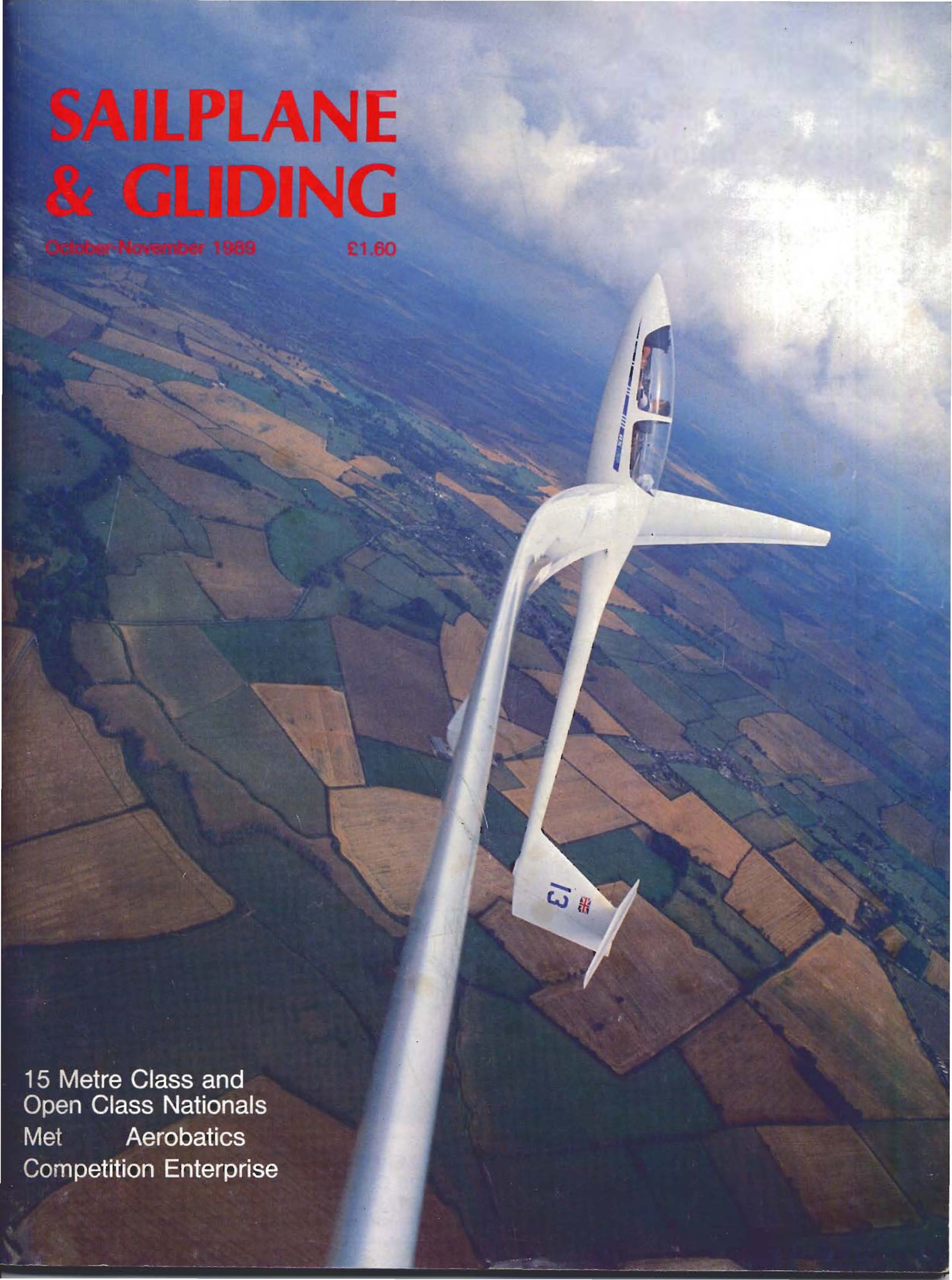
SAILPLANE & GLIDING

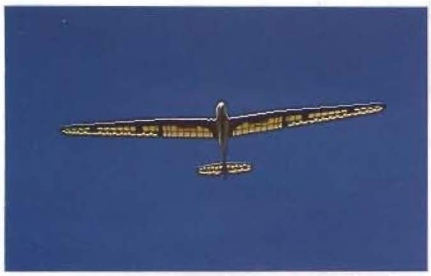
October-November 1989 £1.60



15 Metre Class and
Open Class Nationals
Met Aerobatics
Competition Enterprise

Segelflug-Bildkalender 1990

21st Edition



SOAR THROUGH 1990 WITH US MONTH BY MONTH!

The 1990 Soaring Calendar, now in its twenty-first year of production, provides a baker's dozen of the World's top sailplane pictures. On the rear of each page of the month you will find additional photographs, drawings and fascinating information about the places and the aircraft presented in magnificent full colour on the front.

Whether your mental VSI hits 10 knots in response to the latest in Teutonic glass fibre aerodynamics, wafts nostalgically upwards at 2 knots at the sight of pristine pre-war elegance, or vibrates with excitement at the vision of a humble motor glider, this calendar presents the full range of the soaring experience to keep your spirits aloft throughout 1990, whatever the weather. Photographed and written by glider pilots, for glider pilots. Make sure of your 1990 copy now.














Price, including VAT, held for third year at £11.50 (plus £1.50 postage).

AEROSPACE INFORMATION CENTRE
26 CHURCH STREET
STAPLEFORD, CAMBS CB2 5DS
Tel: Cambridge 843400 (after 5.30pm)

Magazine of the
British Gliding Association

Kimberley House, Vaughan Way
Leicester, LE1 4SG
Tel Leicester 0533 531051

October-November 1989
Volume XXXX No. 5

EDITOR
Gillian Bryce-Smith
281 Queen Edith's Way, Cambridge, CB1 4NH
Tel 0223 247725
Fax 0223 247725

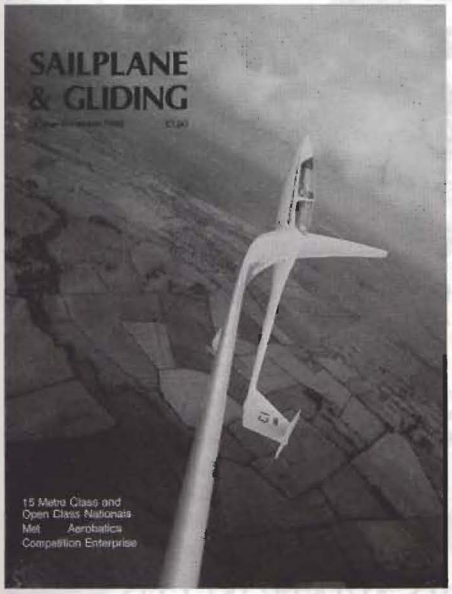
CONSULTANT EDITOR
Rika Harwood
66 Maisemore Gardens, Emsworth, Hants, PO10 7JX
Tel 0243 374580

SUBSCRIPTIONS
Bev Russell
BGA Office

COMMITTEE
R. Q. Barrett (Chairman)

ADVERTISING MANAGER
Helen Ritchie
Cheiron Press Ltd
241 Desborough Road, High Wycombe
Bucks BP11 2QW
0494 442423

PUBLISHER
British Gliding Association
(Barry Rolfe, BGA Administrator)



Cover: Tony Hutchings took this dramatic shot of the ASH-25 flown by Robin May, Open Class Champion. Tony's camera was on a boom mounted on the wingtip and he used a radio remote control to fire the shutter.

SAILPLANE & GLIDING

221 YOUR LETTERS
M. Fairclough, P. Mulacz, H. G. Peters, I. W. Strachan (reply by D. V. Steynor), Y. Rosen, I. Daglish, A. J. Watson, W. E. Richards, R. R. Rodwell, P. F. Foster

226 WIND SHEAR, DOWNDRAFTS AND VORTICES – Part 2
T. A. M. Bradbury

228 CRISP ROLLS IN THE MORNING
C. Thomas

230 SURVIVAL FROM SAILPLANES
R. P. Saundby

232 35 YEARS ON
T. J. Wills

233 MERRI'S PROGRESS
Merri Head

234 THE XXI OSTIV CONGRESS, 1989
F. G. Irving

236 LIMITED OPTIONS
J. L. Bridge

237 WAY OFF TRACK
Penguin

238 15 METRE CLASS NATIONALS
E. R. Lysakowski

239 FINAL RESULTS

240 OPEN CLASS NATIONALS
M. Bird

244 THE 1989 COMPETITION SCENE

247 OPEN CLASS FINAL RESULTS

248 THE BACK SEAT IN FIRST CLASS
B. Dalrymple-Smith

249 MARY IN RUSSIA
Mary Meagher

250 TOURNAMENT IN TOURAINE
J. C. Riddell

252 BGA & GENERAL NEWS

253 GLIDING CERTIFICATES
BGA ACCIDENT SUMMARY
J. Shipley, D. Wright

257 NATIONAL LADDER RULE CHANGES
E. Johnston

258 CLUB NEWS

Member of the Royal Aero Club and the Fédération Aéronautique Internationale

Leicester Printers Ltd., Leicester.



THE SUPER DIMONA HK 36
A REAL STRIDE FORWARD

16.2m span extendable to 17.6m

CHOICE OF ENGINES

For details

John Adams
Soaring (Oxford) Ltd

Hoo Mill, Ingestre, Stafford
(0889) 881495
FAX (0889) 882 189

Grob G103 Twin III Acro built to Grob high standards for spring 1989 delivery

Excellent for basic training through to performance training

Send for details:

JOHN ADAMS
SOARING (OXFORD) LTD
Hoo Mill, Ingestre, Stafford
Tel: 0889-881495 FAX 0889 882189



CAMBRIDGE

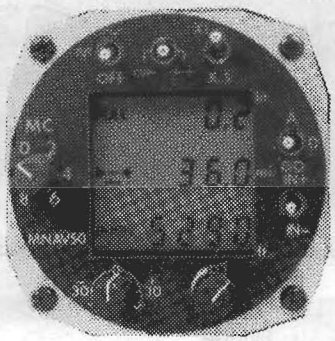
A SELECTION FROM OUR PRODUCT RANGE



CAV II

Vario – Averager – Audio

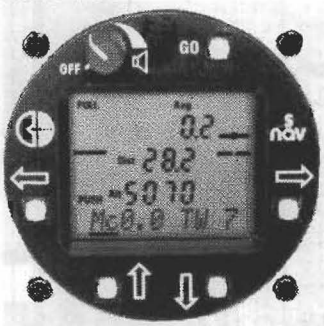
£329+VAT (£378.35)



M-NAV 50

Vario/Nav System – Four function audio Speed Command – Final Glide Computer

£998+VAT (£1147.70)



snav

Vario/Nav system – Graphic final glide display Programmable Tasks and statistics

£1674+VAT (£1925.10)

Our Record Speaks for itself.

E & OE

CAMBRIDGE AERO INSTRUMENTS
WARREN-SUGARBUSH AIRPORT
RR BOX 109A WARREN, VERMONT 05674 USA
PHONE: (802) 496-7755 FAX (802) 496-6235
ALL CAMBRIDGE PRODUCTS CARRY A FULL 2-YEAR WARRANTY.

Available from:
RD AVIATION LTD
UNIT 23, BANKSIDE, KIDLINGTON
OXON OX5 1JE
☎ 0865-841441 FAX 0865-842495

OSBORN & LOWNES

STORMPROOF/THERMAL INSULATED OUTWEAR

O-zee



For many years glider pilots have been unable to find suitable clothing to combat the extreme temperatures experienced while flying at high altitudes. Does the thought of putting on layers of thermal vests, shirts and jumpers plus a couple of pairs of trousers and other various clothes make you look and feel like a spaceman put you off flying?

The O-Zee flying-suit has been developed to overcome all of these problems and yet still has the panache and practicability that every glider pilot demands.

The secret of the O-Zee MK2 suit is the usage of the most high-tec fabrics on the market today. The outer shell comprises of two handy sized flapped pockets, one on the breast the other on the left shin, and two very spacious hip pockets all manufactured in Aquatex Breathable Fabric. The fabric composition is 64% Plolyester and 36% Polyurathane making it very durable, waterproof and still letting the suit breath.

The quilted lining, Thinsulate, is a microfibre material made by 3M contains microfibres ten times finer than typical synthetic fibres. Thus giving an amazing improvement in warmth due to the trapped air.

The combination of these top quality fabrics gives O-Zee this opportunity for all glider pilots the warmth and comfort they have been dreaming of.

The O-Zee flying-suit is available in four colours, Black, Royal, Sky Blue and Morello with an option of mixing any of the four colours or adding our Satin Yellow, an extra charge is made for this service.

Sizes range from Small to Extra large and also Long lengths for those very tall people out there, a made-to-measure service is also available.

The price of this outstanding suit is £110 inclusive of VAT and Postage and Packing. All major credit cards are welcome. For any further details please contact:

OSBORN & LOWNES
11 NELSON DRIVE, LEIGH-ON-SEA, ESSEX SS9 1DA
OR TELEPHONE: 0702 471613

HARRY MENDELSSOHN

DISCOUNT

TRANSCEIVERS

SALES

ICOM IC-A20 (CAA approval No. LA341/G62C)
720 channel transceiver (expandable to 760 channel) with VOR (OBS & CDI)
standard accessories include:
rechargeable Nicad Battery, mains charger, 12v. DC charger, Leatherette carrying case, belt clip, & earphone £350

ICOM IC-A2 (CAA approval No. LA328/G59C)
720 channel transceiver
standard accessories included as with IC-A20 . £299

NARCO HT870 (CAA approval pending)
760 channel transceiver with VOR (OBS & CDI)
standard accessories include:
rechargeable Nicad Battery, mains charger . . £299

KING KX-99 (CAA approval No. LA342/G64C)
760 channel transceiver with VOR (OBS & CDI)
standard accessories include:
rechargeable Nicad Battery, mains charger belt clip & headset adaptor £379

WE ALSO STOCK A COMPREHENSIVE RANGE OF OPTIONAL ACCESSORIES FOR THE ABOVE TRANSCEIVERS

*TRANSCEIVER PORTABLE POWER AMP. Boosts any handheld transceiver to 10 watts (30 watt P.E.P.)
*(not CAA approved) £149

AMERICAN EXPRESS · ACCESS · VISA

ADD 15% VAT (U.K. ONLY) TO ALL PRICES
TELEPHONE AND MAIL ORDERS DISPATCHED IMMEDIATELY

DISCOUNT SALES
34, BUCKSTONE ROAD,
EDINBURGH, EH10 6UA SCOTLAND UK.
TEL: (031) 445 4444 & 3896
FAX: (031) 445 4454
9 a.m.-10 p.m.



For top flight gliding insurance...

...at down to earth prices.

We are insurance advisers to the BGA with over 30 years professional service to gliding.
We also provide insurance, reinsurance and related risk services to clients throughout the world.
For details of our competitively priced insurance, call
Peter Matthews on 01-377 3125.

Sedgwick

Sedgwick Aviation Limited, Sedgwick House, The Sedgwick Centre, London E1 8DX.
Telephone: 01-377 3125 · Telex: 882131 · Facsimile: 01-377 3077
A Lloyd's Broker acting as agent of SG Services Limited.

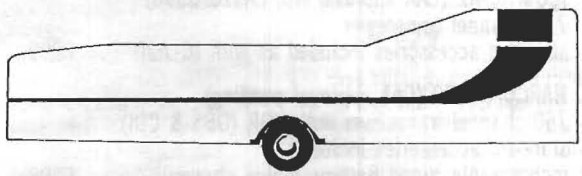
AMF ENTERPRISES

THE FAMOUS 'DROOP SNOOT' TRAILER
BEST CHOICE FOR YOUR GLIDER

Designed and Built by AMF ENTERPRISES – Britain's Biggest, Most Experienced Manufacturer

CHECK LIST – Tick* each feature you would expect to find in your 'Best Buy' Glider Trailer:

- ☐ HIGH SPECIFICATION, UNSURPASSED QUALITY
- ☐ ALL ARGON SHIELD-WELDED TUBULAR STEEL FRAME
- ☐ HIGH-GRADE ALUMINIUM SHEET SKIN
- ☐ 12mm EXTERIOR GRADE PLY FLOOR (UNDERSEALED BEFORE ASSEMBLY)
- ☐ GRP SELF-COLOUR MUDGUARDS (FOR ZERO MAINTENANCE)
- ☐ CURVED SIDES, 'STAND-UP BACK', 'DROOP SNOOT' (FOR MIN. DRAG, MAX. STABILITY)
- ☐ 'AVONRIDE' AXLE, AUTO-REVERSE, HYDRAULICALLY-DAMPED HITCH (FOR SUPERB BRAKING EFFICIENCY)
- ☐ RADIAL TYRES AND SPARE WHEEL AS STANDARD
- ☐ FULL STATUTORY LIGHTING
- ☐ DROP POLE FOR PARKING SECURITY
- ☐ FULL RANGE OF 'OPTIONS'
- ☐ SPECIALLY-DESIGNED AMF FITTINGS
- ☐ AIDS FOR SOLO TOWING
- ☐ 'USER HANDBOOK AND MAINTENANCE GUIDE' (SUPPLIED WITH EACH TRAILER)
- ☐ CHOICE OF ACCESSORIES (WING ROOT DOLLYS, COLLAPSIBLE TRESTLES, ETC.)



***All these are in your AMF Trailer**

STOP PRESS!

AMF Enterprises have won yet another high-spec. Ministry of Defence contract to supply Glider Trailers for Royal Air Force (Air Cadets).

For Full Specification and List of 'Options', Fittings and Accessories:
Call in, write or telex: Membury Airfield, Lambourn, Berks. RG16 7TJ. Tel: (0488) 72224 Telex: 848507 (MIFLI)

YOUR LETTERS

BBC WEATHER FORECASTS

Dear Editor,

Has the BGA placed a "mole" in the BBC TV weather forecast department to leak out normally restricted information of use to glider pilots?

When this happened for a brief period in July I could hardly believe my eyes; there on the screen a chart of the British Isles showing sea breeze convergence lines, wind directions, inversion levels, cloud patterns and thermal strengths. I was so surprised and delighted by this that I immediately wrote to the BBC to ask that they may continue the good work.

Hopefully readers may feel moved to take similar action as I am sure the more feedback the BBC receives the greater are the chances that they may be encouraged to provide this service regularly.

MICHAEL FAIRCLOUGH, *Christow, Exeter*

EDWARDIAN SCRAP-BOOK

Dear Editor,

In the lovely "Edwardian Gliding Scrap-Book" in the June issue, you depicted on p135 an Etrich glider, with the caption: "Etrich glider, Germany, 1906". In fact the Etrichs were Austrian: Ignaz (father) and Igo (son) owned a fabrics' factory in a German speaking area of the Austro-Hungary empire which following World War 1 became Czechoslovakia. Incidentally Sigmund Freud lived in the same area.

After the turn of the century they moved to Vienna where Igo, who gave up flying after being injured in an accident, eventually built his masterpiece, the famous Etrich-Taube (dove) which was later built on license by Rumpler in Germany - Rumpler-Taube was the leading monoplane designer in the pre World War 1 era. It was an extremely safe and forgiving plane.

There is one Etrich-Taube on display in the Technical Museum in Vienna where, as a small boy, I met the already aged Igo Etrich who died a few years later. I will never forget the confidence of the designer in his aircraft which he expressed by saying that he was prepared at any time to fly his then already half-a-century old plane.

PETER MULACZ, Iraq and Vienna

HAY FEVER HAZARD

Dear Editor,

I offered to lend a hand on the fourth day of a course and found myself behind a Bronze C pilot who had laid off for a few years. "A few contrived situations to test judgment and she will be solo for the last day" I thought as all out was signalled.

A second later the glider leaped into the air as the stick whipped backwards. "I've never done that before" she declared as the nose was returned to a more dignified position.

The remainder of the launch was fine and some well co-ordinated exploration upwind demonstrated that lift had departed for the day. I opted to watch a normal circuit and approach. All was well until a desperately late round out found my saying "I have control".

"Of course I was going to round out" was an angry reaction though I had not (quite) touched the stick. As we got out I noticed her nose was streaming as much as her eyes and commiserated over the effect of the highest pollen count for years.

She had tried all the drops and sprays but they had been without effect for some years. Only Triludan (the so-called none sedating antihistamine pills) had done any good.

Even they could not cope with the uncut grass at North Hill so she had bought some Piriton over the counter to add to the prescribed medication.

Clearly the pilot was not going solo that week but I must confess that the obvious diagnosis (that the medication not the pilot's ability was at fault) did not occur to me at once.

Although it must have been said a thousand times, it's still worth repeating that drink and sedating medication presents major hazards to driving and flying.

Unfortunately decision making is impaired on very low doses. Fine judgment is the next to go while slowing of the reflexes needs high doses. The great danger is that the person may not be aware of the changes.

Pilots suffering from hay fever should try and control symptoms with locally acting drops and sprays. They should tell their medical adviser that they wish to fly when asking for antihistamines.

Students are often given a long acting cortisone to get them through an examination week. These give excellent control without sedation.

A medical practitioner may feel these are justified for the peak of the season or for a competition pilot. Steroids are quite a sledge hammer so are not lightly prescribed.

In summary, seek advice before taking hay fever pills. Never exceed the recommended dose and never double up with a different medication.

Dr GORDON PETERS, *Wellington, Somerset*

SPINNING TRAINING - A CAUTIONARY NOTE

Dear Editor,

It is with some trepidation that I enter the lists on the subject of stalling and spinning training, after the contributions by Bill Scull (February issue, p14) and Dudley Steynor (June, p115). However, my basic point is very simple - I agree absolutely with Bill Scull that the *automatic* application of large amounts of opposite rudder in slow-speed "wing-drop" situations will, for most gliders and powered aircraft, make the situation worse. This is particularly important near the ground, where rudder applied unnecessarily at slow speed can actually *cause* a crash.

I know of several accidents where this occurred, in each case the machine being written off and the pilots badly injured. In one case a stall was being deliberately practised and a mild wing-drop occurred. Full rudder was applied and the machine quickly entered a spin from which the pilot was unable to recover before the ground intervened. A similar case was where an inadvertent wing-drop at low speed was turned into a full spin by coarse use of rudder, the machine also crashing into the ground. Another case which I witnessed happened from the launch point and was even more ironic; a wing-drop occurred at about 200ft on the approach which the pilot diagnosed as due to a stall but almost certainly was simply due to turbulence. He had been taught to apply opposite rudder in this situation, he duly did and the glider crashed into the ground with its wings almost vertical.

I therefore agree with Dudley to the extent that the instinctive reaction to detecting an inadvertent low speed situation should be to move the stick rapidly forward and then away from the dropped wing (if there is a wing-drop). But please be very careful with the rudder until a fully developed spin is diagnosed. It is a powerful control at the stall and must not be abused.

I well recall gliders with horrendous stalling characteristics where a stall was virtually an incipient spin. They would not nowadays be granted a C of A by the National Regulatory Bodies (CAA/BGA, FAA, LBA). I vividly remember stalling the Kite 2 (most were spun in) and Geoffrey Stephenson's Gull 1 (also eventually spun in). A large wing-drop was usually implicit even in an attempted "straight" stall. Fortunately characteristics have improved considerably since those days and automatic application of large amounts of rudder to correct a wing-drop is no longer necessary, if indeed it ever was.

Having also flown over 50 types of powered aircraft I can assure you that, at the wing-drop stage, using forward stick for recovery followed by normal control actions to level the wings, works equally well in a Harvard, Hawk, Hunter, Vampire, Nimrod, and indeed *all* aircraft and gliders I have stalled except perhaps the said Kite 2 and Gull 1 which, unfortunately, are not now available for experiment. As an example, Harvards usually have a nasty wing-drop at the stall, and a "classic" full spin, losing about 600ft per turn. Many have been "spun in", usually with fatal results at low level. In this context I quote the current Boscombe Down Pilots' Notes: "At the stall, the nose and either wing may drop. With flaps up the wing drops more rapidly than with flaps down. If the stick is held back, the aircraft will spin. To recover from the stall with minimum loss of height, apply power and simultaneously move the control column sufficiently far forward to unstall the aircraft. Ailerons then become effective and wing-drop should be corrected with lateral stick. Ease out of the dive into a gentle climb . . ." Note the absence of any instruction to use rudder (that comes later in the recovery drill for a fully developed spin), and the emphasis on smooth handling with no automatic use of coarse or full control deflections - "*Sufficiently* far forward", "*Ease* out", "*Gentle* climb".

What we need is instruction which clearly distinguishes between a fully developed spin, which should now be very rare except for deliberate training at a safe height, and the earlier stages such as wing-drop at a stall which are better recovered by quickly reduc- ➡

ANGLO-POLISH SAILPLANES LTD.



STD 51-1 JUNIOR

• EASY TO FLY • 35-1 GLIDE ANGLE • GLASS-FIBRE CLUB GLIDER
• DELIVERED TO UK WITH INSTRUMENTS FOR ONLY £12,500 + VAT

PUCHACZ

• GLASS-FIBRE TWO SEATER • LIGHTWEIGHT • CAN BE LAUNCHED BY ORDINARY WINCH • £17,500 + VAT

JANTAR STANDARD 3 &
JANTAR 2B

• STILL AVAILABLE

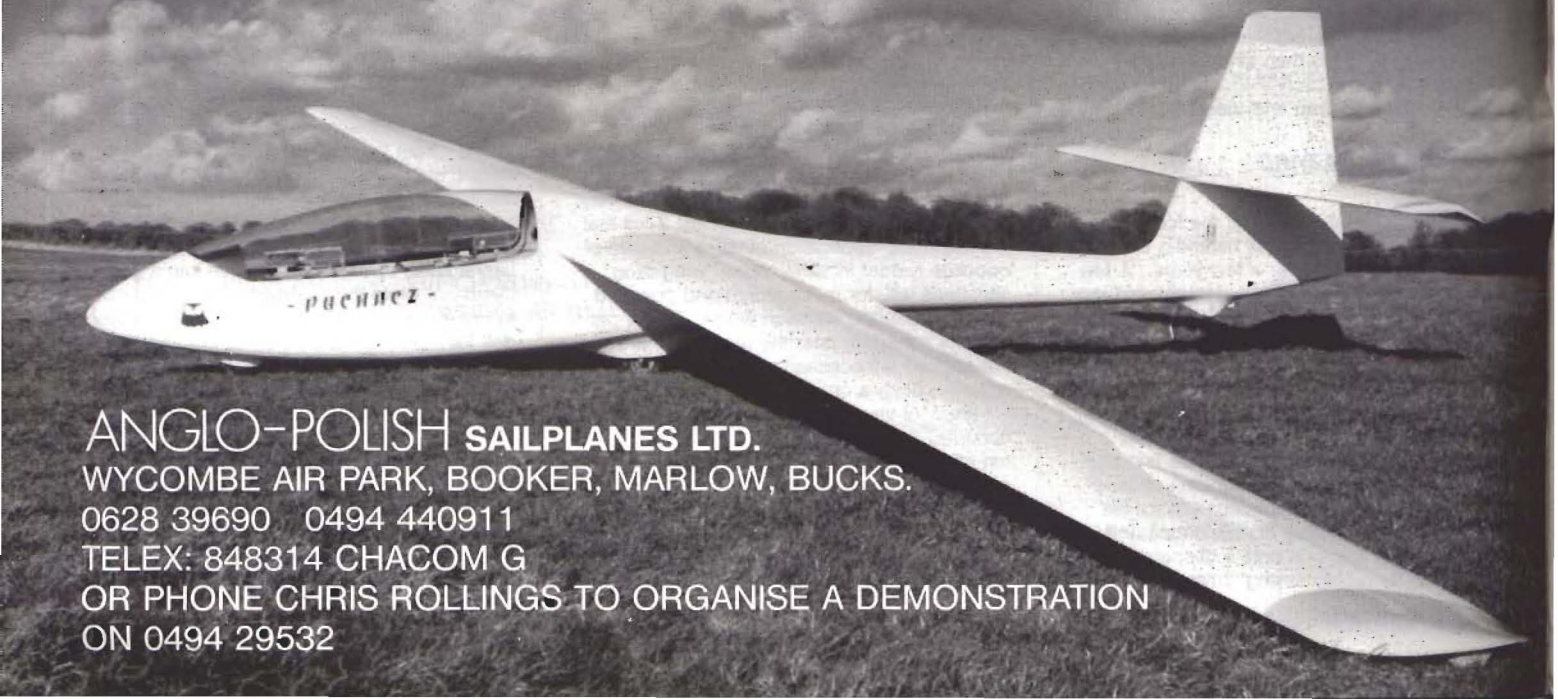
WILGA TOW PLANES

• AVAILABLE FOR SALE, LEASE OR HIRE

NEW PARACHUTES

• WITH NEW PACKS ONLY £291 + VAT

The most competitively priced performance gliders you can buy!



ANGLO-POLISH **SAILPLANES LTD.**
WYCOMBE AIR PARK, BOOKER, MARLOW, BUCKS.
0628 39690 0494 440911
TELEX: 848314 CHACOM G
OR PHONE CHRIS ROLLINGS TO ORGANISE A DEMONSTRATION
ON 0494 29532

ing the angle of attack and then levelling the wings, and not by inducing autorotation the other way by unfeeling boots of rudder.

Stalling and spinning characteristics also vary with the C of G position. At forward C of G all aircraft tend to be very stable in pitch and some may not spin at all, just exhibiting a sideslipping spiral dive in response to full pro-spin control. But as C of G moves aft, pitch stability reduces and the tendency for a wing-drop at the stall, and to enter a full spin, increases. Light pilots, beware!

The Janus is an example. It will only exhibit a true spin at extreme aft C of G at all other C of Gs entering a rather horrendous sideslip in response to boots of rudder (it has very low directional stability and is unstable in sideslip below about 55kt. Perhaps this has something to do with the Janus accident mentioned on p197 of the last issue). It is also extremely twitchy in pitch control at fully aft C of G, which shows up particularly on an aerotow in turbulent conditions and indeed sets the aft C of G limit. These considerations should be borne in mind when, for instance, stalling or spinning two-seaters when solo, where C of G will generally be further aft than when dual. Instructors have their uses, even if only as ballast!

Wind Gradient. Stalling and spinning training is carried out at a safe height, whereas the "worst case" inadvertent slow speed situation is probably the final turn in a field landing in conditions of turbulence and wind gradient. Airfields are generally flat (there are some notable exeptions!) whereas the topography around fields may not be, and wind gradient will therefore be more severe. A slow speed situation could easily get out-of-control due to the lower wing being in a lower wind speed, and a glider with benign characteristics when practising stalls at height might bite you if you are less than careful near the ground. There are two rather pessimistic "old adages" which may, on field landings, be relevant – "If you are going to crash, crash with your wings level", and "Always hit the far hedge rather than the near hedge". Think about it!

I am sorry this letter is so long, but my overall conclusion is that we want more practice in slow-speed situations which we may meet inadvertently, such as a slow, badly flown turn with thermalling or landing flap, rather than over-concentration on the deep stall or the full spin. And we should practise a recovery technique which is both straightforward and that will not get us into more trouble. Lots of us do not have either the regular flying practice of the professional pilot, or the intuitive handling ability of a Neil Armstrong, John Farley or Brian Trubshaw.

Stalling characteristics will, of course, vary with type, flap position, C of G an even wing condition (bugs, rain etc). Practise recoveries regularly at a safe height to optimise your technique. But generally, short of a fully developed spin, the best technique will be to rapidly move the stick centrally forward to unstall the wings, and then recover from the ensuing attitude by normal use of controls. Beware the unnecessary use of coarse control, particularly rudder and particularly near the ground!

IAN STRACHAN, *Lasham Gliding Society*

Ian is a qualfiied Service test pilot and an A1 category RAF QFI as well as being a glider and motor glider instructor, and Bill Scull, BGA director of operations, and Bernie Morris, chairman of the BGA Instructors' Committee, are understood to be in agreement with the main points of this letter.

Dudley Steynor replies:

Situation: Surface wind 20kt gusting 25kt and a considerable wind gradient. You are on a straight approach into wind with half airbrakes and just over the airfield boundary at 100ft when your glider stalls and the left wing drops 45°. What are your **initial (immediate)** control movements:

Stick (Elevator)	Keep it where it is.	☐ 1
	Move it forward.	☐ 2
	Move it back.	☐ 3
Stick (Ailerons)	Keep it central.	☐ 1
	Move it right.	☐ 2
	Move it left.	☐ 3
Rudder	Keep it central.	☐ 1
	Move it right.	☐ 2
	Move it left.	☐ 3
Airbrakes	Leave them where they are.	☐ 1
	Close them a bit more.	☐ 2
	Close them fully.	☐ 3
	Open them a bit more.	☐ 4
	Open them fully.	☐ 5
Trimmer	Leave it where it is.	☐ 1
	Move it back.	☐ 2
	Move it forward.	☐ 3

Pray for forgiveness (for those who do not know what to do). ☐

DEREK IN ISRAEL

Dear Editor,

During the end of April Derek Piggott honoured our glider pilots with a short visit to Israel. There is probably no need to sing Derek's praises to your readers, but for us it was a rare chance indeed to have the most famous gliding instructor of all in our midst, cut off as we usually are from the main gliding centres in Europe and America.

Derek flew with all four of our clubs, impressing everyone with his vast knowledge, skills and enthusiasm for anything that can fly. Indeed, he reinforced the conviction that Englishmen are a little eccentric – he was the only one seen running to a glider to clear it from the runway while the others walked because of the temperatures above 30°C. Oh well, "Mad dogs and Englishmen, out in the midday sun."

By the way, Derek can even control the weather as experienced by 11000 to 13000ft thermals that rarely grace our skies and which, ➡

BGA MAIL ORDER



Take four new items from the BGA Shop such as the World Soaring Directory, Trish Durbin's widely acclaimed 'Is There Sex after Soaring?', the new weather book by Tom Bradbury and our very latest effort the gliding bow tie.

Mix them all together with witty anecdotes that link the advertisement causing you both to laugh and to run for your Access card to order the goodies straight away.

Result – an overflowing waste paper basket and a growing conviction that only Platypus could do it with style and humour.

THE WORLD SOARING DIRECTORY – international reference book £5.00
IS THERE SEX AFTER SOARING? – no, it's not a manual £3.95
METEOROLOGY AND FLIGHT – Tom Bradbury's blockbuster £13.45
BGA BOW TIES – navy blue with glider motif £4.25

(all prices include p&p)

Order these items from

BRITISH GLIDING ASSOCIATION

SALES DEPT., FREEPOST, LEICESTER LE1 7ZB

or ask us to send you our complete sales list

Telephone 0533 531051

Competition...



Can be a very good thing in sport or in business.

In any contest the best man usually wins. It's much the same with insurance — the facts speak for themselves!

Mowbray Vale Insurance provide cover for more UK gliders than all the rest of the competition put together!

So when it comes to glider insurance, there really isn't any competition!

Contact Carol Taylor or Stephen Hill on
Thirsk (0845) 23018 — 24 hr. Ansaphone Service.

Or write to:

MOWBRAY VALE INSURANCE

8 Castlegate, Thirsk, North Yorkshire YO7 1HL.
Telex: 587470 *Represented at Lloyds* Fax: 0845 25483

of course, vanished the moment he left the country. A seminar he conducted on safety and cross-country soaring was a huge success, as was an evening spent listening to his entertaining and hilarious stories about film flying.

There is no doubt that this visit has inspired us all to try and attain higher goals and which will result in improved flying standards. Thank you again Derek.

YOAR ROSEN, *Megiddo GC, Israel*

UNINTENDED HUMOUR!

Dear Editor,

Browsing (again) through the June issue, I find Mike Usherwood's comment (that only Platypus and the Accident Summary are humorous, p115) totally belied by the classified advertisements.

Am I the only one to take delight in "Ex-military glider winch . . . Very little use"?!!

IAN DAGLISH, *Alderley Edge, Cheshire*

(This also appealed to Mike Russell's sense of humour.)

VERTICAL AIRSPACE LIMITATIONS

Dear Editor,

The glorious weather during the Open Class Nationals and Regionals at Lasham in which we all rejoiced has unfortunately brought to the fore a spectre which has haunted gliding competitions in England for years. It is the problem of airspace restriction and the infringements which consequently arise.

Until the last few years, apart from London, Manchester and Birmingham, restrictions only rarely resulted in infringements and penalties were very viable and at the whim of the competition director. Now we are faced with many more restrictions, especially vertically. A large area of the best soaring country is restricted to about 5000ft above ground even in VMC. During last year the weather during competitions was often so restricting that the vertical limitation went largely unperceived. This year has been different.

