded the very fine summers of 1989/90. The winter of 1988/89 was drier than usual with one of the mildest spells since the 17th century. December 1988 was exceptionally mild and very dry. The following summer of 1989 was one of the warmest and sunniest yet recorded.

The winter of 1989/90 was again very mild but this time exceptionally stormy too. Falmouth reported a gust of 117kt in February. That summer there was a record heat wave over England and Wales with a maximum temperature of 37.1°C at Cheltenham on August 3, 1990. This extreme temperature did not give exceptional soaring because the inversion did not break until noon. When it did go 6kt thermals almost immediately went up to 8000ft but there were wide gaps between them.

2. If the warm dry summer continues through September the odds are in favour of a mild winter. However if September and October are wet then winter will probably be cold.

3. A very wet September/October can precede a cold winter. Cold and snowy winters tend to be followed by a poor summer. January 1985 was the coldest in SE England for 22 years. (1963 was worse with many days of lying snow.) February was mostly anticyclonic and dry but very cold mid-month. That summer May turned out cloudy and wet; June was cool, cloudy and wet; July was much better in the south but very wet in the north and August had a spell of westerly winds bringing more cool and wet weather. The whole summer was both wetter and cooler than normal and in Glasgow it was the wettest summer this century. Not surprisingly it was a poor year for badge days.

**TABLE 2.**

Some particularly dry and wet summers in London 1921-1994. (Summer taken as June-August)

Dry summers	Wet summers
1921 34 mm	1924 247 mm
1949 79 mm	1927 243 mm
1955 83 mm	1931 249 mm
1959 84 mm	1941 302 mm
1972 50 mm	1946 245 mm
1975 56 mm	1954 241 mm
1976 46 mm	1956 291 mm
1983 73 mm	1958 255 mm
1984 83 mm	1971 241 mm
1990 73 mm	1980 223 mm
1994 63 mm	

**Note on heat waves**

The hottest spells are usually from late July to early August when sea temperatures reach their maximum and there is already a hot spell over NW Europe. Heat waves usually need dry ground because heat lost in evaporating moisture reduces the maximum temperature. Hence droughts are more likely to produce heat waves.

**Anomalous rainfall figures during droughts**

During even the driest spells the temperature rise is often enough to bring the air close to instability by late afternoon. As a result isolated thunderstorms occasionally break out in the middle of a long drought. However they are usually confined to very small areas. Some places may record heavy rain which seems to contradict the impression of a drought but local downpours seldom allow the hosepipe ban to be lifted.

**Bad summers are usually caused by:-**

1. A jet stream passing close to our area with cyclonic curvature to the upper flow. This often steers Atlantic depressions across the country.
2. The presence of a slow moving cold vortex nearby. This is a cyclonic circulation which extends up to 30 000ft or more. Long spells of poor weather affect most of England and Wales when the cold vortex lies over Biscay or France pro-

ducing an easterly flow over much of the UK. In contrast Scotland is likely to have a fine spell, especially in the west, if the vortex centre is at least 10° latitude further south.

**How a cold vortex forms**

Most frontal depressions go through a life cycle. This is illustrated in Fig 3. They start as a little wave on an almost stationary front (A). They are often stimulated by the presence of a jet stream aloft. The next stage (B) is deepening of the depression; as this progresses the system of warm and cold fronts becomes occluded (C). An occlusion lifts all the warm air from the surface. An occluded front often becomes wrapped round the depression (D) which at this stage has lost all its warm air. The jet stream, which in stage one lay close above the new low, is moved far out from the centre of the low. In the beginning the strong upper flow both produced and steered the new depression. When the jet is removed the low loses its guiding force (E). It slows down and becomes almost stationary drawing in more cold air on its western side.

A cold vortex is just the opposite of a blocking high but both interrupt the normal eastward progression of weather. The difference is that while the blocking high deflects bad weather round its perimeter the cold vortex acts more like a magnet and attracts further lows to curve into it. At first these lows are steered south of the vortex before turning in towards the old centre. Then the lows merge, the deeper one taking over from the shallower low. This is apt to invigorate the original low and keep the whole system churning bad weather.

The appearance of a vortex is illustrated in photos A and B taken from Meteosat. When one sees such a spiral of cloud it often means the main depression has come to a halt. Any place within the circulation is liable to get a spell of poor weather. Although the fronts have vanished the air remains moist and unstable. Small troughs often develop and these occasionally grow into little vortices revolving briefly within the main circulation. It looks quite decorative on a satellite picture but spells disaster for a competition week.



**A**fter two years' gliding I had risen to the dizzy heights of a Silver badge, but despite shares in two glass ships the next 15 years had only brought a Gold height. The nearest I had come to a Diamond goal was an epic 240km flight which included a 60min scratch at 600ft near Scunthorpe steel mill.

Part of the problem was that the preparation required to find the barograph, candle, string, sticky paper, foil, matches, TPs, OO etc usually took longer than the failed flight and with four in the syndicate and British weather these had averaged about one per year.

However in 15 years things had changed. I had hoped and believed that the GPS system, which has removed much of the skill and challenge from cross-country gliding, would be outlawed by the BGA. Instead they accepted it without so much as a whimper declaring that it was all in the name of progress, so, reluctantly, I had to accept the new technology.

Young whiz-kids were now swanning off all over the place with their GPSs insinuating that they were better cross-country pilots than me and worse still, because I hadn't made a decent cross-country in years, insinuating that I probably didn't know much about field landings and wasn't capable of teaching them any more.

The attraction of the EW barograph was obvious. I could not believe that all you had to do was switch it on and stuff it in the glider. How on earth could the BGA let anyone get away with that after all the performance we had to go through with the damp matches and paraffin lamp etc in that stinking old hut.

It seemed that all you needed now was a degree in electronics and a load of money, but what about the weather and the glider?

Well why not throw even more money at it, kill two birds with one stone, go to France and hire a glider for two whole weeks? What indulgence, the equivalent of 15 years' English gliding in two weeks. The challenge, expect a Diamond goal and hope for a Diamond distance.

So that's how we ended up in France with an immaculate Pegasus and a brand new GPS and EW with everything carefully connected according to the maker's instructions - "Short wires and soldered joints, because if you don't then 10min flights will fill the memory with missed fixes", that's what the young whiz-kids told me. Unfortunately the previous user of the immaculate Pegasus insisted on leaving his wiring which consisted of several of those terminal block things and yards of multicoloured flex. Things were starting to go wrong.

They didn't set tasks on the first two days because of thunderstorms; well we needed to get acclimatised anyway. I needed to fly because the landing technique seemed a bit fraught - "Land then turn right so that the hordes behind can land or take-off on the same strip, go right to the edge of the runway but do not go over the ruts or you will destroy the glider." The hordes were some of the other 40 gliders. Apparently we had managed to go at the busiest time of the year. "Essential to go this fortnight for the best weather" said the experts, which probably meant the most violent thunderstorms.

I plucked up the courage to launch and pulled off at the recommended 1600ft. It was a struggle to stay up, it was very hot and I realised later

## WHAT PRICE A DIAMOND?

As you contemplate your goals for the coming season you might like to consider the way Colin got out of the rut and achieved an elusive Diamond by visiting Le Blanc



Colin, who flies at the Wolds GC, is a full Cat Motor Falke instructor and a tug pilot. He has 700 gliding hours and 200 power.

that this made the thermals different to the standard British thermal, sort of weak, narrow and rough.

Nobody had mentioned this when they recommended the loads of money theory. How on earth could I do 300km in this? Worse still after pulling off tow I could not find the airfield - unbelievable but it took 5min of panic at 1600ft in a weak rough thermal before I recognised the field, then I scraped away and worried about the landing for a couple of hours. It was uneventful apart from not getting to the side of the runway for fear of going in the dreaded ruts.

The next day there was a task. Electronics to the ready but unbelievably I had left my GPS list of pre requested carefully compiled French TPs at home which I had religiously copied and distributed to others. Now I had to go round like a beggar, asking for scraps of paper with complicated mathematical references with months of planning up the spout.

Barograph on, check the memory, 5hrs, I don't believe it, only 5hrs, ask an expert to check, "Yes that's OK". Five hours, how can it be? If only he had told me the 5hrs was really five days I would not have wandered round tasks believing that I had to complete every flight in 5hrs or lose the barograph trace.

I plugged the whole contraption in and up came the message "membatt". "Memory battery fault, return to dealer", said the handbook. Impossible it's only four weeks old. I decided to ignore it in the hope it would go away and unbelievably it did. Was it the power of positive thinking starting to work after 15 years? The whole contraption worked perfectly for the rest of the holiday.

The briefings were comprehensive and the task setting seemed to fit the weather perfectly. We flew a 100km and 200km before the 300k was set. This time I would need to use the camera. Previous experience meant this added approximately an hour to the task but better be safe

than sorry. You need to take several photographs of each TP so the width of the photographic zone only becomes adequate to cope with all the fumbleings if you go about five miles past. It seems to take hours, but actually its only about 15min.

I did not need to navigate once thanks to the GPS. Visibility was usually poor, thermals were usually strong and you needed to bank at an alarming angle but cloudbase was up to 7000ft. Thankfully the task was completed in 4hrs 30min, but what about the dreaded photographs?

They were usually returned promptly the next day by the OO with a pleasant "Well done", but mine were being scrutinised carefully and a second opinion was sought. Later they admitted they had never seen any taken from that distance and were worried the first one might be out of sector - they hadn't realised there were dozens of photographs of each TP. I got the Diamond goal along with several others. It was just as well because the next task they set was a 299.67km triangle.

We flew another 200 but did not get the 500km - anyway that's a good reason to return next year. One pilot said he'd been using that excuse for years, and as for the cost of the Diamond, it was worth it to me, but it makes the wife's golf seem cheap.

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# CLUB FOCUS

In this issue we feature the Shropshire Soaring Group at Sleaf which has a membership of 32 in 12 privately owned syndicates. Dave Triplett tells us why he joined and Tony Adams describes the club

## Sleaf - the euphoria

**A** sheer white wall, solid, smooth and still, filled the screen, whilst the muffled drone of the Rolls Royce engine filled the air. Five minutes earlier we had climbed through a slot in the clouds and I remember being surprised by the frisky climb performance - better than 1400ft/min. Behind me was 300ft of lightweight rope and holding perfect formation in the uncannily smooth air was a Nimbus 2c.

I looked again at the white wall in front of me and realised I wasn't getting any closer. I switched on the R Nav. Selecting the MCT VOR/DME confirmed that I wasn't actually going anywhere. That couldn't be right - or could it? The VSI said I wasn't climbing any more either; 10° of flap, 80% power, nose up to hold speed - and not climbing and not going forward. The first words on the first page of my gliding career was being written. A distant memory of lee wave in the PPL Met syllabus came back but dimly - surely mountain wave couldn't be that powerful, or could it?

Throughout the day radio transmissions talked of climbs of "15 000ft plus at 5 up." Other fascinating but mostly mysterious words and phrases were in frequent use: "5 up at Smoky Joe." "Working well at Oswestry." "Pressing forward to the next one." "Bala's open and working." I was becoming a convert before I'd even sat in a glider.

Just a few weeks later Vic Carr sat me in the front seat of the Twin Astir and, with infinite patience and clarity, taught me how to unlock the gates to the Promised Land. I've been obsessed with the sport since that first aerotow (albeit at the wrong end of the rope), and count myself privileged to fly from a superb site in such elite company. Many of them have their bus passes now, but their enthusiasm and sense of adventure remain undimmed; retirement means they come out to play more often.



Over Rhyll: Ric Prestwich and Alan Levi in ASW-20s at 10 000ft in wave. Photo: by Ric.

And that Promised Land? The first time I went there it was about eight miles SE of Barmouth, but I learned that we all have our own which we take with us to rediscover time and again; along the meandering Loire, above the flatlands of Northern Spain, skimming across the slopes of Aviemore, sitting at 20 000ft above North Wales in 50 miles of gin-clear visibility, or a few yards away from a barren cliff face in the Alps.

But I shall never forget that my first pilgrimage was from Sleaf.

## The facts

We started the operation in 1972 as a group of private owners who wanted better launching than was offered by other clubs. Towing started with an Auster Terrier and after 18 months we bought a Chipmunk and built it a hangar.

We are all members of the Shropshire Aero Club who made the field available for us and whose clubhouse and facilities we share - a field with two paved runways on flat ground in the lee of the Welsh hills, and rigging, launching and taxiing from runways to trailers, all on concrete. There is very little queuing for flights.

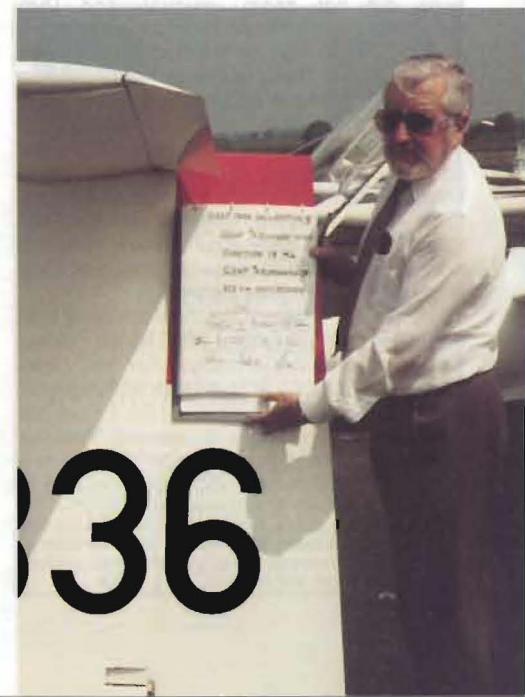
In general we do not enter competitions, but do achieve a considerable cross-country mileage in summer thermals on informal tasks which many of us attempt. When conditions are suitable, we can sometimes penetrate into Snowdonia or to the north and west coasts of Wales, using both thermals and wave.

We cannot undertake regular training as airfield traffic wouldn't allow it, but we have converted a few power pilots, including Dave who tells his story on this page, and have taught a few of our helpers to fly from scratch. The latest of these came to the field two years ago at the age of 17 - the Astir syndicate made a two-seater available, a member generously offered to pay his tow fees and his monthly sub was waived. He now has a Silver badge and is flying an ASW-20L generously loaned by another member. Well done Alistair Gilson.

We now have capacity for more launches and could take another syndicate. We welcome visitors for daily membership or longer visits. If a distant club wants to station a glider here for winter or summer wave, it will be welcome. Anyone interested should contact our secretary - see our ad in this issue.



Above: The Chipmunk tug, which has given 20 years' service, photographed by Peter Foster. Below: Vic Carr who has inspired and led us in wave and thermal flying and not least in committee work. Here he witnesses a start for the Swindon O/R 300km milk run. Photo: Tony Adams.





**B**y January 4 my cold was on the mend, but one's ears do not like rapid altitude changes with a thick head, so I decided against going to the gliding camp, and instead motored to Oamaru to see Matthew. After an accident the previous week, he was coming along well, nursed by his wife Jan, and in excellent spirits. The day did not look anything special from the gliding point of view (at any rate, to my eye, unversed in the extraordinary atmospheric phenomena of New Zealand), and when I got back in the evening to my cousin's homestead at Irishman Creek I was astounded to hear the news that Dick Georgeson had broken the World O/R record with a flight in his Skylark 3F of 400 miles, from Omarama north along the famous north-west Arch to Hanmer and back again. God moves in a mysterious way – thank heavens for my cold, which kept me away, for if I had been there Dick would quite certainly have put me in his aircraft for a local flight, and the record would never have been achieved.\*

The glider site at Omarama is a huge, flat, brown grassy plain, near the head of a valley running out of the south-west corner of the Mackenzie country. High mountains hedge it in to the west, south and east; to the north the valley runs round a spur of Mount Benmore into the oval Mackenzie basin, surrounded in its turn by a ring of mountains, snow-capped to the west and north-west.

But round Omarama itself the adjacent mountains are not quite high enough for snow in mid-summer, and seem to be made of crinkled brown velvet. In the evening the setting sun lights the sunward slopes to a living golden colour, and the shadowed sides become a true deep purple.

Along the eastern side of the field a small, straight brook of clear, sweet water has been cut, and along the bank of this is a single line of trees perhaps a mile long. The caravans and tents of the gliding folk are pitched in their shade. At their back the brown mountain springs steeply up into the sky.

On the morning of January 4, 1962, the pilots were preparing for the day's flying. The conditions did not seem unusual, and Dick Georgeson was planning his flight, when a few minutes before take-off a telegram arrived for him from Fred Dunn in Christchurch reading "Arch to Mt Torlesse occasional but increasing lenticular northwards."

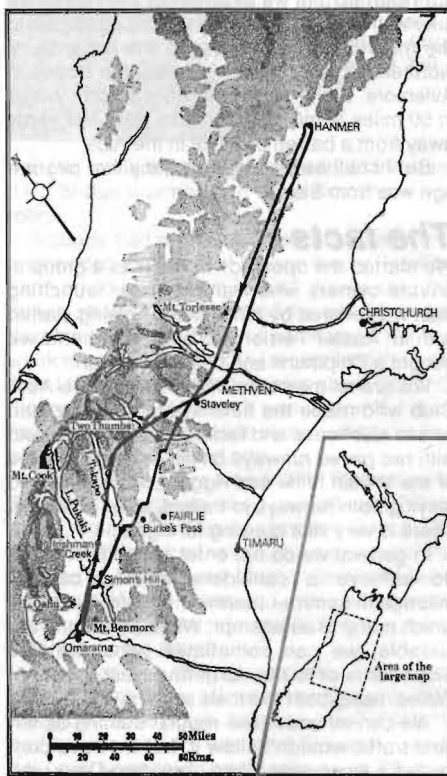
For long Dick had planned a record O/R flight along the front edge of this vast wave cloud known in New Zealand as the north-west Arch, to its known northern edge at Hanmer, 200 miles away, and back again. Fred's telegram provided the clue to possible success. Dick leaped into action. (See the map.)

His Skylark 3F was a machine specially built for the British team at the 1960 World Gliding Championships in Germany. After this, I was due to buy it, but just then Dick wanted one, and I transferred my option to him. I have not regretted this, because in January 1961 he achieved the world gain of height record with a climb of 34 300ft near Christchurch, and in

\*Whilst going to press, news has come through that Dick has done it again, with a flight on September 7, 1972 of 1003 kilometres along the same wave system, Hanmer-Mossburn and return in 11hrs 55min.

## WORLD RECORD

**With the World Championships in action in New Zealand as we go to press Michael Russell, who will be covering the competition in the next issue, suggested we should set the scene with this account of a 400 miles record flown by Dick Georgeson in 1962 from Omarama and recounted by Philip Wills in characteristic elegant style in his book *Free As A Bird*. We are grateful to Philip's family for permission to reprint this section**



**A map showing the world record route.**

January 1962 this further world record also fell to this formidable combination of man and machine.

His aircraft was ready, with two separate oxygen installations and all the equipment needed for a long flight at great altitudes. In fortunate New Zealand, the ether is not over-crowded as elsewhere, and an HF radio frequency is reserved for glider pilots. This gives a range of several hundred miles, and so it was possible for the pilot on this flight to remain in contact with his base throughout, though at one point a second glider, airborne over Omarama, was used as an intermediate re-transmitter.

The most important preparatory task was to arrange for photographic evidence of his declared TP at Hanmer. Dick put a new film in his camera, which was then sealed. He then took a photograph of a blackboard having the message: "Ja. 4th 1962, pilot S. H. Georgeson, Skylark 3F, course Omarama-Hanmer-Omarama." In his haste, he failed to wind on the film correctly, and only a small fraction of the right-hand side of this photograph materialised – but just enough to fulfil the requirements. On such small mishaps may a world record hang! The subsequent photographs include three taken of the TP at Hanmer and two final ones of the same blackboard taken that evening, thus locking the film within the time space of that day.

Dick was eventually towed off at 1105hrs, and released five miles away at 3000ft. The main first problem on these wave flights is usually to get up through the weak mixed thermal and wave lift to the critical altitude above which the wave takes firm hold of the air. This proved so difficult that on this day Dick alone succeeded and then only after nearly an hour's struggle. Finally, helped by radio advice from Bruce Gillies, who was also struggling in a Skylark 2, he found himself quite suddenly in the typically smooth lift of a wave at 6500ft west of Benmore mountain, climbed rapidly to 14 000ft and set off northwards. The three beautiful lakes of the Mackenzie Basin, Ohau, Pukaki and Tekapo, showed up well between the formations of cloud, but all the New Zealand Alps to the west were completely blanked out. In these conditions it was hard to locate lift, but if it became weak, he first turned and flew into wind for a time, and if this failed, he would circle and be carried downwind until he was brought back into the rising part of the wave.

At 20 000ft over Irishman Creek he called Bruce Gillies again, who said he was still struggling over Benmore, and then flew on into the never-never country of the Two Thumbs. The wave formation was completely jumbled in this area and the country below absolutely inhospitable. Wind direction was 290° and the course around 030°, so he decided to do a long glide downwind to the first of the series of lenticular



clouds reported in Fred Dunn's telegram. Sure enough, he found it, over Methven, and at 18000ft ran into smooth wave lift again.

Now over 100 miles away, he called Bruce Gillies again – Bruce had struggled up to 14 000ft and then lost it all again and sounded frustrated in the extreme, but full of encouraging words. He called Christchurch Airport and got clearance to pass through Red 1, the airway to Australia, and eventually reached the Hurunui River at 25 000ft.

Ahead he could see the end of the arch and beyond it a low-down sheet of cloud covering the whole northern end of the island. It looked quite possible that Hanmer was just too far north to be visible from above; if it was under this cloud it would, of course, be quite impossible to photograph the TP, and the whole enterprise would be vitiated. But fortune (aided by experience) smiled, and the TP was just short of the cloud sheet. There seemed no chance of covering the last 25 miles, as the air was clear, but extraordinary luck continued and a lenticular tongue formed under his starboard wing and kept pace a little ahead of him – a guardian angel leading to his goal.

Two-and-a-half hours after getting away, he photographed Hanmer, having travelled 200 miles – a startling average speed, aided by a favourable wind component and the increased groundspeed achieved at the great altitudes at which he had been flying. The inside of the cockpit was a veritable icebox and he had to prise open the window with his fingernails to see where he was and to take his photograph. He tried to call up Bruce Gillies again, and also Stewart Cain, who was flying the Eagle. He got no reply, but gave his height and position in case they were still receiving him (which they were).