During the Lasham competitions convected cloudbase rose to over 7000ft and probably many competitors exceeded the vertical airspace limit, often unwittingly. Penalties there were, but these were based on reports by one pilot about another and the examination of individual barograph traces. This is a rather invidious way of getting information and applying penalties and presumably the worst infringements were not spotable.

Surely all barographs should be examined after every task where infringement vertically could have occurred? This may well be a tedious procedure with current technology, but it is the price we must pay for the limitations imposed on the gliding movement. (Alternatively no barographs should be examined except when an official airmiss occurs or there is an accident.)

Perhaps we should have fought harder to prevent these limitations. Certainly cramming more and more aircraft, parachutists, balloons, hang gliders, etc, into less and less space does not improve the recreational pilot's safety, whatever it does for the packaged tourist.

TONY WATSON, *Romsey, Hants*

COMPUTER OR NO COMPUTER

Dear Editor,

Mike Cuming's article in the June issue, p137, on barographs may have led to some confusion about the EW barograph. The unit is fully able to download its traces without the need for connection to a computer. It prints its traces by a simple connection, with the supplied lead, directly to any serial Epson compatible printer. The majority of printers available are of this format. For those of you who require an instant printout on your return to the airfield, then a very small portable thermal printer is available. Total printout time is usually only a few minutes.

The only time a PC is required is when you wish to use the EW Analysis software. This uploads all the information in the barograph's memory to the computer. The software will display the flight, all the flight statistics and store the flight details on disc. Well recommended for those of you who like viewing all the gory details of your flight at some later date.

For those of you who are wondering how much we paid Mike to write the article, we must disappoint you and say he is merely one of the growing number of fans who has seen the potential of this barograph.

WAYNE RICHARDS, *(EW Avionics)*

JUST SWANNING ABOUT

Dear Editor,

Terry Hurley's enchanting little tale about a hot-shot drake and an incompetent duck in the last issue, p212, may have been intended as a leg-pull. But I'm prepared to believe every word.

Connubial bliss for me began aboard the 46ft Bridlington seine netter *Gloamin N,* our home for some years. The early months were on a mud berth at Maldon, Essex, where the Chelmer joins the Blackwater, before we emigrated in it to the Netherlands.

One day we were thrilled to find our reach had become an EFTS for swans. We were disturbed at lunch by the unmistakeable racket of wings on water and loud squarks of admonishment.

Rushing on deck we found two adult swans giving take-off instruction to a clutch of cygnets, under the supervision of a third who was clearly the CFI. He was perched on a lighter moored at the timber quay opposite and periodically emitted sounds of scathing disapproval.

I've met many CFIs like that.

We watched the training for some hours, with noisily aborted take-offs before the fledglings graduated through low hops in ground effect to well disciplined circuits-and-bumps. No kidding.

ROB RODWELL, *Belfast*

DUAL BADGE SCHEME

Peter Foster, who has multiple sclerosis, replies to Dave Firman's letter in the last issue, p165.

Dear Editor,

The dual badge scheme is not for me. If I fly in private gliders, and I do, then I cannot take liberties with their aircraft. I am limited if I fly at my level of competence – strong wind, cross-wind, cloud flying, etc – but when I fly with the owner I am only limited by their abilities. As most of them are the best pilots in the country there is no limitation to my flying.

If I want to fly cross-country in their aircraft I must let them do a good deal of the flying otherwise I would land out on every flight. I get my kicks by tempting them to stretch their abilities even further.

I fly club aircraft at Talgarth with Derrick Eckley and Ivor Shattock and I get a tremendous thrill out of ridge soaring, thermalling and landing them. No club would be very pleased if we took the club aircraft away with the instructor for the day and landed out in some remote place.

If I am in a private aircraft and land out when the owner is flying, and that has happened several times, then that is his responsibility (I would take it as a black mark against me for getting him in that situation).

My interest is in the weather, wind and climate. The more I can help the pilot to make the best of the conditions the happier I am. Dual flying is all about sharing the ecstasy and despair.

Sailplane & Gliding

The magazine can be obtained from most Gliding Clubs in Gt. Britain, alternatively send £11.40 postage included for an annual subscription to the British Gliding Association, Kimberley House, Vaughan Way, Leicester.

Red leather-cloth binders specially designed to take copies of the magazine and gold-blocked with the title on the spine are only available from the BGA.

Price £5 including post and packing.

OVERSEAS AGENTS

CANADA
T. R. Beasley, Soaring Supplies, PO Box 169, L'Orignal, Ontario, K0B 1K0.

SOUTH AFRICA
Peter Eich, PO Box 82707, Southdale 2135, Johannesburg, Transvaal.

USA and all other Countries
Payable in either Sterling £11.40 or US $19.00 (or $29.00 by Air Mail) but International Money Orders preferred, direct to the British Gliding Association.

WIND SHEAR, DOWNDRAFTS AND VORTICES

Part 2

The second part of Tom Bradbury's feature on the low level wind flow and its influence on landing.

The old saying "what goes up must come down" is certainly true of the atmosphere. If thermals go up in one place there must be a compensating descent of air nearby. The sink is usually spread over a larger area than the lift and consequently is less strong. Occasionally it is concentrated into a narrow column and then these downdrafts become unpleasantly powerful.

The effect of condensation and evaporation

When a cloud forms at the top of a thermal the latent heat of condensation is released; this warms the cloudy air and boosts the updraft inside. However, if drier air from outside is drawn in it starts to evaporate some of the cloud.

Now the effect of latent heat is reversed. Heat is taken from the cloudy air to evaporate moisture. This has a marked cooling effect; if the surrounding air is very dry the evaporational cooling may produce a concentrated downdraft which can be stronger than the original updraft. Once all the cloud droplets have been evaporated the descending air will start to warm up. This tends to limit the loss of height but the momentum of a rapidly sinking column may carry it right down to the ground. These downdrafts spread out along the ground to trigger off new thermals.

Thunderstorm downbursts

On days when there are no big cumulus about the evaporational downdraft comes as an unpleasant surprise but is seldom dangerous. When large cu-nim occurs the development of a shower can set off a "precipitation downdraft". The enormous mass of rain or hail falling through the cloud disrupts the updraft and starts a column of sink. When this hits the ground it spreads out as a squall blowing out from the shower. (See Fig 1.)

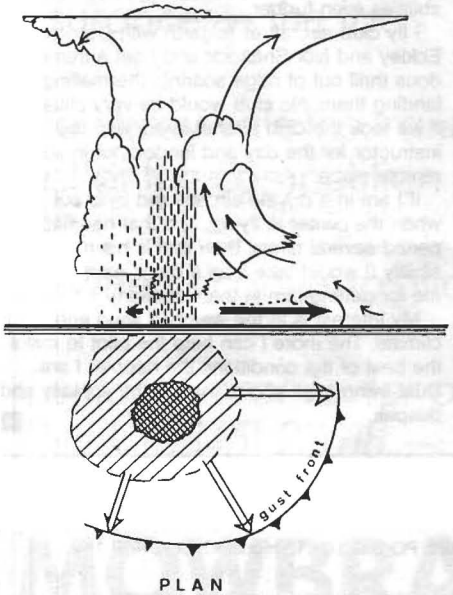


Fig 1. Cross-section and plan of a cu-nim with shower and outflow.

There is a vast tonnage of air moved through a really big cu-nim. Recent American studies using triple doppler radar showed that in one cloud there was an updraft mass flow of 95 000 metric tons/sec over an area of 11 sq kilometres. These monster cu-nim can grow up through a considerable shear of wind. The cloud itself may be travelling at only about 20kt but the upper section may be surrounded by winds blowing at 50-80kt. Such clouds can draw in a huge volume of the surrounding dry air, especially where they encounter the strong wind shear at higher levels. The resulting evaporational downdraft is added to the precipitation downdraft and may be cooled even more by the melting of hail. This can produce a really fearsome descent of air. Some years ago the terms "downburst" and "microburst" were introduced to describe this phenomenon. (A microburst is just a downburst covering a smaller area.)

In one case studied by the Americans it was calculated that the air in a microburst was descending at 50-70kt. It struck the ground producing a vortex like swirl and then spread out horizontally to give a wind of some 60kt along the ground. Although the diameter of a microburst is generally only about 200m the mass flow through a section across this column is likely to be well over 1000 tons/sec. Some giant cu-nim have produced several microbursts, one after the other, in different places. A microburst is sometimes strong enough to fell trees. It has proved disastrous to airliners on take-off or descending to land. In very dry air the microburst may be invisible until it strikes the ground. This is a particular hazard in regions where the cloudbase is very high.

Accidents caused by downbursts

In the USA 11 civil aviation accidents were attributed to downbursts or microbursts between 1974 and 1985. Four hundred people were killed and a further 145 injured. There was also a near miss when a microburst struck Andrews Air Force base a few minutes after Air Force One had landed. On that occasion the wind diverged from the centre of the microburst at over 100kt.

How a downburst develops

Fig 2 shows how a downburst may develop. The left hand sketch shows the top of a cu-nim with an updraft. There is a mixture of rain and hail; the hail is shown by the solid black dots. Star like symbols indicate ice crystals in the cloud. In the middle sketch dry air has penetrated from either side above the melting level. This causes evaporation which cools the air. The cooling is

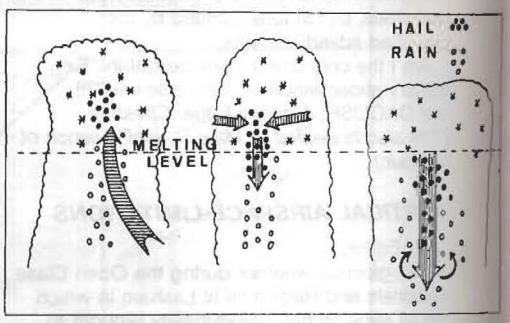


Fig 2. Three stages in the development of a downburst in a cu-nim.

increased by the descent of hail through the melting level. The combination of evaporational cooling and the loading produced by a falling column of hail and rain sets off the downdraft. The right hand sketch shows the developed downburst rushing downwards.

The upper part of Fig 3 shows a computer simulation of the airflow in a downburst. There is an inflow of dry air above 10 000ft which starts the evaporational cooling. At the side of the

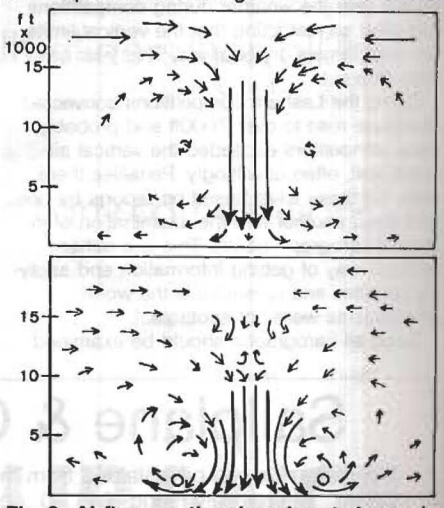


Fig 3. Airflow as the downburst descends and (in lower sketch) strikes the ground forming a ring vortex.

downburst there is the beginning of a vortex ring. In the lower part a well developed vortex ring appears round the downburst where it strikes the ground.

The "burst front"

Fig 4 shows how the outflow spreads out along the ground. It has been called a "burst front". The peak wind speed is usually about 1.5 times the speed of the burst front itself. The leading edge moves slower than the speed of the wind because some of the outflow rises up inside the nose. This nose has been given the term "burst

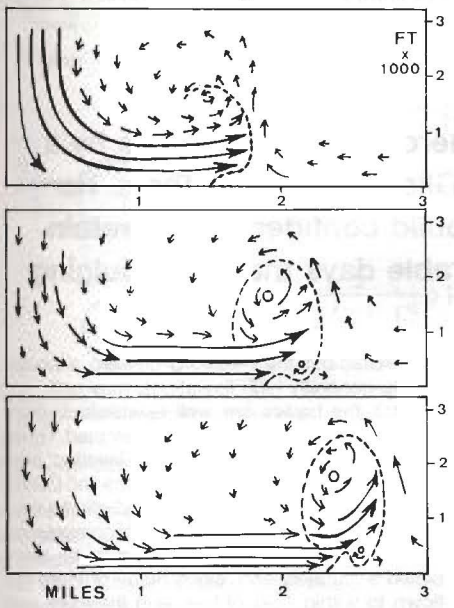


Fig 4. Cross-section showing three stages of the "burst front" as the air spreads out.

front head" and there are strong up and down currents within it. As it spreads out some of the surrounding air is forced up over the burst front producing a ring of lift which may trigger off another cu-nim. At other times it produces an arc of cloud. Burst fronts weaken as they travel outwards but one gust front sometimes collides with another from a separate storm. On one such occasion the collision produced an updraft of 32kt to a height of some 10000ft.

Downbursts are unlikely in cool air

In the UK and NW Europe, where many thundery showers occur in cool, moist unstable air coming from the Atlantic, squalls are common but full sized downbursts seem almost unknown. However, they can sometimes occur under the far larger thunderstorms which develop in very warm southerly flows during the summer months. This warm air from the tropics can hold much more water vapour than the cool unstable north-westerlies. More water vapour means that far more energy is available from the release of latent heat so the thunderstorms which spread up from the south in hot spells are potentially more violent.

Outflows

Although reports of downbursts in or near the UK seem to be rare the cu-nim still contain regions of extremely heavy sink which spreads out beneath a storm and travels many miles horizontally to produce a thunder squall. In the hot dusty regions of Africa and Arabia the squall raises a great wall of dust known in the Sudan as a "Haboob". A haboob can travel so far beyond the cu-nim that ground observers may never see the originating cloud before they are enveloped in a dust storm. In the UK and NW Europe where the ground is usually moist and covered with crops there is a little dust to be raised by the outflow. This makes the outflow almost invisible and therefore more dangerous to pilots on long finals. There is little or nothing to show that the surface wind is about to change suddenly.

Pressure falls and temperature jumps

The downdrafts in or near cu-nim are often accompanied by sudden pressure changes. When the downdraft hits the ground a sudden drop in pressure may be accompanied by a jump in the temperature. The sudden reversal of wind direction, squall and marked pressure drop combine to make landing very hazardous.

An example from the Channel Islands

In a recent issue of *Weather* (Vol 44, March 1989, p133-135) Mr D. Cunningham, writing from the Met Office at Guernsey, described what seems to have been an example of a downburst. There was a thundery low over northern France and the English Channel. The air over the continent was very hot and temperatures in France had reached 40.7°C (105°F). At Guernsey the first event was a squall with a veer of wind from NW to east and a pressure rise of 4mb in 40min. Soon afterwards the pressure dropped 4mbar almost instantaneously, followed by another drop of 3mb. (The total is equivalent to an altimeter change of more than 200ft.)

The wind fell calm and then gusted to 63kt with a rapid shift of direction. The temperature leapt 13°C and the humidity fell from nearly 100% to 16.5%.

A passenger aircraft passing to the east of Guernsey lost 3500ft in no time at all, only managing to level out 1000ft above the sea. On land some trees and a greenhouse were blown down.

Commenting on this letter Dr Mansfield suggested that the air, starting at cloudbase around 10000ft, was first cooled to near saturation by rain falling into it from above. This would make it much cooler than its surroundings so it would accelerate downwards. It should have reached an equilibrium temperature at about 3000ft but the momentum carried it on downwards to arrive at the surface as a warm blast of air.

Features to watch out for

The thunderstorm outflow usually develops after the start of torrential rain; it forms an arc spreading out from below the cloud so that the wind blows almost directly from the distant storm. (Fig 1 again.) Before the squall arrives the surface wind may be quite light and often blows towards the storm. The direction then changes as much as 180° with the arrival of the squall. This makes it particularly dangerous to leave gliders parked with only a tyre on the upwind wing.

Watch out if the previously bulging "bubbly' appearance of the side of a cu-nim changes into a smoothed shape just before the rainshaft descends. This may indicate the start of a powerful downflow. Sometimes, when the air is hot and relatively dry (giving a high cloudbase), there may be no rain shaft but only trails of "virga" hanging from the cloud. Such virga may sometimes mark the beginning of a downburst.

Any approaching shower is likely to produce a much stronger gust of wind. Vigorous squalls may occur in cool showery weather with winds off the Atlantic. The giant cu-nim which sometimes develop during heat waves in the southerly flow across Europe are less common over the UK but potentially more dangerous.

Castellanus, the advanced warning sign

One of the most reliable indications of thundery weather in England is the appearance of altocumulus castellanus spreading from a southerly direction. These clouds look like cumulus but have a very high cloudbase, often well above 10000ft. Unlike most cumuli they are not formed by thermals rising from the ground. They are due to instability at high levels, usually caused by a high level flow of cold dry air from the south-west moving over a low level flow of warm moist air from a southerly direction. It is not always obvious that these castellanus cloud really are at a high level. However, if you see them spreading up across the English Channel or appearing in the sky long before any thermals have started they are almost sure to be due to upper level instability. They may give as much as 24hrs warning of thundery developments

Short period warnings

Showers coming in from the Atlantic fall through clear unpolluted air where the visibility is often particularly good. One can usually see the rain long before the squall arrives. This is not always possible during heat waves because the air is often filled with a deep layer of haze. Visibility is poor and the first sign of an approaching cu-nim is an unexpected darkening of the haze as the cloud casts a shadow over it.

Watch out for the storm which "comes up against the wind". In hazy weather look for the anvil of cirrus blowing out ahead of the cu-nim. This often shows which way the storm is moving before the main body of the cloud is visible. It is a sensible precaution to move any temporarily unused gliders into shelter in good time and keep a team standing by to deal with aircraft practising circuits. Anyone flying locally should prepare to land long before the downpour of rain and its preceding squall gets close to the airfield.

Deceptive signs

If you are local flying when there is a storm creeping up from the south-west you may see a glider land comfortably into a light easterly wind that barely lifts the windsock. Before the rain arrives that wind may change to a 40kt south-westerly squall. There may be no visual indication of the change until the squall reaches the windsock. Perhaps you will be lucky and only have a mere 20kt tail wind. You may be able to handle this but, believe me, it comes as quite a shock to find yourself skimming rapidly across the length of the airfield with a ground speed well in excess of 60kt.

CLIVE THOMAS

CRISP ROLLS IN THE MORNING

Clive Thomas writes about an aerobatic course given by a member of the Polish National Glider Aerobatic Team. He says there is no better way to build confidence and retain co-ordination skills on non soarable days than by indulging in some fun aerobatics

Nine in the morning at 4000ft over Lasham. The April sky was an early hint of summer, clear, blue and still. Beautiful, but not for soaring. My hands and feet were off the controls when at 50kt the glider, a Puchacz, suddenly flicked to inverted, paused, and then commenced a breathtaking dive. The ground rushed up. I glimpsed the stick coming back towards my waiting hand, which got weightier as the *g* forces rose. My body was pressed firmly into the seat and I fought to raise my head against the increasing acceleration. The horizon fell beneath the glider's now rising nose and was replaced by a slashing burst of sunlight penetrating the canopy. At less than 1*g*, but still positive, I felt light in my seat and I craned my head backwards, anxiously seeking a reassuring view of the Hampshire countryside below. It came into view with a vengeance, and I was back to seeing patchwork fields rushing up towards me rapidly, the rising roar of the slipstream soaring to a crescendo before the aircraft pulled out of the dive.

"At 90kt, half roll to inverted."

In clear English, Jozef's Polish accent impinged upon my consciousness. I became aware that he was calmly talking me through the manoeuvres. Half snap roll and pull out followed by a full loop and now with the nose 20° above the horizon at 90kt, a banking movement continued through 90° to stable, inverted flight.

Now upside down, blood rushed to my head and a pulse beat noisily in my ears. Trying to take note of the attitude and the control movements that had simultaneously achieved this unusual state, with the ground where the sky ought to be, I caught myself checking the individual stitches on the seat harness and pondering on my chances of a long and healthy life. If I fell out of the straps would I be contained by the canopy? I decided not and diverted my attention, or as much as I could muster, to the remainder of Jozef's demonstration. Roll to normal flight, stall turn, full slow roll and vertical climb.

"Now you try."

I admired his sense of humour.

Courses to pass on some of his undoubted skills to pilots

Jozef Solski, a member of the Polish National Glider Aerobatic Team from Aeroclub Bialystok in the north-east of Poland, whose competition achievements had placed him in the top ten aerobatic glider pilots in the world, had come to Lasham for the second time. In six, one week courses he would pass on some of his undoubted skill to pilots who wished to gain experience in competition aerobatics. What better way to build confidence and retain co-ordination skills on non soarable days than by engaging in some fun aerobatics.

Now there are a number of soaring pilots who will grumble into their beer, saying, "Gliders aren't meant to do aerobatics. Good Lord, no. If they had been so intended. He would have given them short wings and an engine!" But, who



Clive has over 300 gliding hours and a PPL, runs an early morning Thursday course at Lasham (see Peter Pepper's article in this issue) and is a former treasurer of Surrey & Hants GC.

amongst them has not at some time experienced the exhilaration of a loop, perhaps, or a steeply climbing turn, dare I say chandelle, before coming into land at the end of a successful cross-country.

Of course, whilst aerobatics are good fun, yes, they really are, Jozef very correctly insists that all exercises are flown to a pre-planned programme, using Aresti diagrams, All manoeuvres must be attempted along a reference line; usually directly up and downwind. Jozef's philosophy is that if you start disorientated and finish disorientated neither you, nor any of your admirers below, will appreciate just how accurately you have managed to complete your programme. Although you may have gone through the motions no real progress, or standard, will have been achieved.

On the course student progress is dealt with individually. A pilot with stall and spin competence and having a little experience of other unusual attitudes will start on a basic programme: aerobatic spin, *ie* entry and exit on controlled headings, loops, 60° stall turns, 45° straight climbs and half snap rolls. Steep climbing turns and chandelles, although not actually competition manoeuvres, are often included to fill out the programme and make it flow. After instruction the choice of programme content is left to the student. Students should take into account whether a figure is best up or downwind, whether it requires high energy to commence or whether it is best to lose speed and regain height. An over-riding planning consideration is whether the manoeuvre is permitted in the glider flight manual. The SZD Puchacz, for example, may be snap rolled but, the T-tailed Grob Acro, although having generally high limitations, may not!

Once the basics are well established, more advanced manoeuvres may be attempted. These include full slow rolls and rolls to inverted, sustained inverted flight, Immelman turns and Cuban eights. Fully vertical stall turns and climbs may now be introduced. A high degree of competence is required for these manoeuvres to be completed accurately and, since many of them are flown to within 15kt of VNE, and therefore well above *Va, very great care must be exercised to maintain flight safety. It is extremely foolhardy to attempt any of these manoeuvres without first gaining dual instruction and achieving a competent standard.

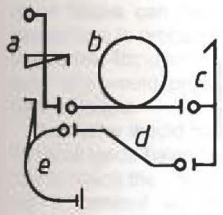
Aerobatic competition scoring is based on the degree of difficulty multiplied by the level of competence displayed in the performance. Catalogue Alpha contains the diagrammatic representation of aerobatic figures, see Fig 1, and is based on an original format devised by Count Aresti. Each figure has a difficulty, K (Koeffizient) factor and a specific code number, to avoid confusion.

Judges mark out of ten and multiply by K. A slow roll, perfectly executed (K20: code No. 6.1.1.1), would score 10×K20=200.

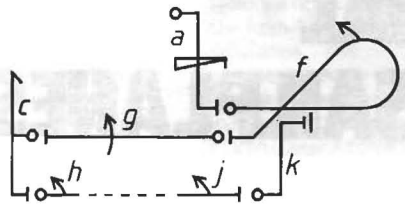
Each programme should be completed in a box, a cube of 1000m on each side, with the base at 200m. Manoeuvres outside the box are penalised, especially below 200m. Aerobatic manoeuvres attempted below 100m agl, less than 328ft, result in disqualification, if not a fatality!

Three types of competition programme are flown. Voluntary, known and unknown. The voluntary programme is planned by the pilot and devised to score the maximum number of points, 3000 (10×300K). The known programme is published well before the event and each competitor has an opportunity to practise and polish the sequence. The unknown programme is handed to the competitor on the morning of the event and there is no opportunity for a trial run. The very advanced competition manoeuvres, involving high negative *g* loads in outside loops, inverted tail slides and inverted pull-outs from dives, are

**Manoeuvring speed*

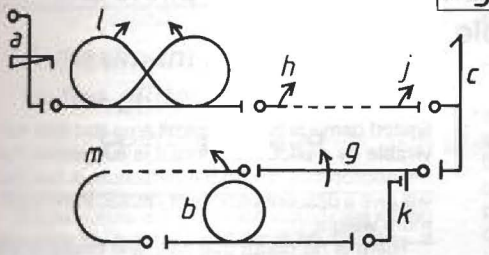


1 Basic sequence



2 Aresti code and scored sequence

ARESTI code	K
a - 3.1.1	10
f - 8.4.2.5.2.1 ..	22
g - 6.1.1.1	20
c - 5.1	20
h - 6.1.1.3	13
j - 6.1.1.3.1	14
k - 8.1.1.3.1	13
Total K	112
Potentially x 10	1120



3 Advanced sequence :- +4 to -2·5g

Fig 1

KEY

a - 360° spin b - loop
c - stall turn d - 45° climb
e - half snap roll and pull through
f - half Cuban g - full slow roll
h - half roll to inverted
j - half roll from inverted
k - 90° climb l - Cuban '8'
m - half roll to inverted and pull through

Fig 1. Aerobatic figures.

unsafe for all but a very small number of fully aerobatic gliders with exceptional flight envelopes.

In World Championships Jozef flies a Kobuz. Although a wooden aircraft, the Kobuz is more like a modern jet fighter in appearance than a sailplane. With a VNE of 340km/h (190kt) and allowing full control deflection to 180km/h at Va, this sturdy glider can withstand +7*g* to −5*g* without stress.

Not many UK glider pilots are involved in competition, or for that matter airshow display, aerobatics. A few flew at Lasham before Jozef arrived, now there are a few more and I suspect there are one or two lurking at other clubs waiting to emerge if not already fully fledged. With whispers that the BGA and the Sports Council are becoming interested in the possibility of British entries in glider aerobatic competitions, it is likely that aerobatics will expand as an aspect of gliding over the next few years. There certainly seems to be enormous potential.

But if international competition is too far ahead to contemplate, look no further than those aircraft already at your disposal. The ubiquitous K-13 may be looped, spun, stall turned and chandelled.

An attractive basic programme may be constructed within the flight envelope from these manoeuvres. The Grob 103 Acro (+6.5*g* to −4*g*, to Va), the K-21 (+6 to −3) and Puchacz (+5.3 to −2.65) are all two-seaters capable of rolling and inverted flight allowing an enormous amount of fun with accurate aerobatics. And this list is not exhaustive. Just check the manufacturer's flight manual of your club gliders to see what they can do.

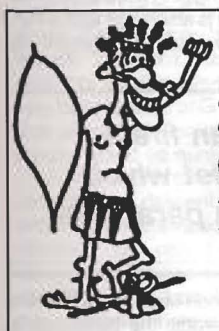
Jozef should be coming to Lasham again next spring with his family for a holiday. If you think you should obtain a different perspective on gliding, have an inverted mentality and a sense of adventure, why not give it a try – but book early to avoid disappointment.

FEMALE PILOTS

Less than 10% of British glider pilots are female. This seems (even from a Booker point of view where almost 20% are female) to be too few.

Interestingly, a recent survey found that of all the female glider pilots polled every one had been introduced to the sport by a friend. Not one had responded to an advertisement or poster. This seems to suggest that the best way to get more women gliding is to ask them along. Think about it chaps ...

Mike Cuming, *BGA Newsletter*



ZULU GLASSTEK LTD

FREE replacement glider available (LS-4A) for long term jobs

Glass-fibre repairs & maintenance. Repair agent for 94 Aviation.

Peter Wells (0494) 883101
(08444) 3036

OXFORD CHALLENGED CAMBRIDGE



Our photograph is of the Oxford University GC team, l to r Derek Prinsen, Graham Armstrong, David Heath-Whyte (in the glider), Frank Zachariasse and Margaret Oakes, who challenged Cambridge University to a varsity match at Bicester on June 17-18. The weather was excellent, especially the first day, but cross-countries were out as most pilots were pre-Bronze, so the organisers chose the "cuppers" competition used successfully in the Oxford inter-collegiate contest. Each flight was to take no longer than 55min with every minute up to 50 counting for 1pt. If a pilot landed after 50min, 6pts were deducted for every extra minute. Points were also given for height gain. With limited aircraft this meant every pilot could fly more than once each day – and there were six flights of exactly 50min. There were five members in each team and the best ten flights were counted giving Oxford a win with a 57pt lead. – Condensed from a report by David Heath-Whyte.

PETER SAUNDBY

SURVIVAL FROM SAILPLANES

From time to time readers have suggested parachutes should be fitted to gliders rather than worn by pilots and now this is technically feasible

It has often been suggested that the ideal method to ensure the safety of the pilot following an accident in the air is to lower the whole aircraft under a parachute. The difficulty has always been that while parachutes work very well for masses the size of a man, as one scales up the size of the mass to be lowered, one can neither increase the density of the air, nor the strength of the materials from which the parachute is constructed. As the combination of a loaded and recovery parachute enlarges, the parachute will fill a greater proportion of the total mass.

While this mathematical relationship cannot be changed there have been developments which make the recovery of sailplanes technically feasible. The development of high strength materials permit the construction of light weight parachutes, and using similar materials in composites, the structure weight of the airframe has been reduced.

The advantage of an emergency descent while remaining in the cockpit are obvious. From high altitude the pilot is protected from the cold, the oxygen system will be available and the aircraft radio can be used to make distress calls. At low level, the parachute would extend and inflate faster than anyone could climb out and pull a rip cord.

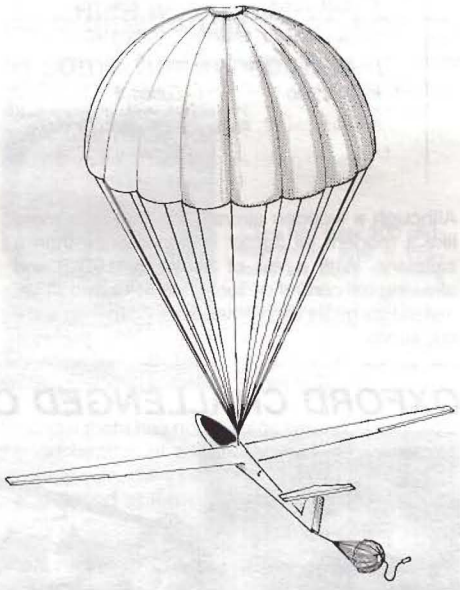
On arrival at the surface the pilot is protected by the cockpit structure both at initial impact and during any subsequent dragging. There is no requirement to carry a separate parachute in the cockpit, or have a double set of harness. Clubs need not provide parachute storage and the repacking intervals for an undisturbed parachute will be longer. Cockpit dimensions will be less critical for the larger pilot. Cockpit transparancies will not have to be fitted with emergency jettison mechanisms. Equipment in the glider is useful for survival. Rescue aircraft would find it easier to look for a glider rather than a man.

The records of recent parachute escapes from gliders are disappointing. The evidence from World War II is that the limits of altitude for a manual bale out lie between 300m (1000ft) and 6000m (20000ft) and that escape is unlikely over 100m/sec (200kt) or from an aircraft undergoing any significant rotation or acceleration.

Even from within those parameters, only about half the glider pilots have made a successful escape. I started thinking seriously about the problem when we lost two pilots from low performance gliders after a collision in a thermal near Colerne during 1982.

We must face the fact that our present escape capability is unsatisfactory and cannot meet the demands set by modern sailplanes. There is nothing new about this - military aviation faced the same problem fifty years ago. The solution was the very successful ejection seat which is now fitted to fighting aircraft.

A number of aviation companies have gained considerable experience in the field of parachute recovery. Flight Refuelling Ltd manufacture a series of military targets and reconnaisance drones which are recovered by parachute. These unmanned aircraft are smaller, but faster than sailplanes. Usually the parachute is deployed from the rear end of the drone at a predetermined speed, and the ground impact is absorbed by a frangible nose cone. Our fellow pilots flying hang gliders and ultralights have



used parachute recovery with great success, albeit with lightweight airframes, having high drag and low maximum speeds.

In the USA two companies have been developing parachute recovery systems intended for light aircraft. They are Second Chantz Inc of Reno, and Ballistic Recovery Systems Incorporated of St Paul. Both have demonstrated that the recovery of light aircraft is technically possible, and have contributed valuable work on deployment of parachute systems, but at the time of writing FAA approval has not yet been given. A problem is that the market is for retrospective fitting of a system to existing aircraft, but this is more difficult than incorporation in a new design.

Any parachute recovery system will require a compromise between the size of the parachute and the speed of descent. For military parachutes the specified descent speed is 7m/sec (1m/sec is almost equal to 2kt or 200ft/min). Because parachute drag is a function of the square of the velocity, specification of a lower descent rate would require a very much larger parachute. The recent crash test done by Tony Segal (see the June issue, p130) employed an impact velocity of 9.6m/sec striking a hard concrete surface. He concluded that this would have caused only limited damage to the cockpit area and was survivable by a pilot. Therefore it is suggested that the appropriate size of the parachute is one that will give a descent velocity of 7m/sec at the maximum weight.

There is no doubt that sailplane cockpits will require additional crash protection irrespective of whether parachute recovery is used. We will always suffer low speed accidents during launching or landing. Ed Crawly in the USA has shown that the integrity of the cockpit can be improved by quite small design changes. Tony Segal has shown that five or six point harnesses improve restraint. Energy can be absorbed using cushions made of long memory materials. The avoidance of potentially injuring metallic projections is a plain common sense measure ignored by too many glider pilots. Heavy items such as oxygen cylinders require reinforced stowage and Schempp-Hirth have redesigned the fuel tank for their turbo aircraft.

The problem of how to deploy the parachute can be solved by several differing methods. For low speed low level emergencies it is essential to eject and inflate the parachute as fast as possible, for this will govern the minimum altitude performance. Manual deployment is dangerous and too slow. A pilot throwing a parachute out of a cockpit may end up with rigging lines around his neck! Spring deployment is also weak and unreliable, therefore a powered deployment is essential.

A gun can fire a heavy bullet which extracts the parachute

Three methods have been used; a gun can fire a heavy bullet which extracts the parachute; a high energy rocket can perform the same function, or the parachute assembly can be fired out utilising the container as a low velocity mortar. The mortar is powered by a gas generator similar to those used to inflate air bags in some automobiles. All perform satisfactorily.

The danger of guns or rockets is that they are a hazard on the ground, having potentially lethal power. A gun or mortar produces large recoil forces which have to be absorbed by the airframe. The choice lies between a high velocity small

mass or a low velocity large mass, and whether recoil forces can be accepted. While rocket deployment is probably the only option for a retrospective fitting to existing aircraft, a mortar is safer and would provide the best solution for future designs.

The mortar would have to be close to the C of G; recoil loads being taken by the strong structure to which the undercarriage is attached, giving a minimal increase in weight. Further structural efficiency could be obtained by making the mortar barrel an integral part of the fuselage.

A maximum load to apply to the glider at parachute opening is 25g

If a parachute is fitted which would give a drag equalling the mass of the glider at 7m/sec, then at twice that speed the drag is four times as great, and 4*g* is applied to the load. Without incurring excessive structure weight, a maximum load to apply to the glider at parachute opening is 25*g*. Simple theory would suggest that this would occur at five times the descent speed, or only 35m/sec (70kt). As the parachute is to be as light as possible, it need not withstand a higher opening load than can be accepted by the glider.

In practice parachutes can stand higher speeds because they protect themselves by partially closing or squidding. Due to reduced air density, and less damping at altitude, the limiting speed is a function of the true air speed. Therefore a parachute which can lower a glider at 7m/sec will be destroyed, or could destroy the aircraft at quite modest speeds of some 40-50m/sec.

The large forces applied by the recovery parachute to the glider means that the attachment has to be very substantial, and at or behind the C of G in order to give a stable deceleration. Too nose down a descent would make the pilot vulnerable at impact, and a level descent attitude allows the undercarriage to absorb the initial impact. Therefore the parachute suspension point has to be located on top of the glider and very close to the C of G. Fortunately in gliders this is an area of substantial structure and the weight penalty would be minimised.

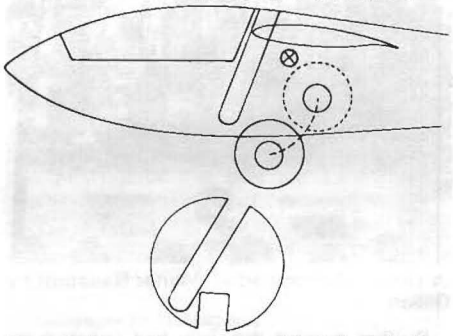
Large parachutes with unwieldly loads tend to be unstable in descent. They develop oscillations which could add needlessly to the final impact velocity. This can be cured by giving the parachute drive, or a small horizontal velocity, so the stability of the combination may be important in establishing a steady descent.

Modern sailplanes fly at up to 75m/sec (150kt), and following a disaster may be going very much faster. These velocities are well above safe parachute deployment speeds and so some means has to be found of slowing the glider before the parachute inflates. It is also desirable to delay parachute inflation when at very high altitude, because of low temperatures and the adverse effects of high true air speed.

If the main parachute will lower the load at 7m/sec (14kt), and has a maximum opening velocity of some 35m/sec (70kt), then for the same load factors a drogue could reduce the speed to 35m/sec from 175m/sec (350kt), an ample margin for sailplanes. Therefore to offer a reasonable escape envelope, a two stage system is required. Similar systems with a mode selection according to height and speed have been developed by the Martin Baker Aircraft Company for use in ejection seats.

Parachutes can be designed to cover a wider speed range and BRS has patented a sliding reef which prevents a parachute from inflating at high speed. Nevertheless, to provide maximum performance when either low and slow, or at high speed a multimode system is essential.

Some sailplanes are already fitted with a tail parachute and this could double as the primary drogue; being deployed first, and both slowing and stabilising the sailplane. There are several ways by which the main parachute delay could be achieved, but one simple solution is to duplicate the gas generator which expels the parachute, fitting one with a pyrotechnic time delay and inhibiting the other with speed and altitude sensors. Deployment would take place immediately if speed and altitude were low, or after a fixed time delay. This would also improve reliability by duplicating the gas generators.



Parachute mortar - permitted installation angles.

It is impossible to predict the capability of a pilot following an accident, nor is it possible to rely on the normal functioning of any aircraft systems, therefore initiation of the emergency parachute has to be as simple as possible, and all subsequent actions fully automatic. Sensing of speed or altitude should be contained in the cockpit area and independent of other aircraft systems. Initiation must be mechanical and unambiguous in operation.

To reduce the aircraft mass, deployment of the system should automatically open any water dump valves and the undercarriage should also be lowered to absorb landing impact. Because of the possibility of deployment, inadvertent or intended, while being launched, initiation of the recovery parachute must also open all launching release hooks. Experience of ejection seats has shown that fully automatic operation improves reliability and saves time, and both of these lead to improved survival rates.

Companies in the USA have found that it is easier to develop a system than to obtain airworthiness approval. The difficulty is philosophical. Clearly the installed system must not add to the dangers of flight, or create an emergency by uncommanded operation, so in respect of installation and reliability of initiation, it must meet normal engineering standards. Once an emergency has occurred, the aircraft may be either complete or structurally damaged and it may well be outside the permitted flight envelope.

The function of a recovery system is to give the pilot the best prospect of survival. Absolute safety can never be assured. At present the survival rates are only about 50% from inside the theoretical escape envelope. Military experience with ejector seats suggests that a 95% survival rate from an increased envelope should be attainable. No testing could explore every combination of height, speed and aircraft structural damage. Tests of models are of dubious validity because of viscosity effects.

Testing has to be aimed at establishing the function and reliability of the initiating mechanism, and any associated speed and altitude sensing systems. The strength of the parachute and the attachment of the strop to the aircraft structure has to be demonstrated. Evidence from dummies in drop tests is required to show that the pilot can survive the ground impact. Therefore the testing of an escape system must be directed towards establishing the performance of the systems, rather than proving safety.

The problem for the glider manufacturers is whether a system will sell to customers. The installed equipment over the life of the aircraft may not be much more expensive than the present cockpit parachute, but development costs will be significant. As with ejection seats in military aircraft it will require a few spectacular saves to convince pilots that a recovery system is an essential feature for their new sailplane.

For the manufacturers this must be a gamble; nevertheless work is being done in Germany along these lines by a consortium of glider manufacturers, a university institute and a parachute manufacturer. The question no longer lies in the technical feasibility of a survival system, but whether we as customers are willing to spend money as an insurance premium on our lives. Reliable survival at any speed up to 150m/sec (300kt), and at any height down to 30m (100ft) should be a possibility.

STORCOMM

TWO-WAY RADIO

TR7603 Air Set

Each set fitted with all four gliding channels 130.4, 130.125, 130.1 and 129.9.

'Volmet' 128.6 optional on channel 4.

★ Full power transmitter with excellent speech quality.
★ Highly sensitive and selective receiver works both distant and close range.
★ Extremely rugged and reliable.
★ Full back-up service and spares available.
★ CAA and NATS approved.

All radios supplied absolutely complete with easy fit connectors and all fittings.

Details information, prices and full Technical Specifications FREE from

GEORGE STOREY *Tel. 09327 84422*
H.T. Communications, P.O. Box 4
SUNBURY ON THAMES, Middlesex, TW16 7TA

JUSTIN WILLS

35 YEARS ON

A pilot's impression of the World Championships

It was a strange, ambivalent feeling to stand on the second rung of the podium at the World Championships. On the one hand I was never more conscious of the gap between 1st and 2nd (and my mind ran over once again those few decisions that would have made the crucial difference), and on the other I was aware of all the excellent pilots who on this occasion were ranked behind me.

Certainly the Austrian World Championships exercised almost the full range of my emotions – from confidence to caution and from comedy to consternation. Perhaps this was hardly surprising, as almost every task required numerous changes of mood dependent on both the weather and the terrain ahead. There were sections where one could fly very aggressively, often close to the slopes, ignoring powerful lift; minutes later one might be tiptoeing across a gap in order to reach the next ridge high enough to climb away quickly. The only thing I never felt was bored.

Gillian and I arrived at Wiener Neustadt feeling reasonably optimistic after our successful visit there the year before. We were further encouraged by the flying I had done in New Zealand during the European winter, and the practice I had had over the previous two weeks in Switzerland and Austria, where I had been fortunate to stay on the south side of the Alps in good weather whilst most teams seemed to have had much less flying in the poorer conditions to the north.

My LS-6 had been further fettled at the factory and was performing very well, and the rest of the British team seemed in good spirits, including Andy Davis with his infectious optimism and determination and Chris Garton with his rock solid ability. Despite our rather undistinguished results at Benalla the working relationship we had developed there paid dividends in Austria; Chris and I flew together for a significant part of most tasks and it certainly helped us both.

My only real concern at the outset was to stay healthy. Gillian tells me I am an incipient hypochondriac, and I was indeed alarmed when various teams caught a throat virus during the practice week. However, all seemed well with me as the contest opened. Unfortunately the weather prevented flying for the first three days, and on the fourth day I awoke with a prickly feeling at the back of my throat. Sure enough, a 206km task was set and we were off into Hungary.

The weather was very weak, with ragged cu around 2500ft agl under large sheets of overcast. I scratched my way along in best British fashion, anxiously peering at my various maps which frequently contradicted one another. A 1kt thermal just after the first TP prevented me from joining the Arnhem-like scene below, and I even climbed to 3200ft over the second TP. Chris was marking the next thermal ahead and we edged our way back towards the Austro-Hungarian border, where Andy joined below us as we slowly drifted on to the low hills to the west. Interestingly in these very weak conditions the flapped gliders did seem to have a detectable advantage, and the final thermal left Chris and I with enough height to reach home with a few feet to spare and 4th and 3rd places respectively. Andy managed to make it on to the airfield, but stopped just short of the finish line, a remarkable bit of cool judgment, as the last 2km of undershoot was unlandable.



Justin photographed at Wiener Neustadt by Gillian.

By that evening the virus had reduced my speech to a croak and I embarked on a course of antibiotics to speed its passage. The next day the weather was forecast to be a little better, though still unsuitable in the mountains, so a 325km quadrilateral task was set to the north and west with a short final leg back to Wiener Neustadt from the south. Some Codis just before take-off eased my discomfort, and together with Chris I made reasonable progress up the first leg and across a 30 mile blue gap over the Danube valley. Fortunately I had flown over the area in a motor glider during the practice week so navigation was no problem and I arrived at the second TP having made good time.

However the bad weather over the mountains had produced a great line of storms lying east/west blocking the track to the south-east and gliders quickly piled up around the turn as everyone wondered what to do. Some flew back into the sunshine at right angles to course, but Chris and I headed due west encouraged by reports from Andy that there was lift under the main cloud mass. In fact we had a good run in wide areas of 1½kt up until we found a particularly active section beside some straggling cloud and rain. I watched a gaggle ahead climbing well until a bolt of lightning darted to the ground just west of them. The whole gaggle gave a twitch but went on circling. Then another bolt came down just to the east of them, and in perfect unison the gaggle straightened up and sped away.

At this point a couple of gliders got 1000ft higher than the rest and subsequently made the best times of the day. My Codis was wearing off and I made a mistake, got low, and spent 20 minutes creeping upwards whilst others climbed away above me. Finally I got up again and reached a ridge just west of Wiener Neustadt. I felt mentally drained and for the first time in my life had to get Gillian to do my final glide calculation for me. I was most relieved to get back and be placed 12th.

The next day proved unflyable and I hoped this would give me time to shake off the dreaded virus. Gillian and I spent the day walking, but were alarmed by the sight of the local doctor emerging from our hostelry with the news that the whole household had gone down with a feverish cold. We just prayed that we would now prove immune.

However, the next morning Gillian was feeling unwell, In an attempt to avoid our landlady who was obviously infectious we skipped breakfast, which may have contributed to Gillian feeling faint after briefing. Fortunately she recovered before I set off on the 197km task into Hungary again. Chris and I started fairly early as it was already overdeveloping on the mountains and beginning to rain.

As we flew east the clouds became smaller, but cloudbase steadily descended to 2500ft agl. I broke away from a gaggle and tried using the towns as thermal sources, but was forced to use weak lift and came up with the same gaggle at the first TP. I had a better run homewards, but flew too conservatively across a blue hole beside the Neusiedlersee before ending up in very strong conditions for the last 70km to Wiener Neustadt, and 5th for the day.

The weather the following day looked discouraging, but a brilliant bit of Met forecasting and task setting found Chris and I completing a 232km task to the north. The start time proved critical and I flew with Bruno Gantenbrink for quite a while, noticing how steadily and conservatively he was flying. The last 45 miles of the task was devoid of lift, and thanks to advance warning from Ralph Jones I stayed under the last weak cumulus until it pulsed again to give me final glide height. My only quibble was that the wait cost me all the time I had gained earlier and three of us virtually tied for 1st place.

Chris and I were now lying 4th and 2nd respectively behind Bruno Gantenbrink, who had flown the third task very well, and Stefano Ghiorzo. Of the other pilots whom we had marked out at the start, the French had had several outlandings, as

had the Americans, Doug Jacobs having been almost the only non finisher in task three. Bruno was obviously the man to beat.

In retrospect the next day provided one of the best opportunities. Gillian was still very snuffly but Tony Segal pronounced her to be recovering, whilst my virus had almost gone. The task was a flat triangle of 305km westwards into the mountains and the weather at take-off looked good. Unfortunately I delayed too long before starting whilst the cu dried out and rapidly disappeared. The result was that both Chris and I had extremely difficult flights, and were the latest starters to complete the task, whilst those ahead had a comparatively easy run, Bruno also had a bad day, but we failed to make any impression on his lead, though Chris overtook the Italian who landed out.

Next morning it was clear that I had caught the household germ. In an ominous flurry of Kleenex I departed on a 515km O/R to the west. I managed fairly well on the outward leg (so I thought), but lost time on the return to complete in 4hrs 40min for 5th place. However, the French staggered everyone by doing the task in 4hrs 26 minutes, and henceforth proved incredibly fast in the mountains in these conditions.

My cold was in full flow and I was daunted by the thought of a 6hr task

Our task for Day 7 was a cat's cradle to the west. Normally I would have relished the prospect of being able to fly on my own without incurring the penalty that a lone glider normally suffers in other tasks. However, my cold was now in full flow, and I was daunted by the thought of a 6hr task, which was the time limit set for the flight from one's start photo. To add to my problems we had exhausted our supply of medications and it seemed all the other teams had too. In the end Trish Watson volunteered to dash off to a local chemist and try to explain what was needed in her best medical German, Just before take-off she returned with some very large tablets which fizzed aggressively as they dissolved in water, and tasted absolutely disgusting. However, they didn't seem to have any bad side effects, and I was feeling so poorly that I decided to take them at the prescribed interval during the flight. Unfortunately they were not much help and the scene in the cockpit reminded me of a piece of MASH.

Towards the end of the flight I found it desperately difficult to calculate how to make the maximum distance before my 6hrs expired, and resorted to the basic decision to land at the airfield furthest downwind from Wiener Neustadt. As a result I landed at Zell-am-See after 5hrs 57min having scored 722km (including the 5% bonus for landing on an airfield) and 1st for the day. As I sat recovering in the Zell clubhouse I showed Alf Schubert (who is a vet) the pills I had been taking, "These are fine," he said, 'but they are not for you. These are for women when they feel bad during the month". And for cats in their cradles, apparently.

Day 8 found us both almost incapable of getting out of bed, having got back at 2.30 that morning with Gillian doing all the driving, including the 400km home in 4hrs. The glider had to be rigged and ballasted, and the usual preparations made for the 465km triangle which involved crossing the main Alps from north to south. News of my health difficulties had spread and Trish Watson produced some wonderful cold pills. In addition I was approached by a bearded muscular figure in a skin tight athletic suit who was the Austrian team's trainer. Without a word he produced a small bottle from his sock, and attempted to dab some of its fluid up my nose. Debrett's **Guide to Good Form** gives no indication of how one should behave in this situation, so I resorted to squeaking desperately for Gillian, who to my surprise thought the whole thing a good idea. As a result I took off a few minutes later reeking of peppermint and with a much clearer head.

It was a magnificent day over breathtaking scenery. After a glorious run to the first TP I turned south across the main Alpine Massif. As I skimmed over the peaks I encountered several of the Open Class flying the other way, graceful tadpole fuselages supported by almost impossibly long curving wings against a glistening white backdrop of snow and ice. Even in full cry during a World Championship task I could not help reflecting that for the 108 pilots competing from 27 nations this must surely represent the most aesthetic and civilised moment of 20th century sport.

Chris won the day and, despite an infuriating navigation error that cost me 10 minutes, I managed 4th, which brought me to within 70 odd points of Bruno who was still in the lead.

The next day I set off full of determination to close the gap over the 563km triangle set, but I had some difficulties circumventing a thunderstorm on the last leg and dropped a few points further behind, whilst the French won again by convincing margins.

The last day arrived, with a 323km triangle set for us into the mountains, and a remaining possibility of random overdevelopment. It must have been nerve wracking for Bruno, as I needed under 9 minutes to catch him but he flew beautifully, starting fairly early and putting up an excellent time. Knowing of his departure I had to start late, and this proved significantly slower, so that he ended up well ahead. He had flown so well throughout and he fully deserved his win, especially after having been second in World Championships twice before and third on two occasions.

So at the end we stood on the podium, Bruno, Chris and I, watching the clouds building over the distant mountains whilst the two Union Jacks fluttered in the breeze behind us flanking the German flag. I thought of the gliding environment from which I came, and of those who helped me in the early days, including Ken Fripp, Derek Piggott, Andy Gough and, of course, my father. And then I suddenly remembered that just 35 years before he too had stood in the same position, at the end of the Camphill World Championships when he relinquished his world title to Gerard Pierre. Idly I wondered how he must have felt, and then realised that I knew; above all, we felt happy.

MERRI'S PROGRESS

200km: How To Do It



As a result of the embarrassment caused by what must be the slowest 100km for the UK Cross-country Diploma in the history of glass-fibre gliding, my CFI took me around a 200km triangle during the recent Inter-Services Regionals at Bicester in our Twin Astir. I was in the back seat in charge of navigation and TP photography. It was a dirty job, but someone had to do it. Take me around the triangle, that is!

The overwhelming reply to my question "What have I done wrong?", was "You flew too slowly" (or would have been if glider pilots were more sensitive to the finer aspect of grammar). This trip around the Comps task was to teach me how fast fast was.

One thing I noticed was that a nationally rated pilot has the same problems I have, determining where the lift was. So much so that at one point he actually accused me of being a jinx. So that's what my problem is . . .

The real difference was that he kept flying at least 15-20kt faster than I would have under the same circumstances, and refusing to turn in any lift that fell below his expectations.

Now, I know that's the thing to do but, in practice, it's not so easy simply pulling up in bits of lift when I can't tell where it's coming from anyway! It's far more tempting to grab each little scrap in a misguided effort to stay high, though on a nicely defined day, when everything is working (or not) as it should be, then it's a different matter.

I shall try to fly as prescribed by experience, the book, and the CFI. Honest. And when I raise my average km/h above the stalling speed for the glider, I'll buy you all a beer!

CHURCHILL FELLOWSHIPS

Churchill Travelling Fellowships are for UK citizens from all walks of life, irrespective of age, education or professional qualifications, to undertake study projects overseas related to their trade, profession or interests and bring back knowledge and experience for the benefit of others. For an application form send a sae to The Winston Churchill Memorial Trust, 15 Queen's Gate Terrace, London SW7 5PR.

FRANK IRVING

THE XXI OSTIV CONGRESS, 1989

With news of such things as a parachute rescue system, two tugs towing one glider, a stall-warning device, gliding in China, a noise reduction programme . . .

The Sailplane Development Panel emerged from its deliberations at Lindabrunn (see the last issue, p192), blinking in the unfamiliar sunlight. It was Thursday, May 18, and, for many of us, the first opportunity to see how the WGC was getting on. Rather tentatively, we discovered, most pilots having landed-out on the previous day, the first on which a task was possible.

The SDP is only a small sub-set of OSTIV, so it was a greatly augmented body which set off to the official opening of the Congress. We were welcomed by the president of OSTIV, Dr Manfred Reinhardt, heard a keynote address by Professor Piero Morelli, were addressed by various dignitaries and enjoyed a splendid reception and dinner. The OSTIV awards were presented: the OSTIV plaque and Klemperer award to Piero Morelli, for his outstanding work in the development of soaring, and the OSTIV prize to our own Tony Segal for his outstanding contribution to sailplane safety. Diplomas were bestowed on Armin Quast, Thomas Hauf and Terry Clarke for their papers at the Benalla Congress.

Venue had all the facilities the high-tech lecturer could desire

The Technical Papers commenced on the following day at the Ritz (otherwise RIZ, the Regional-Innovations-Centrum). This was an excellent venue, with all the facilities that the high-tech lecturer could desire. However, it did have the severe disadvantage of being noticeably remote from the airfield, rather too far for a casual stroll in either direction. This tended to defeat the idea of having the OSTIV Congress alongside the WGC, in order that fruitful intellectual interchanges should take place between the respective participants.

What follows is a very condensed personal view of the Congress. Those seeking more detail can read the papers in forthcoming issues of "Technical Soaring" or ultimately in the OSTIV Publication. Also I am confining my remarks to the Technical Papers: there was also an array of Scientific/Meteorological papers from which I excused myself.

We started with Hans-Jurgen Berns, telling us about the SB 13 flying wing sailplane of the Braunschweig Akaflieg. The performance seems to be as good as expected but some tricky handling features were discovered. It was rather easy to achieve pilot-induced oscillations because the short-period frequency was about 1-2Hz. This situation could be improved by moving the C of G aft which, however, produced a very steep spin following a stall in a turn. Unless the sideslip was rather precisely zero at recovery, a spin in the opposite direction tended to occur. We saw some spectacular pictures of its behaviour, which looked extremely emetic. It was proposed to fit boundary layer fences just outboard of the airbrakes. This must be the first serious sailplane to have a parachute rescue system, consisting of three parachutes with a total area of 300sqm and weighing 20kg.

Dick Johnson told us about the development of his stall-warning device which we sampled on the DLR "Janus" (also in the August article), and Mr Schurmeyer explained his pitot-traverse system for measuring aerofoil profile drag in flight, controlled by an HP-71 pocket computer.

Otto von Gwinner explained, at some length, the problems involved in restoring the airworthiness of "Security" parachute canopies of US and UK origin. Owners of such parachutes should contact him.

David Marsden explained his latest thoughts on aerofoil design, in this case for a little light sailplane. The idea was to keep the empty weight down to 45kg, but to keep a conventional wing loading not less than 30kg/sq m. The span should be 10m, with an aspect ratio of 20. With such small chords, the Reynolds number was rather smaller than usual: about 0.5 to 1.0 million. He has designed and tested a wing section designated VAG 88 143/20 which denotes a thickness of 14.3% and a 20%-chord flap.

It works over the desired range of Reynolds numbers, with a profile drag coefficient of 0.008 at 0.5 million, 0.006 at 1.0 million and 0.004 at 2.0 million. The section may also be suitable for propellers. The whole concept sounds most interesting and we hope it leads to some flying hardware.

Cedric Vernon presented a paper by Hans Nietlispach on "The Y-Aerotow". We all know about towing two gliders behind one tug but this was the other way round – two Robins towing one K-21 from Bern Airfield. This sort of thing has been done before for military purposes but this is probably the first civil application. The two tugs had ropes of 60m and 40m respectively, with a third 60m rope from their junction to the glider. We got the impression that the whole performance required a great deal of organisation doubtless, no doubt, to fit the operation in between Bern's international movements (courtesy of Dan-Air's 146s). It worked, but we got the impression that Dr Johnson's remarks about a woman's preaching might be applicable.

Detlef Pusch gave a very interesting paper on the investigation of glider safety belt behaviour under accident conditions using the data from 911 accidents in Germany, together with tests using a ballasted front fuselage with a dummy pilot. He opined that a four-strap harness can be satisfactory if optimised with energy absorption devices. He was inclined to the view that straps between the legs "pinched the soft tissues". His views were clearly at variance with those of Tony Segal.

The safety theme was continued by M. Conradi of Aachen, who has been looking into canopy jettison on behalf of the German Ministry of Transport, with some input from the BGA. He has been conducting getting-out tests (static, on the ground) with pilots of various ages, some loaded with ballast to simulate high-*g* conditions. The worst time to release the harness and get out was 7.2sec for an elderly pilot at 1.5*g*, whilst the best was 2.5sec for a young pilot at 1.0*g*. Some elderly pilots loaded to 1.5*g* could not get out at all. Working three levers and pushing the canopy off can take 3.5sec. This can be reduced by fewer levers and a further 1.0sec can be saved if the canopy sucks off itself. The height of the cockpit side and the configuration of the instrument panel were also important. Good detail design can clearly make an immense difference.

"A very important paper and its full text is eagerly awaited"

Experiments were conducted in a wind tunnel at about 33m/s (64kt) to measure the fore-and aft and vertical loads on canopies. There was often a forwards load, with no great sucking-off force. The latter was improved by closing the window and opening the ventilator. This was a very important paper and its full text is eagerly awaited.

Tony Segal then told the tale of his impact test, already reported in the June issue of *S&G*, p130, preceded by health-giving exercises for the audience, which was showing signs of wilting by then.

On May 20, I missed most of the morning's lectures, except for my own, as a result of sampling the stall-warnings in the DLR "Janus" which I reported on in the August article. This considered likely sizes, aspect ratios and weights for sailplanes conforming with the World Class specification. The main message was that, unless the designer is going to be very attentive to fine details (with, no doubt, corresponding expense in defiance of the spirit of the Class), little machines of less than about 13m span were unlikely. Since there is no span limitation (save by

implication) the bigger the better, combined with the highest wing loading which satisfies the stalling speed requirement. I suspect that there has to be a major breakthrough if this Class is to be economically viable.

Chris Kensche repeated his observations on gel coats (see August issue). This is obviously a most important matter and needs to be resolved asap. Until it is, owners are likely to feel very aggrieved at manufacturers and gel coat suppliers when faced with a bill for a few thousand pounds after a few years.

The evergreen topic of dynamic soaring was given another airing by A. Knoll, who showed some nice mathematics on optimum three-dimensional paths for extracting energy from the wind gradient. This seemed to be required reading for the Albatross rather than for glider pilots, but an elegant piece of work. The lecturer was given something of a hard time by Herman Dusek, who was given an even harder time the following day.

Encouraging French teachers to develop knowledge of soaring among their pupils

Saturday ended with a lengthy oration by Gerard Gillot on "Studies on assisting and encouraging French teachers to develop knowledge of soaring among their pupils". His intentions were of the best and his enthusiasm great, but his complaints about lack of support from his local club suggested that they, too, had become a little overwhelmed by his zeal. Also, he was very prone to use words like "pedagogical".

Came Sunday morning, with various presentations relating to human- and solar-powered flight. One can only boggle at the lightness of the HPAs, and their fragility. "Daedalus" (the one that flew from Crete to Santorini) was 31kg empty with a span of 34m. The ultimate load factor was 1.75! And Velair, Mr Frank said, was 35.5kg with a cantilever wing of 23m span. At the other end of the structural scale, or nearly so, Jerzy Smielkiewicz told us about loading spectra for the SZD "Junior".

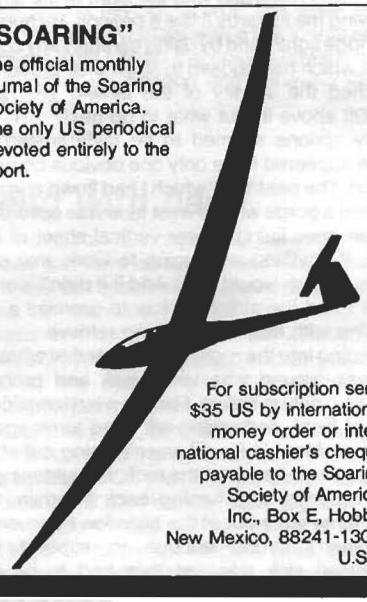
Then came a fine display of glasnost, with Alan Patching reading a paper by Mr Ushakov investigating the fail-safe characteristics of the LAK-12 sailplane, taking into account the effects of temperature and humidity. A very good paper. We were also told about the problems of designing and developing the LAK-12 in Lithuania. It was a very forthcoming paper: they were well aware of what needed rectification and had no hestitation in telling the Congress. Apparently, JAR 22 is in short supply in the USSR, so the BGA was happy to help by bestowing a copy.

Hermann Dusek then addressed us on the optimal dynamic utilisation of ground effect and low-level wind gradient during final approach, to hop over an obstacle, for example. It was not at all clear how the pilot's fevered brain was supposed to sort out what NASA would call "terminal manoeuvring phase energy management" in the heat of the moment, but we got the impression that it was imprudent to exceed about twice the minimum drag speed. Otherwise, it seemed likely that Kronfeld said it all in the 1930s ("Kronfeld on Gliding and Soaring", illustration No 47 entitled "An obstacle in the course of flight"). Professor Dusek made the unfortunate mistake of implying that the audience was unlikely to appreciate the true beauty of his variational mathematics and was rather taken aback when one listener was unkind enough to say that it had all been done before.

Mr Pirker then provided some light relief with an account of the development of his leading edge bug scraper, several of which are now littering the Austrian mountain sides.

On Monday, we went on the excursion to Hungary, a great bus load of 74 souls, splendidly organised by Dr Pumpl. Earlier, there had been a certain amount of vacillation, as to whether we should fill-in the blue forms, or the red forms or none at all. I forgot which colour eventually became fashionable. Also a great list was compiled and dispatched to Budapest, where it was lost. None of this worried the frontier guards, by then inured to gliding eccentricities. They stamped passports with immense gusto and sent us on our way after only 30 minutes which, at 24sec/passport, was pretty good. Off to lunch and thence to a small glider factory where they were re-treading and constructing the Gobe R-26 two-seater. Louis Rotter's rather subdued photo in the June issue of *S&G*, p158, scarcely does it justice, particularly in respect of the stretch-formed leading edge. In an adjacent building, Scheibe SF 34s were being constructed, rather slowly. Onwards to Sopron, noting some Iron Curtain demolition *en route*. There, we peered through various dusty shop windows at displays of idiosyncratic souvenirs, one of which Cedric Vernon felt impelled to purchase. And thence to a splendid country house for dinner, wine and gypsy violins, where we rapidly came to realise that the pockets on the standard gypsy waistcoat are strategically placed to accept offerings. And so back to Wiener Neustadt *via* another frontier post, who also had the message.

"SOARING"
The official monthly journal of the Soaring Society of America. The only US periodical devoted entirely to the sport.



For subscription send $35 US by international money order or international cashier's cheque payable to the Soaring Society of America, Inc., Box E, Hobbs, New Mexico, 88241-1308, U.S.A.

Back at the RIZ on Tuesday, Axel Friedrich told us about the latest thinking at Aachen on optimum cruising speeds, etc. The standard method of determining it from polar curve (incorrectly credited to MacCready) was not quite right, we were told. An alternative construction was displayed, to the mystification of one and all. We must await the published paper to try and comprehend what is going on but at first sight it seems rather unlikely that the last 50 years or so of fairly incessant work on this topic can be tossed aside quite so easily.

Mr Zhang Ruying gave a survey of the development of gliding in China over the last few decades, illustrated by a video. There was considerable Polish influence in the equipment and we were charmed to note the tendency of trainee pilots to wear white gloves. He described the "River West Corridor" gliding site which has been visited by an Australian team. "Pilots of all countries are welcome" he said - but that was prior to the new dark age in China.

Mr Kampf explained the "crash" tests of quarter-scale models of the front end of composite sailplane fuselages at MIT. These were conducted on a test machine under almost static conditions, which is entirely compatible with real dynamic crashes. The tests were equivalent to striking the ground 45° nose-down with a force six times the glider weight. Delamination of the seat-pan reduces the strength markedly, but a simple mod could double the strength. There was much discussion about harness, with inputs by Tony Segal.

Ed Crawley, also of MIT, spoke of a noise reduction programme applied to a Cessna L-19 towplane. Using a 4-bladed Hoffman propeller reduced the tip Mach number from 0.86 for the original 2-blader to 0.7. Various mufflers ("silencers" to the Brits) were tried, the most beneficial of which was of the large truck variety. There is not much point in quoting his dB figures, since the method of measurement was quite different from that of CAA, but the improvement was so great that the Callistoga gliding site was getting "negative noise complaints" from the locals.

And then our own Bill Scull, chairman of the OSTIV Training and Safety Panel, presented a truly excellent paper. The theme was that gliding needs to be kept safe, but without stultifying it. He described the T&S panel and its philosophy of safety and went on to cite various official actions, some of which sounded familiar, which certainly did *not* improve safety.

Then followed the Meteorological papers, which I did not attend, although in retrospect I should certainly have listened to Dr Joachim Kuettner speculating on how to do 2000km in the USA.

The closing dinner was a most pleasant affair. Prizes were given for the stall-warning devices to the value of the second prize to Lamers-Roman and the value of the third prize to Klein and Dick Johnson. None of the devices were deemed worthy of the first prize. Kind words were said about the various helpers and much praise was bestowed on Dr Herbert Pumpl for making all the arrangements and ensuring that they worked. Farewell speeches were made and medallions distributed. It had been a good meeting. We left Wien airport on the following day in a spectacular snowstorm.

LIMITED OPTIONS

In France on a June day in his Jantar, John Bridge admits to being "more than uneasy as the dangers of mountain flying were once again brought home to me"

It is one of the many fascinations of gliding that the flights we remember most keenly at the end of the year are not necessarily the record breakers performed on stonking days. They are rather more often those which had been under more trying conditions, occasionally requiring all our experience and concentration to achieve success. One such flight was in the French Alps and I describe it here in the hope that it may be of some interest to other pilots wishing to visit the area in the future.

The venue was Sisteron, in June, in the company of most of the gliding population of Hampshire. During the early afternoon, as the heat of the sun began to burn on to the local hillsides, a dozen or so gliders were to be found waiting to launch. With a light lunch inside me and one more long cool drink of water I was ready to go. It looked like being yet another good (*ie* typical) day in the mountains.

After tearing down the dotted line and releasing over a local hillock (l'Hongrie), I climbed in the company of the other gliders into the blue. The heat of the valley gradually gave way to the coolness of altitude and, by looking north, we could see the day would be good towards Briancon and the higher mountains beyond.

On to Jouere, and then the *parcour des combattants*, reputed always to be good under these weather conditions. Whistling past Le Dormillouse, I elected to follow a southern route past the lake. The strong, reliable conditions permitted me the luxury of spending long periods looking at the scenery; 1000ft above the mountains the ski lifts and resort hotels looked strangely out of place in the lush green of summer.

My normal practice when planning cross-countries back home is to ensure that I pass almost indecently close to landable airfields and I saw no reason to alter those tactics when flying in the Alps where the fields are steeper. It just so happens that in this area of the mountains there are no less than seven conveniently placed gliding sites to act as safety fields, one of them at St Crepin, just south of Briancon and directly beneath a large west facing mountain called Eygliers. Mr Malpas has suggested that it is possible on a good day to aim almost anywhere up the face of this mountain and find good lift. So it proved again today.

Higher and higher on to Briancon, I was now 12000ft asl and after some microseconds of careful thought I decided to cross into the next valley system, past Bardonnechia, into the valley of the Arc. After passing over the snow and rock of the pass I descended slowly into the valley. Over the airfield of Sollieres-Sardieres I was well aware that I would need a decent climb to get me back home, so I decided to try and find it from the south facing mountainsides across the valley. However, as I met only subtle hints of lift there, I headed westwards and re-crossed the valley, searching for a gorge with a west facing slope pointing more directly into sun.

Around the corner I found only grass covered slopes, lined with ski lifts and the ever present threat of power cables. Now down to under 9000ft, I turned back along the south side of the valley, hoping for further lift nearer Sollieres-Sardieres. Fifteen kilometres from the security of the airfield, I lost 1000ft in about thirty seconds. Having now only just over 7000ft on the clock (only 3000ft above airfield height), I saw, not really that far away, only a deep gorge in which there was only a small town and a railway line – nowhere to make even a half decent crash. (Well, there was a car-park . . .)

"I pulled myself together and switched into survival mode"

By now I was beginning to feel just a little bit more than uneasy as the sublime dangers of mountain flying were once again brought home to me. Again I had been misled by the strength of the conditions in one part of the mountains into thinking that it was all rather easy everywhere and that I'd be bound to hit something decent soon to get me out of trouble.

As a committed believer in the principle that a really good scare at regular intervals sharpens up the flying skills, I pulled myself together and switched into survival mode. Several moments later I was rewarded with the sight of the airfield, drawing me towards it like a beacon. By hugging the ridge tightly and by using carefully any scraps of lift which had chosen to show their presence, I reached the vicinity of the airfield still nearly 3000ft above it. But what to do next?

My options seemed to be fairly limited and there appeared to be only one obvious course of action. The pass over which I had flown originally formed a gorge whose west face was covered by dense trees lining a near vertical sheet of bare rock. If anything was going to work, that small piece of rock would be it. And it if didn't work, at least I had the airfield below to promise a safe landing with albeit a very long retrieve.

Gliding into the rock, it was clear that whatever lift was around was very weak and probably dynamic only in nature. I began a systematic pattern of flight, performing left hand turns against the rock face. At least I wasn't losing out at this stage; turning against the rock, straightening for two seconds, and turning back in again. Very tight turns were out of the question because the lift wasn't strong enough to support their increased sink rate, yet they had to be tight enough for me to stay in the lift and to avoid hitting the face itself. Climbing always at less than ½kt, I got to know that rock face rather well as the trees slid slowly downwards. This was the fruit of the many practice sessions at Talgarth in close formation with the Black Mountains; I was now experiencing merely raw, concentrated fear, instead of complete uncontrollable panic.

The rock face up which I was crawling formed one end of a horseshoe, the bowl of which I was soon high enough to enter. Once there, the lift improved to 2kt and I felt a greater confidence that I might actually reach the top of the mountain. I did not believe at this stage that getting home was a strong possibility, as I was starting to run out of day. Further up the bowl I noticed that its top was marked by a sharp point where three slopes met. I had a feeling that something interesting might happen when I got there but the reality was far more turbulent than I had imagined, particularly since the preceding thirty minutes had been spent in remarkably smooth, if weak, lift.

There was no hope of flying well co-ordinated textbook tight circles – just keeping an approximate amount of bank without spinning was about the best I could manage. The Jantar is not the snappiest of gliders in roll and I found myself demanding full control deflections (occasionally uncrossed) and an airspeed significantly higher than usual, just to keep the aircraft the right way up.

Eventually I found myself well clear of that particular peak, climbing away in 5kt towards cloudbase. Checking the map, I found that I had two choices to get back into the southern valley; the more direct route would take me over the higher pass, while the lower pass was further off track. I elected to go for the direct route, hoping to get enough height *en route* to take me over the mountains.