The return journey was, of course, much harder, with the wind now adverse. Unless he maintained between 80 and 100mph, he seemed to make little headway; the down-draughts between the waves were up to 3000ft/min, so in spite of his great altitudes, a single mistake could have had him on the ground in a few minutes. At the southern end of Lees valley, he again called Christchurch control for clearance. A TEAL Electra was climbing out to 24 000ft. By now the Skylark was at 28 000ft, so obviously the Electra was in no hazard.

He was beginning to feel the need for food. On a flight a few weeks before he had taken a thermos flask of hot coffee, but the low pressures at altitude had caused the cork to lift, and the coffee had frozen solid and hence been useless. So on this occasion he had taken a bottle of lemonade and some sandwiches. Both were useless – the lemonade a mass of ice-crystals and the sandwiches triangles of frozen rock. In the rush of the take-off he had not put on his full kit and the combination of cold and hunger began to present a serious hazard.

About now, at an altitude of over 28 000ft, he began to feel decidedly odd; he found himself busy trying to call Omarama, but on the Christchurch tower frequency. His previous experience immediately led him to suspect anoxia, and a glance at his blue fingernails confirmed the suspicion. He grabbed the oxygen valve and found himself turning it the wrong

way – to the "off" position. The shock of this realisation aroused him; he turned it full on, took several deep breaths, then opened his air-brakes and dived down to 25 000ft and promptly felt better. Investigation showed that his oxygen mask was not fitting tightly, having lost much of its elasticity in the cold.

Six hours after take-off he was over Staveley. The cirrus arch was now above him, cutting off the sun, and the cold was intense. He found himself rubbing first one leg and then the other, muttering "The cruel cold, the cruel cold." This kind of flight can be a solitary experience, for the sky is so vast and one is so insignificantly embedded in it.

Now he had to move to the west, upwind, and so leave the comforting line of the wave he had been following for over 100 miles. He dived into wind, found the next wave at 18 000ft and repeated the manoeuvre a second time. At 1800hrs he was half-way across the Fairlie Basin at 13 700ft. In most parts of the world this would indeed be a comforting height, but not in these great wave systems. He thought of abandoning the record attempt, running comfortably along the wave and landing at Timaru with his 500km easily in the bag. But world record winners are made of sterner stuff than that. He rejected the temptation and, although there seemed no visible support to the south, he set off on course and arrived over Burke's Pass at 12 000ft. At 10 000ft over the Tekapo river he encountered unmarked and entirely unexpected lift and for the first time in the whole flight realised that there might be a chance of success.

At 1900hrs he was past Simons Hill at 12 000ft and had only to make a final upwind dogleg into just one more wave, when he could turn along it and it would lead him back to his starting point. Marking its position was a roll-cloud, that indication of the violent turbulence that frequently underlays wave systems. The Skylark crept up behind it, and suddenly the thrashing came. The aircraft bumped and banged, wings veering and clawing the insane air. His camera hit the cockpit roof with a bang magnified by the cramped size of the cockpit.

But Dick was ready for this; he put up his speed to the maximum permitted in rough air, and suddenly was through it and at 8000ft found himself rising, swiftly and smoothly. At this moment he knew he had won the day.

It was now 1930hrs. He had eaten nothing all day and was feeling cold and sick. But he reached Omarama at 10 000ft and touched down shortly afterwards with all the camp surrounding the aircraft. Since they had heard his transmissions throughout the entire flight and there had been silence for the last half-hour, the excitement when he landed victoriously can be imagined.

Bruce Gillies expressed his mixed emotions of congratulation and frustration by seizing Dick and ducking him in the creek, whereupon the entire camp threw themselves on Bruce and reciprocated the operation. But Bruce put himself to rights the very next day when in the high wind and almost total cloud cover he set off and triumphantly achieved his Gold badge in his Skylark 2.

These were great days. ☑

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Plat gets a tutorial in fishing from 15m World Champ Gilbert Gerbaud, who has a passion for *poissons* as well as *planeurs*. In between angling sessions Gilbert did 950km in the Ventus - a distance equalled on another day by Reinhold Schramme in the same glider. Those were the two best flights in the nine days of non-competitive fun-soaring.



Above: If anybody has aviation in his blood it is Dan Gudgel, whose dad ran a crop-dusting operation. A professional meteorologist, Dan gave the forecasts, checked pilots out in the Grob Acro, launched them in the Ag-wagon and, when needed, retrieved them from the boondocks and dry lake beds. Below: Kempton Izuno (Hilton US Western Medal) and John Good (Hilton US Eastern Medal) flew the Schweizer 2-32 down "Helmut's Run", a twisting ground-effect dash down ten miles of ravines and boulder-strewn mountainside at near VNE. For steady hands and strong stomachs only. Plat underwent it just once as a front seat passenger in the Grob Acro, eyes closed half the time. Never again!



Early risers could take a balloon flight. Sometimes the balloon will do a circuit in the gentle, but contrary, winds.

## Barron Hilton award winning pilots and guests at the Flying-M Ranch

*It could be you!!*

*Where will the finger of fate point next? You too could be streaking along the Sierras and whiffing along the White Mountains in August 1996, as these lucky people, pictured here by Platypus, did in 1994. Your chance to fly for nine marvellous days as a guest at Barron Hilton's Flying-M Ranch in 1996 will not depend on blind luck, however, but on careful preparation and the seizing of soaring opportunities during this coming 1995 season. In the last issue, p317, I rashly promised to tell you the Hilton rules in this issue. However when Annette Reichmann kindly sent them to me I found they ran to several thousand words, so instead I have asked the BGA to supply a copy to anybody who sends in a sae. The main points are first that it is a pure distance competition in several Classes and world regions, and secondly, that handicapping means that you don't have to own a supership. (Hey, could that damn Tutor win it?) If you despair of your flying ever being good enough to win a Hilton medal, then write a column in S&G for 25 years and eventually some good person might take pity on you.*

The magnificent red fire-truck is not for decoration - it delivers waterballast every morning. The pilots and guests collected together with Barron Hilton for this photograph are, from l to r, top row, Hannes Linke, Linus Maier, Jurgen Muhle, John Good, Gilbert Gerbaud, Reinhard Schramme, Andreas Moser and Jani Skedelji, bottom row, l to r, Bruce Tuncks, Annette Reichmann, Kempton Izuno, Vernon Spencer, Barron Hilton and Cliff Robertson. Photos: Platypus.







John Good works the Grob Acro along the White Mountains (tops over 15 000ft) which form the eastern flank of the famous Owens Valley, the Sierras forming the western flank. Off-the-clock lift was common. The unballasted Grob completed the last 200km of a 500km O/R in 80min. Happy days!



Above: Idlers still abed at breakfast-time would be woken by the throaty 450hp roar of the Stearman, one of Barron Hilton's fleet of immaculate vintage power aircraft. Below: Here is a new idea for two-seater gliders! This tandem (pilot sort-of-in-charge Jurgen Muhle, Sports Class Medal) is moving from right to left, just in case you were uncertain. The rear-gunner (Andrea Schopman) pedals in the normal way - as if going from left to right - and the ingenious chain layout converts her efforts into right-to-left motion. I'm glad that is clear. ✕



## Impressions of Summer and Thoughts About Turbo Gliders

**A** relatively good summer and the best cross-country flying I have ever enjoyed has gone and as I looked through the window at grey skies the winter of discontent began.

For the first time I vowed in early spring to put gliding cross-country in front of cricket and what a good decision it turned out to be.

I share a Ventus C turbo (170) with Guy Corbett which JJ (John Jeffries) has occasionally flown to Wales. This being my second season in 170 I was determined to extend myself and my cross-country soaring. Flights to Wales and back with JJ in the ASH-25 inspired me to fly westwards many a time and last year I managed an O/R to Shobdon in August.

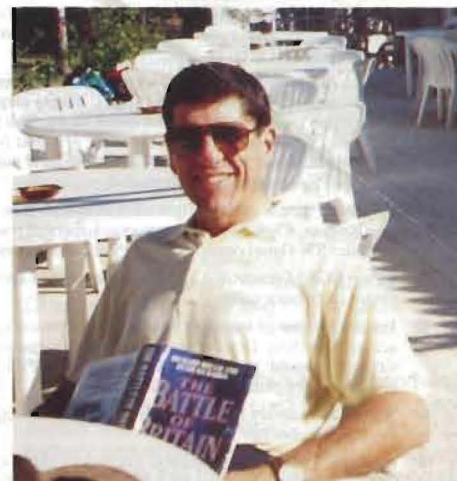
1994 saw some lovely days in March and May and on the first Sunday in May a tactical error (lack of patience really) saw the need for a 1000ft climb with the engine near Thetford on what would have been a 327km triangle. After that I got home with purely natural energy. This was a turning point though and the fact that I didn't have to spend until 8pm in a field waiting for a retrieve saw me press on undaunted to Evesham and back the next Sunday.

A fortnight later I achieved my first 300km of the season and had my first sighting of Ely Cathedral which I shall always remember as absolutely resplendent. Another lasting memory was the lead and follow led by JJ. I was just beginning to feel my way around the sky on June 10 when I chanced upon JJ's gaggle over Halton. The day didn't appear easy and I decided to tag along. All six gliders were plastic ships of reasonable performance so off we went. If you have never done a lead and follow with JJ then put that right next season.

He was every bit as good as I'd expected and to travel far afield with no great tactical responsibility was a novelty and, since he covered much more ground than I would have contemplated that day, a welcome bonus.

Many more pleasant flights to Wales and the Welsh borders followed during the summer. I have strong impressions of flying to Evesham, North Leach, Pitsford reservoir and home on July 17. I started an hour ahead of the Nationals' pilots whose task it rightly was. Sitting happily in a thermal at Evesham that I worked jolly hard to find, my peace was shattered by the arrival of 15 or more gliders comprising the lead gaggle of the Nationals. Since I couldn't hope to beat them, I did my best to keep up but eventually failed.

That flight was the first in a series of five in



John, an AEI with approx 900 launches and 600hrs, started gliding in 1987 and is a member of the London GC. He spent two years as a syndicate partner with JJ in an ASH-25 and featured in his wave flight to Wales which JJ wrote up in the August 1992 issue, p200.

eight days covering nearly 1400km to the west and east. It was without doubt the best week's cross-country flying I have ever enjoyed. I even got my speed up from about 60km/h to 80km/h and I dare say that had I been a better pilot much higher speeds and more kilometres were there for the taking.

To carry me through the winter is the thought that I covered over 5000km last season which is more solo flying than my first five years put together, and I have the memory of my first Comp, the Dunstable Regionals.

About that turbo - 170 has a self sustaining (approx 200ft/min climb rate) retractable engine. I have heard much debate for and against this principle but I see the pros and cons as follows:-

### Pros

High utilisation with flights on marginal days made without undue fretting.

The self limiting effect that a landout with a late retrieve causes does not occur.

When faced with unbreakable evening arrangements, my flight doesn't have to be corrupted by conservative decisions to avoid a landout.

### Cons

It is dangerous to fly too low before deciding to start the engine, so that staying aloft by natural energy has to be abandoned by about 800ft agl with a field chosen and well positioned in the event of engine failure.

I must stress that I see the use of the engine to avoid a field landing as a failure, i.e. the end of that particular task. To the purists who turn their noses up at an engine, how is it that they accept all the performance and instruments money can buy, yet fail to see the turbo as just another development to fulfil the need for some cross-country pilots?

I have no doubt that having a turbo has vastly increased my learning curve and could well do the same for others. ✕



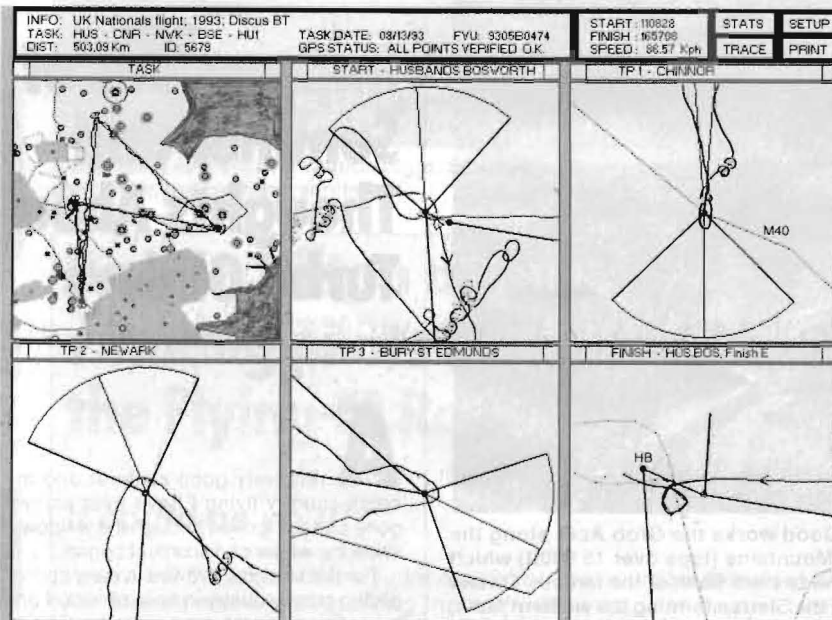
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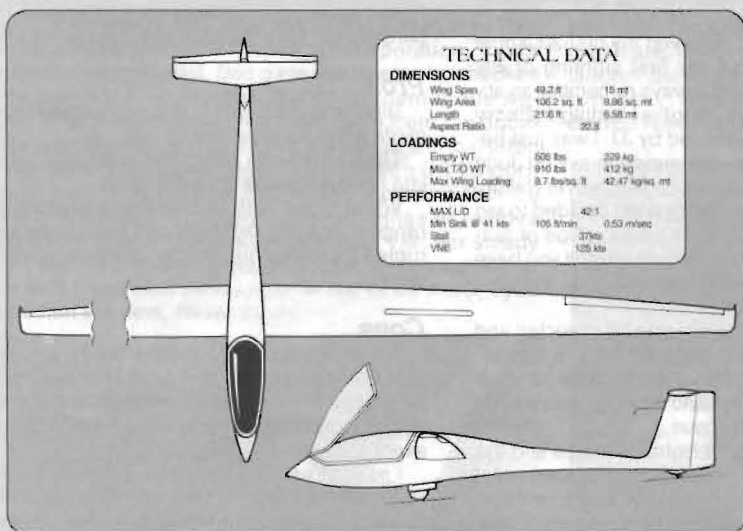
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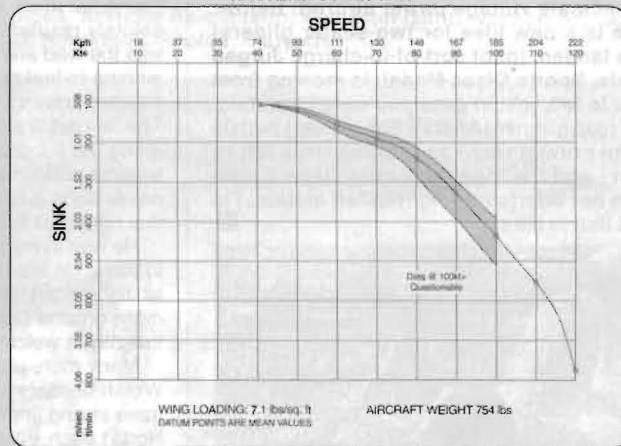
TECHNICAL DATA	
<b>DIMENSIONS</b>	
Wing Span	49.2 ft 15 mt
Wing Area	106.2 sq ft 9.95 sq m
Length	21.6 ft 6.58 m
Aspect Ratio	32.5
<b>LOADINGS</b>	
Empty WT	506 lbs 229 kg
Max T/O WT	910 lbs 412 kg
Max Wing Loading	8.7 lbs/sq ft 42.47 kg/sq m
<b>PERFORMANCE</b>	
MAX L/D	42:1
Max Sink @ 41 kts	105 ft/min 0.53 m/sec
Stall	37kts
VNE	125 kts

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# NI-CADS

## Love them or hate them

As promised David follows up his article "Lead Acid Gel Cells" in the June 1993 issue, p155, with advice on how to look after Ni-Cads

**T**he cost of electricity bought as torch batteries compared with the initial and running costs of Ni-Cads (NC) is so lopsided that NCs win every time. The initial cost of the NC and the mains charger gets lost in the statistic that electricity from alkaline manganese, which are the best buy in torch batteries, costs something like a thousand times more than the mains electricity which is used to charge up NCs.

Gel cells (GC) are more cost effective than NC in terms of volume per unit of charge, weight and initial expense and they are also easier to maintain. The situation is more favourable to GCs in terms of volume because most GCs are cubical and most NCs are cylindrical but have to be packed into cubical spaces. GCs win on weight, but not by much. On initial expense the advantage is quite high - 6amp of GC can be had for £18.50 whilst the same capacity in NCs would cost a mighty £87.90.

NCs are still favourites for portable power as they are made in many more sizes than GCs. GCs are based on leak proof plastic boxes containing lead products and gelled sulphuric acid whilst NCs contain potassium hydroxide, a strong corrosive alkali, and nickel and cadmium. I have not yet met anyone or heard of anyone injured by the contents of a GC or NC.

NCs have two outstanding characteristics - freedom from the need for maintenance and the ability to yield high, sustained, continuous power. The cells can be discharged hundreds or even thousands of times, depending on the conditions of use.

NCs have a flat voltage graph or discharge until they are nearly exhausted and then the voltage falls off quickly. Take the voltage of a NC as being 1.25 volts, so that a 13.75 volt system needs 11 cells, not the ten that are usually used. Ten stack better than eleven and the manufac-

turer cheats a little and can get ten into a smaller plastic box.

Memory and charging are common questions asked about NCs, also, what is discharge and deep discharge. I will describe what is simple and safe and what is dangerous.

### **The main causes for premature failure:-**

1. Frequent shallow discharge before recharging resulting in memory phenomena - apparent loss of ampere-hour capacity.
2. Charging to less than 1.4 volts/cell (not replacing 40% more energy than discharged) also affects memory.
3. Shorted cells. The shorted condition is caused by chemical "whiskers" growing inside discharged NCs. Cells with this fault will show zero voltage and zero resistance across the terminals and will not accept a charge.
4. Reversed cell polarity. This occurs when a cell in a series string becomes fully discharged and then is reverse charged by the current flow from the other healthier cells.

These defects are usually curable with proper techniques and most NCs can be restored to full health. However, it must be realised that "dry out" caused by the rupture of internal seals caused by overheating, with resultant loss of fluid, is incurable.

This fatal condition can be recognised by the presence of small crystals around the cell terminals plus signs of high internal pressure round the cell base.

### **The easiest way to paint yourself into a corner is to totally flatten a NC and walk away and forget it.**

A single cell sitting on the kitchen table can be treated but not the diseased cell in the middle of a ten cell pack surrounded by overpriced plastic attached to a 720 channel handheld. Your neglect will cost you £80 plus.

**To keep a NC in perfect health you must:-** Know that a perfect charge is about 40% more than the ampere-hour (AH) capacity of the battery and should take 13 to 24hrs. In other words an AA cell has 0.5AH or charge at 50 milliamps printed on the side of it and if you stick it into the charger for 14hrs it is happy.

Realise that NCs are charged from a constant current source totally different from a GC which has a regulated constant voltage (although some modern GC chargers are very complex marvels). Try and forget about fast charging of NCs - it is tough on the batteries.

In practical terms, carry a spare battery pack for your handheld and when the transmitter is on the blink you know that the battery is hovering around 1 volt a cell only. Recharge the unit as soon as possible for 14hrs.

Don't leave the handheld on to totally flatten the battery. Forgetting to charge it pronto will cost you.

### **A battery clinic, to restore perfect health or nearly so, has the following items:-**

- A volt meter reading up to 15 volts.
- A torch bulb of the right voltage with holder and wires to act as a test loader.
- A big condenser, say 33 000 microfarad at 40 volt max.
- A standard NC charger.

### **First, single cells**

If on inspection the bottom is blown out and a bit rounded with crystals near the top vent forget it. Bin it. But if it looks OK, check its volts. If the volts are the right way round, ie positive is positive, it could be OK and could be memory'd. The way to cure memory is to full charge and then to discharge normally to 1V and to repeat the treatment a number of times. If you don't like hovering over a battery, bin it, or buy and make a NC recycler. They are available.

Reverse volts, single cells, are very rare. Charge them normally and they're OK.

### **Single cell.**

If there are no volts, it's totally flat and won't charge, then it is whiskered. Charge your condenser with the right polarity from a 12 volt car battery and with thick copper wires discharge the capacitor into the dead cell. Observing correct polarity, the surge of current will despike the cell. This treatment may have to be repeated in bad cases. You know it's cured when you observe a bit of voltage across the cell. Charge the cell at once.

Jump in the deep end pilots have been known to use the car battery by itself, what is commonly called "the quick flash". More than a few seconds could explode the battery throwing caustic into the eyes - need I go on. Eyes are more valuable than dead NCs.

### **Multiple cells**

There is a problem. Why do manufacturers of handhelds put ten AA NCs, which I can buy at less than a £1 each, into a plastic box with little bits of metal in it and sell at a price that brings tears to your eyes. It's called marketing. Charge the pack up normally, fully, then put it on a lamp load, check the brightness of the lamp and voltage from time to time and see what happens. A ten cell pack should sit at 12.5V all through its discharge and then quite suddenly drop off.

The voltage of a dud pack tells you how many dead cells there are in the pack, subtract 1.25/cell and there it is. If there is an ingenious way of get the pack open, well and good. There is nothing else to do other than to open the pack, isolate the dud cell or cells and treat them individually. NCs with solder tags in AA, C and D sizes are readily available from specialised suppliers. A 'phone call to me (081 3991289) and I'll tell you where. The same applies to sources of cheap big condensers.

Most people I meet don't seem to know that virtually all 720 channel handheld manufacturers and suppliers sell empty battery boxes for handhelds which can be filled up with AA cells. They are still overpriced, but still cheap in comparison with the sealed for life kind.