After twenty minutes or so I realised that I wasn't going to make it, so reluctantly I returned to the point of the mountain where I had gained my last good climb. Thankful that the lift was still working well, I switched to Plan B and made the detour over the lower pass.

Referring to my incredibly useful guide to landable Alpine fields, I quickly established that in the next valley there was a microlight strip which would provide me with a good chance of hitting the ground safely. My hopes, which had been lifted as I had realised that I would cross the pass easily this time, soon fell again when I saw the

(Continued on p265).

WAY OFF TRACK

It may have been lucerne but I was in clover

Satellite technology being what it is nowadays, some eye-in-the-sky may well have recorded Penguin pedalling an ancient woman's bike - on reflection, perhaps I mean a woman's ancient bike - with a flat rear tyre and no brakes along an interminable and dusty Hungarian farm track on July 2.

I had purloined the bike from a six-year-old - one of three small boys who arrived on such steeds when I landed in an enormous field of lush *lucerne after cockily converting an intended air retrieve into an attempt to soar back by pulling the plug at 400 metres some 60km from home.



Dusty Hungarian farm track.

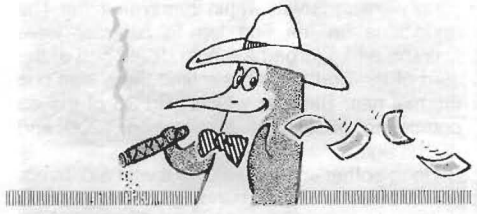
The six-year-old was now riding pillion on the carrier of the biggest kid's bike, all three following me to a distant farm where, they had indicated, there was a telephone. There wasn't - but there was a cow hand who proudly and courteously ushered me into his Lada and drove me about 8km into the nearest village and from there telephoned my plight to base. Refusing my gestured offer of a cooling beer, or even an ice cream, he drove off with a beaming smile.

From Kiskunfélegyháza (try saying that when you're tight) a trailer was quickly dispatched and the whole incident became the most pleasantly memorable of my many retrieves. The little *sörözö* and *büfé* outside Tiszakécske station was doing a lively Sunday afternoon trade; the bench outside in the warm, warm, sun was preferable to jukebox pop within.



Fast asleep.

I sat, then lounged, lazily watching traps and carts pulled by the shiniest and most stately horses arrive and depart. And it was there that Laszlö and my companion in the odyssey, Dan, found me about an hour later, stretched out fast asleep, soaring hat over my face, three discarded beer bottles and an empty glass on the window sill above my head.



Behaving like a rich American.

Even as a short cross-country it was a dismal failure, scarcely worth a logbook entry as such. But as an afternoon experience it was sublime, well worth a fistful of forints for every memorable minute.

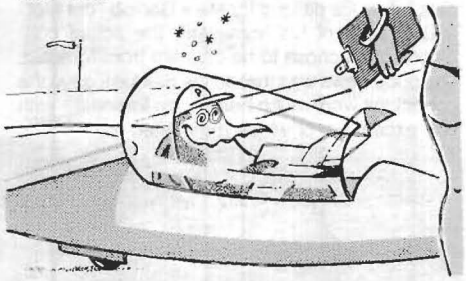
Back at the field of lucerne, the three small boys were duly rewarded with a few forints each, provoking from Laszlö the unkind remark that I was pushing up inflation and behaving like a rich American.

Flying with flare

Every Hungarian launchpoint - I have now flown from four and have landed out and relaunched at two others, so I speak with reasonable authority - follows a standard format. The controller/instructor-in-charge sits at the front table with the base radio, flying list, Very pistol and cartridges at hand. At the second table behind sits the timekeeper. Behind them both, trainees waiting to fly, retrievers etc., sun themselves while lying on spare fluorescent ground signals. To one side is the landing T. On the other a Russian UAZ or Romanian ARU 4×4 stands ready, together with an open trailer loaded with all manner of launch point kit, such as ballast weights, tyres, smoked baros, 'chutes, packed lunches and a large churn of drinking water.

The fact that the controller and timekeeper, not to mention the waiting pilots, are as likely as not to be well bronzed, nubile, young women in miniscule bikinis - I speak of the high season - does little to concentrate the mind on the task one is about to attempt.

I have reservations about the Very pistol and the cartridges, though. I was told it was to fire red flares to call all aircraft down, including those without radio, should such a recall be required. In the intense Hungarian sunshine, and the inevitable haze, it would take more than a small red flare to be seen from any distance in the air, even if one happened to be looking at the field when it was fired.



Concentrate the mind.

Certainly at one site they were treated with some abandon. Two flares were fired, apparently pointlessly, because the controller was bored and it had been a long, hot, duff day - causing great consternation to the timekeeper's dog who leapt up at the descending fireball.

The flare fell straight into the large funnel through which mechanics were pouring Avgas

And like all pyrotechnics, they come with penalties. A year or so ago one launch point controller fired his Very. The flare fell straight into the large funnel through which two mechanics were pouring Avgas into a twin-engined, twin-rotor Kamov Ka-26 agricultural helicopter nearby.



Firing his Very.

In the ensuing excitement the chopper was completely destroyed and the two mechanics, though unhurt, were still running as they passed the upwind boundary about 2km away.

**A fodder plant like clover.*

TED LYSAKOWSKI

15 METRE CLASS NATIONALS

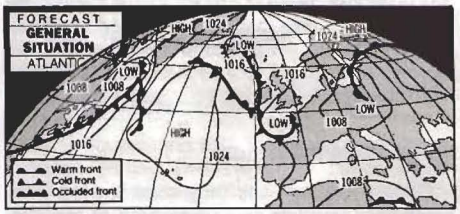
Dunstable, June 3-11

You may remember that during the amazing UK summer of 1989 there was one week that did not fit the typical pattern: June 3-11. As luck would have it those were the dates of the 15 Metre Nationals, held at freshly groomed Dunstable, home of the London Gliding Club.

The weather was dominated by a series of small depressions variously positioned to the west, south and south-east of the British Isles; only towards the end of the week was the flow cyclonic, mainly southerly.

The result was a total of only four contest days out of possible nine, with the mid-week being wiped out by cold and rainy weather.

The Met situation and the absence of good data made life difficult for Mike Garrod "the Met" and in spite of his homework the actual conditions often chose to be different from forecast. The good news was that on the four task days the conditions were much better than forecast – with one exception, of which more later.



The forecasted low for Day 1, Sunday, June 4.

Days 1 and 3 turned out to be short tasks flown in good to excellent conditions, flawed for a while in just one area (on the way back and on the way out, respectively). They proved once again that tasks which are much too short for the actual conditions may be very enjoyable, but have little competition value. In the good part of the route the speeds achieved by the top 50% are much of a muchness and the resultant point spread is minimal and disproportionately influenced by what in hindsight proves to be the optimum start time.

On Day 1 the optimum start time proved to be a 15min "window" around midday, under an inviting cloudsheet to the SW, but perhaps rather early for a 234km task. Those who left at that time and managed to maintain good progress *en route* were assured a trouble free run, with home runs from about 5000ft asl from as far away as Wantage, some 60km away.

Later starters were faced with a temporary deterioration of conditions, including rain, on the final 40km.

But it was a good day and most of the time we had four octas of healthy looking cu with 4500 to 5000ft asl bases and 4 to 6kt average climbs. So it was all good fun, with high cruising speeds, reasonable streeting and generally classic "press on" conditions. High cruising speeds meant around 85 to 90kt when appropriate; you should not believe that anybody flies slowly on a good day for a good result.

Peter Sheard showed the form that he was to maintain throughout the contest and managed to devalue the day to less than 1000pts with his winning time of 2hrs 22min, but there were 20 others within 20min of his time with very small separations – with Pam Hawkins and Alistair Kay being the closest. By 3pm it was all over, bar the shouting, and we were basking in the warm afternoon sunshine and watching soarable conditions for the next 2hrs. But not all of us – five pilots landed out, four of these within a few fields away from Dunstable; Phil Jones was the most determined one – he landed his Ventus at the bottom of the Pitstone quarry.

Day 3 was another one of the same type. The launching began at 1330 into weak but gradually improving conditions with moderate southerly wind and local cloudbase of about 3500ft asl. The start line was opened an hour later and all pilots were underway within 20min after that. The conditions on the first leg to Bicester were average and a large blue hole developed at the start of the 2nd leg. At one time there was one thermal near Bicester which held 36 of the 43 competing gliders, all at between 1200 and 4000ft agl.

On the other side of the hole it was a different world: three to four octas of good flat cu, with bases gradually improving to 5500ft asl and 6kt lift.

This time a late start proved to be more advantageous and the winner was again Peter Sheard who left at 1445 after a relight and finished in 2hrs 21min, with many others within 10min of his time.

Day 2, the Cheltenham day, was something else altogether: the longest task of the Comps, set with high expectations of good conditions in an unstable NW flow that covered the British Isles. But a small depression off SW Scotland moved quickly SE, the humidity at middle levels increased and in the W part of the task there were large spread outs and some rain.

All of the NW, including the start of the 3rd leg toward Evesham, looked unsoarable.

But the air coming from NW was much cooler and highly unstable and despite the uninviting sky produced 2 to 3kt lift to the SE and E of

TASKS
Day 1: *Sunday, June 4; 234.3km ▲, Headington (Oxford), Devizes.*
Day 2: *Monday, June 5, 301.3km ■, Hungerford, Cheltenham, Pitsford Reservoir (nr Northampton).*
Day 3: *Friday, June 9, 199.8km dogleg O/R Bicester, Newbury R/C, Bicester.*
Day 4: *Sunday, June 11, 230km ■, Grafham Water (nr Huntingdon), Gaydon, Headington.*

Phil Jones at the bottom of the quarry.



Cheltenham, with clear air climbs up to 4000ft asl. The trick was to get to that height somewhere near Aston Down, tiptoe in and out of the rain at Cheltenham and back track on the 2nd leg toward Hungerford to remain airborne under dark - but working - cu. Those who did that were then able to contact better clouds around Little Ris which offered cloud climbs to about 6000ft asl and, from that height, to make reasonable progress in weak to average conditions under ⅞ cu and Scu toward Pitsford. The final leg into Dunstable was on the edge of all those clouds into moderate westerly head/crosswind with deteriorating conditions.

Cheltenham remained open until at least 3pm and most pilots did in fact get around that TP, but it took a heavy toll in outlandings in that area and up to half-way on the 3rd leg around Evesham and Long Marston.

There were only four finishers, led by Peter Sheard after 4hrs 13min on task and a character forming final glide from south of Northampton 35km away and from not much above 3000ft. I arrived some 17min later *via* a safer Olney and Bedford route. An hour later David Stewart finished from the same direction and Ted Richards was back at 6pm after it had been drizzling at Dunstable for some time.

No suitable fields ahead

Bruce Cooper expected to get in from near Northampton, but the glide was not working out, there were no suitable fields ahead and in the end he had to turn back and land 10km short of Dunstable. Simon Redman was the only other pilot to get past Pitsford.

An "interesting" day, as they say, but it is always disappointing when the weather takes out so many pilots so far away from home and the lost points are **very** difficult to make up.

Day 4 on the last Sunday of the competition was, by comparison, perhaps the most straightforward one. The previous day's forecast was most unpromising, but on Sunday clearly a soarable day was in the offing and the briefing hangar buzzed with anticipation: it is always good to finish a Comp on a flying day and there is always one more opportunity to improve one's position - although the reverse is also true!

It turned out to be sunny, with moderate southerly wind and four octas of cu with 3-4kt lift and 4500ft asl cloudbase, except around Northampton where it was about 1000ft lower. There was also some high cirrus, but it did not spoil the day.

The line opened at 1254, but this time there was some local hanging around and the start times were spread over the following hour.

This was a day for choosing your time and just getting on with it. The first leg to Grafham Water was downwind, easy and fast, the 2nd leg much slower and then improving but cycling conditions beyond Gaydon. The final 45km leg was a happy downwind dash from cloudbase at Headington. In my perfect world all final legs would be downwind and in soarable conditions.

Much water was dropped on the Dunstable countryside in spectacular finishes, although Pam Hawkins flew her LS-6 unballasted for the winning time of 3hrs 10min. Jed Edyvean was about 1min faster, but a 20pts "admin" penalty for not reporting his start time pushed him into the 3rd place for the day. The norm for the task was about 3hrs 30min, with most pilots completing within 4hrs, although the cycling weather on the 3rd leg caused four outlandings around Headington. Peter Sheard did not win this time, but was only 7min slower than Pam and his 4th place for the day ensured him the well deserved Championship.

And that, all too soon, was that. Time to pack, attend the prizegiving and wait for another competition.

Even though there were only four contest days, this was a happy Championship, helped no doubt by the attractive setting of Dunstable and by the smooth, efficient and friendly organisation. Most of the non-flying days were "touch and go", so we were always called to the grid and thus there was plenty of action as gridding on that site is no mean feat.

Thank you again Dunstable, more in two years?

ORGANISATION

Director:	Tom Zealley
Task setter:	Robin May
Met:	Mike Garrod
Chief Marshall:	Derek Sear
Scoring:	Tim Newport-Peace
TP photos:	Derek Sear
	Tony Danbury
Control:	Joan Bird

Below: All the "Niners". Photo: Ted Lysakowski.



FINAL RESULTS
15 Metre Class

			Day 1.4.8 234.3km ▲ Oxford, Devizes			Day 2.5.8 301.3km ■ Hungerford, Cheltenham, Pitsford			Day 3.9.8 199.8km dog leg ⇄ Newbury via Bicester			Day 4.11.8 229.9km ■ Grafham, Gaydon, Oxford			
Pos	Pilot	Glider	Speed (Dist)	Pos	Pts	Dist (Speed)	Pos	Pts	Speed (Dist)	Pos	Pts	Speed (Dist)	Pos	Pts	Total Points
1	Sheard, P. G	Ventus A	98.5	1	951	(71.9)	1	1000	85.2	1	938	69.7	4	940	3829
2	Lysakowski, E. R.	Ventus B	91.7	15	864	(67.5)	2	991	78.1	14	825	68.4	8	916	3596
3	Stewart, D. R.	Ventus B	92.1	13	869	(54.9)	3	967	81.6	=4	881	65.4	18	859	3576
4	Edyvean, J.	Ventus CT	96.8	4	928	182.1	11	642	84.7	2	930	72.9	3	980	3480
5	Cooper, B. L.	LS-6s	93.4	7	885	286.9	5	896	74.7	22	772	64.5	21	843	3396
6	Hawkins, Pam	LS-6s	97.7	2	940	148.2	38	542	78.4	12	831	72.4	1	989	3302
7	Kay, A. E.	ASW-24	97.1	3	932	192.9	=8	668	76.0	18	793	67.6	10	900	3293
8	Durham, M. W.	Discus B	94.3	5	895	192.9	=8	668	75.3	19	782	66.4	14	879	3225
9	Roberts, D. G.	ASW-20s	88.4	20	821	187.3	10	654	81.6	=4	881	65.8	17	867	3223
10	Cook, I. R.	Ventus C	92.8	11	877	156.6	=27	579	79.6	7	850	69.3	13	*882	3188
11	Elliot, B.	ASW-24	91.9	14	866	184.3	17	598	79.5	8	849	63.9	23	831	3144
12	King, P. A.	Mini Nimbus C	87.9	21	815	164.0	=18	597	75.2	20	781	69.6	5	938	3131
13	Richards, E. W.	Discus	86.4	23	795	(52.5)	4	962	72.8	39	*695	55.6	35	677	3129
14	Murdoch, M. L.	ASW-20	91.3	16	859	174.9	=13	624	72.2	31	733	68.0	9	908	3124
15	Hartley, K. J.	ASW-20s	95.9	12	*870	154.2	=30	573	73.8	=24	759	66.9	12	888	3090
16	Cunningham, G. W.	Discus	93.1	9	882	153.1	=33	571	79.2	9	844	60.9	31	776	3073
17	Jeffery, P.	Pegasus	93.1	9	882	148.5	37	552	73.1	29	747	68.4	15	878	3059
18	Scott, T. J.	ASW-20	80.5	27	720	168.0	16	607	76.6	16	803	69.0	7	927	3057
19	Addis, C. J.	LS-4	79.0	31	701	167.6	22	591	84.2	3	922	62.9	24	813	3027
20	Jordy, M. J.	ASW-20c	83.9	28	*716	215.6	7	724	74.9	21	776	62.4	26	803	3019
21	Glossop, J. D. J.	ASW-20	83.2	25	754	172.3	15	618	78.5	11	832	62.0	27	796	3000
22	Rollings, C. C.	ASW-20s	80.1	38	*705	156.6	=27	579	78.4	13	830	62.6	25	808	2922
23	Morris, G. D.	ASW-20L	91.3	29	*710	161.8	=20	592	71.0	33	715	67.1	11	891	2908
24	Knight, R. J. S.	ASW-20	93.8	6	890	161.1	23	590	73.2	27	749	54.6	38	659	2888
25	Fox, R. L.	Ventus B	73.4	37	630	178.8	12	633	80.5	6	864	58.0	34	722	2849
26	Galloway, J. P.	LS-7	88.8	19	827	138.3	39	507	73.1	28	748	59.6	32	751	2633
27	Miller, A. S.	LS-4	76.0	34	673	154.2	=30	573	76.3	17	798	61.1	30	779	2823
28	Baker, P. E.	ASW-20	76.7	35	672	151.3	36	564	70.7	=34	709	64.9	20	850	2795
29	Redman, S. J.	ASW-20c	90.8	18	852	250.2	6	888	78.5	10	833	(180.1)	=40	267	2780
30	Moulang, A. P.	ASW-20	68.1	38	562	153.5	=33	571	73.3	26	750	66.0	16	871	2754
31	Kay, W. M.	ASW-24	86.7	22	800	78.2	43	245	73.8	=24	759	69.1	6	929	2733
32	MacPherson, D. J.	ASW-20	81.5	26	733	159.4	=24	586	74.0	23	781	53.9	38	645	2725
33	Murphy, T. J.	ASW-20	78.3	33	692	153.1	=33	571	71.4	32	721	54.1	37	650	2634
34	Jones, P. R.	Ventus	(226.4)	40	306	174.9	=13	624	70.7	=34	709	72.0	2	982	2621
35	Spencer, J. D.	DG-600	(227.2)	39	308	154.2	=30	573	76.9	15	807	65.0	19	851	2539
36	Lyttelton, C. C.	ASW-24	93.3	8	884	184.4	=18	*597	72.2	30	734	(179.9)	=40	267	2482
37	Davis, C. M.	Mini Nimbus	78.6	32	696	156.6	=27	579	50.2	41	387	81.3	=28	782	2444
38	Wright, R. H.	Mini Nimbus	91.1	17	856	137.4	40	503	69.7	40	894	(184.5)	39	275	2328
39	Reading, P. T.	Ventus	84.3	24	789	161.8	=20	592	69.9	38	696	(176.9)	42	261	2318
40	Logan, M. W. B.	Ventus	(218.5)	42	292	159.5	=24	586	70.1	=36	701	58.1	33	723	2382
41	Eagles, T. W.	Discus	(155.2)	43	175	159.5	=24	586	70.1	=36	701	61.2	=28	782	2244
42	Stuart, T.	ASW-24	75.1	36	652	128.0	42	461	(166.3)	42	249	66.7	22	*334	2196
43	Bastin, J. C.	Ventus B	(224.8)	41	383	129.9	41	470	(40.9)	43	34	DNF	43	0	887

DNF=did not fly **=penalty* **BGA scoring program by Specialist Systems Ltd**

OPEN CLASS NATIONALS

Lasham from July 15-23

The notes in bold italic are by Tom Bradbury, the competition's Met man.

The contest period was mainly anticyclonic throughout. The high centre started off to the west of Ireland and slowly moved across to the southern North Sea by Wednesday. It paused over Germany and Scandinavia on Friday leaving a very slack pressure gradient with several heat lows over France and the UK. Throughout the period most of the country was in warm sector conditions and fronts skirting the area were weak and poorly defined.

Day 1, Saturday, July 15: 235km, Salisbury, Cerne Abbas, Salisbury.
12 finishers: Winning speed 60km/h, median speed 52km/h.

Winds were about 15kt from the north and there was a very low inversion trapping a band of low stratus extending from the Irish Sea to the Midlands. The stratus burnt back but the temperature never rose high enough to break the inversion and it was a day of shallow blue thermals. Cooler sea air spread in from the south coast and also over the Yeovil area spoiling conditions in the west. Max temp 27°C dew point 12/13 inland but 16 near the coast.

Saturday was the trickiest and weakest day of the whole competition. Tom's forecast of 1.5kt climbs in the best part of Saturday was exactly right, according to the long term averager on Robin May's Peschges, but that average concealed some slow and sticky moments, as the modest speeds show.

The Old Man of Cerne Abbas (the notion that old men are endowed like that is a myth spread around by optimistic senior citizens, by the way) is difficult to find at the best of times, though it is unmistakable once you see it, as the bishop said to the actress. What seemed like sea air added to the misery and many fell to earth.

This was not the sort of day a Vega should get round (five superships failed to get even halfway) but the 17 metre version flown by Jerry Odell, and developed by Jerry Odell and Mike Cuming, CFI at Booker, is a great improvement. Every surviving Vega should have a pair of tip extensions. There is no fee for this plug.

Ralph started late with a group consisting of Pam Hawkins, Robin May and Mike Webb and managed to pull away from them by about five minutes.

1st Ralph Jones 2nd Pam Hawkins
3rd Robin May

Sunday, July 16
Once again the band of low stratus spread in from Liverpool bay overnight but this day it reached Lasham about breakfast time and persisted until well after lunch. Even when it did finally burn off it left a thick haze layer below the inversion.

Day 2, Monday, July 17: 270km, Wantage, Frome, Wantage.
33 finishers: Winning speed 100km/h (Ralph Jones), median speed 76km/h.

Large areas of upper cloud, some said to be thick enough to produce a few drops of rain, slowed down the rise of temperature during the morning. The morning inversion was much weaker and when the top cover cleared temperatures rose high enough for cumulus to develop at 4000ft and higher. An unpredicted convergence line lying roughly EW from Wilts to the Lasham area gave a boost to the cu. Winds were light WNW in the south but increased further north. There was a strong wind shear above the cloud giving some wave. Max temp 27°C, dew point 13 rising to 15.



Mike Bird (The Hack in the Back) unpaid and undumpable. Your trepid (as opposed to intrepid) reporter and cameraman describes the Nationals quite objectively from the rear seat of the winning glider. His rather serious expression in this photograph – obviously taken by a less skilled cameraman – is due to having that stainless steel probe stuck in his left ear. His only chance to handle the controls was when the boss needed a pee: any air-misses involving No 13 are attributed to these rare moments.

The *S&G* reporter's first day in the back seat (No. 13 was flown solo on Day 1) also happened to be Robin May's worst day of the whole competition. Pure coincidence, of course, but not encouraging, especially as our next day was almost as bad.

Areas of blue, especially when you are not far from the sea, can be daunting, and a group of us detoured to top up height in what was evidently wave to the north of the Frome TP, and only later saw other people flying arrow-straight through the blue into Frome and out again with a great saving in time.

Ralph did not make this mistake, and gave the impression that he was going to walk away with the show. His leading position was to hold till Day 7.

John Glossop and John Bally, having fallen down on Day 1, piled on the coals this day. John Bally flew like a demon on many days and ended the competition 5th overall. It takes a very long competition to catch up after one outlanding, though.

1st Ralph Jones 2nd John Glossop
3rd John Bally

Day 3, Tuesday, July 18: 450km, Colerne, Melton Mowbray, Headington.
25 finishers: Winning speed 97km/h, median speed 75km/h.

With the high centred over Scotland the winds changed to north-easterly at low levels but remained NNW above the inversion. Problems were: first delayed convection due to early morning stratus in the south Midlands and second, a belt of cloud covering the east coast of England. This sub-

sequently gave me a fright when I noticed it was threatening the Melton Mowbray TP. The idea of sending the competitors to the high inversion region in the NE nearly came unstuck. Luckily the cloud sheet broke up into cumulus but the clouds there were nothing like as good as they looked. Max temp 24°C but only 21 near the NE TPs. Dew point went down to 10/11°C.

This was the biggest task set in the 1989 Nationals. Pam Hawkins practiced "Winning by not losing" and tiptoed round taking no risks. This made the rest of us think a bit about tactics. She started seven minutes behind Robin, caught us up a third of the way round and finished 26 minutes ahead. After these two bad days Robin decided that we had been flying too fast between thermals. "Trying too hard?" says his logbook. He is too polite to mention the dud stubble fire which *S&G* recommended we turn back to: this turned out to be not stubble at all, but a whole wheatfield ablaze, to the immediate aid of which the noble fire brigade had been summoned by some interfering busybody. They, with reckless disregard for the need to conserve water in these drought-ridden days, doused the flames and with them our hopes of catching Pam.

It was a long, long day for some. Graham Davey crept home at 1925, and the eight outlanders just ran out of day. There were no specially difficult bits; even the bottom scorer, Clive Davis (Nimbus 2B) did 280km.

1st Pam Hawkins 2nd Ralph Jones
3rd John Bally

Day 4, Wednesday, July 19: 310km, Didcot, Caxton Gibbet, Didcot.
35 finishers: Winning speed 110km/h, median speed 87km/h.



Dave Roberts



Pam Hawkins (Nimbus 3) 4th.
The inept reporter of last year's Nationals, who has been sacked, described Pam as a *vetinary* surgeon. The proper spelling is, of course *veterinary*. In that 1988 Nationals Pam, who has flown hundreds of hours in Australia, came unstuck on the bad weather days. This year the conditions steadily became more Aussie-like, and she won three days out of eight, more firsts than any other pilot. Playing around with delayed starts on Day 6 cost a lot of points, however.

The high settled between East Anglia and Holland producing a slack southerly gradient but the winds above the inversion persisted with their old N to NW flow. The air over SE England had been almost isothermal up to 5000ft and I failed to predict a cooling off of some 3°C around the 3500ft level. As a result a forecast of "blue thermals with some wisp of cu" turned out to be pessimistic. There were some well developed clouds under the inversion. Robin May reported mean thermals of 3.3kt with a peak of 7.7. Max temp 26°C. Dew point 12/13.

Caxton Gibbet sounds like a place where printers used to be hanged. This crossroads in the flatlands must be a bleak place in winter. It is quite a common TP for Dunstable-based tasks. Robin May changed gear this day: "Much better; flew slower and concentrated on straight flying. Didn't turn till Didcot, nor after Didcot on the return. Good cloud markers."

Photographs and captions: Michael Bird.

It was with mixed feelings that the May *equipe* had heard that Chris Rollings was entering a brand new ASH-25 in this competition. The national coach is a formidable cross-country pilot, and it was doubtless unfamiliarity with the new beast that caused Chris to fall down on the opening day. However he did a Bally and clawed his way back from 33rd on Day 1 to 6th at the end.

1st Chris Rollings 2nd Robin May
3rd John Bally

Day 5, Thursday, July 20: 375km, Didcot, Ely, Didcot.
14 finishers: Winning speed 80km/h, median speed 73km/h.

The high now extended from Germany to the Shetlands and a strengthening south-easterly gradient developed over England. Thermals were very slow to develop at Lasham, partly because a sharp inversion had developed near 3000ft. Temperatures had to rise to 25°C to get things moving. As a result conditions were poorer and the predicted cumulus only appeared well north of the TPs. Luckily the low level winds did not become as strong as forecast so returning against it was less of a problem. Max 29°C well inland. Dew point 9/10° C.

If by this stage you conclude that the organisers were in love with dog leg O/Rs to take us round airspace, you are right. The more TPs there are the greater the opportunities for penalties, but that's tough. The really precise pilots just don't incur them.

Everything was straightforward till about half way between Ely and Didcot, when it was being debated any of us would get back at all. There are few things more galling than having worked hard to cross a blue and difficult area and then seeing a monster straw fire start up ten miles behind you. Add to that the depressing chatter of your deadliest rivals, whom we had smugly overtaken earlier on, happily plunging in (using a variety of radio frequencies, there still being no agreed convention about how to behave in dense smoke) and wafting up to 7000ft, effortlessly to cross your hard-won territory. Professional airline pilots don't swear, but there was audible grinding of teeth in the front seat, especially when Pam Hawkins' cheerful voice chimed in. Pam went on to win two other days, proving thereby that the Huntingdon fire was no flash in the pan.

John Glossop must be psychic: just as P2 in No. 13 was wishing he was not weighing the ASH-25 down, Glossop, having jettisoned lots of water and now several hundred feet higher, made some joke in execrable taste about the problem of dumping redundant navigators. We had the last laugh, though: conditions improved markedly after passing Aylesbury and the monster two-seater strolled past his Nimbus 3 on the final glide, and the original insult was returned with compound interest.

1st Pam Hawkins 2nd John Bally
3rd Robin May



Ian Cook who won the 19m and under 21m pots, just pipping Mick Boydon, last year's double-pot winner by 6pts, or less than 1pt a day. This flouts the old rule that says that to do well you must *always* finish. Ian fell short by just 2km on the 375km Day 5, so got nearly all his distance points. Moreover, there is more scope for diluting the bad effects of one outlanding when you have eight days.

High Flyer from the Low Countries

Gerrit Kurstjens flew Pam Hawkins' LS-6 hors concours, *while Pam flew his Nimbus 3. The LS-6 had been flown by Pam in Russia in the European Feminine Championships and her devoted crew only managed to get it back in time for Day 2. Gerrit put up an impressive performance in this seven days - on a handicap probably equivalent to our top three - and took away to Holland a picture of typical British summer days (7000ft bases and 6kt thermals) that will doubtless bring the Dutch over here in droves in 1990 . . .*

Day 6, Friday, 240km: Pewsey, Bath, Pewsey.

33 finishers: Winning speed 91km/h, median speed 72km/h

Prospects looked bleak at breakfast time; there was a wide zone of unstable medium cloud over the area giving spots of rain. The satellite picture showed a break developing to the west and by mid morning the sun was back to full strength and the temperature was rising well. This was fortunate because the wind was much stronger (SE 24kt at 3000ft at Crawley).

The air was potentially so unstable that thunderstorms were predicted to develop during the afternoon. However, the wind eased off later and the air became very dry, so thunder never materialised until after dark when it reached parts of SE England. Max 31°C inland. Dew point 12°C falling to 5/6°C during the afternoon.

Robin May's log reads "Found excellent blue conditions from Pewsey to Melksham, probably wave enhanced. Couldn't find same on return unfortunately." What impressed his navigator was the boldness of John Bally's dashes into the blue in search of stronger lift, which paid off with victory for the day.

John Glossop started half an hour after the mob and breezed through them.

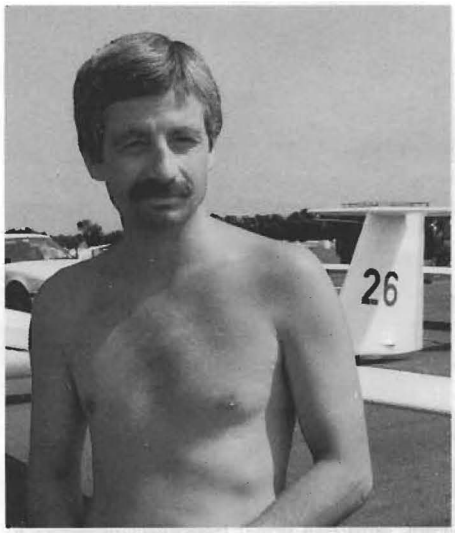
Pam Hawkins and Ralph Jones spent so much time in startmanship that they blew the day. Pam said when the decision finally to depart was made she took 15 minutes to struggle up to start height.

1st John Bally 2nd John Glossop
3rd Robin May

Day 7, Saturday, 400km: Northampton, Woburn Sands, Moreton-in-the-Marsh, Northampton.

35 finishers: Winning speed 115km/h, median speed 83 km/h

The high was now well to the east and a trough developed linking heat lows over France, England and Scotland. This was the hottest July day since the summer of 1976 and it produced many strong thermals (some very rough too) with well formed caps of cumulus with a base which went up to 7000ft or more during the afternoon. Thunderstorms and squalls were again predicted and once more failed to materialise until long after dark, and were then mainly to the north and east of us. The sea breeze reached Lasham at tea time and a region of storms from France spread a cloud sheet over Lasham about 5.00pm. Both these arrived too late to hinder competitors returning from the north. Max temp 34°C inland (31° at Lasham). Dew point 16°C falling to 12/13 inland during the afternoon.



Micky Webb (Nimbus 3DT) 3rd place. Your reporter was pleased to see two-seaters take 1st and 3rd places this year, and is doubtful whether there is much to choose between an ASH-25 and the Schempp-Hirth super-two-pew which Micky flew so consistently. He and his non-dumpable ballast, Andy Smart, weighed a total of about 280lbs, leaving lots of scope for the dumpable variety. What future competitions will require is a race of brainy bantams; then single-seaters will go completely out of fashion.

Some wag said that the task was shaped like an umbrella and that we might need one if the threatened cu-nims materialised. Would they swell to bursting point and wash our hopes away? No, we caught the day at its ripest and richest and romped home in seven league boots.

No. 13 started too early, about 1300, and fell into a hole at Reading. As we crawled up from 1100ft, the debate was, should we start again? Calculations were done as to the expected re-start time - approximately 1355, which sounds horribly late to start a 400km task. But a restart was the only chance to topple Ralph and had to be seized, cu-nims or no. As luck would have it, 1356 was the official start time, 31 minutes after Ralph and 32 minutes after Pam, and was ideal.

The only slowish patch was running down the M1 to the second TP, which dragged the average down to 103km/h. The incentive to move fast was not just to beat Ralph but to beat the darkening, cu-nims that were swelling near Moreton-in-the-Marsh.

A small number of pilots lost all their points for reasons we won't go into, though numerous others were seen doing much the same thing. "In view of the forecast conditions and the weird shaped task, *something* might have been said by the organisers about **rsp*c*," is the burden of the complaint by one of those who went to the guillotine. I sympathise, but the reply is likely to be that if you have an up-to-date map you should know what the notes on the map actually mean. (I have to admit that I myself didn't know.)

No. 13 finished at 1735, long before the bar opened. Something will have to be done about those opening hours. Sitting in the cockpit drinking hot lager offered by children who have been running up eagerly with the cans is not a gourmet experience, and can be messy too. All the same it was nectar. It was the only day Robin won in either 1988 or 1989. Because everyone had finished a 5% speed advantage was worth 86pts, and pushed No. 13 into the lead.

It is a very slight pity that as the weather got better and better no 500s or 600s were set. When all Open Class pilots, most of whom are not flying superships, finish on three days and all but two finish on a fourth day, hindsight suggests they were not being stretched. There were problems of airspace and of accommodating a Regionals at the same time, and this member of the task-setters' union is not complaining; nobody else seemed to mind either. And it was very good for guaranteeing attendance at the club bar, not to mention the cocktail parties, soirees and elegant dinners that Lasham does in such style.

1st Robin May 2nd Ralph Jones
3rd Chris Rollings

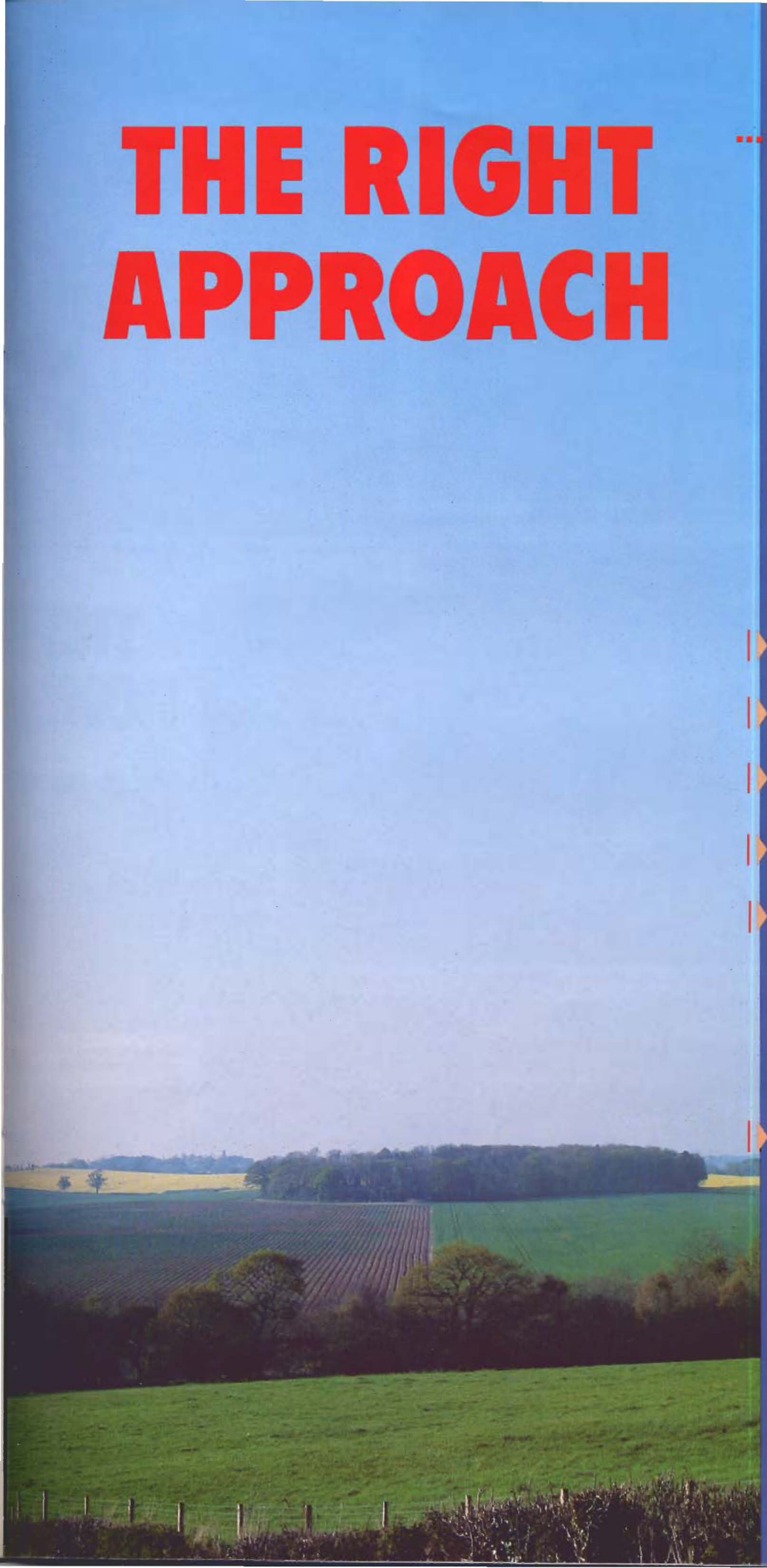
Tom Bradbury is the best Met man in the fraught game of competition forecasting. We can't thank him enough. Everyone should buy his new book!



Ralph Jones (Nimbus 3) 3rd place. Had these Nationals run true to form and lasted no more than five or six days, Ralph would be polishing the Champion's pot for the umpteenth time. One of the minor pleasures of this competition was hearing Ralph tearing somebody or other off a strip on 130.1. What he was doing on the other radio channels was more difficult to find out: as a master of inscrutability as to his intentions and whereabouts he makes the Stealth bomber look clumsy.

(Continued on p247.)

THE RIGHT APPROACH



..... to making a perfect landing is having the right insurance for when you don't.

At **CENTRE LINE** *we're here to give you the best insurance deals on the market . . .*

- **IMMEDIATE COVER**
- **PROGRESSIVE NO-CLAIMS BONUS**
- **GENEROUS INTRODUCTORY BONUS**
- **NO PREMIUM LOADING FOR COMPETITION PILOTS**
- **AGREED VALUES**

CENTRE LINE SERVICES

20, Middle Road, Park Gate, Southampton, Hants SO3 7AL

Tel: 0489 885998

Fax: 0489 885889

In association with A.P.S. International, Lloyds Brokers



"Fast and wet" . . . (but not furious). The 15 Metre Class Nationals. Photo: Ted Lysakowski.



Robin May, the Open Class Champion, with his ASH-25 in the b



Above: Peter Sheard, the 15 Metre Class Champion. Photo: Ted Lysakowski. Below: Mike Jordy at the Open Class. Photo: Michael Bird.

Below: Terry Joint keeping cool at the Open Class Nationals. Photo: Michael Bird.



Jane Jones and Gerrit Kurstjens at the Open Class Nationals. Photos: Michael Bird.

THE 19
COMPE



Above: A man of Kent, Michael See
Tom Docherty in his Nimbus 3. Ph











e background. Photo: Tony Hutchings.



John Glossop (ASW-20) photographed by Ted Lysakowski at the 15 Metre Nationals.

89
ETITION SCENE



Sasemann at Competition Enterprise. Photo: Chris Riddell. Below: . Photo: Michael Bird.

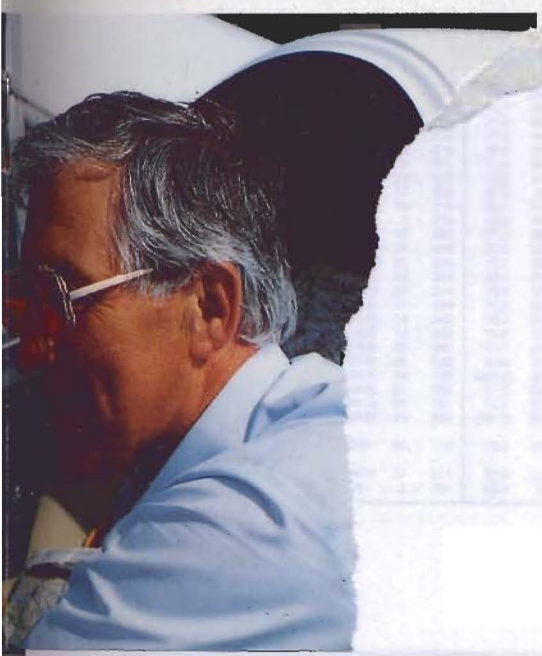


Above: John Bally who, having blown the first day, was considered to be out of the race, but flew demonically on occasions and clawed his way up to 5th. Photo and caption: Michael Bird.

Below: The Dunstable grid. Photo: Ted Lysakowski.



John Jeffries hardly ever flies in competitions, but he was one of the elite six who completed all eight tasks; keeping it up is never one of his problems. However, besides being a rather approximate navigator, JJ has problems taking TPs from the right sector. Numerous photo penalties caused him to slip to 8th in the Open Class Nationals. In addition, he says "I flew much too cautiously. These hardened competition types just keep pressing on." Photo and caption: Michael Bird.



McLEAN AVIATION

THE AERODROME, RUFFORTH, YORK YO2 3QA

FACTORY TRAINED AND APPROVED REPAIRERS FOR GLASER-DIRKS SAILPLANES

TELEPHONE 0904 83653

FAX 0904-838146

VISA

Access

NEOGENE & CECONITE STOCKISTS

GLASER-DIRKS DG FLUGZEUGBAU

SOLE UK AGENTS FOR O/K BAROGRAPHS



DG 400

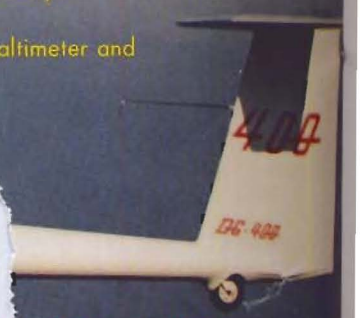
*THE **BEST SELLING** SELF-LAUNCHING SAILPLANE WITH RETRACTABLE POWERPLANT IN THE WORLD*



OVER 250 DELIVERED SO FAR!!

Also: ***K-6CR FOR SALE***

...bble, side hinged canopy.
...ted from Germany.
...eat
...sh altimeter and



...AILPLANES

JOHN ELLIS
0765-89431

Gamesmanship

Is all the gamesmanship around the start justified? This is how the game is played: you start early-ish and announce the time publicly on 130:1; then you creep back, hoping to see your rivals dashing off down the first leg, and start again, telling your crew by code the true start time which they then convey to the organisers. This is all within the rules and great fun – after all, a good pilot has a perfect right to fox the hangers-on who might try to get a free tow round the course – but does it work?

A simple analysis of statistics from Tim Newport-Peace says it might work. Of the finishers on each day, ***those who started last invariable beat those who started first.*** *Of course, if you start so late as not to finish at all, you don't count in the analysis.*

I suspect that starting late does not make you go any faster (though thermal-markers on blue days are useful) but fast pilots know they can afford to hang around. Peasants like me have to get going early for fear of running out of day. Startmanship is ***not*** *for us.*



Jim Prior and Peter Hearne. Prizes at the closing ceremony on Sunday, July 23, were presented by Lord Prior, chairman of GEC, clearly delighted to be at sunny Lasham rather than sitting at home waiting for calls from Number Ten. Peter Hearne, assistant managing director of GEC Avionics, who plans to sponsor the Nationals annually from now on, once shared a K-7 in 1960-61 with the writer; it was entered in competitions at Dunstable and Lasham, though, perhaps wisely, we did not fly together: too much of the nation's future would have been at stake.

Day 8, Sunday, July 23: 260km, Wylye, Frome, Headington.

35 finishers: Winning speed 117km/h, median speed 87km/h

Overnight thundery rain cleared away before dawn but the rise of temperature was delayed by a residual band of upper cloud. The chain of heat lows lay to the east and a drier NNW flow began to develop at low levels. At high levels the thundery south-westerly flow still persisted and the midnight upper air soundings indicated that storms were still possible. Tasks were set to the WNW to keep competitors as far as possible from the threatened regions. In fact the air there stabilised faster than predicted and the good looking cu over Lasham dissolved westwards. Max 30°C, dew point fell from 17 to 13.

Robin was now in the lead by 52pts, but if Ralph beat him by a few minutes on the last day that lead would vanish. Pam was with us at the start, but where was No. 82? To our great relief we found Ralph at Frome in a blue hole and though he and Pam got away again in the booming conditions that soon developed, he was only 46 seconds ahead, leaving Robin as Champion by 44pts out of 7127 or 0.6%.

1st Pam Hawkins 2nd Ralph Jones
3rd Robin May.

On the last day organisers want to get people for prize-giving, so a brilliant short (soon we shall say anything under 300km is short) task was just right, to put the final gloss on a dazzling week.

Gin-clear visibility and creamy cumulus

The landscape was beginning to look positively Australian: yellows and browns of harvested fields predominating over the green. Add to that the gin-clear visibility and creamy cumulus sitting on their 6000ft bases, and it was another country. It looked as if you could hold the entire Marlborough Downs in one hand, and Salisbury Plain in the other.

Eight knots on the averager for the last climb before peeling off into the final glide. Stunning. All those of us who took part that week, including the Lasham Regionals, were still vibrating like bells long after the competitions were over. Will there be another competition like that this century?

FINAL RESULTS
Open Class

Pos	Pilot	Glider	Day 1.15.7 235km Salisbury, Cerne Abbas, Salisbury			Day 2.17.7 270km, Wantage, Frome, Wantage			Day 3.18.7 450km Colerne, Melton Mowbray, Oxford			Day 4.19.7 310km Didcot, Caxton Gibbet, Didcot			Day 5.20.7 375km, Didcot, Ely, Didcot			Day 6.21.7 240km, Pewsey, Bath, Pewsey			Day 7.22.7 400km, Northampton, Woburn, Moreton, Northampton			Day 8.23.7 260km, Wylye, Frome, Oxford			Total Points
			Speed (Dist)	Pos	Pts	Speed (Dist)	Pos	Pts	Speed (Dist)	Pos	Pts	Speed	Pos	Pts	Speed (Dist)	Pos	Pts	Speed (Dist)	Pos	Pts	Speed	Pos	Pts	Speed	Pos	Pts	
1	May, R. C.	ASH-25	62.3	3	821	91.9	6	814	88.9	6	887	107.1	2	950	80.2	3	987	112.3	3	822	116.1	1	1000	118.8	3	866	7127
2	Jones, R.	Nimbus 3	64.9	1	838	105.8	1	1000	98.6	2	992	103.9	4	906	79.5	6	941	93.0	18	618	109.4	2	914	119.3	2	874	7083
3	Webb, M. J.	Nimbus 3DT	60.2	4	807	94.6	4	850	92.8	5	930	102.6	5	889	80.0	4	965	104.7	9	741	99.4	8	785	101.7	9	680	6647
4	Hawkins, Pam	Nimbus 3	63.7	2	830	89.0	7	776	99.4	1	1000	96.8	7	810	82.4	1	982	83.5	28	517	103.6	7	639	119.8	1	879	6633
5	Bally, J. D.	Nimbus 3	(117.1)	23	274	97.0	3	882	94.6	3	948	106.3	3	939	85.0	2	980	118.4	1	886	105.1	5	858	110.6	4	778	6545
6	Rollings, C. C.	ASH-25	(133.3)	33	194	96.0	5	818	94.2	4	944	110.8	1	1000	78.2	5	953	99.8	12	689	107.1	3	884	111.9	6	748	6230
7	Glossop, J. D. J.	Nimbus 3	(141.0)	14	342	100.9	2	933	82.2	10	815	96.4	9	804	75.4	8	933	115.0	2	850	106.1	4	871	98.5	10	645	6193
8	Jeffries, J. J.	ASW-22	55.1	8	773	84.9	15	620	89.3	9	842	92.4	16	701	66.2	13	867	110.3	4	801	99.2	9	781	102.4	8	688	6073
9	Richards, E. W.	ASW-22	55.8	12	736	86.6	9	742	86.1	8	857	95.6	10	795	(360.4)	19	653	110.1	5	798	98.5	10	773	91.8	17	571	5925
10	Cook, I. R.	Ventus	57.9	5	792	81.0	12	668	73.8	22	675	89.4	13	710	(382.0)	15	695	102.0	10	713	104.3	6	848	108.6	5	756	5857
11	Boydon, M. V.	Ventus CT	58.7	11	742	80.6	17	613	86.6	7	862	98.0	6	827	71.6	9	906	88.6	24	571	83.1	20	574	97.7	11	636	5731
12	Jefferyes, M. B.	DG-600	56.0	6	779	66.3	29	472	73.3	16	719	96.7	8	809	62.3	14	840	96.9	15	658	103.9	33	0	106.7	7	734	5011
13	Findon, D. E.	Nimbus 2c	(100.5)	27	228	72.7	22	558	72.3	18	708	87.6	18	686	(347.2)	22	628	98.4	14	675	98.1	11	767	95.4	13	611	4861
14	Fox, R.	Ventus B	(116.2)	22	278	71.8	26	496	67.7	23	658	94.5	11	779	69.1	12	888	89.1	23	576	82.7	21	569	94.2	14	597	4841
15	Davies, F. J.	Kestrel	(134.5)	17	324	77.3	16	618	72.6	17	711	88.5	17	698	(378.5)	16	688	92.7	19	615	82.7	21	569	93.9	15	594	4817
16	Docherty, T. P.	Nimbus 3	(97.6)	29	219	86.3	10	739	(402.1)	27	402	82.0	26	610	75.7	7	935	109.5	6	792	86.6	21	569	88.3	19	533	4799
17	Davis, C. M.	Nimbus 2B	51.8	9	751	71.0	24	535	(312.8)	35	308	81.1	28	598	71.5	11	905	85.1	27	533	91.3	15	829	86.7	21	514	4773
18	Davey, G. R.	Ventus B	(125.3)	20	298	78.5	14	635	70.8	20	692	89.2	14	708	(366.9)	18	666	95.8	16	647	87.0	16	625	84.9	25	495	4766
19	Thompson, M. H.	Nimbus 3T	(134.5)	17	324	87.2	8	751	(418.2)	26	419	85.6	24	659	(291.8)	25	521	109.1	7	787	91.0	12	676	96.7	12	625	4762
20	Pozerskis, P.	ASW-22	(97.5)	35	177	85.7	11	731	78.5	15	724	92.4	12	751	(376.2)	17	683	81.6	29	497	92.1	14	640	89.5	18	546	4749
21	Roberts, D. G.	ASW-20BL	55.5	7	776	75.2	19	591	78.5	12	775	89.2	15	707	(266.3)	30	473	(185.1)	35	177	88.6	13	645	93.4	16	588	4732
22	Odell, J. H.	Vega 17L	51.6	10	750	71.0	28	484	71.9	19	703	86.2	23	666	(268.0)	29	476	89.6	22	582	81.3	24	550	76.2	30	399	4610
23	Taylor, J. R.	ASW-20FL	(101.5)	25	230	70.5	25	528	67.3	24	654	86.4	22	669	71.7	9	906	78.6	30	464	84.1	18	587	87.2	20	520	4558
24	Corbett, G. C.	ASW-20L	(101.5)	25	230	79.7	13	651	72.6	20	692	84.8	25	647	(321.5)	23	578	99.6	13	687	85.3	17	602	76.8	35	342	4429
25	Jordy, M.	ASW-20L	(141.4)	13	343	68.0	27	494	79.0	11	780	87.2	20	680	(350.3)	21	634	61.7	33	286	63.4	19	578	85.5	24	502	4297
26	Bridges, R. C.	ASW-17E	(97.6)	29	219	75.8	31	398	76.9	13	757	87.1	21	679	(281.7)	31	464	106.0	8	755	78.5	26	515	90.1	23	508	4295
27	Moulang, A. P.	ASW-20L	(134.5)	17	324	76.5	22	558	(344.5)	33	342	87.3	19	682	(354.2)	20	641	100.6	11	697	80.7	28	493	88.4	21	514	4251
28	Smith, R. J.	Ventus B	(141.0)	14	342	75.9	20	580	75.1	14	738	81.5	27	603	(350.3)	28	484	91.3	21	599	70.1	32	356	84.3	26	488	4190
29	Mitchell, K.	Ventus B	(138.8)	16	336	76.0	18	602	(400.5)	28	401	79.3	31	574	(291.8)	25	521	85.8	26	541	77.7	27	504	82.4	27	488	3947
30	Joint, T. A.	Janus C	(125.3)	20	298	63.7	33	386	(386.9)	29	386	79.6	30	578	(268.2)	33	422	85.9	25	542	79.8	25	528	75.5	31	392	3532
31	Tull, V. G. F.	Kestrel	(97.8)	28	220	63.9	30	419	(381.1)	32	380	73.0	34	488	(124.0)	35	200	91.8	20	605	75.8	29	479	74.5	32	380	3171
32	Gardiner, D.	Kestrel 19	(90.5)	32	199	(260.9)	34	280	(386.9)	29	386	74.9	33	514	(254.0)	32	449	76.9	31	447	72.4	31	435	75.4	34	371	3081
33	Millar, J. A. K.	ASW-22	(108.5)	31	208	61.6	32	389	75.4	25	641	73.5	35	444	(333.2)	24	551	79.9	32	435	95.4	33	0	76.9	29	407	3075
34	Russell, F. K.	Glasflügel 604	(99.0)	34	181	72.8	21	559	(402.1)	31	382	81.8	32	557	(173.4)	34	294	(195.0)	34	187	74.5	30	462	73.7	33	372	2994
35	Dobson, J. B.	Janus C	(105.9)	24	243	(247.6)	35	265	(318.3)	34	314	80.4	29	588	(284.4)	27	507	95.2	17	640	90.7	33	0	79.4	28	434	2991
Hors Concours																											
12	Kurstjens, G.	LS-6	DNF	36	0	78.8	14	639	79.6	11	787	94.7	11	793	(377.9)	17	687	115.8	2	859	94.7	12	724	94.6	14	602	5091
31	Key/King/ Watt/Young	Janus C	(94.5)	31	211	82.0	12	681	(386.9)	29	386	84.2	26	639	DNF	36	0	(80.9)	36	65	(147.5)	36	0	90.3	18	555	3454
34	Delafield, J.	ASH-25	58.1	9	751	88.4	8	767	DNF	36	0	DNF	36	0	DNF	36	0	DNF	36	0	106.7	4	879	100.6	10	688	3065

DNF=did not fly

BGA scoring program by Specialist Systems Ltd

THE BACK SEAT IN FIRST CLASS

Butch Dalrymple-Smith experiences the Rollings' technique in an ASH-25 at the Open Class Nationals when they were "whistling along like a jet plane"

A couple of years ago I was fortunate enough to have the flight of my life with Derek Piggott in a Janus. (See *S&G*, December 1988, p275.) It is hard to imagine a suitable sequel. How do I get another lesson from an expert; how can I follow up on my Janus flight with something more, something better, something to leave me breathless and wild about this crazy, delightful, frustrating sport called gliding?

I was no longer looking for pointers on how to brush-up my Falke flying but six months into ownership of a PIK 20E, I felt that my "teach yourself" approach was leaving me frustrated, inexpert and probably dangerous. Since I live in Cork, miles from the nearest active gliding club, my gliding activities had to be self-contained. No possibility of tug pilot, instructor, and half a dozen willing hands to push-out, connect-up and wingtip hold: it is a case of tow out on the dolly, check over, light up and off into the wild blue yonder . . . all on my own in the still silence of a summer's day on the Emerald Isle.

It's nice to be unfamiliar with launch queues, tow fees and the morning rush to bag a club glider, but I miss the other part of club life. I miss having someone around to tell me or show me how it should be done. I need a CFI around to give me hell if I fly incautiously and then accept a beer or two as penance. I hate the uncertainty of never knowing if I'm just a lousy pilot or if it really was a bad day. And when it all goes well I miss having someone who understands to listen when I tell them what a magical flight I've just had.

Now you know those dreams you get about telephone calls. You imagine the phone ringing and when you pick it up there's this voice saying you've just won 25 million on the lottery; or perhaps its Glavcosmos calling to say you've been selected to train as the astronaut for the Anglo-Soviet mission to Mir.

Well, one of those dreams turned into reality when it was my old sailing mate Bruce Owen on the line ". . . just bought a new ASH-25 . . . Open Championship at Lasham . . . Chris Rollings piloting . . . fill in as back seat ballast for Day 4."

Would I what!!!

All I had to do was sit tight and do nothing . . . except take the occasional photograph, and look out and follow the map, and look out and give Chris headings off my compass, and look out and hand out the sandwiches, and look out and spot stubble fires, and look out and keep track of the others, and look out and help with retracting the wheel but most of all **look out!**

Actually Chris didn't really need me at all (not even as ballast – water would be better, it doesn't complain, requires no sandwiches and can be dumped when conditions deteriorate), but he was good enough to suggest that if I kept a look out and an eye on the map it would allow him to concentrate on flying the big bird. But far from keeping quiet and working away he was good enough to describe exactly what was going on and give me a running commentary on the whole flight, including background history of every stately home, airfield and village we passed.

He explained why he wanted a late start. Now I had heard about starts. You get as high as you can, put the nose down and when the ship's just a whisker off VNE, going like hell and just 200ft below cloudbase you take the photos, pull up and set out.

So we did that and we were storming along doing nicely when Chris said "Didn't take that, I think we'll go back for another."

So the first thing he did was report we'd already started (and I thought the Irish were illogical!) and we toodled back to the starting gate again.

This time we were not so high, travelling not so fast, but we took the photos anyway and set out.

"Much better", said Chris.

("Shows you how little I know about competitions", thought I.)

"I'll tell you why it's better afterwards". And he did too . . . very logical really. It seems that when we started first time we shot straight into a wide open sky – nothing to go for. The second time there was a nice street of clouds leading us to the first TP. Obvious, really.

So there we were at 3000ft, bombing along at about 80 to 100kt, occasionally slowing down in the lifty bits. It was a while before I saw the flight director register any "Push" or "Pull". And if it agreed with what Chris was doing it must be a pretty good computer, because even at the first TP, Didcot, he still had our original 3000ft!

"We actually shot the railway station three times."

So now I had to earn my passage and take another photograph. We actually shot the railway station three times. I was wondering why, not thinking so much about the lack of faith on Chris's part in my ability as a photographer as concern for the delay in circling three times. I should have noticed. We were in a 6kt climb the whole time.

And so onward to Cambridge. More of the same gentle dolphin flight, with just the very occasional (three times?) circling in those thermals which were too good even for Chris to ignore. And when we did circle, did we circle! None of the gentle merry-go-round turns I do in the PIK. He just stood the plane on its side and pirouetted round the wing. With the same span as a 737 I would swear the inside wingtip was going backwards.

Another illusion was gently shattered when I watched the yaw string. Honestly, we all try to keep it straight but I really did believe even the experts slipped just a teeny weeny bit from time to time. Not our Chris, not unless he had stuck the yaw string on with hairspray that is.

Then just before the crossroads TP I saw a stubble fire starting. Up till now I always thought the farmer went out in the morning, threw a match into his stubble and let it burn away quietly all day. Wrong again. These days they must use a healthy dose of four star Napalm or something because the whole lot goes off like a fire bomb on a TV series. It peaks after five or ten minutes and then dies quietly away to something that would scarcely lift a sparrow.

Once again I got a lesson in the subtle approach. We shot past it, whistled round the TP and caught it on the way back. By this stage it was cooking up a bit. We knew it was a stubble fire to be seen in because Ralph Jones was already there, although it didn't seem right to me that he had his wheels down. Apparently it didn't seem right to him either when he found out. (Thinks . . . even a beginner like me does that! At least I'm in good company!)

The extra height gave us a good start for the run back to Didcot. Perhaps we circled once or twice, but hardly enough to notice.

And then I saw another stubble fire beyond the turn. We rounded the mark and shot straight for it. Chris repeated his warning to tighten my straps, but they were already bottomed out. We pulled up just short, hung around for a moment then went on in.

Suddenly it was black, the glider was being shaken like a pea in a whistle and when I looked out I saw the wings flapping like a swan on full take-off power!

Talk about disorientated. I didn't know what was up, down or sideways. I thought we were pointed straight downwards. I thought we had lost control. I thought we were all going to die. I suppose I could have sneaked a look over Chris's shoulder at the artificial horizon but I felt my time was better spent praying that there wasn't another glider in there somewhere.

And there was that ominous smell of burning from the stubble far below.

Suddenly it was daylight again and I could look around. The sun was shining, birds were singing and we were still alive, but we swung round and

(Continued on p251.)

MARY IN RUSSIA

Pam Hawkins and Mary Meagher went to the Soviet Union to take part in the 6th European Feminine Championships, representing Great Britain for the first time in this event.

For forty years Russia has been the tribal enemy. We've got our missiles aimed at them. They've got their missiles aimed at us. When Mattias Rust landed his Cessna 172 in Red Square the Russians were not amused, and it was two years before he got home again. It was with some trepidation that we arrived in Moscow trundling radio equipment, barographs, typewriter and cameras galore. They didn't care. But they did want to know exactly how many dollars we had with a view, we suspected, to trying to keep most of them in Russia.

We were met by interpreter Andrew, driver Anatoly and international master of sports Yuri Kuznetsov. For many years Yuri held the two-seater gliding distance world record and is coach to the Russian women's team.

He took us all to dinner, with champagne and caviar, and we caught the overnight train to Oriel, 300km south of Moscow.

They have big plans for the National gliding site at Oriel. But when we arrived it looked like a building site on the Costa Mucho. A sea of black mud surrounded by scaffolding, half-formed concrete structures and stocky Russian women wearing white hankies on their heads, carrying squares of wet plaster, shovels, picks, bricks and brooms. It takes eight Russians to do one job: two to do it and six to stand around and watch. Just like it used to be in Britain back in 1971.

Pam was anxious to see if her glider had come through its trans-continental trip unscathed. We were told to bring the trailers out to the airfield where we could assemble and tie them down. However between the airfield, which was quite well-drained turf, and the end of the driveway were twenty yards of well churned virgin black Soviet mud. And while a queue of anxious pilots seethed and muttered, the Soviets laid down then and there a tarmac road, graded it, hard cored and surfaced it in 45 minutes flat! We crossed it while the tarmac still bubbled and steamed and the mud heaved on either side.

Pam Hawkin's LS-6 was towed across eastern Europe by her crew, Sue Mossman and Tish Johnston of Feshiebridge. It took them six days.

Forty-one pilots took part from 11 countries in the 15 Metre and Standard Classes. Eastern bloc women are not permitted to fly in the Open Class.

At last I met my glider. I had a choice of four, all brand new Jantar 3s, so I picked the one that had been flown before, No 16. And I met Sergei, chief engineer in charge of my glider and his three mates. I had only to ask and they would fix it. We were called to the briefing room in the yet unfinished main building. The director, Yuri Valentin, welcomed us in Russian, which was translated in heavily accented English by a lugubrious lanky interpreter, then re-translated by everyone else in the room to their neighbours in sibilant whispers of Polish, Czech, German, Belgian, Hungarian, Bulgarian and Finnish. So now you know who came to the party. Mostly Eastern Europeans, Janet Hider-Smith of Australia and Karol Hines, from California, were flying *hors concours*.

On Monday, June 19, the rain cleared up. We were given four TPs to define our practice area



Mary ready for the opposition.

and off we went. My very first go in a Jantar and getting used to an ASI in kilometres, took a bit of practice. I got the numbers very wrong on final approach and came in much too slow through a formidable wind gradient and the landing was a terrible flop. The Russians watched in horror and an entire delegation came to tell me to land with more speed next time. So next time I came in at 120km/h and got three landings for the price of one.

A road in Russia is a rare luxury. After five days of rain dirt roads are swamps. It became clear that a road retrieve must be avoided. Pam's crew and my crew, Mark Holmes, went to Moscow during the practice week and we were extremely careful not to land out.

Saturday, June 24, was the opening day and we all dressed up in our best British T-shirts, bright yellow with the Booker glider on the front. They put on a splendid airshow. The high point was the display of six Wilgas towing six Jantars in formation which aerobated line astern, six looping all together, nose to tail. The last one almost came unstuck!

And the building work was ready on time. Just about, anyhow. One must be impressed by these people. It certainly is a superb facility for the National Gliding and Parachuting Centre of Airsports.

Day 1. Now it begins. Serious business now. I did pretty well following people; that way I didn't have to navigate. Pam whizzed round in great style and would have been 2nd for the day but a big black cloud obscured the second TP and her photograph didn't come out. Somehow the second film was spoilt in the developing. Despite her protest, the jury ruled against her and she lost 400pts. I ended up 8th after following the railway home. It's easy to see because trees are planted all along the lines to keep off the winter snow.

Day 2. I somehow got muddled up on my nav. Went 40km south of where I should have been with the final glide into the wrong place. I struggled back after the Russians had raised the alarm because I had radiod "One six, 5km" and never arrived and they thought I had pranged in the perimeter.

"And then happened the most terrifying incident"

Day 3. Pam recommended soaking my hat before take-off to keep cool. But the condensation from the hat coated the inside of the canopy so I couldn't see out too well. And then happened the most terrifying incident. After thermalling in a stack with some very aggressive Hungarians, close quarters too, we all dolphined off down the street. Encountering lift, I hauled back on the stick and there was a terrible BANG! "My God, I've been hit" was my first reaction. Hair stood on end. No, it wasn't a mid air. Just the undercarriage slamming down.

Everybody landed out this day, it all went to worms. I learned that if you are lower than everyone else it is not a good idea to keep following them. Pam was 2nd because she landed first in a field followed by two Russians.

Day 4. Got lost. Finished last. There I was, lolloping along behind a band of four Russians girls - their team flying was extremely effective - and I took one more turn in the thermal. When I looked round again they had all vanished. And I hadn't a clue where I was or the church with the golden onion.

Determined to do better, I took advice from Norman Smith, who had kindly flown from the ➡

Lybian dessert to suffer as team manager. Russian charts don't include helpful information like "Variation 7 east". Using km/h for dead reckoning was a new idea to me. I worked out my average from those days I got back as about 60km/h. "A click a minute" said Norman, and so it proved.

Day 5. They sent us on a short beat round some now familiar landmarks and I didn't get lost once! But I was awfully slow. Only one landed out, which saved me from being last.

That evening we gathered for the ceremony of initiation. I may not disclose the inner secrets of our sisterhood, or every detail of the mystic rites, but we did kiss the sooty barograph and dance around the fire. You've got to be careful messing around with witchcraft. No sooner had the last novice been inducted than the heavens opened and it rained for five days.

Eventually it cleared from the north and a 166km was set. Most people got round. I was doing well following some Hungarians, but when they went west of track I got independent and decided to cross the street. Bad idea. In an incredibly brief time I was sinking like a brick, sizing up a hay field.

Well, if you're going to land out girls, land out early! In precisely 15min, thanks to a radio relay by Pam, my Wilga arrived and took me home on a very short rope.

Day 7. We were promised a corker, a 319km task was set but what was actually served up were 30 to 40kt winds, a sheet of cloud and a big cluster of pins in the map before the first TP. Pam landed out after taking 40min to get 20km.

I took two launches, steamed along as best I could but the airfield kept overtaking me so I stayed local relaying outlanding messages. The German girls nearly got round. Splendid effort.

Day 8. Last day. Must do well. My position in the ratings was inexorably sinking towards the bottom. I was full of determination. A sensible task was set round a well trodden task of 162km, so I set out at once.

Nobody else started. They were all waiting for conditions to improve while I was floundering downwind towards the first TP. The thermals bore no relation to the shreds of cloud. At last the rest got fed up waiting and came pelting down the first leg, overtaking me on the first turn and squeezed me out of a perfectly serviceable thermal.

Conditions improved on the second leg and everyone else made it home. I was still struggling into wind on the last leg. Day was dwindling. They sent out the search plane to look for me. "One six where are you? What is your location of outlanding?"

I replied, indignantly, "One six is still airborne". And one six made it home! Oh, that wonderful feeling on a marginal final glide when you know at last you're going to get in. Took four hours. That's an average of 40km/h. Oh well.

Who won? Perhaps by press time we'll know but we had to return early the next morning. Doesn't matter really. Taking part is what matters. New friends, new faces, new places. We'll meet again, some day. ■

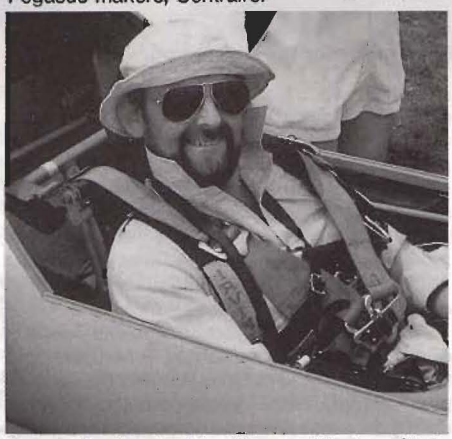
* * *

NB. The Standard Class was won by M. Kyzivatova (Czech), Discus B, and the 15 Metre Class by G. Weinreich (W. Germany), LS-6.

TOURNAMENT IN TOURAINE

Reflections on a Hundred Hours War - Competition Enterprise, Le Blanc, France, June 17-25

Competition Enterprise is a moveable feast. This year after fifteen previous meetings in the UK, competitors were to venture to France, to Le Blanc where Brian and Gill Spreckley have set up the European Soaring Club for the summer. Our most recent World Champion has a sailplane hire and launching facility at this fifty year-old airfield. The local gliding club share the field with the Parachuting Centre and the assembly factory for Pegasus makers, Centraire.



Gerry Martin in his Cirrus. Photo: Chris Riddell.

The Competition Enterprise Committee had set aside convention, exercised enterprise and called for the annual joust to be *chez* Spreckley. Gone were the days of wetness and clag so often found in England when hope was so surely tried. We were to fly in the constant high pressure set up by the great heat engine of Europe in summer. Thermals of astonishing regularity were present every day. They started at noon and finished in time for supper at eight or so.

We travelled overnight by ferry. The three of us achieved a full night sleep and ample refreshment before setting out on the five hundred or so miles from Zeebrugge to Le Blanc. We went to the west of Paris only to find it slow in comparison with the toll motorway *Peage* that stretch from the Channel ports to our destination. We swallowed our pride and came back by motorway and found if fifty miles shorter and three hours quicker than the outward journey, even through Paris.

Still the day was bright and we were on holiday. The single carriageway took us past the famous names of northern France. As I noticed a road sign to Crecy, a small red bead rose on the back of my hand following the attack of a beligerant insect. It was not, I recollected, the first drop of blood to be spilt on French soil. In days long past, the English had held authority over much of France, and slowly the French had pushed them out.

Our present tournament seemed little changed from those times for the English came to France to do battle. Even the names were the same: John Cadman, Yeoman of England, the Watson and the Stuart. Burgher Simpson, one of Leicester's men and even the humble Tanner. There was the unknown French contender, the Black Knight, John de Ballet . . . but I digress.

Le Blanc lies to the south of the Loire, one of the great rivers of France. The local flying area is sizeable: stretching from Le Blanc to Poitiers to the west, Angers and Chartres to the north; along the Loire Valley to Tours (to be avoided), Amboise, Blois, each with its great Chateau, for this is Royal France; thence to Vierzon, Sancerre and to Bourges. Back south-west of Chateauroux you pick up the river Creuse or the radio masts to get back to Le Blanc. The area has no significant hills, and the fields are large. The perimeter is significantly more than 500km. Clearly in 1989, Competition Enterprise was going to be different.