The main points again:-

1. To deep discharge (zero volt) a battery is OK if it is charged up at once with a full charge - its amperehour capacity, plus 40%. For an AA cell, this is 0.50AH. Half an amp for an hour is the same as 50 milliamps for 10hrs, plus the 40% surplus, making 14hrs.
2. Single, isolated cells are easy to treat but a pack of ten, sealed for life, is a problem.
3. Defeating memory is time consuming. A lamp load is a help.



# TAIL FEATHERS

## Trepid pilot gets wind up after tempting providence OR More notes from Hilton Heaven

I don't pontificate a lot in this column - no, honest, my speciality is sounding off cockily, which is quite different - and for me to utter anything like authoritative instruction and advice *ex cathedra* is asking for trouble. So you might all have guessed that, when in the last issue I sagely told you how very easy it was to discover the ground level wind direction before landing out amidst the spuds, I was seriously tempting providence. Or is it Providence? (Better stick with a capital P. Ed.)

Well, early one evening last August, after a delicious afternoon's expedition down California's Owens Valley in an LS-4, I set off at 16 000ft from the White Mountains towards Barron Hilton's lovely oasis. I was already imagining in my mind's ear the happy clunk of ice cubes in a highball glass, as I watched the cloud shadows helpfully marching across the desert floor towards the ranch. A healthy tailwind, and no mistake.

Saith the Prophet, however, "That which goeth up someplace, verily cometh down someplace else". Before long I was reluctantly contemplating a landing on what looked like a tiny dry lake bed surrounded by scrub and hummocks. This is the only emergency field that I have ever selected with all of 5000ft in hand, but this wasn't a competition and there were some more mountains between me and the next usable field. If I didn't climb here, this is where I resolved to sit down, trying to be sensible for once. My attempts to soar the high ground surrounding the lake went for naught. Zilch. I might as well have been trying to soar the moon, which this area closely resembled. This failure to find usable ridge lift triggered off no intelligent cogitation in the Plat-brain, however, such as "what is the real wind direction here?". A landing was now inescapable.

With quite a degree of apprehension I hurtled towards the edge of this little flat patch at a vast speed. Now, 6000ft up and 95 F makes for high true airspeeds, a problem we never have to contemplate in Britain. So I fully expected to have to land pretty fast. But this was a bit like bringing in



Trying to soar the moon.

a jet fighter, for Pete's sake. Was the surface going to be rough or smooth, wet or dry? Would I sink in? Should I land wheel up or down? Always wheel down, I said to myself. The glider can get a new bottom, you can't. Anyway, we whistled in and eventually stopped on an impeccable surface that you could do land-speed records on. "Like a pool table" said Dan Gudgel when he bought the tug in. I was back in good time for cocktails, after all.

But you've probably guessed it. I'd come in downwind with a good 15kt adding to an already high true airspeed. The wind was almost opposite to the cloud shadows. I had done nothing to check the wind direction on the ground before landing, like throwing a few circles and watching the drift, although I'd had plenty of height. I had totally ignored my own excellent advice in the BGA's mighty organ. However this tiny dry lake bed turned out to be a good 500 yards long and

### BGA Safety Inquisition.



300 yards wide, the best airfield for miles around. Cliff Robertson kindly named it "Platypus Flats". Provided the current long, long drought continues it will probably remain the only aerotowable outlanding field on the popular route from the northern Nevada gliding fields to the White Mountains. So it's an ill wind as they say. But there will no more instructing from this column. I shall leave that to the professionals.

## Fellow Neanderthals, club together!

One notorious glider-bender, and proud of it, who usually can't spell for toffee sent me an unusually literate note a while ago, which shows that constant nagging sometimes works. He says that he is totally fed up with all the official whingeing in S&G about *safety*, which he thinks



takes up far too much space. He spits out the word safety with much the same contempt and distaste as Maggie Thatcher spat out the word society. I reproduce some of his ravings - without attribution. His anonymity is guaranteed by me to make sure that the BGA Safety Inquisition do not seize, torture and burn this heretic at the stake for blasphemy. I will never rat on you, I promise, John.

He was provoked by a particular issue of the BGA's organ:

*Have you ever picked up a skiing, motoring or riding magazine that devoted a sixth of its editorial space to details of how people have broken or nearly broken, their necks or their sporting equipment?*

Yes, chaps, take care of your sporting equipment. Those heavy landings can bring tears to your eyes, not to mention your wife's. My correspondent then lays into the fatuous excuses pilots give for their blunders:

*You know - the cow failed to get out of the way, the sun was low (it usually is in winter), the headwind was stronger than I expected (after three hours flying in it) or the airbrake lever colour had worn off. It never seems to be the pilot's fault except in those unfortunate accidents where they are no longer able to proffer an excuse.*

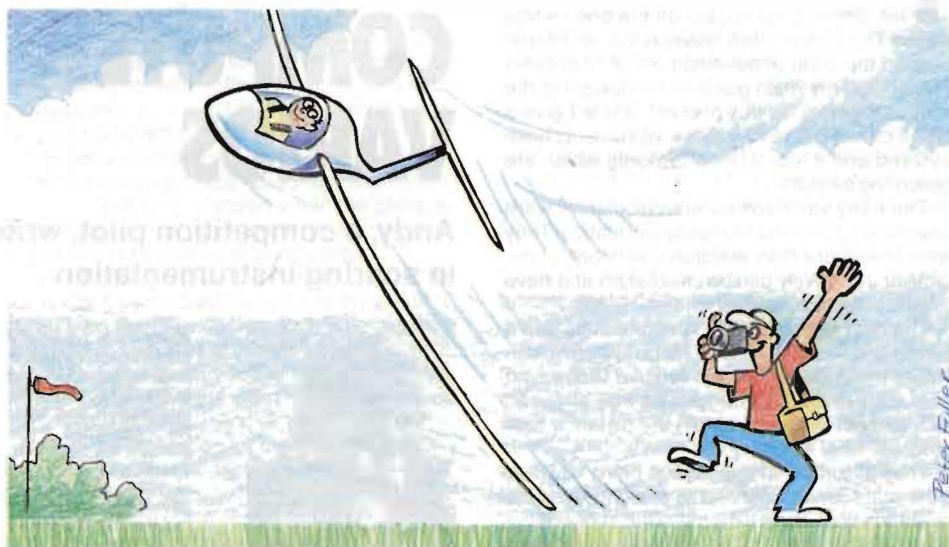
*If the monthly catalogue of woe was shorter it might serve a useful purpose, but it does not. If S&G was read by the general public they would conclude that it was a dangerous sport akin to boxing where bone-breaking was part of the game.*

That bit about not knowing what the wind is doing could be a dig at me, but let it pass. His last line, however, after a personal plea that Plat should support his disreputable, politically-incorrect vapourings, is the clincher:

*After all, it is supposed to be an exciting sport!*

I've sat on this letter for a whole year, nervous about the thought-police. However I am now prompted to publish these extracts by seeing a similar stirring of protest from the other side of the Atlantic. Some months ago a *Soaring* magazine cover depicted a glider joyously beating up the finish line in a tight turn with its wingtip inches off the deck (well, a few feet). For several issues now there has followed a long and disapproving correspondence about the wickedness of a) the pilot for setting a naughty example and b) the editor for glorifying it on a front cover - and, for all I know, c) the photographer for egging the pilot on. Eventually *Soaring* published a letter from a reader who was clearly reacting to this chorus of disapproval with the same irritation as my British caveman friend. I see the American correspondent's point. In a country where guns and ammo are sold far more freely than cigarettes or cars, the occasional low pass in a sailplane is unlikely to add much to the sum total of human suffering.

Too much piety and correctness must eventually prompt the unwashed masses to contrariness and cussedness. There are writers and broadcasters in the USA who have built up a huge following by fearlessly uttering crude sex-



**Egging the pilot on.**

ist and racist remarks, who smoke huge cigars in public places and refuse to count their calories or give a \*\*\*\* about the rain forests. They may be an ugly manifestation, but they are also a safety valve for masses who are fed up with being preached at.

Even in far-too-civilised Sweden the same revolt is under way. Watch out for the English language version of True Gliding, which is an atavistic (I had to look it up in the dictionary, so can you) reaction to too much do-goodery if I ever saw one. There may be a genuine world movement here, to be ignored at our peril. What shall we call it? Campaign for Real Prangs?

What shall its posters and T-shirts proclaim? "Real pilots get carried out feet first" or "Safety's for softies" or "Less Scull, more crossbones"? What am I saying, T-shirts? Tattoos on bare

chests', more likely - lurid depictions of broken sailplanes mashed into treetops, and bloodied but unbowed aviators grinning savagely out of the wreck.

I wonder, is there money to be made backing this runaway horse? For instance, special brands of Real Wreckage Beer and bootleg cigarettes (exactly the same as ordinary smokes except with the government health warning removed).

My marketing team are hard at work in a smoke-filled room, coming up with wheezes, which is not surprising, since none of us smoke. Watch this space.

Clearly there is here an implied assumption of 100% male membership, but if any female pilot wants to go round with tattooed bare chests carrying the campaign logo, I won't stand in her way.

**BRITISH TEAM AT THE PALACE**

Below: HRH The Duke of Edinburgh, patron of the BGA, is photographed with members of the British team at Buckingham Palace where he received them shortly before they left in December for the World Championships in New Zealand. They are l to r, Ian Griffith (crew), Steve Jones, Laura Hood-William (crew), Alister Kay, Anabel Lucas (crew), Chris Garton, Brian Spreckley, Gillian Spreckley (crew), Andy Davis (current Standard Class World Champion) and Bob Bickers (team manager).





**T**his article is an update on the one I wrote for the December 1988 issue, p288, which described the state of development of "computer varios" and my main goals when designing the Varcom system. In this present article I give a broad outline of the way these instruments have evolved and a look at new features which are becoming available.

The early vario/computers/calculators were used to automate the final glide calculation. They were little more than electronic versions of the familiar John Willy plastic calculators and have largely been superseded.

The next generation of Nav computers use a simple dead-reckoning calculation system to calculate the glider's position relative to the next goal. This is done by integrating true airspeed with respect to time to obtain the distance covered.

They assume that the glider is being flown on a thermal soaring flight and all straight glides are made towards the next goal. This is of course only the case when we are making the final glide to a goal - other glides are made towards likely sources of lift that may be well off course.

The final glide function of these computers is a little more sophisticated in that some allow a true measurement of the head/tailwind during the final glide. This is done by the pilot entering the exact distance to the goal at the time the final glide is started.

After a few kilometres have been covered and an identifiable landmark is being overflown, the pilot is able to compare the computer position with reality and enter the correct wind component into the computer to match the real position. This means that an accurate final glide calculation can then be made, taking some of the suspense out of the process. This was of course all possible before using a plastic calculator but required a great deal of practice.

Both methods of calculation assume that the wind is constant but this is not always the case. The altitude required to reach the goal displayed by the computer can normally be asl or above the goal. Some instruments incorporating an altimeter can display the difference between the height required and the current altitude to make life easier. However, this difference altitude may not be corrected for kinetic energy, leading to wide variations during pull-ups and push-overs.

Most current computers contain some means of density correction. This is necessary to calculate true airspeed and rate of climb as altitude increases. This may be achieved by scaling the signals before they enter the computer (in an analogue fashion) or by measuring the altitude independently and correcting during calculation (digitally).

The vario function may be either flask or pressure transducer derived, and total energy (TE) correction by TE tube or electronic. Electronic total energy is where dynamic and static or pitot and static pressures are measured to perform the total energy calculation.

Two pressure tappings are used; the first measures static pressure and operates as a height variometer. It has a double calibration so that it measures the variation over time of static pressure multiplied by two. The second also has a negative calibration and measures total pressure. It is thus an "altitude/airspeed variometer".

# COMPUTER VARIOS

**Andy, a competition pilot, writes about the use of computers in soaring instrumentation**



Andy is a freelance electronics/software engineer specialising in the field of satellite integration and test. He designed the Varcom Mk 1 system, which was marketed in 1989, and did the development work for the Varcom 2G on an LS-6c and a Std Cirrus at Nympsfield where he has been a member since 1985.

Both values combined measure the variation over time of total energy.

A number of climb averages are normally available - a period of 20 or 25sec is usually chosen for thermal soaring as this is approximately the time to complete a circle in a thermal. The methods of calculating this average are either integration or altitude measurement at the beginning and end of the climb. Altimeter averages are more accurate and usually far lower than subjective views of the flight. The ability to quickly select climbs above a pilot selected minimum makes for faster cross-country speeds.

The advent of affordable GPS receivers has dramatically improved the position accuracy of our instruments. Using the output from the NMEA serial port of a commercial GPS receiver the Nav computer truly lives up to its name. And GPS doppler groundspeed availability has meant that windspeed can be accurately calculated making final glides and hill soaring much less stressful. The availability of this information means that some functions of navigation instruments normally associated with commercial aviation are now open to the glider pilot at an affordable cost.

My philosophy with the Varcom has been to continually upgrade functionality as improvements become available and, in line with this, a GPS interface was incorporated in 1992 and an update offered to existing users.

This was a software upgrade only as hardware provision was made in the original design for this interface. In this way the basic design has been kept at the forefront in the range of functions offered. This being said the performance gains available from the new generation of micro-controllers are now such that a new version (Varcom 2G) incorporating a fast processor has been integrated.

The design of both hardware and software are modular so that such an upgrade is possible. The existing software has been transferred to the new system and additional functions added. This avoided having to start again from scratch which would have inevitably lead to increased

cost. It also means that ease of operation of the basic functions, always a major consideration from the start of the project, is retained on the new system.

Many of these features have been developed with the help or at the request of experienced pilots. The new processor board fits inside the existing case and the opportunity has been taken to include all repeater circuitry for two-seaters as standard on the processor interface board. Electronic total energy components have also been incorporated on this board (previously the Varcom was probe compensated). But the main purpose of these enhancements has been to enable the system to drive up to two graphic displays each having a display area of 69mm x69mm.

This size was selected so that the display fits into the space required by an 80mm dia standard instrument. It also means that the installation is pleasing to the eye and the panel is not dominated by any one instrument. A screen is a much more effective means of communicating information than alpha-numeric read-outs as data can be assimilated at a glance leaving the pilot to concentrate on making good decisions.

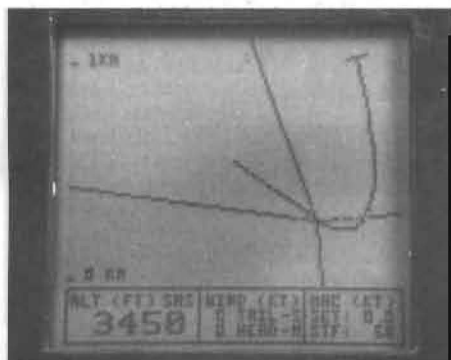
There are two screens available on the system. In a single display installation the pilot is able to switch between the two during flight. Where two displays are fitted each screen can be selected as required, eg in a two-seater installation with one display for each seat the display can be set to show the same as the other or the alternative. By fitting a second system display and switch unit to the rear seat full operation of the instrument is possible from either seat if required.

The first screen is a "moving-map" which shows the glider, its actual track, course lines, TPs, TP sectors, airspace, major towns and all BGA sites plus airfields where gliders are welcome. The route information is automatically loaded from the GPS NMEA interface after programming.

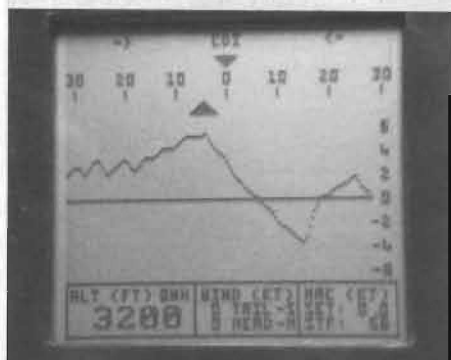
The display screen area can be zoomed in or out from 1km by 1km to 1024km by 1024km by pressing only one switch. It is possible to get a clear picture of progress and, by zooming in, the glider icon can be seen actually rounding a TP. To avoid cluttering the display the airspace information is only drawn when the glider is close to a particular proscribed area. There is a warning message and the area appears together with its height limits.

The screen continuously displays the current altitude which can be QFE, QNH or relative to the standard altimeter setting of 1013.2mb as required. Height, as well as position, is used to determine when an airspace warning is given.





**Map display: Rounding a TP marked with a 90° TP sector at the bottom right hand corner. The track shows that the glider did not cross the bisector! Scale=1km.**



**Director display: cross-track error is zero (top pointer) and current track made good is 5° left of desired track. Histogram shows air-mass history over the last 2min. The most recent data is at the right hand side.**



**Map display: Leaving the Birmingham CTA and heading SW. Scale=16km.**

At the bottom of both the map and director displays the following information is displayed:-

**Altitude:** This can be QFE, QNH or SAS (set to 1013.2mb).

**Wind:** The middle line shows the head or tailwind component set by the pilot. The bottom line shows the present head or tailwind component computed from GPS groundspeed and true airspeed.

**MacCready:** The middle line shows the pilot setting in kts. The bottom line shows the speed-to-fly corresponding to the current MacCready setting and wing loading in still air.

The database containing this information (towns, airfields and airspace) can be updated by connecting the system unit to a personal computer and running refresh software written to reflect changes as they are made or to accommodate flying in a different country.

The second screen shows a continuously updated two minute air-mass histogram. This scrolls to the left and clearly shows when the glider is incorrectly centred in a thermal or when a prolonged run in sinking air is being made.

Above this there is a "heading CDI" (CDI stands for Course Deviation Indicator) which is driven from the GPS track output. This consists of a carat (or pointer) which moves over a  $\pm 30^\circ$  scale. To head directly to the next TP the pilot turns the glider until the carat is in the centre of the scale.

Automatic correction for crosswind drift is inherent in this type of system. Where the track error is greater than  $30^\circ$  the carat stays hard against one side of the scale and the error number is displayed at the centre. Above this there is another carat showing the cross-track error in km. This functions in the same manner and has a range of  $\pm 30$ km.

This simple system is very useful when making decisions on which route to follow towards the next TP as it is possible to see at a glance which clouds are closest to track. The heading indication provided by the carat whilst circling is corrected for turn rate and GPS delay so that straightening out accurately on the desired track is possible.

At the bottom of each of the screens is a "housekeeping" area where the following information is displayed: altimeter (QNH, QFE, or SAS), wind component setting, wind component measured, MacCready setting, speed-to-fly at current MacCready setting and wing loading.

The wind component measured is updated at each GPS output and is obtained by comparing true airspeed with the GPS groundspeed. This is very useful on final glide as an increasing headwind can be detected early. Also ridge soaring possibilities are enhanced if accurate wind-speed is available to the pilot. The corrected GPS turn rate described above is also used to switch automatically between cruise and climb flight director modes on the system unit. This is a more reliable method than airspeed switching.

This switching can be over-ridden by a switch fitted externally, either on the instrument panel, joystick or flap lever. The system unit is externally similar to the Mk 1 Varcom. Switches instead of pots are now used for wind and MacCready setting and the 32 character display has been upgraded to a wide-temperature high-contrast type.

There is still an internal barograph but its resolution has been improved by a factor of four. As well as the barograph an internal GPS data logger is being incorporated as requirements are finalised. It is fixed at the 10sec sample rate but the rate is increased automatically to 1sec as the TP is approached to ensure that a track line crossing the bisector is achieved. Height data is derived from the internal pressure transducer.

The data can be down-loaded directly in the required format from the system unit or by connecting a small unit to the barograph printer port. This unit can then be used to transfer the data to

a personal computer for analysis or verification. Both the barograph and data logger records are retained when the unit is switched off.

Statistical functions have been expanded, access to the last 200 flights being possible. Time-keeping is synchronised automatically to the GPS clock, the number of hours difference between local time and GMT being entered by the pilot when the system is first configured or local time changes.

Although much use is made of GPS data the system reverts back to the old method of distance logging described earlier if the GPS data is unavailable or is not fitted.

Those of you who have managed to plough this far through the article may well be wondering if developments such as these are in the true spirit of the gliding movement. I cannot begin to answer that question but the only possible curb would be more control over what instrumentation is allowed in competitions.

It is difficult to justify such an attitude in a sport which is basically dependent on technology to provide better sailplane performance, and it is almost impossible to enforce such a policy with the ever diminishing size of instrumentation.


What seems relevant is that pilots have a voracious appetite for information that can be used to enhance flight opportunities. The almost universal acceptance of GPS by competition pilots at Nationals shows that they are very keen to reduce the work-load of the navigation task. This has allowed them to concentrate more on optimising other aspects of the flight and, hopefully, fly around the task faster than was possible before. This is, I believe, a constructive use of the technology to improve performance.

The availability of accurate navigation and air-mass information enables the pilot to further exploit the performance of the sailplane, which leads to better utilisation or, put more simply, better instrumentation means more flying opportunities. In our climate in the U.K. this cannot be a bad thing.

Computers are very good at performing repetitive calculations and displaying the results clearly. After a tiring 6hr flight on a hot day it is safer to know immediately the exact position, wind-component, and that a safe airfield is attainable with adequate height in reserve. This must not mean that if there is an electrical failure or GPS outage the pilot is thrown into confusion. The ability to navigate and complete the flight safely on primary instruments and maps is as important as ever.

We probably all have opinions on this subject, and there are a significant number who feel that the tranquillity of the sport is spoilt by a beeping electric vario and the radio chatter on 130.1 on a good summer's day.

I do not dispute that they really do have a point and that there is something magical about the way the air over a glider "sings" as it climbs in a thermal. But if this article causes you to pick up your pen to inquire where this is all leading you need only to look at the multi-mode displays which are now common place on the flight decks of civil aircraft.

Instrument panel space is more efficiently used by reducing the number of dedicated instruments and displaying clear, concise information on screens when it is required. 



It is surprising to find so many club training gliders which are not fitted with an audio variometer system. This means that their students form the habit of looking at the instrument panel every few seconds when attempting to centre in a thermal.

Unfortunately, habits die hard and it is extremely difficult to change from looking to listening once the original habit has been formed. This is particularly true because, in the nature of things, we seldom have to judge what is going on by variations in sound and so will naturally tend to look at an instrument rather than rely on interpreting a noise we hear. This is a very good reason for fitting out all two-seaters with audio variometers and perhaps even a case for covering the variometer face in the early stages of thermal soaring.

The essentials for a club instrument seem to be a clear and pleasant audio signal, a good response rate, a smooth response for the indicator, simple operation and low battery consumption. In addition, of course, it must be rugged and reliable.

The XK10 meets these requirements admirably. The XK10 "Club" has been designed to provide a really good audio variometer suitable for a two-seater training glider. The latest version of this vario has an improved audio response and a simplified system of indicating the strength of the lift. Earlier models gave different audio signals and these, like so many other audios, proved rather irritating to pilots making long flights or instructing in a two-seater all day.

In an effort to make the audio sound more acceptable and give a clearer indication of the rate of climb, the signals both change in pitch going higher for stronger lift and are pulsed so that the rate of climb can be recognised by the number of pulses super-imposed on the tone signal. Up to a reading of 5kt, the number of pulses gives the rate of climb, *eg*, one pulse for 1kt, two pulses for 2kt and so on. Above 5kt the pulse signal is terminated but the pitch continues to rise to indicate stronger lift. The effect of this change is a great boost in morale and you know that you really are in business.

The XK10 uses pressure transducer technology with digital processing which means that it does not require a capacity bottle. This eliminates the false climb readings caused by variations in the flask temperature and also zeroing errors. It also has electronic "Intelligent" gust filtering built into the circuit to reduce the misleading effects of horizontal gusts in and near thermals. Quite a lot of research has gone into this feature which eliminates the effects of short term gusts without significantly slowing down the response of the variometer readings. It seems to work well and makes centring easier on those days when the thermals are very broken and turbulent.

The main variometer and repeater fit a standard large hole and the averager unit fits the standard miniature hole size. Installing the vario is very simple. All it requires is a connection to a total energy probe and to a 12 volt power supply. The current consumption is extremely low (40-80mA).

The variometer is switched on by a single volume control knob and has the audio loudspeaker built in. For two-seaters, the repeater

## THE XK10 "CLUB" AUDIO VARIOMETER

Derek says this has been designed to be a really good instrument for a two-seater training glider



The variometer and digital averager.

unit for the variometer is connected by the lead and plug provided, with no soldering or extra wiring to be done.

Also available and highly recommended is the optional extra "Dedicated" Intelligent Averager. Incorporating this is only a matter of mounting the extra instrument and of plugging a lead into the back of the variometer. Once you have tried this gadget, it ceases to be an optional extra, you just have to have one!

I fitted the vario and the averager into 906, my Astir CS, and coupled it up directly to the drain plug in the total energy system. It did not seem to worry it that there was a Cambridge Director and a miniature Winter variometer using the total energy supply. Probably in most two-seaters it would be the sole instrument working from the TE probe.

Switching on the variometer and averager, the LCD display indicates the battery voltage for a few seconds before changing to giving an average rate of climb or descent over the last 24sec. The digital display has large black numbers which I found I could read very easily at a glance, even without my glasses. I am not fond of LCD displays but must admit that this one is so clear that within a few minutes I accepted it with no reservations. The information it gives is invaluable.

This "dedicated" averager is accurate to 0.1 of a knot and can even be used to obtain a good polar for your glider by measuring the rate of sink at various speeds and plotting them.

Knowing that many club members will forget to switch it off after the day's flying, the manu-

facturers have incorporated an automatic switch which disconnects the supply after 8hrs; that is long before it has run the battery down. Whereas the variometer has just the one knob to switch it on and adjust the volume of the audio, the averager has an on/off switch and two little three-position switches. The pilot has a choice of selecting speed-to-fly, 24sec averager or total averager and with the other switch, 5kt scale, 10kt scale or cruise modes.

For normal use, I left it switched to the 10kt scale and the 24sec averager. On this setting the averager is excellent and really is intelligent. Once a climb is started it begins to calculate the overall achieved rate of climb in a memory, while indicating and updating the average for the past 24sec every 2sec.

It quickly dispels any idea that you are achieving 2-3kt in a 3kt thermal! On the first day I flew I was achieving about 0.5kt on a complete climb although the averager was often showing 2kt! 24sec is approximately every circle so that you have a good idea how disastrous going into the sink on one side of the last circle has been on your rate of climb.

On leaving the lift and starting to lose height, the averager quickly recognises that you have left the thermal and the display switches for 15sec to show your mean average for the complete climb from the time you started to gain height to the moment of leaving. It then switches for a similar time to give a mean speed-to-fly, before reverting back to the 24sec averager. This is all totally automatic and is really all that you need. However, the pilot has



other options.

Switching to cruise the audio changes and becomes less obtrusive. The vario response time increases slightly and this smooths out the movements of the needle.

It is important to understand that the speed-to-fly facility is not a director. It was an added feature when they found there was room available in the software. All it indicates is a basic best speed-to-fly based on the MacCready principles. So for a certain achieved rate of climb, say 2kt, it will indicate 50kt. However, it does not tell you a higher speed when the glider flies through strong sink and it leaves the pilot to decide how much faster to go. The speeds indicated are dependent on the type of glider and the polar is set at the factory.

In addition to the automatic change which occurs after leaving the lift, the pilot can use the little switch and get the speed-to-fly at any time.

I was very impressed by the whole system. The indications of the variometer are very smooth with a quick response. The audio seems more pleasant than the others I have flown with and gives an easily identified sense of the rate of climb, and the averager gives most valuable information, is easy to read and does not involve any work load on the part of the pilot. The pilot gets an update of his achieved rate of climb for each circle and an achieved rate of climb for the whole climb automatically.

The original XK10 is already a favourite amongst many clubs but the new one offers a less complicated instrument with more pleasant audio sounds. It was designed for club two-seaters but would suit any enthusiasts who do not need or want a Director but who want a really good vario and averager to get the best out of their machines. For a two-seater, an XK10 plus repeater is certainly less expensive than two vane type instruments complete with their capacity bottles and gust restrictors. Most important, it is a simple instrument to fit and use at a competitive price. (For further details see advertisement below.)

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# FLYING THE NIMBUS 4DM

Last year, Ralph Jones, Simon Marriott and I flew the Nimbus 4DM at Hahnweide, the airfield close to the Schempp-Hirth works at Kircheim-Teck. The D stands for dual seating and the M for a self launching motor. We fly a Nimbus 3DM from Lasham and so already have experience of this Class of motor glider. Most comparisons are therefore made with respect to the 3DM.

The new machine has the Nimbus 4 wing and fuselage and the same two stroke Rotax engine is mounted in the fuselage instead of on top of the pylon. Other differences include a new design of propeller, engine priming instead of choke for starting and a simple rubber prop-stop to hold the propeller vertical before pylon retraction.

Starting, run-up and take-off were straightforward with the usual caution that you apply the power gradually to avoid tipping on the nose wheel before elevator control is gained. Noise levels outside and inside are lower than the 3DM due to the buried engine and revised exhaust layout. Heights against time were recorded on tape and when plotted on a graph and averaged, gave a rate of climb of 512ft/min starting at ISA (15°C, 1013mb). This is some 100ft/min greater than our 3DM and shows the increased efficiency of the new prop and buried engine layout.

Frankly, motor glider rates of climb in excess of, say, 600ft/min may indicate that the machine is over-engined and may carry too much fixed weight when soaring. After all, if you fall out of the sky and have to re-start, a 5 or 6kt "thermal" from the engine should be more than adequate to get you soaring again soon, and a 7 or 8kt engine-based

"thermal" is over the top!

Engine retraction is simplified by a rubber prop stop which is engaged after the prop has stopped rotating and ensures that it is vertical without the need to fiddle with a prop brake or other control. Simple and effective.

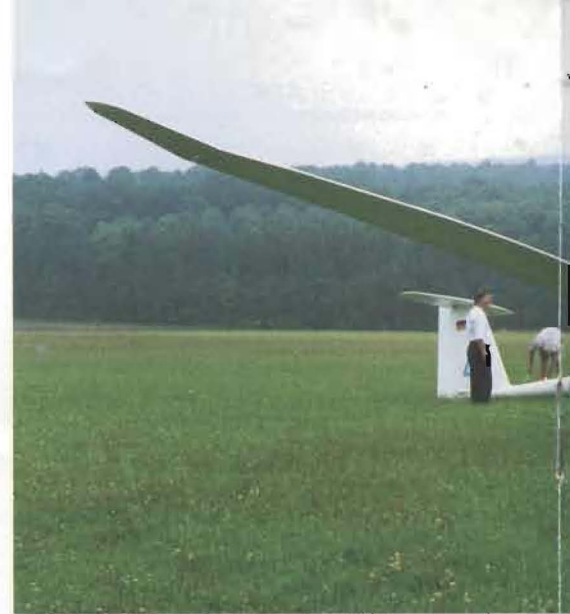
Longitudinal and directional stability and control are improved over earlier marks of Nimbus. The new wing and larger fin really make a difference and the tail arm is longer. The time to roll from 45° to 45° was about 3.5sec, comparable to many 15m ships, but, more importantly, the short term roll response (roll acceleration) was snappy and in my view it is the latter that counts in a turbulent thermal. I had previously flown a single-seater Nimbus 4 and recorded 3.25sec for a 45° bank reversal, which was a remarkable figure for such a long span glider. With the 4 series, Schempp-Hirth has finally added good handling to excellent performance.

The earlier Nimbus series were all too slack directionally and had too much sideslip in normal flight; both adverse yaw with deliberate use of aileron and unwanted sideslip due to turbulence or small inadvertent use of the controls. In other words, it was difficult to keep the string straight. Although I am a firm believer in the primacy of performance over finesse of handling, if you can achieve good handling too than this is even better!

OK, you may say, so handling in a thermal is good but what about weight? Well, the 4DM two-up and with full fuel is similar to a ballasted single-seater Nimbus 4, so no problem in strong lift but

4DM propeller and buried Rotax engine.

The earlier Nimbus 3DM engine layout for comparison.



The Nimbus 4DM is a handsome glider



Above: The late Klaus Holighaus teaching Ralph (centre) discussion on thermalling technique). Below left: The pylon retraction, the exhaust moves down into the bottom of Nimbus 4 in the hangar. In Germany hangar packing gliders from the roof.





re) and Simon Marriott to fly! (Actually it was part of the 4DM radiator, top of engine and exhaust layout. On the left: Ralph under 700kg is made easy and extra space given by suspending



what about weak thermals? It is true that our 3DM when heavy is not the best climbing machine in weak lift. But it is better than say a PIK 20E and when flown solo I can hold a K-6 in weak lift. Compared to this, the 4 has a wing of greater area and more advanced planform and section. The late Klaus Holighaus told me that the 3 wing was nearly 15 years old in design and the 4 wing was made to carry a range of weights better. What a tragedy that Klaus was killed in the Alps a short time after our visit to Hahnweide. I will always remember him as a great gentleman and one of the few individuals who have really shaped modern high performance soaring. I am proud to have known him.

Stall warning was good and stalling was benign, with a mild wing drop at a low rate of roll. This was so both engine in and engine out and stopped. The engine out and stopped is the "worst case" configuration because if for some reason the engine doesn't start in the air, although you really ought to have an airfield or big field in mind, it could also be a panic situation with a small field below. The glide angle with engine out and stopped is about equivalent to an Olympia 2. This compares to about Skylark glide angle for a turbo Nimbus 3 or 4 with the smaller engine. In either case, in the event of a failure to start you still have plenty of margin for circuit planning.

Engine restart in the air is simplified and the replacement of the choke control by a rubber priming bulb gave virtually instant response on all the starts which we did and many others observed in the two days we were at Hahnweide. Height loss, 150ft.

My only real reservation (other than cost, for which you will have to ask Ralph) is that the tailwheel is not steerable and there are no wingtip outrigger wheels even as a customer option. Lack of steering capability on take-off leads to a lower crosswind limit than could otherwise be achieved and could be embarrassing at single-strip airfields with no other launch facilities. The inability to carry out some limited taxi manoeuvres is also inconvenient at many sites, particu-



The 4DM front cockpit which is no more complicated than many gliders. Photos by Ian.

larly since the machine is large and heavy for ground handling, and you don't want to annoy conventional glider pilots or light powered aircraft at the take-off point by parking there while you get in and run up before take-off. At Hahnweide we simply sat on the runway end while we prepared for take-off, but it is a not-very-busy grass airfield with a good relationship between Air Traffic and Schempp's gliders.

I therefore strongly urge all manufacturers of self launching gliders to provide a customer option of some form of steerable tailwheel and easily detachable small wheels at or near the wingtips so the choice can be made by purchasers. The DG-400 design with bolting points for small wheel fittings on the spar inboard of the tips is suitable; the small wheels have little drag in flight and can easily be removed if required. Naturally with the bigger gliders, a full taxi and ground manoeuvre capability is undesirable for a number of reasons including inertia and flexing of the outer wing.

But no ability at all to steer on the ground or during the early part of the take-off roll, is a serious lack which should be remedied. It was noticeable that when a cu-nim descended on the airfield, the 4DM was rapidly taxied back to the hangar by Bigo (Schempp's pilot) with me in the back and Ralph holding the wingtip and running faster than I have ever seen him! How much better than giving Ralph a heart attack to fit a couple of small wheels.

Finally, trends noted in the 4DM and other recently designed self launching motor gliders: Fuselage mounting of engines and lower-drag pylons. Less noise. More automatic engine stop and restart in the air. Better handling. Higher soaring performance. Can't be bad! ✕

## GENESIS 1 HAS FLOWN

Photographed below, the Genesis 1 Standard Class sailplane had its maiden flight on November 16 at Marion, Ohio, USA. It is to be produced as an experimental amateur built aircraft kit, and was flown by the founder and president, Jerry Mercer, who was enthusiastic about its performance. He said it had the most docile stall he had ever experienced, with solid stability. Speeds ranged from stall to 112kt at 5000ft and Jerry added that he couldn't be happier with the results.





# ORLICAN -

## the other Czech glider factory



The finishing shop at Sopotnice.  
Photo: Alan Harris.

**W**hen most people in western Europe think of Czech glider manufacture it is the Blanik and the LET works at Kunovice which spring to mind first. There is, however, another Czech factory with a long tradition of glider and light aeroplane manufacture - Orlican, situated in the village of Sopotnice, some 60 miles north-east of Prague.

Some power pilots may remember the Sokol/Metasokol range of light aircraft, though few glider pilots will know the Orlik and VSO 10 single-seater gliders. I have never seen one of these in the west though they have been the mainstay of Czech and Slovak clubs for many years. The latter is an Astir look-alike made of metal and GRP. It still does well against first generation GRP machines as the 1994 European Club Class Championships proved.

The VSO 10 proved to be a complex machine to manufacture, however, and production came to an early end. Orlican looked to the west for a new glider to build. Negotiations with a number of German manufacturers eventually led to an agreement being signed with Schempp-Hirth to manufacture the Discus under licence at Sopotnice. The contract was signed on November 16, 1989, one day before the revolution!

Originally, the plan was to manufacture 50 for

Czechoslovakia and other eastern block countries, but right from the beginning Schempp-Hirth were so impressed by the quality of the work that some of the early models were sold to the west. In fact, the first Czech Discus went to the late Helmut Reichmann in July 1990. About 180 have now been produced at the Orlican works as well as about 50 sets of Janus wings, though the last pair of these were out of the mould when I visited the factory in August.

The works itself - it used to be a textile factory - is spacious and spotless and most of the machinery used in glider production has come from Germany. Anyone visiting it will leave with all confidence in its products.

Pavel Tomana, the sales manager who has designed a number of gliders and is an experienced cross-country pilot and instructor, hopes that the factory will be making parts of the new Ventus 2 and the Duo Discus, as well as continuing to build the Discus CS. Klaus Holighaus' family, who have taken over the management of Schempp-Hirth after his recent, tragic death, plan to extend the operation, as indeed they intend to continue the other manufacturing traditions established by Klaus.

Orlican also produce an aluminium, lift-top glider trailer of very good quality and are developing their own wooden microlight. ✕

# MOTOR GLIDER TUGS

**O**ne score and seven years ago I remember a wise old bird named Jack Kane holding forth over a beer in the Zell am See bar about the future of glider towing. Jack was a visiting professor of physics at Munich University and much inclined to plan the future. He was also a three Diamond glider pilot (there weren't so many around in those days) and held all sorts of exotic power licences.

Jack's theory was that tugs were inefficient and needed to be replaced by glider-type airframes with an engine on the front. To make the operation of these tugs even more worthwhile he envisaged them as two-seaters. After releasing the glider the tug pilot/instructor would teach a student to fly on the way down.

It has taken a long time and students are not yet taken along, but the use of motor gliders as tugs is beginning to be a reality.

In Austria the Dimona motor glider has already been cleared to tow single-seaters. The Dimona tug uses the 80hp Rotax engine which is also fitted to the standard version. The water-cooled cylinder heads make engine management less critical and tow times are comparable to those achieved by conventional tugs. Even on an airfield about 1800ft amsl on a warm summer day the combinations were well off the ground in less than 500 yards.

In France, Roger Krieger of the IorAvia company has been conducting trials with a modified "B" Falke equipped with a 90hp Limbach engine and variable pitch propeller. Using a 180hp Morane for comparison he has made a number of tows in all sorts of weather and with both single and two-seaters. Again the times achieved were the same for both tugs.

Fuel consumption for a single-seater was 1.6 litres of four star. For two-seaters it was a litre more. The Morane used 6 litres of Avgas to do the same job. Another ecological bonus is the fact that motor gliders are quieter than most tugs now used.

Why do the motor gliders work so well? Better aerodynamics, of course. Some of the numbers involved are interesting. At normal towing speeds the Morane has about 165hp available at the prop. Half of this is needed just to maintain level flight, and a further 29hp to climb at 3kt. This leaves 50hp for the glider. The modified Falke has about 85hp available but needs only 20hp for level flight and a further 20hp for a 3kt climb. This still leaves 45hp for the glider.

The only disadvantage is slow initial acceleration, particularly on a grass surface, so while a motor glider tug might not be a great success at Talgarth, this development could well be of interest to clubs operating from large fields or from hardened runways.

Adapted from *Aerokurier* and other sources by Alan Harris. ✕



**S**o you think you can fly in the mountains? You may have been to the Alps before and even been a regular visitor. After all the weather can be wonderful with the mountains controlling the frontal systems and you can find the southern Alps basking in beautiful sunshine whilst the rest of Europe shivers in cold March winds.

But have you actually flown in the mountains or merely looked down at them from the top of every thermal?

For many who make the journey south in the spring their experience consists of a launch to the local hill some time after the start of the valley breezes, an exciting few minutes dealing with the lower levels of a thermal breaking away from the top, followed by several hours trying to stay as high as possible to avoid another encounter with the rocks. As a result they never learn how to fly into the mountains, merely over them.

If the weather deteriorates, they miscalculate a glide or go to a hill that isn't working yet, then they are in trouble. The high accident rate in the southern French Alps is mostly as a result of these pilots. If it isn't the weather, it may be the result of over-confidence or sheer stupidity and they find themselves unable to stay above the tops. They panic because they can't fly close enough to the hill and in their headless chicken rush, try to land on the ground they are over. This invariably leads to a crash and another statistic.

Learning to fly in the mountains isn't necessarily about cloud selection or getting as high as you can in wave, but learning how to climb a slope to catch the thermal spouting from its crest. It's about parking on a hill face in lift to maintain height until a thermal comes along and about using that thermal to climb away again. It's concerned with identifying the hills, knowing when they should give good lift, how high you have to be to get there and if it's not working where to try the next. And it's staying within reach of a known landing field so that if things do go wrong there is always safety at 20:1.

This can only be learned by getting among the rocks and overcoming and controlling one's fear - for fear it most certainly is. You must learn to dominate the mountain instead of allowing it to dominate you and trying to understand and picture what is happening with the air and where the lift will be.

I've flown in the mountains before but was never told about these things, and believe me if you're trying it without tuition you take the thermal as high as you can and stay there all day, learning absolutely nothing except that the hills are frightening. I've also had the opportunity to take some tuition from an expert and now I think I can begin to understand enough to go off and find out a little more for myself without the immobilising fear of the mountains.

Jacques Noel runs the European Mountain Gliding Centre from Gap in the Durance valley (see also the article in the October issue, p267). In five days last March we flew 20hrs and with briefings before and after flying it is a full day. He teaches you how to deal with the mountains safely and what to do when it goes wrong. He's been flying in the Southern French Alps for over 15 years and with something like 6000hrs in that time he is an expert. Flying his Janus he can show you all aspects of mountain flying from getting away to ridge running, parking in poor con-

## MOUNTAIN EXPERIENCE

Graham, a former BGA national coach and now CFI at Lasham Gliding Society, encourages you to beat the winter blues by trying some mountain flying in the Alps



Jacques with his Janus photographed at Gap by Graham.

ditions to how to dominate the hill and maximise your chance to get away again. Also where to and where not to go and when you feel out of your depth and wish you were a little taller, he'll pull you up, tell you where you went wrong and how to retrieve the situation. He is very keen to teach the beauty and thrill of mountain flying but insists you learn it with the emphasis very much on safety and escape.

Flying close to the hill side calls for enough speed to give you lively controls and a glider that will react when you ask it to. You need to be in a position to accelerate out of the way of the hill if

necessary. The mountain won't move and so should not take you by surprise except when you're not giving it enough attention.

Flying close to the hills enables you to consider where the thermal will come from and which bits of the slope will work best. The mountain has been there for millions of years and for most of that time the wind has been blowing from the same direction, its face being sculptured and eroded by the wind and thermals. As a result you can see which bits are going to be best and which are guaranteed to work. It may sound obvious but until someone points it out and shows you examples it is very difficult to apply.

Mountain flying is incredibly challenging and demanding, but is stunningly beautiful and exhilarating. For some reason the British don't take advantage of the magnificent mountain playground that is only a day's drive south.

But it is open to everyone and at the start of the season it gives you enough flying to put you several steps ahead ready for the British weather. Your ability to control the glider improves and with it your awareness and confidence at a time when it is normally still shrouded in winter gloom. And it's fantastic fun. But take it from one who has seen both sides of the mountain experience - if you are going to fly in the mountains learn how to do it from an expert first. That way you won't bruise your knees as they knock against the side of the cockpit in fear.