Saturday June 17, was the first day. Brian Spreckley gave a very detailed briefing on the French ways of soaring. There was some difficulty with radio frequencies for evidently in France no specific frequencies have been allocated for soaring purposes. Le Blanc airfield frequencies were 129.97 and 129.92.

Several others could be used but it was wise to listen out to see if there was traffic. If they were not in use, then you could call your crew. The only word of caution was that if there was a lot of talk on a frequency it probably meant that the French CAA was having a ball setting up an ILS. In that case it was better not to interrupt.

Lemmy Tanner set the tasks. He called a multiple TP task to be contained in a 4½hr flight. Turning points were to be any airfield and a few more that he had thought of as well for good measure. The day was won by John Bally (Nimbus 3) who covered 409km, Chris Nicholas (K-6ε) was 2nd at 278km, while Lemmy Tanner (Vega) flew 281km into 3rd place, being handicapped.

Sunday gave us better conditions and a conditional task *via* the town of Lusac with the second at Vienne or Chauvigny Airfield. There were other TPs, as in any good Michelin guide of Orleans Cathedral, Loches dungeon, Chatillon Tower. The winner was Trevor Stuart (ASH-24),

from Dunstable, who flew 395km to John Bally's 475km, while Charles Owles (from Tibenham) flew 277km in his Dart 17.

This was a day when the BGA handicapping system came in. Charles Owles showed that once you get a good sailplane it's as well to keep it. Glass isn't everything for the three Dart 17s were flown consistently well by Charles, Peter Poole of Southdown, and Bill Longstaff from the Cairngorm GC. Peter eventually finished 7th with Bill 9th and Charles 12th.

Day 3 gave us still more thermals and an arrow head task - that is with three TPs. Two, Le Chatre town centre and Issoudun-Le-Fay Airfield, west of Bourges, were obligatory. There was a choice for the fourth. With thermals to 7500ft and little wind, this proved to be an easy day. John Bally won and covered 440km. Trevor Stuart made 404km and Lemmy Tanner 310km. Alistair Hallam (Pegasus) took a thermal from 1500ft near Bourges at 6.00pm. He climbed to 8000ft from where it was a straight glide back to Le Blanc, 120km away. Would Enterprise ever be the same again, we asked ourselves.

Day 4, Tuesday, and the conditions were expected to be better to the east. The task was distance along a line through Bourges town centre to a pilot selected TP and thence back to Le Blanc - the flight not to exceed 4hrs without penalty. Spreckley explained that this was a task to recover from the efforts of the day before. Launching started at 1pm, and if any one wanted to visit Centraire, this would be arranged for the following morning. John Bally won again, but this time Tim Hurn from Dunstable in his Pegasus was 2nd at 282km to Lemmy Tanner's 256km.

The rest day allowed the crews to get their Diamonds

Wednesday, June 21, was a rest day that allowed the crews to fly and get their Diamonds. Michael Wood of the Yorkshire Club took advantage of the opportunity and took Chris Riddell's Nimbus 2 around a 300km triangle in 4¼hrs to confirm his Gold C with a second Diamond. In doing so Mike refuted the old saying that those who can do and those who can't teach. As a salaried instructor at Sutton Bank, he spends most of his time in two-seaters.

Thursday, June 22, and it was back to business. Multiple O/Rs with Le Blanc as base. This time Chris Nicholas won on handicap and flew 468km, only to damage his K-6E on landing at 9pm. In all some 6850km were flown in the day. John Bally was the furthest at 555km and Bill Malpas (Ventus) was 3rd at 513km, his 28th 500km flight.

Friday was slow to start. Conditions were tedious to begin with and some pilots retired in disgust. It was not until 4pm that conditions boomed. A distance task was set along a line using two pilot selected TPs. The winner was Bill Longstaff who took his Dart 275km. Second was Trevor Stuart who flew 268km, with Gerry Martin (from Talgarth) 3rd flying his Open Cirrus.

Alistair Hallam landed near Angers and was gratified with his reception. The Mayor of the town turned out the band and there was singing and feasting in the square in his honour. Alistair was invited to be the town's guest of honour on Bastille Day until it became known that he had not flown direct from England.



Trevor Stuart in the pristine ASH-24. Photo: Chris Riddell.

The final day came. A POST was set with a 5hr time limit, for as Brian said, we want you back by 7pm for the prizegiving by the Mayor of Le Blanc. Conditions were again booming, and three contestants declared 500km. In the event Tony Moulang in the BGA Janus, Michael Sesemann (Kestrel) and Chris Riddell flew the distance, although Chris landed 6km short of the airfield. Only John Bally made more at 512km.

The Mayor came and presented the prizes. John Bally was the winner with Trevor Stuart 2nd, and Bill Malpas 3rd and Chris Nicholas, who had competed on the last two days in the borrowed Carman JP-4, 4th. Jane Simpson took a picture and the party started.

Our thanks are due to Gill and Brian who worked so tirelessly for us, their staff of tug pilots, to Lemmy Tanner who set the tasks so skilfully and Derek Staff who stepped in as scorer at the last minute.

So Enterprise was over. Next week it was to be the Centraire's Pegase meeting and while some stayed on to fly, the majority took stock. It had been memorable but hard flying. A total of 37219km had been flown by 21 pilots in seven days. But it had been good to fly fast and high and to get back. Navigation had not been easy for, as Chris Marron said, all the villages look alike, each with five roads. The VOR was a great help, for visibility at cloudbase was often poor.

This was John Bally's meeting. He had consistently flown his Nimbus 3 to beat its handicap. John told me he was flying at 16001bs AUW using the energy path up to 120kt with steep pull ups. In France with its often uniform conditions, this technique can be very effective. To UK pilots regular thermals are unusual and not to be quite trusted. It took a week to get over this reserve and to enjoy soaring flight as it should be.

But will Enterprise ever be the same again? To me Enterprise is about using all forms of lift that arise in a day. Aboyne 1983 demonstrated this to the full with Justin Wills' long long flight of 640km over Scotland in wave. If Enterprise flies only in areas of strong thermal then its flavour will change to something very like a mini Nationals where speed is emphasised.

Enterprise rewards distance and time in the air, it notices speed only in passing. Thermal dominated meetings must reflect speed or they become shapeless and pilots are unable to focus on the meeting. There was an element of repetition about our tasks. As Charles Owles said afterwards: "The tasks weren't very enterprising." But it is a fine judgment, for had there been more speed marks, then the Darts and the K-6E would not have done so well.

This year an effort was made to penalise pilots who flew for too long. I understand this was done to limit pilot exhaustion and in fact there was some evidence of this for some who flew for eight hours and more. On the last day this was done for administrative convenience; not a good enterprising reason to award penalties. Perhaps the Enterprise Committee could ponder these points. I am sure that it has no wish for Enterprise to be seen as a foolhardy meeting.

Next year it is back to Britain, its mellow mists and fitful days of summer. Enterprise 1989 at Le Blanc will long live in my memory. I would not have missed it for anything.

(Continued from p248.)

back in for more of the gates of hell stuff. Bang and it was 15 (or so) up. I couldn't swear to the vario reading. I couldn't even focus on the panel we were being shaken so hard.

Then out again, then in again. I thought it was Chris getting his bearings back, but it turned out the core was so strong we kept being tipped out. With 25m span I guess we would only be comfortable with two thermals, one for each wing.

So then it was time to go home. It turned out we only spent about 80 seconds in the stubble fire, and we left it at 5000ft plus.

(Actually I needn't have worried about hitting anything in there. The reason for slowing down on the way in was to take a healthy look and check for other signs of life in the smoke before getting stuck in.)

So we were nicely high for our final glide and Chris poured on the coals - 110 . . . 120 . . . 130 . . . and we were whistling along like a jet plane. There were a few 15m ships about 500ft above us but we roared through underneath making them look like they were backing up.

But where was Lasham?

Yes, it was straight ahead, but with such a flat glide angle the field was completely hidden by the boundary hedge.

Boy, were we going some. And yet it didn't seem like we were dropping at all. It was only the trees getting closer. And I mean close. It felt like we were only a couple of feet off the hangar as we hurtled over the finish line. Then we pulled up in that glorious expression of freedom as we burned off speed for height, got into the pattern and landed.

What a flight - 310km at 110.5km/h! It would be several days before I could stop grinning. But that evening the day was rounded off with a perfect ending as we sat around a barbeque, ate, talked, drank and sang.

It was Chris who summed it up, "It's what gliding is all about".

ROYAL AERO CLUB AWARDS





On the left, Keith Mansell, BGA treasurer since 1983 and former vice-chairman, being presented with a Royal Aero Club Silver medal by their president, HRH The Duke of York, accompanied by the Duchess, at a reception at the Lansdowne Club, London in June. Keith was chairman of the Midland GC for over 20 years and the author of the BGA current Forward Plan plotting the future of the Association and its finances over the next five years. On the right, Tony Segal receiving a Certificate of Merit for improving cockpit seating and cushioning to reduce the risk of spinal injury, as well as for his crash test which it is hoped will lead to safer cockpit design. Gillian Bryce-Smith was also awarded the Certificate of Merit for editing *S&G* since 1973 during which time the circulation has increased by 25%. Photos: Simon Ward.

NATIONAL LADDER

When four declared and completed flights in a Tutor, including a 200km to the Isle of Wight, crossing the Solent from 2500ft with an emersion suit and life jacket, Nick James of Coventry GC heads the Open Ladder. And he does so with over 3000pts more than anyone else has ever achieved under the current scoring system.

Other commendable flights include two by Yorkshire GC pilots - Phil Lazenby flew 395km in an Oly 463 and Mike Brook 500km in an SHK.

Open Ladder

Leading pilot	*Club*	*Flts*	*Pts*
1. N. James	Coventry	4	13251
2. G. Metcalfe	Lasham	4	8433
3. T. Stuart	London	4	7689
4. W. Kay	London	4	7016
5. E. Johnston	Cotswold	4	6198
6. M. Garrod	London	4	6188

Club Ladder

Leading pilot	*Club*	*Flts*	*Pts*
1. J. Walker	Coventry	4	5505
2. S. Crabb	Coventry	4	4090
3. P. Crabb	Coventry	4	3881
4. D. Taylor	Yorkshire	4	3286
5. A. Foxon	Coventry	4	2490
6. G. Thomas	Coventry	4	2312

INSURANCE COVER INCLUDES TRAILERS

The RAC will now extend their European motoring insurance cover to include glider trailers as well as the towing vehicle.

If you car breaks down abroad they will also return your glider and trailer to the UK providing you have paid the extra premium of £20 for a month's cover or £50 for annual cover.

On this basis RAC Eurocover should be of interest to all members taking their gliders abroad. Full details can be obtained from any RAC area office or direct from RAC House, PO Box 100, South Croydon, Surrey CR2 6XW.

BRITISH OVERSEAS NATIONALS (HANDICAPPED)

During the last few years the weather had almost written off several UK Nationals and, not surprisingly, pilots have been asking if we could run a competition in France. The BGA Competitions and Awards Committee are not prepared to move the existing UK Nationals abroad, however, we would support an additional Nationals rated competition given the support of an organisation team and sufficient entries.

The RAFGSA have offered us an option for late August, 1990, at Roanne, France, the site of their Open Class Inter-Services Regionals for 1987, 88 and 89. Roanne is 70km NW of Lyon, about 420 driving miles from Calais. The local community have given the RAFGSA enthusiastic support including a civic reception at the town hall hosted by the Mayor. The airfield has a restaurant, bar, office and shower and flush toilet facilities. It is active with powered aircraft and would support 40-50 gliders. A 720 channel radio would be needed.

The 1987 and 1988 Regionals did not experience good weather by French standard, averaging six days and 150km tasks over flat terrain. The nearby higher terrain, rising to about 3000ft, has not yet been exploited.

The entry fee would be about £150. In order that we can finalise the Nationals calendar for 1990, a decision on Roanne will be taken in December. If you are interested in entering, please write to Guy Corbett, 24 Shaftesbury Avenue, New Barnet, Herts EN5 5JA before November 30. It would be helpful to know your type of glider and your degree of interest, plus any other comments.

UK NATIONALS 1990

These will be run as usual in three unhandicapped Classes. Closing dates for entries will be January 31; entry forms from the BGA from December. The entry forms will also include Roanne, if we go ahead. Note that Lasham have requested the Standard or 15 Metre Class in 1990, so the Open Class will either be at a different site or combined with the Standard and run at Lasham.

John Taylor, *BGA Competitions and Awards Committee chairman*

* * *

The Inter-Services Open Class Regionals, held at Roanne, France from July 18-August 4 have had some exceptional weather with cloudbases in excess of 6000ft, eight pilots completing 513km triangles, tasks of 300km on two other days and winning speeds of more than 100km/h.

(A complete table of Regionals results will be in the next issue.)

WARNING ABOUT PERSHORE

The RSRE Flying Club point out that while their Pershore site is no longer an active MoD airfield, it is still an active MoD trials area covered by the Official Secrets Act. Many of the trials, which are sometimes at the weekends as well as during the week, are potentially hazardous and may involve RF emissions, lasers or even armoured vehicles moving about the site.

As a by-product there are numerous concrete blocks, posts, wires etc in the grassed areas and the runways are often blocked by

similar obstacles. Even if you land safely, their secretary (D. C. Rodway) warns you may spend several hours trying to explain your presence to the MoD police.

While the club are happy to see other glider pilots on normal operating days, they emphasise that the only time it is safe to land at Pershore is when they can be seen to be operating and the only safe landing area is the one they are using at the time.

S&G INCREASE

From the December issue *S&G* will be £1.75 with the annual subscription at £12.40, including p&p.

GLIDERS BREAKING IN FLIGHT

Gaye Connoway was killed when the Olympia 463 she was flying on July 2 at Southdown GC broke up.

Then on August 5 a Caproni being flown at 110kt and at 2000ft from Dunstable to Avon GC by Trevor Austin (PI) and David Wilde started pitching and oscillating violently before breaking up. The pilots baled out safely.

Both accidents are under investigation.

NAAFI HELPS GLIDER PILOTS

Navy glider pilots have been presented with £1400, part of £15000 given to the Royal Navy GSA as extra rebate from NAAFI. Several members from Culdrose, Heron and Portsmouth GCs were given cheques for £200 each to pay for launches, having been nominated for their enthusiasm and gliding potential by their CFIs.

GLIDING CERTIFICATES

1000KM DIPLOMA

No.	Name	Club	1989
6	Hawkins, Pamela	Booker (in Australia)	2.1
7	Lee, D. G.	in Australia	25.1

ALL THREE DIAMONDS

No.	Name	Club	1989
267	Brook, M. F.	Yorkshire	4.6
268	Downham, E. H. C.	London	10.5
269	Macfadyen, I. D.	Bicester	30.5
270	Harrington, T. C.	Bicester	4.6
271	Aknai, D. P.	Bicester	4.6
272	Gaisford, P. A.	Swindon	9.5
273	Stephen, J. A.	Deeside	5.5
274	Hughes, M. I.	Bicester	24.6
275	Sargeant, T. B.	Norfolk	7.7
276	Moulang, A. P.	Kent	24.6
277	Coward, P. J.	Deeside	14.7

DIAMOND DISTANCE

No.	Name	Club	1989
1/387	Brook, M. F.	Yorkshire	4.6
1/388	Downham, E. H. C.	London	10.5
1/389	Madfadyen, I. D.	Bicester	30.5
1/390	Harrington, T. C.	Bicester	4.6
1/391	Aknai, D. P.	Bicester	4.6
1/392	Gaisford, P. A.	Swindon (in Switzerland)	9.5
1/393	Brook, D.	London	24.6
1/394	Stephen, J. A.	Deeside	5.5
1/395	Hughes, M. I.	Bicester	24.6

BGA ACCIDENT SUMMARY –

Edited by JOHN SHIPLEY,
Chairman, BGA Safety Panel
Compiled by David Wright

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Pilot/Crew			Summary
						Age	Injury	PI/Hrs	
32	Olympia 2B	678	W/O	15.4.89 1415	Retford, Notts	26	N	?	After soaring for 2hrs the glider was allowed to drift three miles downwind while losing height. After being seen circling rather low the pilot selected a field. During a very low and slow final turn the glider spun in from under 50ft.
33	K-6CR	1222	S	15.4.89 1500	Nr Evesham	21	M	24	While on a Silver distance attempt the pilot found he had to land in a field. Rather than turn downwind into a valley, where there were several fields available, he landed uphill into a small field bounded by trees. Undershooting, he pulled up over a slight ridge and hit a barbed wire fence. This entered the canopy and cut the pilot's face.
34	Astir CS77	2540	M	27.3.89 1430	Aboyne	36	N	85	After descending from wave the pilot entered the circuit at 1300ft. In the 90° crosswind the upwind circuit was chosen. The pilot arrived too high on finals so a 360° turn was implemented, but drift led to a landing on rough ground between the runway and grass strip. The undercarriage collapsed damaging the supporting frames.
35	PIK 20D		M	23.4.89	Parham	21	N	180	After a half brake, no flap approach the pilot selected full brake to land short on an upsloping area of the field. The airspeed was not sufficient to allow a full roundout and flare and the glider landed heavily damaging the wheel structure and undercarriage doors.
36	K-18		S	10.5.89	Booker	53	N	186	During the aerotow take-off run the pilot allowed the right wing to drop. After first using just ailerons and then rudder with no success the glider had turned through 30°. The pilot released but landed the glider heavily on its nose. Lack of recent practice may have contributed to pilot's slow reactions.
37	K-8	2083	M	15.4.89	Portmoak	43	N	1hr 48min	After a jerked, slewed initial launch the pilot signalled that the launch was too fast. The speed increased and so he pulled off at about 400ft. The pilot chose to land crosswind and after a slightly fast approach landed with drift and bounced. The airbrakes were then opened and the glider landed heavily breaking the front skid.
38	Mosquito B	2378	W/O	6.5.89 1400	Brechin	43	N	520	The pilot chose to land in a field where another glider had already landed. He planned a diagonal landing across the field but had to modify this when he saw a fence and had to land along one side. The pilot had failed to notice that the wind had changed with a sea breeze and so overshot the field into the far fence.
39	ASW-20	2659	S	24.4.89 1400	Maghera, Co Londonderry	43	S	565	After finding his track blocked by snow showers the pilot turned around to fly out of a range of hills. A field was selected hurriedly and after seeing nearby power wires he found that he could not make the field and in curlover from the hills could not avoid hitting a bungalow with a wingtip. The glider rotated and landed in a concrete yard.
40	K-8B	2332	N	15.4.89 1530	Ringmer	52	S	2	After a normal approach the pilot landed then hit a bump. The glider became airborne and after a series of pilot induced oscillations landed heavily, possibly on another bump. Whilst the glider was undamaged the pilot fractured two vertebrae.
41	PIK 20D	2536	M	7.5.89 1730	Dunstable	56	N	971	Returning to his airfield after a soaring flight the pilot found the landing area congested and only being cleared slowly. Thermalling in weak lift at 800ft he waited for space to land. Other lower gliders landed ahead of him so he eventually had to land between two gliders. After a normal touch down he hit a rut and damaged the undercarriage.
42	Sport Vega	2758	S	21.5.89 1900	Nr Dinnet	35	N	36	After a wave soaring flight the pilot found he could not regain his airfield and had to make his first field landing. The field chosen was rather small and sloped down hill. His circuit was too close in and this led to a very steep approach and a bounced landing. The next touch down was skewed and a groundloop followed.
43	K-8	1807	M	9.8.88 1600	Portmoak	51	N	1hr 45min	**Late 1988 report.** The pilot thought he had fully opened the airbrakes when on high final approach. However, no airbrakes were extended and the glider flew level across the airfield at high speed before turning left catching a wing on a slight rise and groundlooping. The pilot had a tendency to "set brakes" after setting up a high approach.

Our ground support service is held in high regard.



We've always aimed to give flyers the best possible service. So when we were appointed Licenced Repair Agents by Grob, we responded by considerably increasing our stock of spare parts for their gliders, motor gliders and light aircraft. So the chances are, we'll be ready if you have a need.

Similarly, being stockists for Tost launch equipment and exclusive agents for their winches, gave us a bit of a lift.

Having the bits and the responsibility at Chiltern, it's comforting to reflect that if you ever have a forced landing, you can rely upon us to take care of the problems of getting your aircraft back to base or into our fully equipped workshops.

Our large stock of parts, repair material and accessories are at your disposal, whether you carry out your own repair or use the skills of our workshop where our inspection and quality control system ensures you'll get the very best. Our stamp on your repair means that the job is well done.

Every repair by Chiltern is backed by a customer protection policy with full product liability cover – a mark of confidence in both the products and our workmanship.

A telephone call will bring our recovery trailer to your aid and all the backing you need.

The best. And it shows.

Licenced to repair all Grob products.
Concessionaires for spare parts for gliders, motor gliders and light aircraft.

GROB

CHILTERN SAILPLANES LIMITED
AUTH: 1/A/038
DATE:

CAA Approval No. AMR/286

Booker Airfield, Nr. Marlow, Bucks, SL7 3DR.
0494 445854 (works) or 0865 890517 (outside office hours).
Access and Barclaycard accepted with pleasure.

1/396	Boik, M. C.	Bicester	24.6
1/397	Sargeant, T. B.	Norfolk (in Spain)	7.7
1/398	Smith, S. M.	Cambridge Univ	24.6
1/399	Arthur, E. A.	Norfolk (in Spain)	12.7
1/400	Moulang, A. P.	Kent (in France)	24.6
1/401	Payne, G. K.	Booker (in France)	18.7
1/402	Coward, P. J.	Deeside	14.7
1/403	Peatfield, N. A.	Shropshire (in Spain)	16.7

DIAMOND GOAL

No.	Name	Club	1989
2/1633	Robson, T. J.	Derby & Lancs	15.4
2/1634	Wilton, J. N.	Four Counties (in France)	6.5
2/1635	Oswald, P. D. H.	Cambridge Univ	10.5
2/1636	Johns, R. S.	Devon & Somerset	28.5
2/1637	Harsant, K. E.	Wrekin	30.5
2/1638	James, C. V.	Two Rivers (in Germany)	14.5
2/1639	Curtis, K. J.	Two Rivers (in Germany)	29.4
2/1640	Sullivan, C. J.	Cambridge Univ	10.5
2/1641	Dickson, M. W.	Phoenix (in Germany)	25.5
2/1642	Liddiard, J. C.	Lasham	2.4
2/1643	Sullivan, J. P.	Two Rivers (in Germany)	15.5
2/1644	Cooper, R. G.	London	2.6
2/1645	Hanlon, L.	Oxford	4.6
2/1646	Williamson, M. B.	Booker	4.6
2/1647	Beattie, J. M.	Booker (in France)	29.5

DIAMOND HEIGHT

No.	Name	Club	1989
3/889	Willis-Fleming, R. C.	Pegasus (in France)	21.3
3/890	Davidson, J. W. L.	Deeside (in France)	14.7
3/891	Eade, D. J.	Lasham (in France)	23.6

GOLD BADGE

No.	Name	Club	1989
1313	Robson, T. J.	Derby & Lancs	15.4
1314	Harsant, K. E.	Bicester	30.5
1315	Curtis, K. J.	Two Rivers	29.4
1316	Dickson, M. W.	Phoenix	25.5
1317	Sullivan, J. P.	Two Rivers	15.5
1318	Cooper, R. G.	London	2.6
1319	Beattie, J. M.	Booker	29.5
1320	Kirschner, P. M.	Bicester	30.5
1321	Gascoigne, P. E.	Bath & Wilts	4.6
1322	Gibson, N. R.	Phoenix	17.6
1323	Wood, M. J.	Yorkshire	21.6
1324	Lawrence, D. J.	Surrey & Hants	24.6
1325	Kelly, P. J.	Cotswold	24.6
1326	Ellner, J. P.	Surrey & Hants	3.7
1327	Lewis, P. A.	Lakes	9.6
1328	Roberts, N. S. C.	Bristol & Glos	20.6
1329	Barrett, G. L. J.	Oxford	24.6
1330	Philpott, M. J.	Booker	3.7
1331	Davidson, J. W. L.	Deeside	14.7
1332	Neal, R. E.	Booker	12.7
1333	Allcoat, R. W. P.	SGU	15.7
1334	Stephen, W. S. Y.	Deeside	15.7
1335	Higgins, E. J.	Cotswold	15.7
1336	Stotter, Anne	Booker	14.7
1337	Franks, H. S. M.	Cambridge Univ	24.6
1338	Peatfield, N. A.	Shropshire	16.7

GOLD DISTANCE

Name	Club	1989
Robson, T. J.	Derby & Lancs	15.4
Wilton, J. N.	Four Counties	6.5
Oswald, P. D. H.	Cambridge Univ	10.5
Harsant, K. E.	Bicester	30.5
James, C. V.	Two Rivers	14.5
Curtis, K. J.	Two Rivers	29.4
Sullivan, C. I.	Cambridge Univ	10.5
Dickson, M. W.	Phoenix	25.5
Liddiard, J. C.	Lasham	2.4
Sullivan, J. P.	Two Rivers	15.5
Cooper, R. G.	London	2.6
Hanlon, J.	Oxford	4.6
Codd, P. G.	Essex & Suffolk	2.6
Williamson, M. B.	Booker	4.6
Beattie, J. M.	Booker	29.5
Kirschner, P. M.	Bicester	30.5
Gascoigne, P. E.	Bath & Wilts	4.6
Hyslop, A. D. W.	Chilterns	4.6
Pugh, S.	Booker	8.6
May, J. I.	Bicester	6.5
Barrie-Smith, N. J.	Lasham	24.6
Marsden, R.	Phoenix	16.6

BGA ACCIDENT SUMMARY *(continued)*

44	Sport Vega	2728	S	31.5.89 1345	Portmoak	39	M	28	After trying, unsuccessfully to fly around a large rain squall the visiting pilot made a hurried descent back to the airfield. The wind direction changed as the rain passed and he landed downwind in an area of the airfield not normally used. The glider impacted right wing and nose together. The wings and canopy broke off in the resulting groundloop.
45	Blanik		M	29.5.89 1015	Rufforth	49	N	108	The pilot selected flap instead of airbrake and became high on the approach. After completing a 360° turn he still could not land on the runway ahead. "Closing" the flaps he chose a field and landed in a crop of standing oilseed rape which damaged the glider's tail. At no time were the airbrakes seen to open on the approach.
46	K-7	2223	M	2.7.89 0919	Winthorpe P2	50 57	N M	293 3	After normal canopy checks the glider climbed to 800ft on the winch launch when, with one wing down to compensate for drift, the front canopy opened. Both pilots tried to grab this then P1 took control of the aircraft. Meanwhile the rear canopy came open and the front came off its hinges. Subsequent examination showed the rear lock to be badly worn.
47	K-7	2223	M	9.4.89 1140	Winthorpe	45	N	1hr 55min	The early solo pilot noticed the airspeed drop during the flare at about 6ft above the ground. He lowered the nose sharply and the glider hit the ground nose skid first. It then bounced 4ft into the air and fell back damaging the wing.
48	K-13	3133	S	4.6.89 1830	Lasham P2	32 ?	N N	- -	On a low circuit exercise P2 was to land in an area of the airfield not normally used. P1 instructed him to make a shallow "S" turn to position away from a rough area. During this low turn the glider's wingtip caught in the long grass and a groundloop followed.
49	SF-27	2752	M	22.1.89 1515	Husbands Bosworth	43	N	800+	Prior to his first flight on type for some years the pilot did his normal pre-flight checks. Later, during a practice spin the canopy flew off. After handling checks to ensure he still had full control he landed safely. Had he asked for a briefing he would have been told that the canopy bolt needed external confirmation of locking.
50	Bocian 1ε	2904	S	4.6.89	Husbands Bosworth	35	N	6hr 45min	After searching for lift the early solo pilot realised he was getting low and flew back to the airfield. Finding himself too low he selected a field which he overshot, hitting a tree and going through a hedge. The glider was substantially damaged. The field chosen was small, sloped down hill and bounded by 50ft trees.
51	Std Cirrus	1621	M	17.5.89 1348	Talgarth	54	N	976	After soaring in weak thermals near the airfield the visiting pilot failed to allow enough space for a proper base leg. Too high, he tried to sideslip to lose height but when he touched down he was going too fast and not aligned with the runway. He tried to groundloop but still hit the fence sideways. The pilot considers he could have landed in a field or downwind on the airfield.
52	K-13	2739	N	31.4.89 1830	North Hill	39	N	10	The early solo pilot was briefed to make a hangar flight and land up the field. During his circuit another glider was winch launched. Approaching, the pilot found that the winch cable was still in the air. This caught on the glider's wing causing slight damage to the leading edge.
53	Swallow	2793	M	10.6.89 1449	RAF Syerston	30	S	120	The glider was being winch launched when at about 25ft the cable was seen to go slack. The pilot appears to have been slow to recognise this and continued to climb for a few seconds prior to lowering the nose. He then did not have enough speed for a proper flare and the glider impacted slightly nose down. The pilot suffered a cracked vertebrae.
54	K-23	AGA 18	M	29.5.89 1830	Newton Staces	25	N	30	After selecting a field the pilot made a normal circuit until approaching over high trees he realised he was too high to land in the rather marginal field. He attempted to sideslip to lose height but did not straighten before hitting the ground with the nose wheel which was pushed up into the fuselage.
55	Cirrus	388	M	13.5.89	Odiham	57	N	79	The wingtip runner released the glider's wing as the aircraft accelerated normally on the winch launch. However, after 2 or 3sec the right wing dropped and the pilot failed to correct this before the tip caught in the long grass alongside the launch track. This caused the glider to groundloop. **The grass has now been cut.**
56	ASW-20BL	2974	M	27.5.89 1615	Aston Down	39	N	84	During the final approach the pilot selected full instead of half flap. Descending rapidly he tried to reach the airfield by increasing speed rather than gently resetting the flap. With full flap this made matters worse so he undershot and hit the sharp lip of the perimeter track, damaging the glider's nose.

Gibson, N. R.	Phoenix	17.6
Wood, M. J.	Yorkshire	21.6
Dolphin, M. G.	Kestrel	24.6
Lawrence, D. J.	Surrey & Hants	24.6
Evans, S. R.	Cotswold	24.6
Kelly, P. J.	Cotswold	24.6
Bleasdale, J. G.	Heron	28.5
Ellner, J. P.	Surrey & Hants	3.7
Hannah, D. C.	Lakes	8.6
Lewis, P. A.	Lakes	9.6
Roberts, N. S. C.	Bristol & Glos	20.6
Poole, P. L.	Surrey Hills & Kent	24.6
Stringer, M. G.	London	24.6
Barrett, G. L. J.	Oxford	24.6
Philpott, M. J.	Booker	3.7
Truman, A. G.	RAE	18.7
Ennis, P. J.	Booker	19.7
Everest, J. T.	Lasham	11.7
Heather, M. J.	Bristol & Glos	14.7
Neal, R. E.	Booker	12.7
Lloyd, G. F.	Cotswold	14.7
Allcoat, R. W. P.	SGU	15.7
Stephen, W. S. Y.	Deeside	15.7
Higgins, E. J.	Cotswold	15.7
Stotter, Anne	Booker	14.7
Franks, H. S. M.	Cambridge Univ	24.6
Peatfield, N. A.	Shropshire	16.7

GOLD HEIGHT

Name	*Club*	*1989*
Flaherty, M. W.	Ailsa Soaring	13.7
Lyell, J. P.	Lasham	13.7
Davidson, J. W. L.	Deeside	14.7
Kentish, S. C.	Deeside	16.7
Peaks-Woods, R. P.	Burn	13.7

SILVER BADGE

No.	*Name*	*Club*	*1989*
7928	Clark, C.	Yorkshire	10.5
7929	Peaks-Woods, R. P.	Burn	28.5
7930	Rich, D. C.	Bristol & Glos	2.6
7931	Bartlett, B. R.	Southdown	28.5
7932	Worsdell, E. R. J.	RAE	28.5
7933	Moore, D. R.	Cambridge Univ	31.5
7934	Hillary, A.	Culdrose	30.5
7935	Willis, H.	Cotswold	30.5
7936	Pepper, R. E.	Bicester	27.5
7937	Donald, E. P.	Brackley	2.6
7938	Coatsworth, A.	Dorset	4.6
7939	Thackray, S.	Swindon	7.5
7940	Hassan, P. C.	London	8.4
7941	Bailey, P.	Enstone	28.5
7942	Sim, C.	Borders	13.5
7943	McDonnell, B. F.	Coventry	30.5
7944	Naegeli. P.	Surrey & Hants	6.5
7945	Burgoyne, J. B. K.	Coventry	4.6
7946	Brown, G.	Borders	20.5
7947	Hughes, S. A.	Yorkshire	6.5
7948	Wood, J. M.	Blackpool	28.5
7949	Riley, S. P.	Kent	28.5
7950	Rappaport, A. J.	Devon & Somerset	28.5
7951	Stabler, D.	Norfolk	2.6
7952	Mitchell, J. C.	Blackpool	10.6
7953	Fielding, J. D.	Norfolk	31.5
7954	Ansell, A. G.	Southdown	6.5
7955	Moors, G. J. M.	Two Rivers	6.5
7956	Hobbs, N. J.	Two Rivers	15.5
7957	Martin, N.	Welland	2.6
7958	Fack, R. J. H.	Midland	15.6
7959	Dixon, H. W.	Four Counties	17.6
7960	Morris, M.	London	11.6
7961	Laylee, A. K.	Bicester	17.6
7962	Preston, R. D.	Avon	16.6
7963	Upson, D. B.	Buckminster	4.6
7964	Bonser, S. T.	Upward Bound	4.6
7965	Pettit, B.	Booker	18.6
7966	Pinkerton, F.	Nene Valley	9.6
7967	Way, S. R.	Southdown	14.6
7968	Gardiner, J.	Essex	18.5
7969	Wright, S. J.	Rattlesden	28.4
7970	Nunn, C. R.	Essex & Suffolk	18.5
7971	Manktelow, S. A.	Cotswold	28.5
7972	Dowding, M.	Lasham	28.5
7973	Burden, R. J.	Kent	31.5
7974	Wade, Bonnie	Norfolk	2.6
7975	Huggins, G. W.	Swindon	24.6
7976	White, H.	Avon	20.6
7977	Cleworth, A. D.	Phoenix	29.4
7978	Jurdison, T. N.	Midland	4.6
7979	Noctor, A. J.	Vectis	5.6
7980	Sprake, D.	Midland	7.6
7981	Halldron, C. M.	Midland	7.6
7982	Trotter, B.	Eagle	28.5
7983	Matthews, R.	Dartmoor	16.6
7984	Armitage, R. B.	Channel	21.6
7985	Collins, C. G.	Yorkshire	29.6
7986	Slater, J.	Booker	19.6
7987	Cater, M. W.	Coventry	29.6
7988	Kirkby, S. G.	Lasham	21.6
7989	Heard, G. M.	Kent	24.6
7990	Clark, A.	Portsmouth Naval	4.6
7991	Johnson, S. D.	Derby & Lancs	29.6
7992	Salter, C. B.	Devon & Somerset	15.6
7993	Bewley, M. W.	Yorkshire	25.6
7994	Wilkinson, D.	Bristol & Glos	3.7
7995	Willis, E.	Staffordshire	3.7
7996	Wever, M.	South Wales	29.5
7997	Bradley, B.	Cambridge Univ	12.6
7998	Candow, G. H.	Burn	29.6
7999	Boaler, G. L.	Bristol & Glos	29.5
8000	Bradley, P. J.	Wyvern	24.6
8001	Salter, T.	Lasham	4.7
8002	Ten Cate, H. L.	Lasham	3.7
8003	Sutton, D. A.	Cranfield	24.6
8004	Mills, A. M.	Bannerdown	4.7
8005	Bell, C. G.	Kent	24.6
8006	Vickerman, B. S.	Dorset	25.6
8007	King, A.	Booker	4.7
8008	Rodgers, J. L.	Cotswold	4.7
8009	Cannon, N.	Chilterns	24.6
8010	Hindmarsh, Sheila	Lasham	11.7
8011	Newman, R. J.	Dorset	17.6
8012	Parish, A.	Welland	4.6
8013	Walton, K. R.	Portsmouth Naval	24.6
8014	Pascoe, S. M.	Fulmar	15.7
8015	Reid, R.	Deeside	15.7
8016	Kingsland, K. J.	Deeside	15.7
8017	Paveley, N. D.	P'borough & Spalding	13.7
8018	Hopkins, P. A.	Avon	24.6
8019	Day, C. M.	London	17.6
8020	Barnard, W. T. B.	SGU	13.7
8021	Clifford, R. J.	Coventry	18.7
8022	Jesty, C. J.	Coventry	18.7
8023	Goodall, J. T.	Blackpool & Fylde	20.5
8024	Strong, P. M.	Welland	4.6
8025	Falkingham, A. E.	Chilterns	15.4
8026	Jennings, C. A.	Derby & Lancs	29.6
8027	Pridal, Mary	Lasham	13.7
8028	Reasbeck, P.	Booker	19.7
8029	Joll, P. S. B.	Phoenix	14.5
8030	Lewis, J.	Imperial College	14.7
8031	Allen, M.	Coventry	2.6
8032	Burton, G.	Enstone	23.7
8033	Heather, M. J.	Bristol & Glos	14.7
8034	Mackintosh, A.	Black Mountains	23.7
8035	Hooson, B. J.	Cambridge Univ	2.6
8036	Jones, P. R. T.	London	18.7
8037	North, D. W.	Lakes	16.7
8038	Gale, J.	Stratford	23.7
8039	Kite, A.	Lasham	3.7
8040	Limb, R. J.	Booker	17.7
8041	Sage, T. A.	London	23.7
8042	Familton, J.	Borders	26.7
8043	Piper, J.	Norfolk	27.7
8044	Bell, G. E.	Wrekin	27.7
8045	Lavender, J.	Wyvern	30.5
8046	Glazebrook, G. R.	North Wales	28.7
8047	Clowder, D. F.	Cornish	19.7
8048	Barrett, N. P.	Oxford	18.6
8049	Green, Annette	London	13.7
8050	Simpson, R. J.	Bristol & Glos	15.7
8051	Ashton, I.	Blackpool & Fylde	26.7
8052	Carnegie, A.	Cairngorm	26.7

BGA ACCIDENT SUMMARY *(continued)*

57	Olympia 463	1212	W/O	18.6.89 1515	Marshfield, Wilts	?	S	-	This serious injury accident occurred during a landing at a **farm airstrip**. The glider was seen to turn away from a normal circuit and complete a number of turns before disappearing from view, low down and still turning. The wreckage was consistent with the results of a low spin. Possible causes include heat exhaustion and/or altimeter set for base A/F which was 200ft lower.
58	Bocian 1E	1668	S	14.6.89 1920	Condor, Arbroath P2	48 ?	N N	558 -	After a badly planned and flown circuit the final approach was too low and in order to avoid obstructions at the launch point the pilot raised the right wing. The left winglip caught in standing crop and caused the glider to land sideways which broke the fuselage.
59	Dart 17R	1266	M	31.5.89 1500	Kidlington	39	N	21	During a **50km/5hr** attempt the pilot had to land in a field. A flat, crop free field was selected and a normal circuit and landing was made. After touch down the pilot found that the grass concealed lumps of concrete and deep ruts which damaged the undercarriage.