For more details contact Jacques Noel at the European Mountain Centre, 16 rue Emile Boyoud, St Auban, France, Tel 010 9264 2863. Jacques speaks good English. ☑

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# ANNUAL STATISTICS

OCTOBER 1, 1993 TO SEPTEMBER 30, 1994

GLIDING CLUBS	AIRCRAFT				ALL LAUNCHES	NO. OF AEROTOWS	HOURS FLOWN	KMS FLOWN	MEMBERSHIP		
	Club 2s	Club 1s	PO	Tugs					Flying	Estimated No. of Temporary Members	No. of Female Members
ANGUS	2	1	5	0	1054	0	142	N/K	29	269	3
AQUILA	2	4	0	2	2031	1411	1106	21 685	47	144	1
BATH, WILTS & DORSET	4	3	22	1	4160	449	1398	12 000	114	262	7
BIDFORD	4	2	20	2	N/K	N/K	N/K	N/K	147	980	3
BLACK MOUNTAINS	2	1	26	1	2274	2274	3480	29 600	62	123	9
BOWLAND FOREST	2	3	23	0	4088	0	1950	4000	99	150	8
BOOKER	7	8	85	6	8879	8879	N/K	325 000	304	1364	33
BORDERS	3	1	21	2	1581	1548	1054	7850	86	215	5
BRISTOL & GLOS.	4	5	63	2	7456	2894	5170	70 000	269	428	33
BUCKMINSTER	3	2	15	2	2874	1917	1239	5050	64	261	11
BURN	4	4	24	1	5889	1364	1820	2400	133	351	6
CAIRNGORM	1	0	9	0	834	222	570	-	34	65	2
CARLTON MOOR *	1	0	2	0	782	0	141	0	21	18	1
CAMBRIDGE UNIV.	4	4	2	2	10 672	1901	7192	216 578	224	1465	19
CHANNEL *	3	1	5	0	3803	0	528	N/K	54	490	4
CONNEL	3	0	5	1	790	84	205	2620	33	217	1
CORNISH	2	2	7	1	1949	1520	585	1008	25	243	1
COTSWOLD	4	4	44	0	9736	77	3996	38 500	210	1139	18
CRANFIELD *	1	1	11	3	1299	1299	777	2150	39	164	2
DRA FARNBOROUGH	2	3	7	1	1207	449	540	1056	48	0	5
DARTMOOR	3	2	12	0	4186	0	666	N/K	66	591	5
DEESIDE	2	3	26	3	5374	5142	5563	N/K	139	547	12
DERBY & LANCS	6	3	35	0	7593	0	3474	15 000	211	1261	22
DEVON & SOMERSET	4	3	0	1	8417	406	3140	9320	181	896	13
DORSET	2	3	7	1	3371	197	359	N/K	73	245	3
DUKERIES	2	1	8	0	2663	0	588	1250	31	143	2
DUMFRIES & DISTRICT	1	1	3	0	306	0	110	350	17	7	0
EAST SUSSEX	4	4	13	0	4794	120	922	N/K	109	997	7
ENSTONE EAGLES	2	1	9	0	2020	45	644	2500	49	289	4
ESSEX	3	2	22	1	3127	998	-	-	123	672	2
ESSEX & SUFFOLK	3	2	20	0	4028	10	1374	13 750	83	356	5
GLYNDWR SOARING	2	1	13	1	5467	1572	2526	N/K	74	202	-
HEREFORDSHIRE *	1	1	8	1	663	663	663	N/K	33	104	4
HIGHLAND	2	2	8	0	2005	179	909	2000	64	184	18
HIGH MOORE	0	1	0	0	80	0	29	0	9	2	0
IMPERIAL COLLEGE	1	2	0	0	2500	500	600	1200	15	60	2
ISLANDERS	1	1	0	1	498	14	484	0	24	64	5
KENT	3	2	30	1	N/K	N/K	N/K	9000	146	484	13
LAKES	2	2	5	1	1274	1274	499	4870	44	130	1
LINCOLNSHIRE	2	2	7	0	3880	39	538	565	60	130	11
LASHAM	11	0	135	5	28 944	11 060	12 720	222 512	455	2675	148
LONDON	7	4	51	3	22 000	8000	-	N/K	400	4880	20
MARCHINGTON	4	1	15	1	1925	1925	1018	N/K	85	156	3
MENDIP	3	2	14	0	3304	50	878	9549	65	555	9
MIDLAND	3	3	36	1	10 608	456	5052	23 728	205	1844	24
NENE VALLEY *	3	2	5	0	2811	0	540	1200	45	180	10
NEWARK & NOTTS	3	3	16	0	2781	N/K	584	1000	60	526	6
NORFOLK	3	2	33	2	5358	2892	2129	N/K	201	753	19
NORTH DEVON	2	0	8	1	260	260	150	300	10	30	0
NORTH WALES	2	2	4	0	3552	0	718	N/K	49	244	2
NORTHUMBRIA	3	2	18	1	3246	859	899	1000	112	458	3
OXFORD	4	3	15	0	3414	22	1245	15 792	89	204	9
OXFORDSHIRE	2	0	3	0	-	0	1230	9000	30	20	2
PETERBORO & SPALDING	3	2	18	2	2597	2597	1324	7500	73	251	5
RAE BEDFORD	1	0	6	0	603	0	N/K	N/K	16	6	0
RATTLESDEN	2	2	14	1	4310	412	1186	11 005	70	552	9
RSRE	2	1	1	0	273	0	40	0	11	25	1
SACKVILLE	2	1	11	1	1100	500	290	10 200	34	10	6



SCOTTISH GLIDING UNION	3	3	46	1	7466	701	4883	—	224	947	14
SHALBOURNE	3	2	22	0	3137	0	883	5000	88	513	15
SHENINGTON	5	3	9	1	3737	333	836	10 000	48	152	5
SHROPSHIRE	0	0	10	1	427	427	910	17 000	32	—	1
SOUTH WALES	2	2	18	1	2471	1096	1478	13 120	70	463	5
SOUTHDOWN	3	3	36	3	6723	5274	4160	—	229	701	21
STAFFORDSHIRE	4	4	9	—	5371	0	1146	962	118	320	8
STRATFORD ON AVON	3	2	22	0	7112	0	1406	14 065	117	1111	17
STRATHCLYDE	1	2	5	1	461	173	94	200	27	71	1
SURREY & HANTS	—	11	32	—	See Lasham	201					
SURREY HILLS	4	4	3	0	5201	—	653	—	70	N/K	5
THE SOARING CENTRE	5	6	87	4	13 028	9213	7391	82 617	306	1750	36
THE GLIDING CENTRE	6	7	0	1	13 237	442	3147	7500	26	705	4
THRUXTON *	3	1	7	1	752	752	350	2050	34	101	2
TRENT VALLEY	4	1	15	0	3390	690	1215	7250	61	173	9
ULSTER	2	1	16	1	1287	1287	766	350	40	131	1
UPWARD BOUND	2	1	4	0	1894	—	365	450	25	222	3
VALE OF NEATH	2	1	4	1	635	275	223	N/K	32	23	2
VALE OF WHITE HORSE *	2	1	14	0	2817	25	368	11 000	47	250	5
VECTIS	1	1	5	1	715	715	258	2300	31	54	3
WELLAND	3	2	14	0	3349	93	1198	11 200	74	385	6
WEST WALES *	2	1	1	0	326	0	47	—	5	44	—
WOLDS	4	2	1	28	9824	978	2946	18 800	174	1558	10
YORK	3	3	17	1	4613	2789	1710	7000	125	770	5
YORKSHIRE	3	5	38	3	6706	3224	2914	28 142	264	1022	7
<b>CIVILIAN CLUB TOTAL</b>	<b>233</b>	<b>187</b>	<b>1460</b>	<b>105</b>	<b>332 669</b>	<b>94 967</b>	<b>124 331</b>	<b>1 351 094</b>	<b>8071</b>	<b>40 547</b>	<b>762</b>
<b>ARMY GLIDING ASSOCIATIONS</b>											
KESTREL	2	3	3	1	1747	61	405	9602	45	195	2
WYVERN *	2	4	6	1	3900	0	960	5300	59	121	6
<b>ROYAL NAVAL GSA</b>											
CULDROSE *	3	3	1	3	2074	1664	426	N/K	46	215	6
HERON *	3	2	4	1	1219	799	460	4500	54	108	8
PORTSMOUTH	5	5	4	3	7272	2738	1837	81	165	780	19
<b>RAFGSA</b>											
ANGLIA	3	3	3	0	N/K	N/K	N/K	N/K	45	50	—
BANNERDOWN *	2	3	5	1	5557	264	1190	5890	82	294	7
BICESTER *	7	5	30	4	14 119	4808	6350	67 015	220	720	—
CHILTERNS *	2	4	7	0	5010	59	1591	3561	110	146	14
CLEVELANDS *	3	4	17	2	4436	1923	2064	20 743	107	150	—
CRANWELL	3	3	9	1	5131	637	1515	15 306	72	50	13
FENLAND *	2	4	5	0	4465	31	1011	3279	70	150	9
FOUR COUNTIES	3	4	11	1	7143	552	2713	29 975	92	160	6
FULMAR	2	2	0	1	1378	326	382	1400	45	47	5
HUMBER	2	3	1	0	2126	0	717	7950	37	142	4
LOMOND *	0	1	2	0	480	80	500	2500	15	—	1
PHOENIX *	3	4	2	0	4440	0	1029	1200	63	435	—
TWO RIVERS	2	4	1	0	2307	80	830	9100	34	250	5
WREKIN *	3	3	6	1	5158	628	1429	7118	90	206	—
<b>SERVICE CLUB TOTAL</b>	<b>52</b>	<b>64</b>	<b>117</b>	<b>20</b>	<b>77 962</b>	<b>14 650</b>	<b>25 409</b>	<b>194 520</b>	<b>1451</b>	<b>4219</b>	<b>105</b>
<b>CIVILIAN CLUB TOTAL</b>	<b>233</b>	<b>187</b>	<b>1460</b>	<b>105</b>	<b>332 669</b>	<b>94 967</b>	<b>124 331</b>	<b>1 351 094</b>	<b>8071</b>	<b>40 547</b>	<b>762</b>
<b>GRAND TOTAL</b>	<b>285</b>	<b>251</b>	<b>1577</b>	<b>125</b>	<b>410 631</b>	<b>109 617</b>	<b>149 740</b>	<b>1 545 614</b>	<b>9522</b>	<b>44 766</b>	<b>867</b>

\* Incomplete or no statistics received – previous figures used.



### PETER SCOTT MEMORIAL WINDOW



This beautiful stained glass window in St John's Parish Church at Slimbridge is in memory of Peter Scott, who took over as chairman of the BGA from Philip Wills in 1968. It was dedicated in December at an inspiring service of thanksgiving for his life by the Bishop of Tewkesbury with an address by David Attenborough. David Carrow, vice-chairman during Peter's time as chairman, encouraged donations from the gliding world, starting with a letter in our February 1994 issue, p11. The window is by a young artist, Thomas Denny, who worked with Lady Scott on the design which he described as "about creation in terms of earth, air and water". It incorporates many facets of Peter's interests. Many members of the gliding world were at the service and at the lunch which followed at The Wildfowl & Wetlands Trust. The photograph is reproduced by kind permission of the *Evening Post & Western Daily Press*.

#### HELP TO KEEP YOUR SITE

The General Aviation Awareness Council (GAAC) is appealing for funds to continue its work. You should find a leaflet with this issue of S&G which explains in general terms what the GAAC is all about and why it needs to be

properly funded.

Several BGA people, mostly volunteers, are helping with this work which is vital to protect our existing sites and help pave the way for future developments.

Why bother? Because existing and new sites

face mounting opposition, partly government funded, on environmental and other grounds. Local residents' groups form strong oppositions, aided by a secretive national organisation, and supported when requested by experienced and skilled "experts".

By contrast, the typical gliding club has one planning application in a blue moon, handled by committee members who have never done it before and don't know what is about to hit them, or how to react most effectively when it happens. Appeals, if handled by professionals, cost tens of thousands of pounds each. Could your club afford one?

Has it happened? One site lost an appeal to keep aerotowing, when temporary permission ran out. It seems that the inspector paid more attention to a tiny number of opponents than to larger numbers of supporters. Another appeal, for a hangar among other things, was lost because the inspector seemed not to believe that several club gliders needed hangarage.

A council is actively considering discontinuing or modifying existing planning permission for gliding. (Did you know that there are powers for a council to seek that and for the Secretary of State to confirm it if he agrees? It has already happened to a power flying site, though an appeal is in progress.) Even winch launching has been limited for environmental reasons.

This is not just "someone else's problem". Every battle lost by one club makes the next harder to win for another.

The GAAC and its working groups are trying to combat these moves in a variety of ways - some public, some in meetings with government offices. The long term aim is to improve the acceptance of aviation. Shorter term actions include improving advice to applicants and appellants.

It really comes down to clubs and members helping to fund the work. If we don't try for ourselves we will have progressively fewer sites with worthwhile capabilities in future.

The present appeal is for *ad hoc* contributions needed this year. There will be a discussion at the BGA AGM in March about whether we should build provision for this work into our subscriptions. To do it properly needs something like £1-2 per member each year, for as far ahead as we can see.

Is it worth it? How much have you and your other club members invested in your site, buildings, gliders and launch equipment? A hundred thousand for a small club? A million or more for a large one? What do you think it is worth to keep it available for flying?

#### COMPETITION DIARY UPDATE

The Overseas Nationals from May 14 to 27 will be held at Leszno, Western Poland and the Junior Nationals, from August 19 to 27, will be at the Bidford Soaring Centre.

#### BGA 1000 CLUB LOTTERY

The results of the **November** draw are:- First prize - A.Shaw (£66) with the runners up - P.L.Bisgood, J.Stanley, C.Buzzard, D.Eastell and T.J.Mitchell - each winning £13.20.

**December.** First prize - M.C.Costin (£62.25)



with the runners up - B.Elliott, A.J.Eddie, J. Delafield, W.G.Scul and P Nicholls - each winning £13.50.

### AN APOLOGY TO ADVERTISERS

We would like to say how sorry we were that the printer muddled up several advertisements in the last issue, using old versions instead of new copy. This was a last minute mistake and by then out of our control.

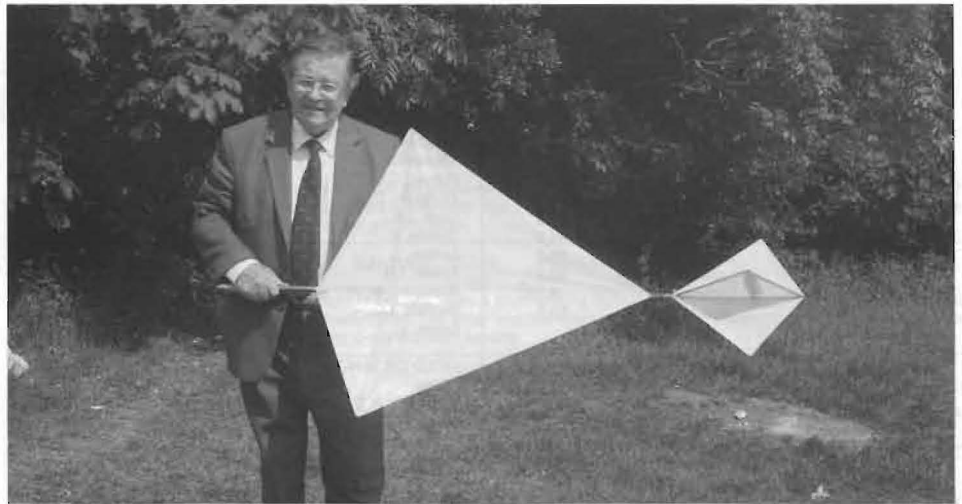
Also, don't be misled by the invitation to land at Binbrook Airfield - this is strictly forbidden.

## OBITUARY

### JOHN STANLEY SPROULE

When you have known someone for a very long time memories remain fresh even though meetings in recent years are infrequent. So it was with John, whom I first met at Dunstable in 1937. Slightly built and not very tall he was totally in love with gliders and had been flying for four years. He was the 22nd British pilot to gain a Silver badge in Britain flying 37 miles in 1936 at a maximum height of 2000ft! As well as enthusiasm he had a remarkably quick "ideas" brain which cut through technical difficulties with ease and skill. Known at the time as "Sprouts" he divided his time between Dunstable and Kirkbymoorside where he worked at Slingsby's factory as designer and test pilot.

In that July of 1937 he had been with the British team at the International Competitions on the Wasserkuppe as retrieve driver for John Neilan and Joan Price, who were sharing a King Kite. The following July he and Bill Murray broke the world duration record in the Falcon 3 flying 24hrs in the soft west wind above Dunstable Downs. As the summer night darkened members lighted up the top of the Downs, the windsock and a landing place with car headlights. Earlier an effort to dangle refreshments on a string from a glider flying above them proved singularly unsuccessful but helped to pass the time.



Derek Piggott sent us this photograph of John with a model of the Cayley.

In 1937 Sproule and Ivanoff designed the Camel, a small single-seater intended to be cheap to buy. It was built and flying within the year.

World War 2 saw John in the RAF with the embryonic glider pilot regiment at Thame. I ferried a Tiger Moth there one day and had lunch with what seemed to be the entire gliding movement! Later John transferred to the Royal Navy and was soon involved in trials ranging from kiting gliders from ships for U-boat observation to air sea rescue with early helicopters, inventing the scoop net to fish people out of the sea.

John was still in the navy, as a Lt Cdr, when he discovered tatty, dismantled Chilton G-AFGI at Savernake. £50 and a gin and tonic secured this once lovely little aeroplane and he bore it home in a truck packed with "borrowed" hay. He went at its restoration with impeccable workmanship, to be rewarded with 100hrs of happy flying before selling it to Hugh Kendall.

In the sixties John's inventive mind researched the work of Yorkshireman Sir George Cayley, whom he believed to be the true father of the aeroplane. He made models to test the theories, culminating in a full scale replica which, flown by Derek Piggott at Lasham, showed its potential as a future aeroplane. In his later years John returned to the Slingsby Falke, almost the first glider he had worked on and of which no example remained. He built a replica with his usual precision until it outgrew his garage and living room and was completed at Lasham by Ken and Mike Fripp. This Falke now flies with the Vintage Glider Club.

John was an unassuming person, which is probably why no one got around to ensuring that his very real contribution was recognised by a worthwhile award. He deserved better. John lost his wife Peggy in 1989. He never really recovered from this and died aged 79 in a tragic road accident. Farewell old friend.

ANN WELCH

## Stories by GREAT GLIDER PILOTS all over the world



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"41 fantastic stories by GREAT GLIDER PILOTS from Australia (9), Great Britain (3), Germany (2), Iceland (1), New Zealand (8), Norway (2), Poland (1), Sweden (3), Switzerland (2), South Africa (1), and USA (9).

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**Åke Pettersson, President of the Swedish Soaring Federation**

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# GLIDING CERTIFICATES

**THREE DIAMONDS**

No.	Name	Club	1994
431	Mulholland, S.	Four Counties	13.8
432	Welsh, S.J.	Upavon	14.9
433	Pullen, C.J.	London	30.6
434	Nunn, A.V.	Lasham	30.9
435	Matcham, K.S.	Lasham	6.10
436	Darlington, A.	Imperial College	28.9

**DIAMOND GOAL**

No.	Name	Club	1994
2/2276	Morrisroe, R.S.	Nene Valley	14.8
2/2277	Payne, R.C.	Cambridge Univ	29.8
2/2278	Flannery, A.	Burn	21.8
2/2279	Walford, A.C.	Cambridge Univ	13.8
2/2280	Lee, K.	Rattlesden	14.8
2/2281	Peters, D.	Burn	13.8
2/2282	Langberg, J.	Norfolk	21.8
2/2283	Smith, D.A.	Bath, Wilts & N Dorset	14.8
2/2284	Blackmore, S.R.	Aquila	21.8
2/2285	Weiford, R.J.	Cambridge Univ	14.8
2/2286	Moore, D.R.	Cambridge Univ	14.8
2/2287	Thornhill, A.W.	Burn	14.8
2/2288	Mason, A.	Yorkshire	23.7
2/2289	Wales, R.J.	Booker	13.8
2/2290	Davis, C.K.	Cambridge Univ	13.8
2/2291	Pengilly, D.S.	Wilts & N Dorset	14.8
2/2292	Stoodley, M.R.	Norfolk	27.8
2/2293	Hughes, S.A.	Yorkshire	14.8
2/2294	Akerman, T.	Bicester	13.8
2/2295	Economov, S.	Booker	13.8
2/2296	Hannah, G.H.	Cambridge Univ	14.8
2/2297	Emson, C.R.I.	Oxford	14.8
2/2298	Crabb, C.	Mendip	14.8
2/2299	Broadbridge, A.C.	Bidford	13.8
2/2300	Shailes, M.J.	Cotswold	14.8
2/2301	Hugill, P.A.	Lasham	19.7
2/2302	Carruthers, M.J.	SGU	17.9
2/2303	Hook, K.	SGU	17.9
2/2304	Cooper, M.D.	Oxford	30.5
2/2305	Edwards, M.W.	SGU	17.9
2/2306	Grieve, R.	Four Counties	17.7
2/2307	Bye, K.J.	Essex & Suffolk	21.8
2/2308	Waite, P.	Bristol & Glos	20.7
2/2309	Aldridge, M.J.	Rattlesden	30.5

**GOLD BADGE**

No.	Name	Club	1994
1764	Payne, R.C.	Cambridge Univ	29.8
1765	Welford, R.J.	Cambridge Univ	14.8
1766	Moore, D.R.	Cambridge Univ	14.8
1767	Mason, A.	Yorkshire	23.7
1768	Hughes, S.A.	Yorkshire	14.8
1769	Akerman, T.	Bicester	13.8
1770	Crabb, C.	Mendip	14.8
1771	Carruther, M.J.	SGU	17.9
1772	Edward, M.W.	SGU	17.9
1773	Hibberd, K.	Glyndwr	25.8
1774	Brice, P.	Booker	2.9
1775	Jeynes, F.B.	Stratford on Avon	30.9
1776	Passmore, N.J.	Wynern	26.9
1777	Large, R.J.	Welland	6.10
1778	Matcham, K.S.	Lasham	6.10
1779	Luck, J.A.	Cranfield	6.10
1780	Luxton, J.	Booker	6.10
1781	Green, I.R.	Imperial College	29.9
1782	Westgate, G.C.	Southdown	27.9

**GOLD HEIGHT**

Name	Club	1994
Mason, A.	Yorkshire	5.6
Turnbull, W.W.	Northumbria	10.7
Hibberd, K.	Glyndwr	25.8
Stanford, G.K.	Glyndwr	28.8
Hicks, B.C.	Deeside	26.9
Brice, P.	Booker	2.9
White, A.D.	Deeside	27.9
Jeynes, F.B.	Stratford on Avon	30.9

Doyle, E.A.	Bidford	29.9
Beach, J.	Bristol & Glos	28.9
Onn, P.	Booker	29.9
Harvey, B.	Newark & Notts	6.10
Passmore, N.J.	Wynern	26.9
Quartermaine, J.	Yorkshire	27.8
Large, R.J.	Welland	6.10
Matcham, K.S.	Lasham	6.10
Stevenson, H.	Cairngorm	7.10
Raisey, C.B.	Lasham	6.10
Hodgson, D.	Yorkshire	28.9
Luck, J.A.	Cranfield	6.10
Dennis, A.	Lakes	10.10
Luxton, J.	Booker	6.10
Green, I.R.	Imperial College	29.9
Westgate, W.W.	Southdown	27.9
Burdett, J.C.	Lakes	10.10
Lewis, J.	Imperial College	30.9

**GOLD DISTANCE**

Name	Club	1994
Morrisroe, R.S.	Nene Valley	14.8
Payne, R.C.	Cambridge Univ	29.8
Flannery, A.	Burn	21.8
Walford, A.C.	Cambridge Univ	13.8
Lee, K.	Rattlesden	14.8
Peters, D.	Burn	13.8
Langberg, J.	Norfolk	21.8
Smith, D.A.	Bath, Wilts & N Dorset	14.8
Blackmore, S.R.	Aquila	21.8
Welford, R.J.	Cambridge Univ	14.8
Moore, D.R.	Cambridge Univ	14.8
Thornhill, A.W.	Burn	14.8
Mason, A.	Yorkshire	23.7
Wales, R.J.	Booker	13.8
Davis, C.K.	Cambridge Univ	13.8
Pengilly, D.J.	Bath, Wilts & N Dorset	14.8
Stoodley, M.R.	Norfolk	27.8
Hughes, S.A.	Yorkshire	14.8
Akerman, T.	Bicester	13.8
Economov, S.	Booker	13.8
Hannah, G.H.	Cambridge Univ	14.8
Crabb, C.	Mendip	14.8
Broadbridge, A.C.	Bidford	13.8
Shailes, M.J.	Cotswold	14.8
Hugill, D.	Lasham	19.7
Carruther, M.J.	SGU	17.9
Cooper, M.D.	Oxford	30.5
Edward, M.W.	SGU	17.9
Grieve, R.	Four Counties	17.7
Bye, K.J.	Essex & Suffolk	21.8
Waith, P.	Bristol & Glos	20.7
Aldridge, M.J.	Rattlesden	30.5

**SILVER BADGE**

No.	Name	Club	1994
9578	Hellier, D.J.	Channel	28.8
9579	Smith, C.F.M.	Bristol & Glos	29.9
9580	Perry, R.	London	13.8
9581	King, P.	London	14.8
9582	Williams, J.	Deeside	4.10
9583	Robinson, A.C.	London	5.10
9584	Cheney, C.J.	Cambridge Univ	15.8
9585	Stanford, G.K.	Glyndwr	28.8
9586	Wheatley, P.A.	The Soaring Centre	14.8
9587	Noel, S.R.	Portsmouth Naval	13.8
9588	Bowker, R.A.	Heron	15.8
9589	Walsh, S.F.	Lasham	14.8
9590	Mason, M.C.	York	2.9
9591	Hicks, I.P.	London	2.9
9592	Sanders, M.I.	Glyndwr	28.8
9593	Ditchfield, A.	Derby & Lincs	5.9
9594	Ayres, S.J.	Bannerdown	13.8
9595	Storer, N.G.	Booker	27.7
9596	Leach, P.	Vale of White Horse	15.8
9597	Slocumb, J.L.	Bicester	14.8
9598	Clarke, B.	Dukeries	14.8
9599	Withers, N.R.	Wrekin	14.8
9600	Francis, R.E.	Bristol & Glos	13.8
9601	Green, A.S.	Fenland	14.8
9602	Howell, D.M.	Staffordshire	23.7
9603	Peters, M.D.	London	14.8
9604	Sadler, T.J.	Surrey & Hants	13.8
9605	Northern, J.A.	Kent	28.8
9606	Elliott, F.A.W.	Anglia	27.8
9607	Greig, D.N.H.	Devon & Somerset	27.8
9608	Field, M.A.	Essex & Suffolk	29.8
9609	Sutherland, G.	Booker	29.7
9610	Cowley, N.J.	Sackville	13.8
9611	Iles, G.	Bannerdown	14.8
9612	Rackman, P.	London	27.8
9613	Waddell, S.C.F.	Booker	23.7
9614	Cossey, S.D.	Deeside	30.12.93
9615	Gynes, R.D.	Shenington	30.12.93
9616	Hughes, M.E.	Surrey Hills	5.9
9617	Heslegrave, A.	Shenington	13.8
9618	Edmunds, K.	617 VGS	21.8

9619	Dunn, A.K.	The Soaring Centre	29.8
9620	Green, P.L.	Culdrose	7.8
9621	Maneisy, S.J.	Bristol & Glos	2.9
9622	Lagden, C.L.	Essex	21.8
9623	Hankey, R.	Bath, Wilts & N Dorset	2.9
9624	de Orde, D.	Essex	21.8
9625	Appleford, J.K.	Wynern	13.8
9626	Wales, D.C.	Sackville	27.8
9627	Vowles, M.	London	28.8
9628	Busby, J.S.	Cranfield	15.8
9629	Mason, A.	Yorkshire	23.7
9630	Stoodley, M.R.	Norfolk	21.7
9631	Sage, W.	York	2.9
9632	Hood, R.	Four Counties	17.7
9633	Davies, J.L.	Notts University	21.8
9634	Higgs, G.A.	Lasham	14.8
9635	Williams, S.J.	Southdown	23.9
9636	Tremayne, J.	The Gliding Centre	16.9
9637	Chappell, A.R.	Herts	13.8
9638	Neil, N.M.	Aquila	29.8
9639	Nayer, P.	Ouse	27.8
9640	Walton, P.W.	Marchington	29.9
9641	Barry, S.	Booker	7.10
9642	Bruce, S.R.	Cairngorm	10.10
9643	Hatton, C.B.	Cornish	29.9
9644	Murphy, P.J.	Enstone	30.5
9645	Murphy, E.T.J.	SGU	8.10
9646	Hill, A.R.	Anglia	13.3
9647	Turner, G.E.	Cambridge Univ	13.8
9648	Batch, J.G.	Cranfield	14.8
9649	Bigniasz, D.	Trent Valley	6.8
9650	Mortimer, P.J.	Shaibourn	28.10
9651	White, A.D.	Deeside	6.11
9652	Glen, T.G.	Shaibourn	26.10

**UK CROSS-COUNTRY DIPLOMA**

**Part 1**

Name	Club	1994
Ford, K.A.	Booker	5.8
Hardy, I.T.	Southdown	13.8
Vowles, M.	London	14.8
Smith, J.J.J.	York	21.8
Bertorelli, F.A.	Devon & Somerset	30.6
Wood, R.	Stratford on Avon	13.8
Whitaker, L.	Essex & Suffolk	29.8
Simpson, D.J.	Rattlesden	13.8
Longhurst, M.A.	Mendip	14.8
Vincent, K.	Bidford	22.7
Blackhurst, J.L.	Midland	21.8
Edlin, D.B.	Wynern	20.6
Morrison, P.	Devon & Somerset	14.8
Cummings, D.M.	Midland	21.8

**Part 2**

Name	Club	1994
Maddison, J.B.	Newark & Notts	14.8
Drury, G.K.	Kent	15.8
Longhurst, M.A.	Mendip	14.8
Roch, A.D.	London	5.10
Garwood, M.	Cambridge Univ	21.8

**INTER-UNIVERSITY TASK WEEK**

The 1994 task week was hosted by Four Counties and Nottingham University GCs from August 27 at RAF Syerston. The competing universities, Nottingham, Essex, Bristol, Edinburgh, University College London, Imperial College, Oxford and the University of East Anglia, brought 14 gliders from a K-7 to a Janus. Separate tasks were set for wood and glass.

Unfortunately it was only possible to set tasks on four of the nine days and these ranged from a 68km downwind dash to a 320km triangle. Most two-seaters were flown by a student with an instructor.

The Glass Class was won by Imperial College (ASW-19), with Nottingham (Janus) 2nd and Imperial's Grob Twin 3 3rd. Bristol (K-13) won the Wood Class with University College London (K-6Cn) 2nd and Essex (K-13) 3rd.

It was a great success and will again be hosted this year by the same clubs at RAF Syerston from August 26 to September 3. For entry details 'phone Matt Abell on 0115 978417.



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**BGA ACCIDENT SUMMARY** Compiled by DAVID WRIGHT

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Age	Pilot/Crew Injury	Hrs
49	LS-7	3556	W/O	30.5.94	Dunstable	84	F	?
<p>This fatal accident occurred during the early stages of an aerotow launch. At 50-70ft the glider was seen to release from the tow rope and enter a steep turn to the left in a manoeuvre like a chandelle. The impact was in a steep nose down attitude (60-70°) and slightly left wing down. As yet no problem has been found with the glider.</p>								
50	Fauvette	2679	Substantial	15.5.94 1740	Tibenham	43	None	590
<p>The experienced pilot was making his first flight in this type. After a short soaring flight he made a normal approach using full brake at first then almost closing them as sink was encountered. The glider touched down just short of the runway breaking the rear fuselage on a grass ridge. The pilot had been attempting to make a short landing.</p>								
51	Bocian 1b		None	5.94 1100	Incident Report	47	None	312
<p>The instructor was demonstrating aerobatics when, after initiating recovery from a spin, the rear canopy came unlocked and slid back before flying off, missing the tail. The recovery was completed and a normal landing made.</p>								
52	K-13	1535	Minor	1.6.94 1635	Weston on the Green	27 P2 16	None None	302 9
<p>P1 allowed a slight undershoot to develop while waiting for the P2 to recover. When he failed to round out the P1 took over and as he did so the glider hit a grass cutter in the long grass of the undershoot area.</p>								
53	ASW-20cl	3654	Substantial	25.5.94 1543	Nr Ballater	47	None	1861
<p>The pilot chose to land in a field that sloped up from a river. On the approach, at 60kt, she saw there was little slope so slowed to 52kt and selected full flap. The glider landed two thirds of the way across the field and the pilot had to turn to avoid a stone wall. A wingtip caught in long grass and caused a groundloop.</p>								
54	Astir CS	2126	Minor	23.5.94 1500	Glenshee	41	None	198
<p>While on a competition task the pilot encountered sink and decided to land in a field that he had seen from the ground and knew was good. On final approach he saw two wires across the field and had to lower the nose to clear them. The undercarriage collapsed on touchdown at 60kt. The wires had been re-routed since his visit.</p>								
55	SZD Cobra 15	1739	W/O	2.6.94 1530	Weston near Malton	70	None	1050
<p>During a cross-country on a day with a low cloudbase the pilot had to make a hurried choice of field to land. From hazy cloud shadows on the ground he thought the wind was between NW and W. However, on the approach he saw he was landing downwind and he could not stop the glider before it ran through the far hedge at speed.</p>								
56	ASH-25	3532	Substantial	19.5.94 1715	Poland, Lesno	40 P2 46	None None	3000 2000
<p>Finishing a competition task the pilot found he had enough height to increase speed and land straight in. Too late he found he had a 5-10kt tailwind and this, combined with an airspeed of 85kt, took him rapidly across the airfield. He saw long grass ahead and so pulled up to turn to one side then stalled the glider into the ground.</p>								
57	Skylark 4	1060	Fatal	9.6.94 1300	Halesland	54	Fatal	30
<p>This was a fatal winch launch accident. The glider took off into a 15kt westerly wind. The cable was released at about 1000ft and the glider was seen to dive vertically into the ground at high speed. The wingtips broke off under flight loads before the crash. There were no technical problems and the probable cause was reaction to "negative g".</p>								
58	DG-500	3715	Minor	28.5.94 1330	Tatenhill	59	None	847
<p>Following a normal landing and a short landing run the undercarriage collapsed damaging the fuselage. The wheel was down but it is not known whether there was a mechanical fault or if it was not properly locked down. The warning horn did not sound during the approach.</p>								
59	Bocian		W/O	9.6.94 1640	Bryn Gwyn Bach	72	None	35
<p>After a normal winch launch to 1500ft the pilot ran into sink and returned to the field. The sink increased to over 10kt and he found he could not make the airfield. He chose a field but undershot into trees on the boundary. Other pilots had not experienced any heavy sink in the area. It is thought that the airbrakes came open in turbulence.</p>								
60	DG-200-17	2559	Minor	28.5.94 1715	Not known	38	None	555
<p>With progress blocked by a rain shower the pilot had to make a field landing. On the approach to a 400yd field he found he was overshooting with no other field available. He used full airbrake and sideslip but touched down well into the field. Turning the glider, a wingtip hit a pile of stones causing a groundloop. The landing was downwind.</p>								
61	Silene	2548	Substantial	30.6.94 1625	Husbands Bosworth	59 P2 49	None None	886 422
<p>After flying an extended circuit the high performance two-seater positioned for a long low approach. On finals, a glider which flew a normal circuit having not seen the Silene, turned in from above. A short landing into the undershoot was chosen rather than overfly. The brakes did not work and the glider hit a fence after catching a wing turning.</p>								
62	K-7	3258	Minor	29.5.94 1530	RAF Upwood	36	None	1
<p>The early solo pilot was approaching to land on an uphill landing area at about 55kt with half airbrake selected. During the roundout and flare the airspeed fell rapidly in the wind gradient and the pilot lowered the nose while keeping the brakes open. He was then unable to stop the nose striking the ground heavily.</p>								
63	Falke C2000	Motor glider G-BODU	Minor	8.6.94 1400	Rufforth	65	None	428
<p>The motor glider pilot made a normal powered approach at 60kt due to the gusty conditions. In the flare he noticed it was covering the ground quickly. After finally landing the propeller grounded when the tail bounced up and he nearly hit the far fence. After a long power lay-off he had missed a 90° wind shift and hadn't done a go-around.</p>								



64	LS-3	Substantial	27.05.94 1528	Lleweni Parc	46	None	107	
<p>The pilot was briefed before his first flight on this type. At about 600ft on the winch launch he thought he had a cable break so released and lowered the nose quickly as the glider was still nose high. It accelerated slowly but quickly lost height. He made a tight circuit to land back but it sank into trees. The brakes were open throughout.</p>								
65	LS-6c	3976	Minor? 5.6.94 1230	Gransden Lodge	39	Minor	2596	
<p>The glider was being winch launched for a cross-country flight with some 50 litres of waterballast when at about 50ft the launch was stopped. The nose was lowered but there was insufficient height to prevent a very heavy landing. The launch had been halted after the launch marshall had heard someone shout "stop" to a crew pushing a glider.</p>								
66	Phoebus C	1553	W/O	11.6.94	Challock	56	Serious	410
<p>The glider was rigged and inspected with a positive control check. Despite this the pilot found the elevator was disconnected and crashed off the aerotow. The checks were carried out with the elevator held in a neutral position. It was found that the elevator rod could be hooked between a bolt and the elevator and seemed connected in this position.</p>								
67	PIK 20e	2129	Minor 18.6.94 1405	Challock	59	None	1200	
<p>The first part of the winch launch was normal but at about 100ft the pilot felt some unusual drag. A little later he heard knocking on the underside of the glider. After a short soaring flight with no further problems he landed and saw that one gear door was hanging off. An aerotow rope had been left across the cable and had caught up.</p>								
68	Grob Twin Astir	2676	Minor 5.5.94 1900	Enstone	61 P2 ?	None None	835 0	
<p>This was a hangar flight at the end of the day to a landing area which was often used for this purpose, but it had been disturbed and levelled during the day. The glider's wheel hit a small metal post which had been unearthed and not spotted. The tyre, wheel rim, brake disc and caliper were damaged.</p>								
69	Swallow		Minor -5.94	Incident Report	0	None	0	
<p>A DI found a skid mount was crushed and the bottom longeron was cracked although a careful inspection a few days earlier after a bounced, fast landing hadn't shown any damage. It is thought that initial damage was not seen and this was aggravated by further landings until more obvious.</p>								
70	ASW-19	4011	Minor 30.5.94 1430	Burn	56	None	295	
<p>The pilot came in to land behind two other gliders so decided to overfly them before landing. He mistakenly operated the wheel lever instead of the airbrakes and overshot the landing area. He turned and landed downwind in a crop field. Workload, limited experience on type and not checking which lever held were factors.</p>								
71	Skylark 3	W/O	22.06.94 1730	Halkyn	69	None	36	
<p>The pilot became lost after he climbed above cloud in wave and turned downwind. He attempted to make a field landing but could not make it to a suitable field and landed in a gully full of trees.</p>								
72	Bergfalke 4	2993	Minor 19.6.94 1039	Rivar Hill	32 P2 30	None None	100 0	
<p>The pilot was making his third flight of the day. A normal approach was made through turbulence across trees as on the other flights. The final turn was made at 55kt and then three-quarter airbrake selected. At roundout the descent rate did not reduce and the glider landed heavily before the pilot could close the brakes.</p>								
73	K-8e	3582	Minor 5.6.94	Garnston	34	None	13	
<p>The winch launch was normal until, at 1200ft, the glider passed through a thermal. The pilot lowered the nose and continued to climb until at 1400ft a loud bang was heard. The pilot assumed a cable break, pulled the release and turned into the thermal climbing to 5200ft. An hour later the pilot landed and found a hole punched in the tailplane.</p>								
74	Blanik	2661	W/O 25.6.94	Enstone	32 P2 44	None None	390 30	
<p>The instructor decided to give his pupil a crosswind landing on a part of the airfield only occasionally used. He inspected the grass length before the flight. After a normal touchdown both pilots saw a wooden post ahead so P1 took control. To avoid the post a wing was lifted but the other wing hit the ground and the glider turned and hit a fence.</p>								
75	Kestrel 19	1793	Minor 19.6.94 1630	Enstone	45	None	360	
<p>The pilot turned into a 15kt headwind on finals at 300ft with full land flap selected and at 60kt. As he descended through the wind gradient the airspeed fell to 50kt and he had to lower the nose. The aircraft dropped quickly and the pilot considered it too late to remove flap and landed short in standing wheat. Land flap was not needed.</p>								
76	K-7	2538	Minor 28.6.94 930	Pocklington	52 P2	None 0	540 0	
<p>A group of visitors were having trial lessons and had strayed on to the grass landing area. Members had moved them back as a glider was approaching. However, as it landed a visitor looking through a camera moved forward and was hit by the glider's wing and knocked to the ground. A visitors "safe area" will now be designated by instructors.</p>								
77	SF-27A	None	6.94 1431	Incident Report	65	None	370	
<p>After a turbulent 2hr soaring flight the pilot returned to the airfield. At about 150ft, in considerable turbulence, the canopy flew off. It did not hit the tail and the glider landed safely. The canopy locking lever was found to be bent so that it fouled the instrument panel and prevented the front bolt from fully locking.</p>								
78	DG-300	3845	Minor 11.6.94 1600	Nr Salisbury	39	None	497	
<p>On a cross-country flight the pilot had to make a field landing. After a normal circuit the glider's undercarriage caught on power lines which the pilot had not seen. The cable broke and the pilot was lucky to make a heavy but controlled landing. The electricity board were contacted immediately.</p>								
79	LAK-12	4035	Substantial 16.7.94 1600	Rufforth	44	None	302	
<p>The pilot returned to gliding after almost a year away and completed four check flights before being allowed to fly his new, flapped glider. On the approach an undershoot developed and he changed hands to close the brakes which were not locked and so sprung open. He tried to grab them but moved the flaps to full negative and the glider stalled in.</p>								

# INTERNATIONAL GLIDING COMMISSION

Extracts from Tom's report of the IGC European meeting held in Paris this autumn



Tom working hard at the recent FAI General Conference in Turkey which took place a week after the IGC meeting in Paris! Photo: Ian Strachan.

**B**efore the main meeting three days were devoted to GPS and this session was attended by many of the main manufacturers as well as Phil Jeffery representing the UK.

**New Zealand World Championships.** There was disapproval of the action taken by New Zealand to invite certain women pilots to compete by using the special rule 7.4 in Annex A of the **Sporting Code** section 3 which had been introduced in the past to allow South Africa to compete. The 108 provisional entries were now expected to be 93. It was agreed to allow Bruno Gantenbrink, winner of the 1994 European Open Class, to enter despite not having qualified by the German "mechanical" entry system.

**World Class Glider.** The FAI secretary had signed an agreement with the Poles confirming that the PW5 was the World Class glider. Twelve had been made with 22 orders and 79 options to buy. There would be the capacity to make 100 gliders next year. About 12 other manufacturers had inquired about taking a licence to make the PW5. The Poles were also hoping to develop a cheap two-seater to be called the PW6. There was some talk of difficulties making contact with the Polish manufacturers and advice was given by the Polish representative.

The German delegate proposed that the



PW5 should be given suitable status as soon as possible and be included as the fourth Class in the World Championships in France. A decision on this and other proposals would be considered at the meeting in March.

**European Championships at Rieti.** It was reported that despite the mountainous terrain there were virtually no accidents. However, the organisers pressed for a rule making ELT equipment compulsory. The use of GPS for navigation had caused some marginal TP photos. Some pilots complained about the contrived tie for the first three places in the Standard Class but most thought that as it would be difficult to repeat no action was called for.

**Eastern Europe.** Fred Weinholtz pointed out that Eastern Europe was suffering from a major reduction in gliding - pilot numbers have dropped from 20 000 to 5000. He appealed for ideas to help and it was decided that a committee should look at the problem.

The next autumn European meeting will be in Helsinki, Finland.

**CONTRIBUTORS:** If you are working on a PC we would appreciate the loan of the disc with the hard copy. Ideally we like a Mac disc but if not, please may it be formatted in ASCII text.