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

UK CROSS-COUNTRY DIPLOMA

Complete

Name	*Club*	*1989*
Williamson, M. B.	Booker	2.6
Davis, M. J.	Wrekin	26.4
Livings, G. E.	Two Rivers	29.4
James, C. V.	Two Rivers	7.5
Marshall, A. J.	Wrekin	4.6
Dutton, S. T.	Surrey & Hants	4.6
Basak, R. M.	Bicester	24.6
Marsden, R.	Phoenix	16.6
Danbury, A. J.	London	24.6
Wright, J. S.	Booker	24.6

Part 1

Name	*Club*	*1989*
Bardgett, A. J.	Borders	13.5
Gatfield, J. E.	London	15.5
Graves, A. T.	RAE	27.5
Starling, Gillian	Bristol & Glos	30.5
Judd, D. M.	Wrekin	4.6
Gardiner, J.	Essex	11.6
Lealand, M. N.	Booker	28.5
Etchells, A.	Avon	6.5
Davenport, M. T.	RAE	28.5
Slipper, T. W.	Cambridge Univ	2.6
Fisher, R. B.	RAE	24.6
Cresswell, W. A.	Wyvern	24.6

Correction: We always expect great things of George Lee - but apologies to him for our error in the last issue, p170. He is claiming the British National, not the world, record for his 1000km triangle.

Gliderwork

C of A OVERHAULS and REPAIRS

By L. GLOVER senior inspector



Husbands Bosworth Airfield, Near Rugby
Tel. Market Harborough 880375
Lutterworth 57544

NATIONAL LADDER RULE CHANGES

The National Ladder is a competition open to every cross-country pilot. It allows them to compare their performance on a day and over the year, and also gives recognition to the efforts of individuals, whether they are doing Silver C or their first 750km.

At the end of each season, prizes are given for 1st and 2nd place in the Club Ladder (for flights in club owned gliders) and Open Ladder (for any flight).

While this division of the competition has proven successful in the past, more recently the Club competition has been shrinking in entries. Although many creditable flights are entered on the Club ladder, the competition is invariably dominated by a few pilots who have ready access to high performance club fleets. The majority of entries comprise two or three flights from those just starting cross-country flying.

A Weekend Ladder in place of the Club Ladder

To try to revitalise this part of the Ladder, the Club Ladder stewards and I have been looking at a new way of dividing it. The method which will be tried next year is to have an Open Ladder for any flight as before, and a Weekend Ladder in place of the Club Ladder.

Any flight flown on a weekend or Bank Holiday can be entered in either the Weekend or Open Ladders *(but not in both)*, whereas other flights are only eligible for the Open Ladder. This will start from the new Ladder season on October 1.

Because only the best four flights count for your final score, pilots who fly on better days have a real advantage. Separating the competition into Weekend and Open sections will allow us weekend pilots to have a more even competition, keeping pilots lucky enough to be able to fly on all those 500km Mondays at arms length in another competition.

In all other ways, the competition remains as it was before. The now well tried and tested scoring formula will go forward for another year, and although I have taken the opportunity to rewrite the other rules, the intention is to carry them forward exactly as before. So the general tactics are to fly a long way very fast, taking pictures as you go!

If you have any questions or comments to make about the rules, please don't hesitate to write or call me, or consult your Club Ladder steward, who should have had a copy for a couple of months now. Meanwhile, good soaring, many cross-countries and may you put them all on the Ladder.

National Ladder Rules for 1989/90

1. The competition will start on October 1 and end on September 30.

2. Any flight which originates in the UK may count, except for flights in a competition for which BGA entry forms are required. Points will only be awarded to the P1 in a two-seater.

3. There will be two separate ladder competitions:
   a. The Open Ladder (for any flight)
   b. The Weekend Ladder (for flights made on weekends and Bank Holidays). *No flight may be entered in both Ladders.*

4. A pilot may enter up to four fights in each competition but only two in each Ladder may be height gains.

5. The pilot's word will be accepted for flight times. His word will also be accepted for rounding TPs, except that the three top scores in each of the Ladder competitions will only be awarded with the support of photographic evidence. The photographs will be assessed according to BGA competition rules, and must contain the following:
   a. A startboard clearly showing
      1. The date
      2. Pilot's name
      3. Glider type and identification
      4. Start, turning and finish points.
   b. Photographs of each TP in the declared order.
   c. A photograph of the glider fin clearly showing the same identification as the startboard.

   Cut films are acceptable if accompanied by a declaration containing the following for each flight on the film:
   a. Date of the flight
   b. Pilot's name
   c. Glider type and identification
   d. The declaration "this film was received in a commercial developer's sealed envelope and opened by me".
   e. Official Observer's number and signature

   Barograph traces must be shown to Club Ladder stewards for height claims.

6. Declarations must be made before take-off and include the start point, up to three TPs and the finish point. All these must be features shown on 1:50,000 Ordnance Survey maps.

7. The current BGA handicap (Si) will apply to the calculation of all open ended tasks. An adjusted handicap (Si^h) will apply to all closed circuit tasks, *ie* where the start is within 2km of the finish.

8. If incomplete, the distance counted for the uncompleted leg is the length of that leg as declared, less the distance between the landing point and the next TP (as in BGA contest rules).

9. Speed points are awarded in addition to distance points if either the flight results in a successful badge distance claim, or
   1. The declared start, turn and finish points are all rounded in the declared order AND
   2. The startline was crossed below the lower of 1000m or 1% of the distance, above the finish line.

10. Calculation of points.

a. *Distance Points*

Undeclared Flights (completed or not) $\frac{d \times 100}{Si \text{ or } Si^h}$

Declared flights (completed or not) $\frac{2 \times d \times 100}{Si \text{ or } Si^h}$

where d = distance in km
Si = Speed index for open ended tasks
Si^h = speed index for closed circuit tasks

b. **Speed Points** (declared, completed tasks only)

$$\frac{d \times 100 \times v \times v}{Si \text{ (or } Si^h) \times 2000}$$

where d = distance in km
v = handicapped speed in km/h

$$v = \frac{d \times 100 \times 60}{Si \text{ (or } Si^h) \times (\text{time in min})}$$

c. *Height points* (not more than two per pilot per Ladder)
   1. Height points *or* distance/speed points can be awarded for a flight, but not both.
   2. No points may be claimed for flights above 15000ft without oxygen.
   3. Height gain points are awarded as follows

$$\frac{(\text{height gain}) - 5000)}{10} \text{ units of ft}$$

11. Details of each flight must be submitted to the Club Ladder steward within one month of the flight taking place. Full details of flights, including photographs when available, must be submitted to the National Ladder stewards within one month of being requested.

12. National Ladder awards
   a. Enigma trophy. To the winner of the Open ladder.
   b. L. du Garde Peach trophy. To the winner of the Weekend Ladder.

A pilot can win only one trophy and if qualifying for both, will win the trophy for which there have been the greater number of entries.

IMAGINE

Mountain soaring, wave and thermal flying in glorious Spain



★ ★ ★

★ Join us for tailor-made holidays
★ Families or individuals welcome
★ Beginners and pundits alike will enjoy breath-taking scenery in our Grob 109B
★ Instrument flying, cross-country, field landing instruction
★ Relax in our luxury private villa, with pool, and experience the holiday of a lifetime

Contact
The Bartons 01 449 9346/01-953-9689
or Spain 010.34.65.795355

GLIDING IN SPAIN

CLUB NEWS

Copy and photographs for the December-January issue of *S&G* should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, to arrive not later than October 10 and for the February-March issue to arrive not later than December 5.

GILLIAN BRYCE-SMITH
August 9

AQUILA (Hinton in the Hedges)
We are having a much more successful season. Dick Williams and John Crewe have Silver height and duration, John completing his Silver badge; Richard Collings has both Bronze legs and Keith Chichester flew a 100km triangle.

John Rayment and Tony Limb have AEI ratings and we wish Ronan Harvey luck in the Enstone Regionals in the club Astir.
J.R.

AVON (Bidford-on-Avon)
The Inter-Club team are doing well and being organised by Richard Palmer who is also sorting out a glut of good ladder claims. A new Rallye gives us four tugs with excellent mid-week launching, so "come on down".

Well done to Chris Law on going solo; to all new members on good progress; Chris Morris on Diamond goal and height; the five who achieved Diamond goals, Mike Cutt and Dave Preston on Silver distance and one nameless member with Diamond goal and distance (507km).
D.T.W.

AVRO (Woodford)
Our thanks to those who repaired our two winches and to the group building a new one. We have had many soaring flights but are short of winch drivers.

Gerry Ramsden has retired as CFI and been replaced by Roger Bostock. Our thanks to Gerry for his many years in the job.

Alan Taylor, Corinne Niman, Alan Davies, Stewart Jones and Chris Muir have gone solo, Chris just after his 16th birthday. Congratulations also to Dave Taylor (Bronze leg); Ian Allan (both Bronze legs); Scott Bird (second Bronze leg) and Nigel Jennings and Jeremy Niman on achieving Gold distance and Diamond goal during their Booker holiday.
L.B.

BANNERDOWN (RAF Hullavington)
We flew over 500hrs with 2000 plus launches in April and May. Although Andy Smart flew 425km on April 28 most weekend cross-countries have been in the 150km bracket. J. Vincent, P. Griffiths, P. Laws and H. Nerain have their 5hrs and there have been a number of Silver heights and Bronze legs.

Paul Armstrong came 2nd in the Inter-Services Regionals, Class A, and Jon Arnold did well in the Club Class. Two members flew in the 15 Metre Nationals and one in the Open Class.

We have lost Tom Eagles, an excellent CFI, who is now RAF liaison officer at Upper Heyford, and thank him for his tireless efforts in maintaining high standards of flying and safety.
D.C.F.

BATH & WILTS (Keevil Airfield)
Phil Gascoigne and Malcolm Smith have completed 300km triangles and we have had a crop of smaller tasks.

A pre Bronze/post solo course over three weekends proved so successful it was repeated.

Our first venture into the Inter-Club League has been a great success with us hosting the final meet of the four.

Congratulations to Dick Yerburgh and Dave Pengilley on completing their Silver badges. A Std Jantar 2 in Swiss livery joins our private fleet.
B.H.

BICESTER (RAFGSA Centre)
Our congratulations to Duane Kincaid (5hrs); Richie Basack (UK Cross-Country Diploma); Pete Atkinson (300km) and Tim Harrington and Dave Aknai (500km), Dave at 83km/h.

The T-31 club soaring record of 1hr 1min is held by Den and Margaret.
M.N.

BLACK MOUNTAINS (Talgarth)
Congratulations to Bill Grundy on going solo; to Mark Brocklington and Alistair MacIntosh on their Silver badges and a warm welcome to Ian Kennedy, a new instructor.

John Bally came 1st at Competition Enterprise with Tim Hearn and Jerry Martin in the first six.

Our chairman, Derek Eckley, had a 10th anniversary flight on July 25 and our anniversary barbecue is on August Bank Holiday Monday.

Entries for autumn and winter expeditions are coming in fast. Please phone early to help us with orderly bookings.

Our tug is back after a very extensive and expensive C of A.
T.J.W.

BLACKPOOL & FYLDE (Chipping)



Our CFI Paul Myers was upstaged by a DG-200 when his bride, Alison Greening, saw her new glider for the first time outside the church - fully rigged and crossing wingtips with his Nimbus.
V.H.

BORDERS (Galewood)
We have replaced the K-8, which was often grounded in rough winter weather, with a Skylark 3F. The good weather has given plenty of flying helping many pilots progress. Congratulations to Kevin Burns on his Bronze leg. The tug has made a welcome return from repairs to its wing roots.
A.J.B.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)
Some of our younger pilots, Rupert, Ashley and Kevin, have been clocking up cross-country kilometres whilst too young to drive.

In June we had the Western Regionals and for nine glorious days the gods smiled, the sun shone and the boys raced. Doug Jones said it was the best competition weather since the Aston Down Nationals in 1962, and his memory is longer than most.

Andrew Davis broke his own record for a 500km triangle on July 4 by about 12% at 89km/h on a 20kt blue day and then on August 1 flew 600km in about 6hrs.

We are having a larger trophy display case to house some of the silverware collected this summer.
S.R.

CAIRNGORM (Feshiebridge)
Andy Carter flew to Aboyne to complete his Silver badge, achieving Gold height on the way, and soared home after a relaunch.

We have had several Gold heights and cross-countries with even a Kinlochleven O/R for the K-7. We hope the good weather lasts for the Fulmar GC visit and our two August courses. We are again hosting Avon's wave soaring expedition in September and October.
S.M.

CAMBRIDGE UNIVERSITY (Duxford Airfield)
Congratulations to Phil Jeffrey on winning the Lasham Regionals (Class A). Also to Gordon Hannah, Peter Ganczakowski and Janet Birch (going solo); Howard Franks (Diamond goal); Mike Smith (Diamond distance); Gary Hunter, Brendan Bradley, Gordon Coupe and Mark Emerson (Silver distance) and Fraser Haydon, Brian Hooson, Gary Hunter, Nick Robinson, Duncan Bray, John Birch, Mike Barnett, Robert Amand and Chris Davis (Silver height). Brian Hooson, Brendan Bradley and Gary Hunter have completed their Silver badges.

We won the Inter-Club League meeting on May 6/7 by a short head.

Bluebell (T-21) was launched at 0408hrs to start our longest day (June 18) with the lunatic fringe having a hearty breakfast (thank you chefs!) but the late shift sadly didn't last until dusk. However, we managed 135 launches.
J.B.

CLEVELANDS (RAF Dishforth)
The good weather has brought many successful flights: congratulations to Colin Smith (solo); Vince Suttle, Steve Harper and Chris Ballard

(Bronze badge); Chris Ballard and Robin Sinton (Silver height) and Gary Mennell (Silver distance).

Our competition pilots have been performing valiantly, Steve Olender (ASW-19) winning his Class in the Northerns and Neil Claughton (Astir) getting the best novice award.

We are adjusting to the loss of a quarter of the hangar and increasing activity at Leeming.
J.P.

CONNEL (Connel Airfield)
John Anderson and David Whitelaw have been re-elected as chairman and secretary with Alex Fleming as CFI, succeeding John MacGilvay who has retired after five years' loyal service.

Thanks to a Scottish Sports Council grant our gliders and towcars have air-band radios, and we are fortunate to have an even larger grant from the Highlands and Islands Development Board towards buying a modern two-seater.

Iain MacArthur, who now has his Silver badge, flew again to Ben Nevis and claims to be the official guide for this route.

We are planning another open day or weekend in a few months time and hope you will all come again.
R.W.

CORNISH (Perranporth)
Our Long Mynd expedition resulted in Silver heights for Denzil Corrigan and Dave Clouder to complete their Silver badges. Ivan Foster completed his with a cross-country to Usk getting his height on the way. Tracey Colbeck, Roy Picton and Ray Brecknock have gone solo.

Commiserations to Eric Jervis who had to land after 4hrs 20min on a 5hr attempt but luckily Pete Burrage completed his despite the damp conditions.

We had a very successful barn dance in our newly painted glider hangar.
G.A.H.

COTSWOLD (Aston Down)
Congratulations on going solo to Tony Young, David Ayres, Phil Underwood, Richard Burgoyne, Clive Moody, David Reynolds and Nigel Pickering, David and Nigel gaining both Bronze legs a few days later. Also to David Townend (resoloing); Junior Orta (Bronze leg on second solo, shortly followed by Silver height with no barograph!); Jim Rodgers (Bronze badge and Silver distance and height); Chris Horseman (Bronze badge and 5hrs); Ted Walker and Pete Barnes (Silver height); Alison Randall and Ginger Lake (Bronze badge); Mike Pearce (5hrs) and Derek Locke (5hrs and Silver height).

Stuart Evans (Pilatus) finally gained Diamond goal which John Higgins and Geoff Lloyd achieved in France. Well done also to Doug Gardner (Astir CS) on his 500km and to Robin Atkinson on becoming an instructor.
G.M.

CRANWELL (RAFGSA)
We have had some good weekends and a few achievements. Congratulations to I. Noble and G. Stubbs on their Bronze badges and the latter on his 5hrs; also to R. Dornan on Silver height.

We hosted the final round of the Inter-Club League when over 2000km were flown. Ken Pick flew the club LS-4 at the Inter-Services Regionals at Bicester and Mick Lee the Janus at Roanne.

We will soon enjoy the freedom of the airfield when the flying club move to the south airfield and with luck the motor glider should soon be back after yet another engine refit.
B.S.

Club News Reporters: If your contribution is hand written please print all names. We had to leave some people out simply because we couldn't read the writing.

CRUSADERS (Cyprus)
Ossie Constable is settling in well as CFI as is the IS-28B. Instructor arrivals include Bob Bickers (Pegasus), Ian Pettman (Two Rivers) and Steve Tape.

Paul Turnell and Dion Stratford were our first Malcolm Club solos. Others to go solo were Lee Royston, Cherry and Mike Robinson, Val Penketh and Robin Pursey. Steve Tape claimed the height record with 6500ft in the T-21.

We miss John Morris (ground equipment member) and wish our chairman Bruce Benford well on his promotion to Wg Cdr and departure to Cranwell.
I.P.

DARTMOOR (Brentor)
With fantastic weather and weeks of prevailing strong easterly winds we have had a choice of thermals and wave. Unfortunately we had one of the few damp days for our longest day and didn't beat last year's launch record of 98 off one winch.

We have had our barbecue, gave a home for deprived children a day's flying and introduced two local Scout troops to gliding.

We are deeply sorry that Tim Parsons has died (see Devon & Somerset GC). Tim helped out at a critical time as temporary CFI and we remember him for his keenness and terrific sense of humour. We are collecting for Cancer Research as a tribute to Tim.
F.G.M.

DEESIDE (Aboyne Airfield)
We have had a great increase in cross-countries this season. In three days of July members flew one 500km, four 300kms and a Silver distance in wave, dispelling the myth that there is only wave in October and that cross-countries aren't feasible in wave.

Terry Slater is giving weekly lectures in the clubhouse and post-Bronze training, including cross-countries in a Super Falke, engine off.

We have our new Pawnee and with the Super Cub engine coming soon we will have three tugs for the wave season.
D.S.

DEVON & SOMERSET (North Hill)
There were seven flying days for the BGA's cross-country and soaring course. By the end Chris Rollings had convinced us pilots can reach out even in grotty visibility, progress can be made against a stiff breeze and that there was a Diamond goal to be taken on even this mediocre week.

Instructors Barry Salter and Gordon Peters took a combined 30 years to convert their Bronze coats to Silver. Guy Adams needed a few months while Alan Rappaport only asked for five days.

Richard Harris and Susan Bold got their 5hrs, Chris Banting Silver height and D. Greig and M. Iles went solo.

Both drums of Supacat sport stranded cable so simulated cable breaks are now in the majority.
G.P.

Obituary - Tim Parsons
After an illness of just over six months Tim Parsons, our CFI, has died.

He will be sorely missed, from his shout "Mind that so-and-so canopy" to the incredible effort he put into every task from being a top instructor to fixing the drains. Everything was approached with full power; no job was too lowly.

Our deepest sympathy goes to Meg, Nicholas and Tammy.
Peter Warren

DORSET (Old Sarum)
At our AGM we awarded an honorary life membership to Dutch gliding instructor Bruno Zijp. We have long associations with the Vliegclub Flevo at Lelystad, Holland, including inter club visits.



Ray Witheridge, chairman, presenting a scroll to Bruno Zijp to mark his honorary life membership.

Congratulations to Robin May, Gee Dale and Jill Bury on doing well in the Lasham Comps and to Nigel Warren, Phil Jaquiery, Bill Flood, Frank Leake and Tim Cushion on going solo.

Our best wishes to Ray Witheridge and Arthur Poulton who are recovering from injuries received in a K-7 accident.
D.N.

EAST SUSSEX (Ringmer)
We have been operating four two-seaters, mending overtaking bending due to sterling work by James Edwards aided by Jack Malcolm and others. George Warrick has built a hangar extension almost single handed and we have new windstock poles, perimeter roads and other projects.

Congratulations to Steve Barter, Kevin Kirkham, Jason Shergold and Henry Weston (Silver distance); Gareth Reason, Rebecca Kingsmill (solo) and to Barry Skilton on becoming an assistant instructor.
L.M.

AWH

GLIDING HOLIDAYS IN THE SCOTTISH HIGHLANDS

We operate from Connel A/F north of Oban, (see Pooleys) launching gliders from 1400m runways into breathtaking mountain soaring conditions.

The Centre is dedicated to making gliding in this superb area trouble free for the experienced visiting pilot or pre-solo student. Expert instruction at all levels.

1 or 5 day courses March to October. Visiting gliders and tugs welcome. **Take advantage of the superb soaring conditions and course prices early in the year.**

ONE DAY COURSE FROM £49
FIVE DAY COURSE FROM £195
ACCOMMODATION INCLUSIVE FROM £255

For information and free brochures, contact:
ARGYLL & WEST HIGHLAND GLIDING CENTRE

Daytime Airfield
Tel: Connel
(063171) 243

Connel Airfield
North Connel
By Oban
Argyll
Scotland

The Scottish Highlands and Islands

ENSTONE EAGLES GLIDING CLUB

Now open for gliding seven days a week throughout the year. New members welcome.

Launch by aerotow or motor tow and soar over the beautiful Cotswolds.

Mid week holiday courses from March to October for beginners or solo pilots tailored to suit your requirements.

Short weekend courses also available.

Details from:
TOM MILLER
ENSTONE EAGLES GLIDING CLUB LTD
Enstone Airfield, Church Enstone, Oxfordshire
Tel: (060 872) 535 (daytime)
(0296) 67403 (evenings)

COME GLIDING

with the

CORNISH GLIDING CLUB

at

Perranporth, Cornwall

Courses from May to September
Under BGA instructors. Beginners welcome.

Trevellas Airfield is only one mile from Perranporth's golden sands, one of Cornwall's favourite family holiday centres.

RUTH B. PHILLIPS
BOSWENS, WHEAL KITTY, ST. AGNES
(0872) 552430
If no reply please phone (0872) 72923

Holiday Gliding Courses for Beginners

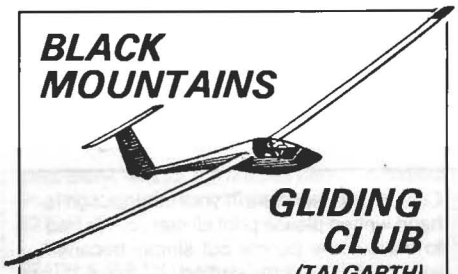


Stay in lovely 16th Century farmhouse or our new Clubhouse

Ring Ron or John on
DOVER (0304) 824888

CHANNEL GLIDING CLUB
Waldershare Park, Dover,
Kent CT15 5NH

BLACK MOUNTAINS GLIDING CLUB (TALGARTH)

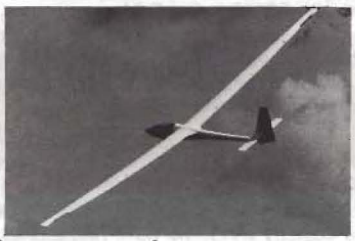


COME AND TRY OUR VERY SPECIAL MOUNTAIN RIDGE FLYING AND WAVE SOARING

We fly 7 days a week, all year round. Weekend and mid-week courses available for beginners or experienced pilots. Because of our good ridge soaring, instructional flights average 45+ minutes.

For details contact
Derrick Eckley on 0874 711254 or the Airfield on 0874 711463

BOOKER



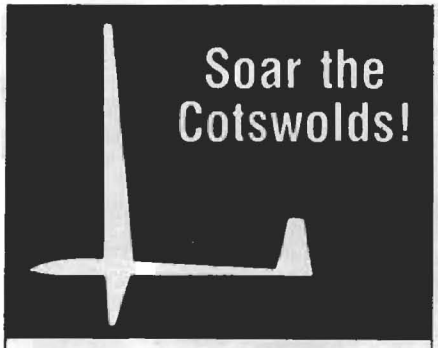
Come on one of our courses

● start from scratch ● go solo ● get a Bronze, Silver or Gold C ● fly a glass glider ● learn to race ● AEI, advanced and instructor courses throughout the year ● completion courses and full rating preparation courses on request

We operate every day, all year

WHATEVER YOUR THING -
YOU CAN DO IT BETTER AT BOOKER

Contact Mike Cuming, Booker Gliding Club, Wycombe Air Park, near Marlow, Bucks SL7 3DR or Tel (0494) 29263



Holiday course members and visitors welcome at our scenic club.

Courses from £100 to £160 with accommodation (flying extra). For details write to Bristol and Glos Gliding Club, Nympsfield, Stonehouse, Glos GL10 3TX or phone 0453-860342/860060.

Open all week April-October

Cambridge University Gliding Club

The club is open to everyone.

We winch and aerotow from Duxford throughout the year, mostly at weekends. We run 3 day "Introduction to Gliding Courses" in April and May, and full 5 day courses for *Ab-Initios* and Solo pilots from the end of May to the end of August.

For general information write to
The Secretary
55 Moorfield Road, Duxford, Cambs

For Course details write to
The Course Secretary
6 Camside, Chesterton, Cambridge
Tel. (0223) 67589

COVENTRY GLIDING CLUB





- Residential courses held weekly
- 5 day and 2 day
- Good field
- Beginners welcome
- Advanced courses for Bronze & Silver badges. Cross Country Flights during 1989
- AEI courses held on demand

COVENTRY GLIDING CLUB
Husbands Bosworth Airfield, Lutterworth
Leics. LE17 6JJ
Tel: (0858) 880521 · (0858) 880429

KENT GLIDING CLUB



Challock,
Ashford,
Kent
TN25 4DR

Courses available for beginners and early solo pilots, April to October. Inclusive of instruction, meals and accommodation in fully licensed clubhouse.

For FREE brochure, write or phone:
Challock 307 or 274
(Std 023 374)

ENSTONE EAGLES (Enstone Airfield)
With excellent conditions Greg Burton has completed his Silver badge; Jim Marburger, Karen Thompson and Roddy Maddocks have gained Silver legs; we had a clutch of Bronze legs and David Wardell, Stephen Thurgood, Stephen Clark, Roger Cross, Mike Somerset, John Canning and Gary Cross have gone solo.

We had nine good days for the Regionals and a record number of air experience flights.
R.J.P.-B.

ESSEX & SUFFOLK (Whatfield, Hadleigh)
Our flying week was made especially successful by the arrival of our newly acquired Pawnee. John Massey and Peter Hart have added a Std Cirrus to the syndicate fleet.

The superb weather has encouraged numerous 100km and 200km flights. Many congratulations to Sharon Gentle and Darryl Simpson (going solo); John Massey (Bronze and Silver badges); Dick Brooker (Bronze badge); Philip Duffin and Chris Nunn (Silver badges) and Peter Codd (Gold distance).
J.B.



Joanne Morrisroe who is Nene Valley GC's first female pilot to go solo on her 16th birthday.

HUMBER (RAF Scampton)
This smashing season Keith Whittaker and Paul Walker have flown their first Bronze legs and, with Steve Skidmore, Silver height; Chris Day and Mike Tobin have gone solo and David Jones has completed his Silver badge with a 120km triangle, also claiming part 1 of the UK Cross-Country Diploma. R. Browne has completed the Diploma.

We had a good showing at the Inter-Services Regionals with Keith Atkinson 1st in the B Class and Chris Gildea amongst the leaders. In the A Class Paul Armstrong was a creditable 2nd. With nine competition days, it was the best Inter-Services we have ever had.
K.M.E.

MIDLAND (Long Mynd)
Roger Andrews achieved 480km, almost entirely in Wales, and Harry Lowe his 300km at last – he also popped into Camphill on the only weak day of this year to take the collector's plate (the poor conditions meant they couldn't follow him back to the Mynd for it).



Norfolk GC's chairman, Mike Bean (right), presenting retiring chairman Evan Harris with a painting of his K-6, watched by fellow members.

We will be running an aerotow/wave course from November 6 under the incredibly experienced scrutiny of John Stuart and Vic Carr.

In June and July we added 11 000km, over 4000 launches and 2000hrs to our total with members going faster and further than they ever believed possible.

Andrew Ray and Nick Heriz-Smith flew Silver distance and Ken Markham has part 1 of the UK Cross-Country Diploma.
R.D.

NENE VALLEY (RAF Upwood)
Our open day was so successful we closed the list at 6pm to fly those already booked. A big thank you those who helped.

Special congratulations to Joanne Morrisroe, our first 16 year-old female to go solo, also to Neil Cannon and Gus Pinkerton on completing their Silver badges.

Our second K-7 came in useful on our course at Bassingbourn Barracks which was a great success with four Army personnel going solo. Of our members, Julian Pool soloed, Andy Thompson gained Silver height and Alan Haiek his 5hrs.
A.H.

NEWARK & NOTTS (Winthorpe)
A party spent a most interesting week at the Dumfries GC; our thanks for their hospitality and to Bob Moorhouse, the winch driver.

Congratulations to Mike Evans on going solo; "Cocker" Marshall on his UK Cross-country Diploma and to "Tiny" Parker and "Slim" Heppenstall on finishing and flying the Pirat.
M.A.

NORFOLK (Tibenham Airfield)
At our AGM Mike Bean was elected chairman – our thanks to Evan Harris for his chairmanship for the last few years and for being one of the main negotiators in the purchase of the airfield. He is now vice-chairman and in appreciation of his work was presented with a painting of his K-6 and a cheque.

There have been a number of badge flights. Congratulations especially to Brendon Sargeant and Eric Arthur for gaining Diamond distance at Fuentemilanos in Spain giving Brendon all three Diamonds.

Charles Owles took part in Competition Enterprise and four flew to France in a member's Tampego to join him for the last weekend.
G.E.

OXFORD (Weston on the Green)
We have been enjoying the best soaring season since 1976 with a great increase in cross-countries. Mark Pollard and Roger Pitman have soloed; Peter Buchan has his Bronze badge; Donal Meehan and David Weeks have Silver heights and John Hanlon achieved Diamond goal.

June 24 was excellent with seven 300kms – the first time for Mick Moxon, Caroline Oakes and Martin Hastings (K-6E). There were two 500km attempts, John Giddings flying 484km and Tony Boyce 460km, and Alex Jenkins gave their Astir its first 300km.

In July Martin Hastings took his K-6E to 12 000ft and Phil Hawkins an ASW-19 to over 13 000ft in cloud. The following day Phil flew another 300km in his Cirrus.

Our mini courses are being well supported.
F.B.

Norfolk Gliding Club

Holiday courses from June to September – beginners to Silver C. Book now!

Motor Glider Courses throughout the year – Bronze or Silver C to PPL (SLMG).

Visiting Aircraft welcome – ideal cross-country site – cheap aerotows and temporary membership.

Friendly club – accommodation on site – licensed bar.

Write to **The Course Secretary, B. L. Owen, 64 Chapel Lane, Wymondham, Norfolk NR18 0DN.** Tel: Wymondham 605444 Evenings

Shobdon



Aerotow from a big flat site – Blanik, K8 and Grob 109B.

HEREFORDSHIRE GLIDING CLUB
Shobdon Airfield Nr. Leominster HR6 9NR
Telephone weekends 056881-8908
or evenings 0905-21740

MARCHINGTON GLIDING CLUB

Situated in the Midlands. Offers Holiday courses from April to September.

Good local soaring and cross-country.

Private owners welcome.

Please Contact:

Course Secretary
Marchington Gliding Club
Marchington Airfield, Morton Lane
Marchington, Nr Uttoxeter ST14 8LP
Telephone: 0785-51570

PLANNING AN EXPEDITION OR PERHAPS A WEEKEND AWAY?

VISIT THE ... Wolds Gliding Club

The Airfield, POCKLINGTON
East Yorkshire Y04 2NR

Situated on the edge of the picturesque Yorkshire Wolds within easy reach of the historic City of YORK, the Moors and the scenic Yorkshire coast.

- EXCELLENT LAUNCH FACILITIES (winch/aerotow).
- ON-SITE ACCOMMODATION AVAILABLE.
- COMFORTABLE CLUBHOUSE, BAR & BRIEFING ROOM.
- FLY YOUR GLIDER OR OURS.

Write or give us a ring – 0759 303579

PETERBOROUGH & SPALDING (Crowland Airfield)
The year has been most successful with launches and flying hours way above previous levels and enthusiasm high. Among the many achievements Steve Turner and Graham Kench have completed their Silver badges and we have a crop of new Bronze pilots.

We have had the third break-in at the clubhouse although yet again little was stolen.

Several new tug pilots are in the pipe line but we are still short of instructors. Hopefully we may be able to run an instructors' course at Crowland soon!
M.J.

SACKVILLE (North of RAE Bedford)
Congratulations to Mick Woodhead and Samantha Wilkinson on going solo. Now beat this one!



Samantha with her father, Tim.

Samantha soloed after her 16th birthday to become the fourth generation of pilots in the Wilkinson family. First was my grandfather, Jack (Dunstable and power flying at Sywell), followed by my father, Peter, myself, Tim, and now my daughter.
T.J.W.

SCOTTISH GLIDING UNION (Portmoak)
We too have been taking advantage of the good weather, although none has coincided with the task weekends, which have still to get off the ground. The July/August wave has been in good form and used by Richard Allcoat (K-6E) to complete his Gold badge with a flight to Sutton Bank via the Wallace Monument.

Congratulations also to Jim Glencorse, Justin Kennedy, Craig Simpson, David Heale and Murray Hamilton on going solo, the latter two of five pupils from Strathallan School for whom we ran a mini course for two afternoons a week through the summer term.

We were shocked to hear of the death of Dennis Johnson in a flying accident in Spain; although not a local member he was frequently at Portmoak and a well liked and respected instructor and tug pilot. We will miss him and share the sorrow of his family and friends.
M.J.R.