We have many generous offers of photographs, often potential covers, and readers want to know if we need the negatives. Usually we can work well from colour prints for the inside pages if the reduction isn't too great but if the photograph will make a cover, then we usually ask to borrow the negative. But please send a print first. Don't forget the cover is a vertical format and we do like an interesting and colourful background. A glider against a dull sky just doesn't reproduce well enough.

**THE BGA SHOP**



There are all sorts of goodies in the BGA shop. This photograph might just grab your interest but it only shows a tiny selection of the shop's range. Apart from sportswear and gliding accessories, such as sun hats and this handsome umbrella, the book list is comprehensive. And best of all shopping this way is effortless. There was an order form as an insert in the last issue but if you want another just phone the BGA on 0116 2531051. You can order by mail, fax or make a personal visit.

80	Janus		None	7.94 1715	Incident Report	62 P2 0	None None	2000 0	
The glider was flown for over 5hrs, in the course of which a flap demo was given. After a normal approach and landing with full flap the right flap was seen to be fully down. The hoteller was found disconnected with the safety pin still in the hole. Two inspections plus operating in flight had not indicated any problem.									
81	ASW-19a	4063	W/O	27.6.94 1900	Nr Sandy, Beds	41	None	170	
The pilot had to make a field landing so chose a large cut grass field. On the downwind leg he saw that it was in fact deep crop so hurriedly picked a small, definitely cut grass one nearby. Landing across the diagonal he misjudged the height of the fence and caught the wheel on barbed wire. This spun the glider around into another fence.									
82	Cirrus	2022	Substantial	27.6.94 1800	Chapel Brampton	27	None	127	
The pilot selected playing fields for a landing but as he thought he was too high on base leg he decided to extend the leg and approach from a different direction. The final turn was made too low and the left wing touched the crop in the next field causing the glider to spin into the ground.									
83	K-8a	1807	Minor	24.5.94 1415	Portmoak	61	None	1	
The early solo pilot on his second flight on type found his landing area obstructed by a previous landing so altered his line of approach. While doing this he closed the airbrakes and the glider flew level in ground effect. A pilot induced oscillation developed and then he opened the brakes causing the glider to stall into a heavy landing.									
84	SZD Puchacz	3782	Minor	18.6.94 1050	RNAS Culdrose	32 P2 39	None None	81 0	
The pilot landed in an area regularly used for landings which crossed from grass on to tarmac. After touchdown the nosewheel hit the raised lip of a drain cover and broke off. Wet weather had softened the ground adjacent to the cover and the pilot had not examined the area on foot before flying on to it.									
85	Chipmunk	Tug	Minor	- 6.94 2025	Incident Report	51	None	0	
After a normal landing the tug pilot taxied off the grass to the runway for the next tow. Taxying into the evening sun he failed to spot a large runway marker board and hit it with the left wing.									
86	DG-200	2603	Minor	10.7.94	Bedale, North Yorks	50	None	2250	
During a cross-country wave flight the system collapsed and the cloud closed in. The pilot descended through cloud into an area of generally landable fields and chose a field which he thought was rough pasture. On landing this was found to be set aside with 2ft grass and patches of thistles 3-4ft high. The glider groundlooped violently.									
87	Bergfalke 2	2159	Substantial	9.7.94 1330	Bradwell Ash	58 P2 56	None None	572 68	
The pilots had to make a field landing after losing lift on a cross-country flight. The chosen field was a good size but neither pilot noticed the downslope until on final approach. The glider, underbraked by modern standards, was obviously not going to stop so P1 put it down in the next small paddock, groundlooping as it hit the far hedge.									
88	K-21	3639	Minor	19.7.94 1755	Sutton Bank	62	None	2	
The pilot was making his third solo flight when he overshot the final turn point in the circuit. He lined up and landed in an undershoot area but failed to roundout in time to prevent a hard bounce. He allowed the stick to move forward and the glider landed heavily on the nosewheel which was pushed into the fuselage.									
89	Pirat	2011	W/O	8.5.94 1500	Upper Winchendon	43	Minor	34	
OFrom the hill and the pilot then found he was flying down the slope. He turned, pulled up over a hedge and the upslope wingtip caught on the ground causing the glider to cartwheel in.									
90	Astir CS Jeans	2450	W/O	23.7.94 1415	Farnborough	27	Minor	24	
The pilot had was making a thermalling turn at about 1500ft near the airfield when the glider collided with a light aircraft climbing out of another airfield. The fin broke off the glider but the pilot was able to bale out successfully despite the low altitude. The light aircraft landed safely despite serious damage to one wing and aileron.									

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## BGA & GENERAL NEWS

91	IS-29d	2045	W/O	14.6.94 1634	North Hill	32	None	460
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The glider was seen to make a low downwind leg before turning on to finals. The pilot landed in a little used undershoot area of the airfield with full airbrake. The 50kt approach speed and full airbrake did not allow a fully held off landing on the slight upslope and the glider bounced, caught a wingtip in the long grass and landed sideways.

92	Cirrus	Minor		14.7.94 1345	Nr Basingstoke	44	None	287
----	--------	-------	--	-----------------	----------------	----	------	-----

On a competition cross-country the pilot had to make a field landing and chose a golf course as there were very few landable fields in the area. On the approach to land on a fairway he overflew two golfers, one of which was reportedly hit by the glider. The glider groundlooped and knocked off the tailskid.

93	ASW-22	Minor		11.7.94 1630	Nr Basingstoke	36	None	277
----	--------	-------	--	-----------------	----------------	----	------	-----

The pilot chose a field to land in but found he was too high when on base leg. He extended this past the field and then turned back. He decided not to make his revised final turn behind the boundary trees but turned inside. Combined with the nil wind, slight downhill slope and late touchdown this made the glider run into the far hedge at low speed.

94	Discus CS	3760	Minor	16.7.94 1830	Membury	40	None	2600
----	-----------	------	-------	-----------------	---------	----	------	------

The glider was being retrieved by aerotow from a disused runway. After good initial acceleration the pilot soon gained aileron control but later in the ground run he allowed one wing to drop and catch in tufts of grass. This swung the glider around before he could pull off despite his left hand being on the cable release.

95	ASW-15b	1938	Minor	17.7.94 1443	Bembridge, Isle of W	49	None	52
----	---------	------	-------	-----------------	----------------------	----	------	----

The pilot found he could not lock the wheel down due to the failure of the locking detent and was advised by radio to land on the grass with the wheel up but it would not lock up. He made a normal approach with the wheel hanging down and then moved his hand from the brakes to hold the gear down. The brakes opened and the glider landed very heavily.

96	Phoebus C	2761	Substantial	16.7.94 1530	Nr Doncaster	70	Minor	1717
----	-----------	------	-------------	-----------------	--------------	----	-------	------

The pilot was returning after thermals become broken and found he had to land in an area of poor fields. He chose a short cut crop field and set up his circuit. At about 200ft the glider passed through a strong thermal off some woods and the pilot realised he could not get into the field. He tried to fly over the far hedge but struck the top of it.

97	Cirrus	3591	Substantial	17.7.94 1430	Husbands Bosworth	57	Minor	367
----	--------	------	-------------	-----------------	-------------------	----	-------	-----

After climbing to 1500ft from a selected field the pilot decided he had enough height to make the airfield. However, he hit strong sink and found he could not reach his field. He tried to fly through the sink but had to make a hurried and heavy landing in a small field. The glider ran into the far hedge and was substantially damaged.

98	K-7	3382	Minor	23.7.94	RAF Upwood	32	None	3
----	-----	------	-------	---------	------------	----	------	---

The early solo pilot made a good crosswind approach until, in the flare, he kicked off the drift ready to land. A gust hit the glider and raised the right wing and swung the glider towards the perimeter fence. The wings were levelled as the glider touched down and the pilot realised it would not stop so initiated a groundloop away from the fence.

99	K-7	3258	Minor	16.7.94 1425	RAF Upwood	50 P2 40	None None	365 80
----	-----	------	-------	-----------------	------------	-------------	--------------	-----------

On an instructor training flight P2 was asked to demonstrate a sideslip approach. When this was done the front canopy opened followed by the rear. A safe landing was made with the front canopy being held in place. The sideslip had been done towards the open front DV panel. This may have been enough to force open a weak or partially closed lock.

100	Dart 17	1293	Substantial	28.7.94 1750	Edge Hill	47	None	76
-----	---------	------	-------------	-----------------	-----------	----	------	----

The pilot approached a cluttered landing area and decided to land between another glider and a barbed wire fence rather than overfly on to 800m of clear runway. The right hand wingtip caught on the barbed wire and pulled the glider around and through the fence.

101	Cirrus	1915	Minor	29.7.94 1820	Kings Stanley	45	None	350
-----	--------	------	-------	-----------------	---------------	----	------	-----

Returning on a marginal final glide the pilot found he could not make the hill top airfield so chose to land in a field at the bottom of the ridge. He approached at 55kt which was insufficient to roundout fully on to the uphill sloping surface and landed heavily. There was also little headwind in the lee of the hill.

102	Vega	2682	Minor	28.7.94	Nympsfeld	48	None	459
-----	------	------	-------	---------	-----------	----	------	-----

As the aerotow launch started the glider moved forward and over ran the tow rope. The slack in the rope caught up in the glider's wheel and the pilot found he could not release. The launch controller stopped the launch and the glider halted after a ground run of about 150m.

103	LAK-12	3944	Minor	30.7.94 1700	Nr Rushden	39	None	347
-----	--------	------	-------	-----------------	------------	----	------	-----

While on a competition flight the pilot had to make a field landing and chose a field of cut rape stubble. He landed at a slight angle to the crop lines and the mainwheel touched down in a deep tractor tyre track. The impact damaged the undercarriage.

104	DG-300	3708	Minor	19.6.94 1300	Sutton Bank	33	None	385
-----	--------	------	-------	-----------------	-------------	----	------	-----

The pilot, who was used to flying a flapped glider which allowed a steep approach to be flown without speed increasing, flew a fast approach in this unflapped glider. He over-estimated the wind strength and rounded out with excessive speed. A PIO followed as the pilot tried to land before the energy had dissipated and damaged the undercarriage.

105	K-13	2317	Substantial	20.7.94 1920	Lasham	34	None	2
-----	------	------	-------------	-----------------	--------	----	------	---

The early solo pilot's previous landing had been well down the field, due to a slight tailwind, so he extended his next circuit. As soon as he turned finals he realised that he was too low so closed the airbrakes. He tried to reach the airfield but landed in corn about 10m short and this tore the tailplane off the glider.

106	K-8	3349	Minor	18.7.94 1330	Abbotstone	31	None	9
-----	-----	------	-------	-----------------	------------	----	------	---

The early solo pilot drifted downwind and became disorientated, losing sight of the airfield. He found himself in sink so decided to land in what he thought was a grass field. But it was standing corn and the tailplane was badly damaged.



107	T-21a	2725	Substantial	27.7.94 1759	Haddenham	20	None	1
<p>The pilot returned to gliding after soloing three years earlier and flew good check flights prior to being sent solo again. He let the slight crosswind blow him downwind of the approach. On the crosswind and diagonal final approach he concentrated on avoiding drift and failed to flare. The glider impacted nose down causing substantial damage.</p>								
108	Olympia 2a	1784	Minor	16.7.94	Wormingford	60	None	20
<p>At the top of the winch launch the cable broke and the pilot probably knocked the airbrake lever open when releasing the cable. He failed to notice the open brakes and soon found he could not make a circuit back to a normal landing. He landed in standing corn on the edge of the runway causing minor damage to the glider.</p>								
109	D77 Iris	2633	W/O	22.7.94 1415	France, Le Blanc	40	Serious	33
<p>Flying at a French airfield the pilot soared for 20min before deciding to return but although he didn't think he would reach the airfield he had to continue as there were no landing fields. The glider's left wing hit a small tree on the airfield boundary causing the glider to cartwheel into the ground, seriously injuring the pilot.</p>								
110	K-13	2406	Substantial	13.7.94 1100	Parham	66 P2 73	None Serious	1025 0
<p>The student flew a rather low circuit and partially opened the brakes as he turned on to base leg. Encountering some sink P1 took over as they were getting too low. He did not realise that the brakes were still held partially open and the glider's wingtip hit the top of a tree and fell sideways into the ground.</p>								
111	Citabria	Tug	None*	8.94 1645	Incident Report	68	None	0
<p>The Citabria tug was on final approach trailing a tow rope which caught around the propeller of a Cessna 150 which was about to land. The engine stopped and the Cessna landed heavily. It was pulled for some distance before the rope broke and the tug pilot initiated a go around.</p>								
112	Ventus B	Minor		29.7.94	Nr Lasham	45	None	320
<p>The pilot set off on a 300km cross-country but soon found he had to make a field landing. The first field he chose proved unsuitable so he selected another which he landed in with the wheel still retracted.</p>								
113	Std Libelle 201	1877	Minor	6.8.94 1630	Camphill	42	Minor	168
<p>After lowering the gear, the pilot opened the airbrakes and the warning buzzer sounded. He checked the gear lever and it appeared to have been fouled by the seat adjustment handle. He decided that he would try and hold the gear locked, leave the brakes out and land. He failed to roundout and landed heavily. The gear was OK throughout the roll out.</p>								
114	K-60a	3508	W/O	14.8.94 1400	Nr Shobdon	47	None	196
<p>The pilot had to make a field landing and chose a grass field. As he flew around the field he saw a line of longer grass across it so planned to land over this. On finals he saw some blue fence posts across his landing run and turned sharply which caught a wingtip on the ground and cartwheeled the glider in.</p>								
115	Std Libelle	201 3780	Minor	21.7.94 0820	Lasham	46	None	49
<p>After a normal circuit and approach the pilot slightly closed the brakes for a "spot landing" and misjudged the flare. The glider ballooned and landed heavily cracking the rear fuselage.</p>								
116	Robin DR400	Tug	None*	8.94 1450	Incident Report	0	None	0
<p>The tug pilot, seeing the landing area obstructed, decided to go-around and in doing so flew to one side of the runway rather than flying straight ahead. He did not see an approaching glider which was in his blind spot and the rope hit the glider canopy, injuring P1's face. The pilot was able to make a safe landing.</p>								
117	Discus B	3406	W/O	26.8.94 1530	Nr Hereford	52	Fatal	800
<p>This fatal accident occurred during a cross-country flight. The barograph trace showed that the glider had slowly descended for some time before crashing. The glider may have spun but apparently crashed in a vertical dive, possibly during spin recovery.</p>								
118	LS-6c	3936	Minor	13.8.94 1600	Nr Chesterfield	63	Minor	916
<p>During final approach to a cut corn field the pilot encountered severe sink so closed the airbrakes but did not reduce flap. Despite this there was not enough height to make the intended field so a landing was attempted in the undershoot field. This field was too short and the glider ran on into a stone wall.</p>								
119	RF5B	M/G SSW	Substantial	18.8.94 1815	Camphill	54 P2 39	None None	515 365
<p>The motor glider's wingtips were unfolded, locked down and the fairings fitted before a DI. As take-off speed was reached the right wingtip lifted to the vertical and the pilot cut the throttle. The aircraft swung around and tipped forward, breaking the propeller and collapsing the undercarriage.</p>								
120	Falke	Motor glider	Minor	8.94 1130	Incident Report	0	None	0
<p>During strong winds the motor glider was parked without the brakes applied and no wheel chocks. The aircraft was blown into a hangar structure which damaged the wing leading edge.</p>								
121	Bocian 1E	1474	Substantial	28.8.94	The Park	53 P2 24	None None	400 0
<p>As the winch launch started the wingtip holder's wedding ring became caught in a small gap on the corner of a metal skidplate. The glider was swung around sideways before P1 could release and the plate detached. The glider landed sideways substantially damaging the rear fuselage on the runway edge. Amazingly, wingtip holder's fingers were intact.</p>								

F=Fatal; S=Serious; W/O=Write off; M=Minor; N=Nil

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Vale of White Horse GC's member, Graham Turner after completing Silver distance to Lasham in his club's K-8.



Above: Sue Harris of Welland GC after going solo. Below: Dukeries GC's first female Silver badge pilot, Beryl Clarke, photographed shortly after her distance flight.



## CLUB NEWS

Copy and photographs for the April-May issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 01223 247725, fax 01223 413793, to arrive not later than February 7 and for the June-July issue to arrive not later than April 11.

GILLIAN BRYCE-SMITH

December 2

### AQUILA (Hinton in the Hedges)

Nick Chapman, chairman since 1987, and Duncan McKay, CFI since 1989, are retiring after giving the club much help and enthusiasm.

The October expedition to Aboyne brought Duncan McKay a Diamond height and Gold heights for Tony Limb and Mel Eastburn, both completing their Gold badges. Jim Hughes has his 100km, Tim Wheeler is an assistant instructor and Ken McAnulty has resoloed.

We have some new members and, thanks to club help, the new clubhouse is in use. S.K.

### BOOKER (Wycombe Air Park)

In an accident free soaring season, our members flew more than 287 000km, gained 11 Bronze, ten Silver, three Gold badges, 20 Gold

legs, six all three Diamonds and three Diamond legs. Eleven became AEIs, two became assistant instructors, "Rocky" Stope won the Booker Regionals, Alister Kay the Open Class Nationals and Tim Scott the Overseas Nationals and was placed 3rd in the 15 Metre Nationals.

The Duo Discus flew about 20 000km and gained its first Diamond height at Aboyne. Members are enjoying free soaring in all the single-seaters throughout the winter and an encouraging number have entered the 1995 free Booker Regionals.

At Aboyne, three members flew Diamond height, 11 Gold height and four Silver height as well as there being numerous other height gains by those with their badges. We soared every day for the three week expedition and the club gliders flew over 200hrs.

Trial lesson sales were up by nearly 10% and course and membership sales were also higher than in 1993. T.R.N.F.C.

### BRISTOL & GLOUCESTERSHIRE (Nympsfield)

A number of visitors from other clubs are enjoying the ridge and wave soaring having taken up our offer of winter membership.

As the wooden plaque we and Lasham compete for has been here all year, we hope there may still be a wooden glider or two that can make the journey in 1995 to collect it and provide some competition.

Jackie Lemin has gone solo and hopes to rapidly progress into the family Discus.

Our field levelling operation to the south is now complete and will provide valuable extra field space once the grass has grown. We have also started phase three of the regrading of the existing field. S.I.D.

### BUCKMINSTER (Saltby Airfield)

We have had a magnificent soaring-season with numerous outstanding achievements - 21 100kms, seven 200kms and a 300, 500 and 750km. The total amounted to over 5000km.

Roy Colman congratulating Marcus Basu of Burn GC after his 5hrs at Portmoak.







Alan Todd, Sherington GC's new assistant instructor, in winter flying mode.

*If you would like to include your club tel No. for the next issue we'll print it at the bottom with the initials.*

Below: Derek Phillips of Stratford on Avon GC in the Eagle he rebuilt. The two hopeful pilots in the back are Leslie Blair and Gillian Ghee. Photo: Frank Jaynes.



Peter Foster photographed Shobdon Airfield, home of Herefordshire GC, on a flight from Sleep in a Cessna 150.



Above: Harold Holsworth of the Yorkshire GC being presented with an honorary life membership by chairman Jim Hill. Below: David Hazard (l), who soloed on the fifth day of a Midland GC course, with one of his instructors, Paul Garnham.





Kevin Hunt has gone solo and Bill Morecraft achieved Gold height at Feshiebridge. Geoff Cotton is now our safety officer.

We hosted a very successful four day aerobatic course in October with Peter Mallison, Mike Woodlard and Guy Westgate instructing.

Bonfire night and the fancy dress Chinese evening were excellent.  
N.R.C.

**BURN (Burn Airfield)**

After a lengthy period of members shivering at a draughty launch point, we have a new luxurious tea bus once more.

Expeditions during the autumn included the Std Cirrus being taken to Aboyne by the Flannery and Clayton syndicate, and a week at Portmoak by Ian Atherton, Roy Coleman and Marcus Basu, where Marcus gained his 5hrs.

As a change from raiding our clubhouse, which is well alarmed and reinforced, intruders broke into our workshop and stole £1000 worth of tools and equipment, some of which belonged to members.  
P.N.

**CAMBRIDGE UNIVERSITY (Gransden Lodge)**

We have an open day on the Saturday after our 60th anniversary dinner on Friday, April 21, at Gonville and Caius College, so that we can introduce past members to our new site. See our advertisement in the last issue, p313, for details.  
B.B.S.

**CORNISH (Perranporth)**

During our Aboyne expedition Diamond heights were achieved by Ivan Foster, John Stewart-Smith and Shaunne Shaw. Gordon Hunter, our DCFI, also gained his Diamond height (but in a Culdrose glider that had joined our expedition).

We plan some Christmas flying and have our annual dinner in January. A group from the Long Mynd visited us in November.  
S.S.

**CRANWELL (RAF Cranwell)**

Bruce Tapson has taken over from Mick "Porky" Woods as CFI after three successful years. This is the third time for Bruce.

At the AGM in November trophy winners included Ged McKnight, Mick Lee, Brian Hutchinson, Richard and Teresa Brown and Adam Clark.

The club fleet is changing again with the loss of our long serving Janus C but we are expecting a replacement soon. We also hope to have a new winch by January which should improve our dwindling launch rate.

We have a mobile 'phone (No. 0585 836669) at the launch point bus.  
R.A.B.

**DEVON & SOMERSET (North Hill)**

As we have a fall in membership, the committee are planning a publicity drive, coupled with improved flight arrangements.

Stuart Procter and Geoff Cook have AEI ratings. Although overall launches, flying hours and cross-country kilometres for 1994 are down from 1993 levels, there is still an air of satisfaction with Ron Johns' completion of all three

Diamonds and a good bunch of solos and Silver badge flights.

Dave Reilly is back at the top of the club ladder on which there are 26 pilots (more than for several years).

Hopefully the BGA instructors' cross-country course (28 May-June 3) will be full.  
I.D.K.

**Obituary - Chris Oldfield**

It is with sadness that we report the death of a popular and reliable member, Chris Oldfield. He joined the club in 1990 and was always ready to lend a hand and "muck in" with whatever was needed.

Part owner of a K-6CR, Chris obtained great satisfaction from gliding.

Considerate, a true gentleman - we shall miss him. We extend our sympathies to Lois, Kate, Annabell and Lottie.

**Sandy Harrup**

**DEESIDE (Aboyne Airfield)**

At our annual dinner-dance trophies were presented to Sarah Harland (club ladder and best cross-country flight by a member from Deeside, Highland, Cairngorm or Angus GCs); Jack Stephen (best gain of height); John Tanner (CFI's award for best progress - at 16 years-old he has a Silver badge and Gold height) and the trophy for the best all round contribution was awarded to the whole Smith family.

John Tanner had his hair cut at the dance with a pair of garden shears and raised over £400 for Children in Need.

Mary Rose-Smith has a Bronze badge; Duncan McKay went solo and gained Silver height; Cameron Robinson has Diamond height; Richard Holt Gold height and Dave Pirie has a Silver badge.

November saw us at 22 000ft.  
G.D.

**DUKERIES (Gamston Airport)**

Craig Hobson and Andy Martin have gone solo. The ground has been cleared and levelled on the NE side of the hangar ready for our new workshop.

We had a most enjoyable bonfire night party.  
**J.C.P.**

**ENSTONE EAGLES (Enstone Airfield)**

We have replaced the Blanik with a K-7/10. Plans are under way to install hand controls in the back seat for Steve Veness so that he can train for his AEI rating.

The Rolls Royce winch had its first airing in the autumn and is a vast improvement on the Jaguar winch which has now retired for a much needed overhaul.

The Long Mynd trip in October was a success; the weather was good most of the week and although there was no wave, members clocked up several hours on the ridge and local soaring.

Autumn was otherwise very quiet so we started a "team scheme" to tackle the various jobs needing to be done around the club - many thanks to those members who have volunteered.

Paul Noonan is an assistant instructor and Mike Weston has his Silver badge.  
L.J.B.

**FENLANDS (RAF Marham)**

We have sold our ASW-19 and gained a second Discus CS. We are also swopping one of our two K-13s for a K-21 after Christmas, giving a much improved cross-country training capability.

Our AGM in November was well attended and provoked some lively discussion. It was followed by the traditional party that was even more lively! Al Raffan, an old stalwart, has returned after a period away from the club.  
A.R.M.

**GLYNDWR (Lleweni Parc)**

Despite the weather not being brilliant, we have had many ridge and wave days, some to more than 17 000ft.

Our recently introduced "wave diary" in which pilots recount their wave experiences is beginning to show that we have considerably more wave conditions than previous thought, even in southerly and easterly winds.

We had a practice annual dinner in November (practice makes perfect!) which was highly successful. The real one is in February.

Glyn Humphrys has gone solo and we now have two Capstans on site, which is a significant proportion of those still flying.  
B.L.

**KENT (Challock)**

At our annual dinner and prizegiving we said farewell to Jean and Colin who have staffed our clubhouse for the past 17 years.

In 1994 we had expeditions to Aboyne, Portmoak, Aston Down and Sutton Bank and were represented in two Regionals and one Nationals.

We have given a home to the Air Cadets' Gliding School from West Malling who were forced to leave their site owing to council development.  
A.R.V.

**LAKES (Walney Airfield)**

We are on the up and up! Last time we reported a new clubhouse, this time a K-21. It took a three day round trip to bring it back from Germany with particular thanks to Andrew Tebay and Peter Scheer in Germany.

At our annual dinner/prizegiving awards went to Peter Redshaw for best cross-country, best flight and the club ladder; Maggs and Yvonne, "the gallery girls", services to the club; Alan Dennis best progress; Peter Lewis and John Burdett jointly best gain of height; Alan Meadows best flight by a non-Silver pilot and Roger Copley the wooden spoon.

In October Peter Lewis and John Burdett gained Diamond heights and Alan Dennis Gold height at Feshiebridge.

"RIP" Pearson has gone solo and Roger Copley and Elwood Mancini have Bronze badges.  
A.D.

**LASHAM (Lasham Airfield)**

We had a successful flying and financial year with plans to improve the canteen, bunkhouse, the clubhouse surroundings and the glider and tug fleet.

Andy Aveling has taken over as tug master



from Mark Thompson who showed great enthusiasm.

Fiona, of the famous Buchanan family (mother, father, and all three daughters fly), went solo on her 16th birthday on a five day course.

Dave Dripps has welded on a cunning contraction to the cable retrieve vehicle to improve turn round time. The parachute now remains attached to the cable during the retrieve.

To improve glider utilisation during the winter, no soaring fees will be charged after 6min. Surrey and Hants GC are also increasing utilisation by reducing charges to non-members. A.M.S.

#### LONDON (Dunstable)

At an EGM a majority voted to build an extension to the clubhouse and the committee is now endeavouring to raise the funds. The new building will house a bar, lounge, balcony, and staff accommodation, as well as the more mundane utilities of a club. It will replace the wartime huts that have become such an eyesore at Dunstable with a prestigious building and landscaped area.

Our extensive publicity campaign has borne useful fruit and membership has increased significantly to the highest level in many years.

We have bought two Robin DR 300s from a French club and are refitting them as tugs over the winter. Then we hope to sell one, and thus increase our tug fleet to four.

Plans for 1995 also include a wide range of courses for all levels of experience. R.C.

#### MARCHINGTON (Tatenhill)

The summer ended very abruptly on August Bank Holiday. However, our summer evening group courses have again been successful, thanks to Bob Gibb and helpers.

Val Roberts is our first female assistant instructor. Grant Williams has soloed and Bill Ulyett, Bob Thacker, Nigel Dukes and Andrew Davis have Bronze badges and Peit-Walton Knight, Jim Robinson, Alan Carr (three legs in one flight) and Paul Walton Silver badges. Diamond distance was flown by Paul Shelton in a competition and Andy Chapman and Phil Pritchard have AEI ratings.

Our very frustrating search for a new site continues. P.M.P.

#### MIDLAND (Long Mynd)

The last week of the course season was busy with lots of visitors from other clubs, as well as course members. We are open all winter at weekends and flying during the week is possible by arrangement. We welcome visitors, so take note for autumn 1995.

David Hazard, Colin Knox (our second winch driver), David Thomas and Howard Whittaker have soloed. David Hazard had won his course as a prize and went solo on the fifth day. Brian Cleugh has gained his Silver height. A.R.P.

#### NORFOLK (Tibenham Airfield)

With the disappearance of the soaring weather, social activities are to the fore. The conference

room has been refurbished with new curtains and chairs. We have had quizzes and a bonfire party.

Training continues on four days a week and land yachting is the latest craze. Unfortunately Snoopy is spending the winter at Crowland. B.W.

#### OXFORD (Weston on the Green)

At our AGM in November Steve Evans became chairman, Barry Taylor secretary and Simon Hogg joined the committee.

Trophies were won by Graham Barrett (club ladder); Howard Stone (most outstanding flight - Diamond goal in his Pilatus); Peter Awcock (first Silver duration of the year); Chris Emson (best flight in a club glider - a race win in our Astir at over 99km/h); Phil Hawkins (best height from our site); Andy Butterfield (services to instructing) and Martin Hastings, the flying brick for twice landing out a couple of fields away.

Congratulatory bottles were presented to Brian Payne, Graham Barrett, David Weekes, Chris Buck, Tony Boyce and John Hanlon for services nearer to the ground. F.B.

#### PETERBOROUGH & SPALDING (Crowland Airfield)

Our AGM in November was reasonably well attended and resulted in a few committee changes. Lois Thirkill, secretary, and Steve Turner, treasurer, have resigned and Roger Gretton has stood down as chairman to concentrate on being tug master.

George Willows is now secretary, Glenn Williamson treasurer and Noel McLaughlin is chairman, with Trevor Nash and Les Rigby also joining the committee.

Mick Thorpe has gone solo and a LAK-12 will shortly join the private fleet. G.E.W.

#### PORTSMOUTH NAVAL (Lee on Solent)

We made a successful pilgrimage to Aboyne in October where Tony Wahlberg, Pete Brown, Tom Edwards and Nigel Gilkes gained Diamond heights and Bill Roebuck and Phil Taylor Gold heights. Back home, Brian Reid gained a Bronze badge.

We have started our major maintenance work, part of which is a 180 HP Lycoming conversion on a Chipmunk airframe. We have sold our Std Astir 2 and are looking for another intermediate glider.

We have our annual dinner-dance in January. J.P.

#### SCOTTISH GLIDING UNION (Portmoak Airfield)

The wave season which gave enjoyable flying was curtailed by appalling weather.

Both K-21s are on site, the second bought with our recent return from the tax man. We plan to buy new single-seaters and to clear the loan on the winch. We are even ending the year in a noticeably healthy financial position, as was highlighted by Roger Coote on a recent visit to the club.

Dick Middleton's DG-800 is on site. Is it the first in Scotland (Britain?).

We are saddened to learn of the death of David Bruce a keen instructor and organiser of our task weeks. He was a gentleman and friend to us all. G.S.G.

#### SHENINGTON (Shenington Airfield)

The winter lecture programme is going well with good attendances.

We have been rained off all too frequently lately, but have nevertheless had a couple of reasonable wave and ridge days. The club will shortly have an additional K-13.

Stuart Meier and Jacqui Miles have Bronze badges, Rob Russon completed his Silver with a distance leg and Bruce Hopkins gained Gold height at Aboyne. Alan Todd has his assistant Cat rating and Alex Hartland an AEI rating.

Members have been on expeditions to Aboyne and the Long Mynd during the last month and enjoyed the wave and hospitality. T.G.W.

#### SOUTHDOWN (Parham)

Ian Ashdown, Craig Lowrie, Geoff Burtenshaw and Dave Connaway visited Denby where heights of 11 000ft were attained. Dave, making a welcome return to gliding, resoloed and should soon be back to his old competitive best. Les and Jane Merritt, Tony Poundsbery and Chris Hancock went to Aboyne, where Chris reached a ceiling of 10 500ft.

Peter Wells, John King, Mick Dunford and Bob Stringer have been rebuilding a Foka-4 which should be ready this coming season.

We ratified our new constitution in November when a superb buffet was provided by our female members.

Our 1994 cross-country league was won by Brian Bateson with Les Blows a close 2nd. P.J.H.

#### STRATFORD ON AVON (Snitterfield Airfield)

At our AGM Neville Skelding retired after 17 years' unstinting service as secretary along with chairman Tony Edlin who gave his best over two spells in the chair during turbulent times.

Leslie J. Harris, auditor for many years, and treasurer Nigel Spedding have also retired. They have all made a valued contribution to our prosperity.

Geoff Butler is the new chairman and continues as membership secretary, Martyn Davies secretary and Brian Tebbitt treasurer with Peter Fanshawe, Roy Wood and Bob Hill joining the committee.

John Bannister, Charles Stearman and Rob Palfreyman (instructor Tony's son) have gone solo, Rob on his 16th birthday.

Our two powerful diesel winches are giving superb launches, frequently to the legal limit for cables, and our original winch has new drums.

Thelma Edlin is running a very efficient catering operation. H.G.W.

#### THRUXTON (Thrupton Airfield)

Peter Craig has a Bronze badge, John Boyle Silver height and Keith Auchterlonie and Krista Wilde went solo with Keith going on to get his B Certificate.





Dukeries GC's Craig Hobson (l) with instructor Keith Gregory after going solo.



Steve Noad (in the Discus) and Dick Verity of Kent GC waiting on the grid during the Northern Regionals at Sutton Bank.



Tony Edlin, retiring chairman of the Stratford on Avon GC, (l), with the auditor, Leslie Harris (holding the painting presented to him on his retirement), and Neville Skelding, retiring secretary. Tony and Neville were given books in recognition of their contribution to the club.

A successful expedition to Le Blanc, France, this summer resulted in Gold distance for Mike Thorne and Andy Mercy, Andy completing his Gold badge.  
J.B.L.

**ULSTER (Bellarena)**

A three year C of A at Aldergrove for hard working Super Cub G-TUGG is scheduled for mid-

January. For the enforced stand-down we plan a blitz on both club and private Cs of A together with some modest site works. Overall, we're entitled to regard our first year on the new field as a great success, measured if not in terms of outstanding cross-country flying or wave climbs, then at least in work accomplished, launches flown, growth in membership and particularly the number of aircraft on site.

The affiliated Queen's University GC seems to have caught a good crop of freshers this year and has put a caravan bunkhouse on site: nominally it sleeps eight but with students who knows?

Our new gaffer, as CFI, is Harry Hanna while Jim Lamb and Peter Richardson are our newest AELs.

We've had a heartening number of cross-Channel visitors, continuing even during the dog days of December and confidently expect hordes in 1995.

What about you? Give us a bell on 015047 50301 (clubhouse).  
R.R.R.

**VALE OF WHITE HORSE (Sandhill Farm)**

Our winter maintenance schedule has started with work being done on the club fleet in preparation for Cs of A, the latest vario/averagers being fitted during this time.

We have a new tractor/retrieve vehicle to give more flexibility and to improve our launch rate.

We are repeating the popular winter lectures with additional lectures to enable members to gain their radio operator's licence.

A.J.W.

**VECTIS (Isle of Wight)**

Ray Ginsberg has gone solo after rejoining the club after a two year absence. Mike Squibb also soared for over 1hr in the club K-8 for his first Bronze leg.

At our well attended annual dinner CFI Neil Watts presented awards to James Coleham (most improved pilot who went solo in 26 launches); Malcolm Huddart (for maintenance

The three photographs along the bottom of the page are of first solo pilots. On the left, Ray Ginsberg, Vectis GC; centre Ian Helme, South Wales GC and right Keith Auchterlonie of Thruxton GC.





work on club equipment) and the good luck "Parrot" to Chris Waghorn to give him better luck with undercarriage mechanisms.

Having just spent a year learning the best way to pack the hangar we have to start all over again due to our landlords wishing to store another Trislander wing in the hangar.  
M.J.H.

**WELLAND (Lyveden)**

Our trip to Aboyne in October was very successful with Diamond height for Richard Large in his new Discus, Gold height for Alan Bushnell and our K-7 reached 22 500ft, flown by Barry Chadwick and Ken Wells.

Gordon Cree, Laura Lindell and Phil Edgar have gone solo.

Mark Prickett completed his Silver with 5hrs from a cable break launch. Peter Willock has Bronze and Silver height; John Ainsworth Silver height; Roger Grey Silver height and distance and Andy Shaw his distance. Andy Parish is now a full Cat. Dick Short flew another 300km with a faulty TP photograph.  
R.H.S.

**WOLDS (Pocklington)**

With the wave season upon us, we have had good climbs to 12 000ft.


The dinner-dance went well with trophies going to the following - Glen Ward (most progress); Alan Hunter (longest distance and club ladder); Michael Fox (task weekend); Bob Fox (outstanding achievement); Dave Bowes (task week) and Derek Roddie (most meritorious flight).

Our CAA safety evening went well and we were joined by other flying clubs in the area.  
M.F.

**YORKSHIRE (Sutton Bank)**

Flying continues throughout the winter months and we operate seven days a week.

John Carter has Silver height and Paul Foster and Jon Ketlaar have Diamond heights.  
C.L.



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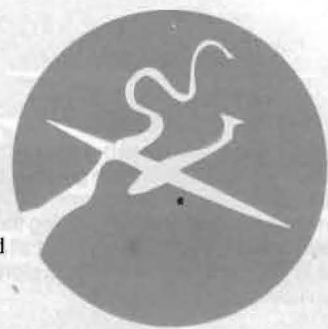
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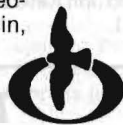
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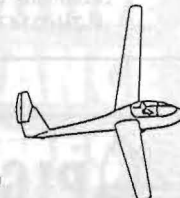
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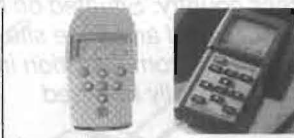
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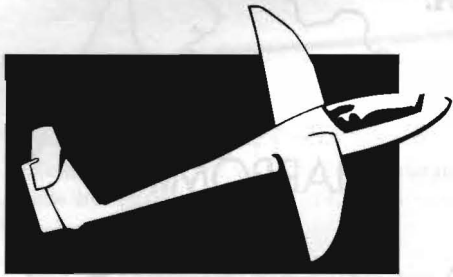
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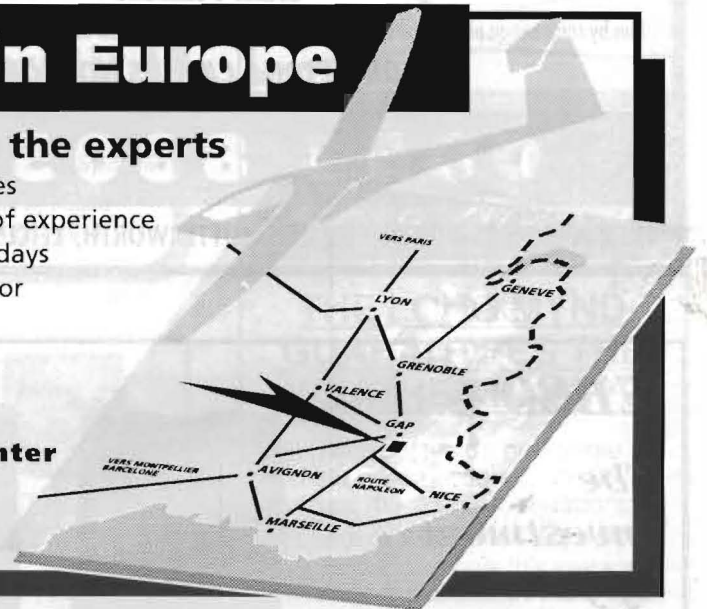
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# CLASSIFIED SECTION

TO PLACE AN ADVERTISEMENT IN THE CLASSIFIED SECTION, please send your remittance together with a copy of your wording to Tiffany Rolfe, BGA, Kimberley House, Vaughan Way, Leicester LE1 4SE (Tel 0533 531051 or Fax 0533 515939), before March 6th for next publication. Any advertisements received after this date will be carried forward to the next edition of S&G. Rates 70p per word with a minimum of £14.00. Black & White photographs accepted £6.00 extra. Box No. £3.00 extra. Prices include VAT.

## FOR SALE

**K-7**, basic instruments, C of A, open trailer, £5000 ono for quick sale. Tel Robin Parker 0472 603778.

**NIMBUS 30r** 25.5m. Competition panels, trailer, T-hangar, based Gransden Lodge. 1/4 share, £20 000. Tel: John Bridge 0763 848478 (eves).

**VEGA 15/17m**. Schofield twin axle trailer. Towing-out gear, Bohli, barograph, oxygen system, 750hrs, good condition, view at Aston Down. Chris Clarke 0453 766252 evenings.

**VENTUS 2b**. Complete including oxygen, GPS and L-NAV. Easy one man rig/de-rig. 0224 733782. £32 000.

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**SCOTTISH GLIDING UNION**. Due to the imminent arrival of 2 K-21s, we will have for sale the following gliders, K-13, K-13/7, Bocian & 2 x K-8s. All reasonably priced for quick sale, £12 000. Phone Alan. Day 0383 510653. Night 0383 511917.

**VENTUS BT** (16.6). Excellent condition, 785hrs, engine 21hrs; ZENDER (Compass) computer, FSG71M, winglets, Komel trailer, tow-out gear etc; £34 000 ono (or shares thereof). Tel 0171 829 8570 (work) or 01438 747753 (private).

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**NIMBUS 3DM No: 60**, 1/6th share for sale. Kept fully rigged and ready to self launch. Reclines in private hangar at LASHAM. This friendly syndicate of six owns 1/2 the hangar which contains only two gliders. Ideal for mature/lazy/infirm pilot who, solo, can extract glider from hangar, tow to launch point and self launch. The Golden opportunity to beat all two place motor glider records with it's 1.57 glide angle. Comprehensively equipped with GPS, logger, SNAV, radio plus chutes and trailer. New engine & C of A. A snip @ £16 000 (includes 1/12 share of hangar). Contact David Innes Tel: 0481 38911. Fax: 0481 38784.

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**SLIMBACK PARACHUTE**, Bohli compass, Ferranti horizon plus inverter, audio for PZL/winter vario, E2 compass, altimeter. Alan Purnell 01252 615365.

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**KESTREL 19** including glass-fibre trailer, instruments, barograph, radio, tow-out gear, oxygen, £11 500. View Gransden Lodge. Tel: 0767 680956 or 0582 422545.

**IS-28b2** (34:1). Two seater, aerobic, superb condition, 900hrs, full panels, dual horizons, compasses, audio/V's, radio, excellent enclosed aluminium trailer, £13 000. Tel 010353 1 8206100 (day).

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**LS-7**, low hours, Cobra trailer, competition kit, £30 250. Tel 0256 764560.

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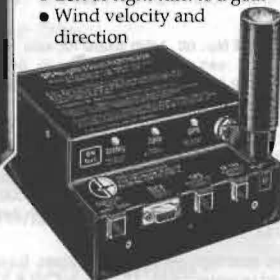
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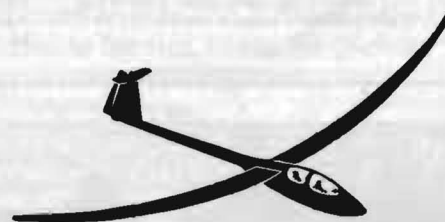
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# BGA CONFERENCE & AGM

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A timetable and ticket application forms are available separately.

For trade stands please contact **Mrs Margaret Gomersall at the Yorkshire Gliding Club (Tel. 0845 597237, Fax 0845 597307).**

**ASW-20** Good condition, 1 owner, no accidents, 1000hrs, new C of A. Tow-out gear, full panel. £18 500. Chris Mayhew 0420 478291 (home).

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**ASW-22** – Any condition, hull only or complete outfit. Telephone 0489 877289.

**DG-101, PEGASUS, ASW-19** or similar, good condition with good trailer. Hull only with trailer considered. Phone: Dave 0794 340655.

Affordable big wings **NIMBUS 2, KESTREL 19** or similar. Must be complete outfit. Cash waiting for best deal. 091 2223407 work.

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**NYMPFIELD** require the following additional staff for June, July and August 1995. Both positions are Mon-Fri and can include food and accommodation if required. Salary negotiable. Full time winch driver – full time air experience instructor. Extra qualifications may be useful. Reply to Les Bradley, Bristol & Glos Gliding Club, Nympsfield, Nr Stonehouse, Glos. GL10 3TX or telephone 0453 860342.

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