SHALBOURNE (Rivar Hill)
Our open day was a great success with Alan Sparshatt-Potter's T-21 a big attraction. Thanks to this and other activities our membership continues to grow.

Our "new" Bergfalke 4 was put to good use at the Western Regionals with Geoff Nicholls and Jonathan Mills flying P1 on alternate days and Malcolm Black, John Parsons and Richard Dann taking turns as P2.

The exceptional weather meant we even ran out of badge claim forms.
S.C.O.

SOUTHDOWN (Parham Airfield)
Our first task week was very well organised by Mark Derby and will hopefully become an annual event. Our CFI Dick Dixon was the clear winner.

Our new hangar extension enables maintenance work to be carried out more easily. A new syndicate has a Motor Falke, flown from Germany by Brian Bateson.

Congratulations to Dave Knight, Rob Smith, Ross Letten, John Tattershall, Stuart Ross and Bill Sisson (going solo); to Bart Bartley, Graham "Bat" Noble and Robin Scott (Bronze badges); to Steve Way, Martin Roberts, Barry Bartlett, Chris Hancock, Colin Robinson and George Ansell (Silver badges); to Martin Roberts (Diamond goal a few months after finishing his Silver) and to Craig Lowrie (487km of a 500km attempt).

After two legs of the Inter-Club League, there isn't much between us and Booker with legs at

SOAR YORKSHIRE SUTTON BANK

For your COURSE! For your EXPEDITION! For your HOLIDAY!

We offer top class accommodation, instruction facilities and opportunities
RIDGE SOARING – 12 miles in suitable conditions
THERMAL SOARING – Club record is 582km from aerotow, 524km from the winch
WAVE SOARING – Club absolute record is 32 670ft. Club record gain is 31 050ft

Our rates are amongst the best – £9.80 for aerotows to 2000ft. Visit us and stay in our fully licensed residential clubhouse. Full catering available in season. Self catering at other times.

COURSES— April to October Visitors always welcome, please book in advance

YORKSHIRE GLIDING CLUB, SUTTON BANK, THIRSK
Tel: 0845 (Thirsk) 597237

Challock and Lasham to come.
P.C.F.

Obituary - Gaye Connaway
It is with great sadness that we report the death of Gaye Connaway, killed in a gliding accident on July 2. (See BGA News.)

She came to gliding barely two years ago and progressed rapidly, achieving so much in such a short time. This amazing ability to learn was not, however, restricted to gliding and her achievements in her other leisure activities as well as in her career in medicine speak for themselves. Gaye certainly lived life to the full, her buoyant personality making her a popular character and one who will be deeply missed.

It is difficult to believe that she has gone and her untimely death left us all numb. Our thoughts are with her husband, David, to whom we send our deepest sympathy.
Craig Lowrie

SOUTH WALES (Usk)
Earl Duffin gained Diamond distance after an epic 10hr flight and Tony Meakin has Diamond goal after a number of attempts this season. Maureen Weaver completed her Silver badge and husband Rod has Silver distance. Joan Bennett and Mike Rossiter have their 5hrs and there have been numerous solos and Silver and Bronze legs.

Our open day in July was a resounding success. We have replaced the Pirat with a Club Libelle.

Our thanks to the Devon & Somerset GC for their hospitality during our annual expedition in June.
N.J.P.

STAFFORDSHIRE (Morridge)
We have had plenty of good flying aided by the weather, improved cables and weak links and better field drainage. We are planning to build a super-winch when the technical team have found the best pattern.

The longest day was the most successful for some years thanks to excellent catering by John Timms, family and friends and good local soaring.

Dave Thorpe beat the instructors' Silver badge deadline with his third 50km plus - the others narrowly failed the 1% rule. Chris Harris flew the K-18 from the Mynd for Silver distance, dropping in for tea at chairman Charles Webb's house! In July Alan Jones and Peter Gill flew 300km triangles from Sleap.

We welcome an additional instructor, former RAFGSA member Charles Wiggs, and Phil Wild and Ted Hobby have bought a Skylark 4.
P.G.

SURREY HILLS (Kenley Airfield)
The club fleet has been restored to strength after the 1987 storm all but wiped us out. With large doses of enthusiasm we now have two Blaniks, a Swallow and a motor glider plus a growing membership

We operate most flyable weekends and have a very creditable launch rate. Congratulations to Peter Gaynor (going solo); Bob Fielder (resoloing); Vic Allison (AEI rating) and Peter Poole, our CFI, on achieving his Diamond goal during Competition Enterprise in France.

We have had successful trips to Dunstable and Parham, led by Ian White, course instructor. Our thanks to visiting instructors for their help.

Visitors are always welcome. Telephone our secretary, Richard Goring, on 0737 554319 and you will be sent a map on how to find us.
H.S.M. & R.G.

TRENT VALLEY (Kirton-in-Lindsey)
Our tug has proved very popular, making a big difference to the launch point queues, and there is no shortage of eager tug pilots. Autumn wave flights should be more frequent.



Robert Griffin who soloed on his 16th birthday.

Congratulations on going solo on his 16th birthday to Robert Griffin, our CFI's son, and to Vernon Schuler and John Wigmore; to Patrick Holland on two thirds of his Silver badge in one flight and Dave Rendall for Silver height.

Our grateful thanks to Humber GC for the use of their site and facilities during the summer when we weren't able to operate from our airfield.
L.W.

TWO RIVERS (RAF Laarbruch)
The German weather has not been so kind. However, congratulations to Graham Letties on his 5hrs and to Simon Cattle and Dave Lansdell on going solo.

We have a new winch, thanks to the members including Chris Gilbert, Keith Curtis and Martin Pengelly. More thanks to Chris, Keith and Val Sullivan for refurnishing the now splendid club bar.

We said a sad farewell to "Taff" and Marilyn Williams and thank "Taff" for his work as treasurer and as an instructor.
P.J. & C.J.

ULSTER (Bellarena)
Hugh Henderson had the first launch at 0545hrs on our dawn to dusk (almost) day before work, followed by an afternoon wedding. He returned for the last launch at 2100 being serenaded from glider to barbecue by a kilt clad piper. (Who says we're nuts?)

Our thanks to the Dublin GC for an enjoyable long weekend and we look forward to their visit.

Father's Day gift vouchers proved a popular present with some prospective members taking further flights.

The schools' flying scheme, in its second year, proved a great success with 21 pupils each having three flights.

Congratulations to Peter Richardson (both Bronze legs) and Brian Tannahill (re-soloing).
A.W.

WELLAND (Middleton)
Our annual flying week was very successful with several good cross-countries, the best being a 274km by Keith Scott (Dart 17R). Paul Warburton (Fauvette) flew Silver distance to Bicester and Ken Wells (Skylark) to Oakington.

Kay Gordon, Jim Skorupa and Neil Hannay have their second Bronze legs and Chris Martin has gone solo. Congratulations all round.

The flying week was bracketed by two excellent barbecues in the field and a large raffle, organised by Norman Martin, has raised over £600 for club funds.
R.H.S.

WREKIN (RAF Cosford)
On the longest day Al Marshall winched for 310 launches of which the Prefect managed a third.

Dave Judd and Al Marshall have UK Cross-country Diplomas; Geoff Matthews gained his Diamond goal at Bicester, Dave Gordon came 12th in his first Comp and Mick Boydon 11th in the Open Class Nationals, narrowly missing the 19m cup.

Jean Gammack and Martin Shaw have gone solo.
R.J.

WYVERN (RAF Upavon)
A successful longest day in June began with a 4am launch by Ephy Darnbrook and ended with an excellent party and barbecue organised by Paul Lutley with live music provided by Mike Law. It was also an excuse to celebrate the 40th

LASHAM

Does your home club operate only at weekends?

At Lasham we operate all week, every week which means we could provide a useful supplement to your training. Whether you are not yet solo and would benefit from a week's consolidated instruction, or a budding cross-country pilot needing soaring or field-landing training, we have the expertise and facilities to help.

Apart from our large two-seater fleet and excellent aerotow and winch launch facilities, we have a comprehensive briefing room for lectures or instructional videotapes if bad weather prevents flying.

On-site accommodation for club expeditions is always available by arrangement.

Absolute beginners are of course always welcome - we have a large choice of courses and types of membership to suit your needs.

Lasham Gliding Society
Nr. Alton, Hants
Tel. Herriard (025 683) 322 or 270

London Sailplanes Limited

GLIDER REPAIRS – SPARES – INSTRUMENTS – PARTS – MATERIALS – SERVICE

MAJOR REPAIRS: in glass and carbon fibre reinforced plastics, steel tube, and wood. Schleicher gliders a speciality: many jigs and spares held in stock.

TOST: Wheels, Tyres (including 400 x 4), Weak Links, Release Hooks.

DOPES AND PAINTS: Main stockists for Neogene products.

INSTRUMENTS AND RADIOS: Winter Agents – most other makes available.

MATERIALS: For all your Repair and Re-build needs: GLI Finnish Birch Ply (thicknesses from 0.8-6.0mm); German steel tube for gliders (complete range).

INSTRUMENT CALIBRATION AND SERVICING

OVER-THE-COUNTER, POSTAL AND CARRIER SALES SERVICE: our Shop stocks Hundreds of items, all at competitive prices.

Open Monday to Friday 9am to 1pm; 2pm to 5pm
Saturday 9am to 1pm; 2pm to 4pm

London Sailplanes Limited

Tring Road, Dunstable, Beds LU6 2JP. *Dunstable (0582) 662068*

BORGELT by FLITE LINES marketing

The Borgelt Flight Enhancement system is built to the highest quality and uses the B-21 as the basic building block unit. The B24/25 units are upwardly compatible and can be added at any stage to make up a full system. The Borgelt equipment is suitable for all levels of Glider Pilot and can greatly enhance flying skills by giving real time information to the Pilot in a readable presentation which can be interpreted quickly and put to use immediately in flight. Glider polars can be changed easily should the Characteristics change or the equipment be transferred to another aircraft. The Netto information presented on the B-21 is 'Real Time' air mass indication and not approximated or historical. The units are easily installed and do not involve complex wiring or plumbing. Package prices available on request.



B-21 Vario - £225.50
Pressure Transducer Technology (No Flask) – Electronically Gust Filtered – 2 Speed Response – Altitude Compensated – No Radio Frequency Interference – Building Block Unit For B-24/25 – 58mm Standard Instrument Face (Available in 80mm to order)

B-21(R) Repeater Vario Unit - £127.95
Two Seater Additional Unit (mirroring Master B-21)



B-24 Averager/Speed Command/Netto/Audio – £339.75
Full Time Digital Averager – Full Time Speed Command – 4 Tone Audio signal - (2 Cruise/2 Climb) – User settable Quiet Band on Audio – Gives Real Time Netto Display to B-21 in Climb Setting – Quick change customising Polar Module – Three Settings for Different Glider Weights – Light Dependent Clear LCD Display – Auto Zero Electronic Drift Cancelling - No Screwdriver Adjustments – Cruise/Climb Switch (may be linked with Flap lever) – 80mm Standard Instrument Face

B-24(R) Repeater Unit - £184.95
Two Seater Additional Unit (mirroring master B-24)



B-25 Final Glide/Nav Computer - £415.00
Very Easy to Use – Programmable before flight – alterable in flight – 9 Turning Point capability – Large clear light dependent LCD Displays – Bug Polar Compensation – Head/Tail Wind Compensation – EPROM polar customising chip easily installed – DUAL Polar Chip (available for removable tip gliders) – 80mm Standard Instrument Face

B-20 Audio Unit - £55.00
For use with B-21 when not installed with B-24 – 2 Tone Audio with 'Up only Signal' option – Small lightweight self-contained remotable unit

HANDHELD TRANSCEIVERS

Narco HT830 incl. VOR	£299.00
ICOM ICA-2	£315.00
ICOM ICA-20 incl. VOR	£359
KING KX99 incl. VOR	£359.00

Most handheld spares and accessories stocked. *Also – Flying Clothing; Nato Style jumpers, shirts, gloves, jackets etc plus maps, flight cases and other equipment. All prices exclude VAT, Postage & Packaging.*

Call us for a competitive quote on all your aviation needs. All prices exclude VAT p&p and ins. Write to:

P.O. BOX 488, BRISTOL BS99 1HS or call 0272 - 710043. Fax: 0272 - 721923

LONDON GLIDING CLUB

Tring Road, Dunstable, LU6 2JP
Telephone: Dunstable (0582) 663419

Open for gliding 7 days a week throughout the Year!

Thermal, Hill and Wave Soaring

Modern, all-glass solo and 2-seater fleet

WINTER COURSES AVAILABLE NOVEMBER TO JANUARY

★ 2 & 3 DAY BEGINNERS COURSES
★ AEI RATINGS
★ 3 DAY BRONZE C GROUND SCHOOL PREPARATION

Resident instructors, full catering, licensed bar, accommodation

Visitors and New Members Welcome:

Please phone us now for full details and available dates

MIDLAND GLIDING CLUB
THE LONG MYND

AUTUMN IS COMING

Keep soaring in our hill and wave lift

Courses available till Christmas for Ab-Initio, advanced, and AEI.

Private owners and expeditions welcome (Prior booking essential)

Detail from:
ROY DALLING
Midland Gliding Club
Long Mynd, Church Stretton
Shropshire SY6 6TA
Tel: Linley (058861) 206

PORTMOAK

IS **THE** PLACE

FOR WAVE – UK altitude record – 36,500' in 1980.

FOR RIDGE – The two hills adjacent to our large airfield give more soaring time.

Inclusive – *Aerotow courses April to September for all levels of competence.*

SCOTTISH GLIDING UNION
PORTMOAK, SCOTLANDWELL
Nr. KINROSS Tel: 059 284 543

birthdays of Pat Farrelly, Ephy, Penny Smith and Colin Arch!

Ken Prout has his 5hrs; Tim Clark Silver height and duration; Pete Bradley has completed his Silver badge with a 50km; Alan Cresswell has part I of the UK Cross-country Diploma and Laura Brownlow, Neil Whittaker and Fiona Tiffan have gone solo.

The Inter-Services Regionals produced impressive performances from several Army pilots, in particular from Pat Farrelly and Graham Browning, the latter in his first Comp, who both completed 300kms in K-23s. Pat came 3rd in the B Class and Andy Harkins 6th in the A Class. Congratulations to them all.
D.B.

YORK GLIDING CENTRE ((Rufforth Airfield)
What a summer - 10kt thermals during the day and sea breeze fronts and wave in the evenings.

One superb Saturday Dave Mason (Astir) completed his 5hrs whereupon Paul Hepworth did the same in the T-21. Geoff Davis flew a Bronze leg and Alan Kilbride went solo less than a month after joining.

We ran two very successful Bronze badge courses and intend following them up with Silver badge courses. We have never been as busy and we will soon have the westerly launch run so no more crosswind landings.
H.McD.-R.

(Continued from p236.)

weather in the next valley. The crystal clear conditions of the area from which I had flown had been replaced by the dull green and grey of hot humid air drawn from the Italian lowlands. I found myself in still air well above the inversion, not sure whether I had enough height to cross a lower pass to get back to Briancon.

Again I headed west, looking for some sign of thermal activity coming off the lower slopes of the mountain upwind of me. After many minutes and without warning I flew smack into 4kt and underwent the somewhat bizarre experience of thermalling in lift directly **above** a cumulus cloud. A large bird joined me for a few turns, no doubt curious at the inelegant efforts of the big white monster. A glance over its shoulder, a flick of its wing, and it was gone.

At last I now knew that I had the height to reach St Crepin airfield. The remainder of the flight was rather more relaxed, although I was not certain that I would make it back to base until I actually saw the gap at Malaup, with Sisteron only 15km beyond.

It was by now late evening, the sun turning red as it slipped behind the mountains in the west. In the lengthening shadows I made my final approach and gently touched the grass. Rumbling to a halt at the side of the strip, I savoured the silence for a few moments and, climbing out of the glider into the warm valley breeze, began to reflect upon the day's events.

As usual, I came to no particular conclusion. After all, by the standards of your Mark 1 Alpine pundit it must rank as a particularly unremarkable flight. yet even with hindsight and the passage of time, I can't help feeling that it had been one hell of a way to spend an afternoon out.

YORKSHIRE (Sutton Bank)
The Northern Regionals was enjoyable with testing tasks and only one day a complete wash-out. Our thanks to the helpers.

Congratulations to Mike Brook on winning the Sport Class and to John Ellis who came 2nd in the Open Class. Also to Martin Bewley (Silver distance) and Richard Smith, Martin Bewley and Mike Dennett (AEI ratings).
C.L.

TAPE REVIEW

In 1988 the Gliding Federation of Australia held an International Soaring Symposium during the Australian Bicentennial Airshow. The talks were recorded on audio cassette tape. The sound quality of the review tape (before this summer's unusually visible sun blasted it almost speechless in the car) was absolutely first class. There are some illustrious names on these tapes: Ingo Renner talking about "The World Championships - is there a need for a change?"; Derek Piggott on "Test Flying and some experiences"; Dick Johnson on "Flight Testing Methods - the hows and whys"; Wally Wallington on "Mini Meteorological Systems" to name but a few of the top people in gliding present at the Symposium.

There are 28 tapes all told, each containing a separate subject. You can buy them singly for A$15, or the whole lot for A$349.

The review tape was Helmut Reichmann talking about "Training for Cross-Country Flying." He sounds a splendid and likeable fellow and the advice he gives is excellent, as you would expect.

I thought the tape useful and enjoyable though a bit of editing might have helped smooth out one very long pause. The speaker also refers in his talk to diagrams which he has but you cannot see. Pity about that. This makes me think that, good as the tape is, a well produced booklet containing the talks **plus** any diagrams, photos etc, might have been better. In addition, my experience of books and tapes is that on the whole books last longer and are much easier to dip into. Having said that, you do get something that no piece of paper ever gives you and that is the genuine sound of the Gods talking, and you don't have to be insane to hear them. That's worth quite a lot.
STEVE LONGLAND

* * *

NB. No sooner said than done! The BGA shop has ordered copies of the new book from Australia which is a reproduction of most of the papers presented at the Symposium and recorded on the tapes mentioned above. The book has 216 pages, over 400 charts, diagrams and drawings and more than 90 photographs. Order your copy now from the BGA shop.

JSW SOARING HAS MOVED!

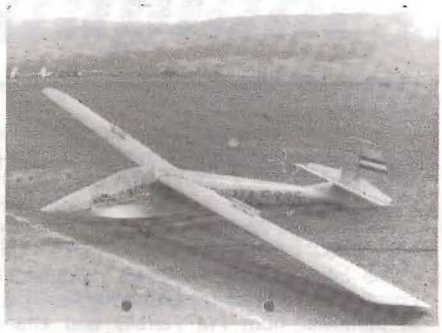
Different Address: Same Super Products

'Aquarius' (Dual Weight) Calculators	£12.00
Wind Component Resolvers	£6.50
'Gemini' Calculators (Resolver on Reverse Side)	£12.00
Flight Planning Rulers	£4.00
Protective Wallets for Calculators – or Rulers	50p
'Dolphin' vario Conversions from	£35

SAE for Product Details to:

51 PARK ROAD
FARNBOROUGH, HANTS GU14 6LQ

THE GÓBÉ R-26-SU TWO-SEATER FROM HUNGARY



All Metal Construction
Designed by Ernö Rubik
Now BGA Certified

UK Price £13500 – Delivered
Instruments extra, plus VAT
and Excise Duty if applicable

Demonstrations available on
The Long Mynd or by Arrangement
at your club.

Sole Agent:
LOUIS E. ROTTER
"Byways" Warrington Road,
Chester CH2 3PA
Tel: (0244) 326555

ROGER TARGETT
Sailplane Services

Bristol & Gloucestershire Gliding Club
Nympsfield, Nr. Stonehouse
Gloucestershire GL10 3TX

Tel: Office (0453) 860861
Home (0453) 860447 (0453) 45316

FOR SPECIALIST REPAIRS AND MAINTENANCE

Offering outstanding workmanship, efficiency and service in:

- ★ All glass, carbon and kevlar repairs
- ★ Wood and Metal repairs
- ★ All modifications
- ★ Motor Glider engine approval
- ★ C of A Renewals
- ★ General Maintenance

(including re-finishing and wax polishing)

COME MOTOR-GLIDING AT ENSTONE

OXFORDSHIRE SPORTFLYING CLUB ENSTONE AERODROME

TO CONVERT YOUR BRONZE/SILVER TO SLMGPPL*

DO FIELD LANDINGS/NAVEX EXERCISES FOR YOUR BRONZE

AB-INITIO TRAINING (NO LAUNCH QUEUES)



Ring Oxfordshire Sportflying Club on 060 872 208
for more information 7 days a week operation

*Self launching motor glider private pilot's licence

OXFORDSHIRE SPORTFLYING CLUB, ENSTONE AERODROME, CHURCH ENSTONE, OXFORDSHIRE OX7 4NP **Tel: 060 872 208**

SOARING EQUIPMENT LTD

SCHEIBE "FALKE" SF25C 2000

Superb Touring & Training
Classic construction, easy to maintain
Has fixed or VP propeller option
Excellent Take-off Performance
Improved Handling
Bigger Cockpit opening
Every School in Germany uses one
Demonstrator Available

HOFFMANN PROPELLERS

Have stock for all Motor Gliders
Offer exchange service
Fitted at your base
Fixed price overhauls and repairs
Manufacturered to highest standard
All delivery charges included
New quiet props for towing
New innovative technology blades

193 Russell Road, Birmingham B13 8RR. Tel: 021 449 1121. Fax: 021 449 9855

PIGGOTTS

Fluorescent Orange Windcones made in Nylon or Ministry of Defence Hypalon®.

Flagstaffs suitable for Windcones supplied and fitted.

Landing Marker Sets in bright orange.

All types of Flags and Banners.

PIGGOTT BROTHERS & CO. LIMITED
Stanford Rivers, Onger, Essex CM5 9PJ
Tel: 0277 363262 Telex 995457 (Piggot)

BENALLA SEASON 89/90

Fleet of 13 sailplanes on hire Junior to Nimbus 2. At lowest rates in Australia

★ ★ **STOP PRESS** ★ ★
ASH 25 on site

BENALLA - WHERE DREAMS CAN COME TRUE!

YOU DON'T HAVE TO BELIEVE US - ASK THEM!!

Ken Moules, Odiham; Colin Poole, Tony Fuller & Martin Aldridge, Rattlesden; Larry Matthews, Ringmer; Jill Burry, Lasham; Eric Arthur, Kings Lynn; Phil Atkin, Cambridge; Nick Jennett, Nympsfield; Keith Earnden, RAFGSA; Bruce Owen and Martin Breen, Booker; Ron Keeping, Culdrose; Mike Sesemann, Challock; Denis O'Hogan, Dublin; Reg Gardner, Aston Down; Mick Wells, RAE, Farnborough; Ernst Specht, HusBos; and many more from Europe and world-wide.

Prices and prospectus on application to:
John Williamson, Gliding Club of Victoria, PO Box 46 Benalla, Victoria 3672, Australia. Tel: (0) 57-621058.

Special-rate travel and details of alternative Aussie holidays from:
TRAVELBAG, 12 High Street, ALTON, Hants, GU34 1BN. Tel: 0420-82133

SKYCRAFT Services Ltd

ALBANY HOUSE · SILVER ST · LITLINGTON · CAMBS · SG8 0QE
TEL: 0763 · 852150

NEW PROPELLERS
OVERHAULS AND REPAIRS
FROM THE SPECIALISTS

HOFFMANN PROPELLER

DOES YOUR WINCH NEED A WIPER?



Sea Crystal

PENDULUM/PANTOGRAPH WINDOW WIPER

- easy to fit
- self parking blade
- ideally suited to gliding club winches
- attractive enclosed ABS cover protects all working parts
- adjustable to seven different angles of arc from 45° to 110°
- various blade and arm lengths available
- 12 or 24 volt radio-suppressed motor

WYNN
Clearly the Best

Wynstruments Limited
Staverton Airport Gloucester GL2 9QW. England
Telephone: (0452) 713264. Telex: 43239. Telefax: 0452-714749

PESCHGES -

THE BEST ELECTRONIC VARIOMETER AND NAV COMPUTER SYSTEMS

- **UNBEATABLE VP4 SERIES FROM UNDER £700+VAT**
- **AMAZING VP3 & VP5 FOR DEDICATED X-COUNTRY FLIERS**
- **EXCEPTIONAL WARRANTY**
- **CHOICE OF TOP PILOTS THROUGHOUT THE WORLD**

FROM THE ONLY APPROVED UK AGENT:

Aero Marketing ASSOCIATES

BOB SZULC
UNIT 9
EAGLE INDUSTRIAL ESTATE
BAGNALL STREET
GREAT BRIDGE, TIPTON
WEST MIDLANDS DY4 7BS
Tel: 021-520 6415
Telex: 336481
Fax: 021-520-6410

TED LYSAKOWSKI
54 TOR BRYAN
INGATESTONE
ESSEX CM4 9HN
Tel: (0277) 352418 *EVENINGS*

BRIAN WEARE

GLIDER WORKS
DUNKESWELL AIRPORT
HONITON, DEVON

Tels: Luppitt 338 (9-6 pm)
Honiton 41041 (after 6 pm)

MAJOR OR MINOR REPAIRS ON WOOD, GLASS-FIBRE, OR METAL. ALSO RESPRAYS GLIDERS AND LIGHT AIRCRAFT

C of A OVERHAULS

B.G.A., C.A.A., P.F.A. APPROVALS

WINCHING WIRE

- Available in stranded cable 4mm, 4.5mm and 5mm diameter
- High tensile galvanised steel
- Special coated wire for use on runway
- Tost release rings and weak links and splicing ferrules available
- Also cable parachutes and shock absorber ropes

BEST PRICES for gliding clubs - supplied by glider pilot

DAVID GARRARD
Bridge Works, Gt Barford, Bedford
Tel: 0234 870401

GLIDE AT GAWLER

SOUTH AUSTRALIA

- Modern glass fleet available for hire
- 7 day operation
- Excellent conditions (seven 1000 km flights done from Gawler)
- Near capital city, wineries, tourist facilities
- Good season lasts from October to March

Write for brochure to:
Adelaide Soaring Club
Box 94, Gawler
South Australia 5118

SAILPLANE & ENG. SERVICES LTD.

C's of A
REPAIRS TO GLASS-FIBRE
STEEL TUBE & WOODEN A/C

WRITE OR PHONE:
KEN BLAKE
BUXTON 24365

SAILPLANE & ENG. SERVICES LTD.
HOLMFIELD RD., BUXTON, DERBYS.

NOW IN OUR 28TH YEAR

SPEEDWELL SAILPLANES

THE REPAIR SPECIALISTS

WE REPAIR: GLASS - STEEL - ALLOY - WOOD

TUG AIRCRAFT REPAIRS AND RE-COVERS

VINTAGE AIRCRAFT REBUILDS

FULLY QUALIFIED STAFF

LLOYD'S APPROVED

RAPID SERVICE

SHEPLEY LANE, HAWK GREEN, MARPLE, STOCKPORT, CHESHIRE SK6 7JW
Tel: 061-427 2488

GLIDER INSTRUMENTS

Repairs and overhauls carried out

Approved for PZL and Winter Instruments

Barograph Calibration centre

Write or phone:

M. G. Hutchinson
'Tanfield'
Shobdon
Nr. Leominster
Herefordshire HR6 9LX

Tel. 056-881-368
(answering machine)

Make Insurance problems just plane sailing . . .



CONSULT THE AVIATION INSURANCE SPECIALISTS

FOR A COMPETITIVE QUOTATION CONTACT: JOHN MARTIN

GLIDERS, SAILPLANES, AND POWERED AIRCRAFT
FACILITIES AT LLOYD'S

Member of B.I.I.B.A.

LOWNDES LAMBERT
AVIATION LIMITED
Lowndes Lambert House, 53 Eastcheap
London, EC3P 3HL
Tel (01) 283-2000 Telex 8814631

SOUTHDOWN AERO SERVICES LTD

SPECIALIST GLIDER REPAIRERS SINCE 1954

REPAIRS UNDERTAKEN ON ALL MAKES AND TYPES

ROLLADEN SCHNEIDER FACTORY TRAINED STAFF AVAILABLE

LIMITED NUMBER OF MK19 ALTIMETERS AVAILABLE

SOLE SUPPLIERS OF GENUINE 'AEROLENE' FABRIC

LASHAM AIRFIELD, ALTON, HANTS GU34 5SR
Telephone HERRIARD (0256 83) 359

CLASSIFIED SECTION

TO PLACE AN ADVERTISEMENT IN THE CLASSIFIED SECTION, please send your remittance together with your wording to CHEIRON PRESS LIMITED, 241 Desborough Road, High Wycombe, Bucks (Tel 0494 442423), before the 4th of the month. Rates 60p per word with a minimum of £12.00. Black & white photograph accepted £5.00 extra. Box No. £2.50 extra. Prices include VAT.

S&G EXTRA SHEET

Due to production and distribution problems the 'EXTRA' sheet is to be discontinued with immediate effect.

FOR SALE

KIWI with TOP engine. The affordable 15m Club Class SLMG. Light, quiet and easy to fly. Price £15500+VAT. TOP engine £6500+VAT. Details and demonstration from Nine Four Aviation. (Steve White). Tel 0494-436888.



PEGASUS, Top performance at affordable price. Delivery March 90. Price from £13250+VAT. Nine Four Aviation (Steve White). Tel 0494-436888.



K-6E. Good Condition C of A. Basic instruments, parachute, barograph. Wooden trailer. Offers. Tel 0757-702209.

PIRAT. Excellent condition with A/H, T/S, audio vario, oxygen, parachute, wing covers, radio, tail dolly and C of A. Good wooden trailer. £6300ono. Tel 0621-855906 or 854836.

STD. LIBELLE, Basic instruments plus A/H, T & S, Cambridge MK IV Flight Director and Averager, radio, oxygen, water ballast. AMF Metal trailer with rigging and towing aids. All in excellent condition. £12500. Tel C. Wilby (work) 0629-812774 (home) 0629-87662 Weekends 0298-871207 (Camphill).

ASTIR CS 77. Low hours, never damaged, privately owned. Full panel + Director, water ballast, new C of A, parachute. Excellent condition throughout. Professionally built glass trailer. £12500. STS 720 radio available. Tel 045387-2740.

SHK-1. (SCHEMPP-HIRTH) V-tail Wooden topglider. No damage. Including trailer. Full instruments tl. electric Cambridge vario/audio+radio. Flown only 1258 hours/756 starts. Plane in good condition. (Photographs available). Price £8700. Tel (home) 010 358 55361992 or (work) 010 358 55363211.

K-8B (SCHLEICHER) with mechanical instruments (no radio). Plane is in very good condition. Flown 2272 hours/3397 starts. Price £2900. Prices Free in Mikkeli Airport. Tel (home) 010 358 55361992 or (work) 010 358 55363211.

LS-3A (1979) 280 starts, 800hrs, never damaged, closed glassfibre trailer. Basic instruments - speed altitude mechanical variometer. £14000 inclusive VAT. Optional extras, radio 720 channel, Zarder elec vario. Tel 01-328 0245.

STD LIBELLE, excellent condition. Complete outfit, including metal trailer, oxygen, A/H, Parachute and barograph. £11500. Tel 01-241 6458 or 0378 76731.

CLUB ASTIR 77 in excellent condition. Fully instrumented including radio. Refurbished trailer, rigging aids and barograph. C of A till August 1990. £12500. Tel 0604-768667 or 0908-562547.

PEGASUS. 3x1/4 shares, kit includes parachute, oxygen fit, radio, instruments, trailer and fittings. Tel Carrie Davey 0793-488165 (business) or Pauline Vahey 0753-47468 (home).

K6-CR in excellent condition with canvas trailer and new C of A. Offers in the region of £5500 to £6000. Tel 0522-790635.

Cotswold Gliders
(Prop. T. Cox)

HIGH QUALITY SPECIALIST WORK IN

Glassfibre, wood and metal
All types of repair undertaken
Kestrel/Libelle aileron drive rebuilds, also rudder drive NDT testing
Full machining facilities for oversize wing pins, axles, control rods etc.

Phone or write
Tony Cox (Senior Inspector)
18 Stanton Harcourt Road
Witney, Oxon OX8 6LD 0993 774892 anytime

Going on a Wave Expedition!
Oxygen Ready? No - we can fit new systems, repair, modify & overhaul your system, at competitive prices.
So you'll be ready for **the** day
HAPPY DIAMOND HUNTING

LLOYDS APPROVED
CAA APPROVED COMPANY
AI/9182/89

K6-CR. Recently recovered. Nice condition. £6250. Tel W Munns on 0533-303804.

STD JANTAR 2, Low hrs, P.B. glass trailer, 720, oxygen, Chute, C of A. Superb well equipped unit. Based USK. Offers around £13000. Tel 09346-28516 or 01-776 1110 or 01-997 5989.

WASSMER BIJAVE WA30. Two-seater, ideal trainer with basic instruments. Tail-dragger with K-7 performance. New canopies and 12 months C of A. Open trailer and parachute included. Offers. Tel 0629 56273 or 0246 202071.

15m METAL TRAILER. Superficially damaged in road accident and repaired. Originally built for ASW-20. Offers in region of £500. Tel 0233 629646.

ASW 19 fully instrumented including AMF trailer for sale by the BGA. Parachute and barograph available. Price £15500 (including VAT). Tel 0533 531051.

★★★★★★★★★★★★
SPECIAL OFFER
★★★★★★★★★★★★
FREE ADVERTISEMENTS

In the Christmas issue, we will accept wording (up to 20 words) free of charge for anything being sold for under £250.00.

Why not clear out that hangar, workshop, garage or loft!! Here's your chance . . .

First come - first served

Adverts to be sent to Cheiron Before 1st November 1989.

STD LIBELLE. Beautiful condition, unpranged. Instruments, Radio, Barograph, Oxygen, Towout Gear. Excellent Metal Trailer. £12500. Available January. Tel 045-383-2061 or 03398-81613.

OLY 2B - with trailer. Recent Recover. C of A until June 1990. Very good condition. £2750. Tel 0409-253370.

ASTIR 77, aluminium trailer, tail wheel modification, 450 launches. Same two owners since new. T/S, 2 various, JSW Dolphin, 2 channel Storey, u/c warning. Best offer around £12000. Tel 0793 36665 or 0793 790954 (eves).

SHK. Inst, Radio, Oxygen, 2 man rigging aids. Tow out Gear. Wooden Trailer. £6000. Tel 0980-32401 (evenings).

KESTREL 19 instruments. radio, oxygen, trailer. Good condition. £13500ono. Tel 0622 56008.

SHK 1:38. Low hrs, recently refinished. Comprehensive panel including Director, oxygen, barograph, parachute, rigging aids. Manufacturers fitted trailer (GRP). 1/2 share available immediately at Cranwell. Would consider selling whole outfit. Offers. 0526 44240 (days) 0526 21628 (eves).

DG-100 LOVELY CONDITION with Storcomm radio, oxygen, T/S, Cambridge Mk4 vario and PZL, parachute, aluminium & glass trailer. Genuine one man rigging. No water - hence £14000. Tel Cooper 0759-304711.

JANTAR 1 Open Class 19m. Superb performance - extensively reprofiled/refinished, competition sealed. New panel, excellent metal trailer, new rigging aids - surprisingly light rig. Full covers, barograph, databack camera. Easy to fly, powerful airbrakes 44.1L/D for £13950. Available immediately. Call Lasham (0256) 83322 ask for G. Dale.

STANDARD CIRRUS excellent condition, air-brake mod, tow out gear, glassfibre covered trailer vgc, 360 channel radio, oxygen, parachute, instruments include: Cambridge vario, BOHLI compass, A/H. New in 1989: Winter barograph, 50 a/h battery, charger. C of A to April.
At HusBos. £13500.
Williams 0604-403119; Spiers 0604-845842.

JANTAR STD II. £10850. Contact Sid Smith on Gloucester 610234 (eves) or Bristol Gliding Club on Dursley 860060 (weekends).

INSTRUMENTS repaired and calibrated. PZL - WINTER - SMITHS. Write or phone D Goodison, 4 Broadacres Avenue, Carlton, N. Humberside DN14 9NE. Tel 0405 860856.

ASW-19B (78) including full kit of parachute, barograph, base instruments, E-vario and speed director, FSG 40 Avionic Dittel, turn & slip, Komet (live) trailer. Enquiries welcome. Price around £16500. Tel 0344-860055.

PILATUS B-4PC11 1972. Cook audio, A/H, closed aluminium trailer. View Aston Down. Atkinson 0453 885647 or Evans 0453 750031. £8950.

SLINGSBY SWALLOW. Ex-RAF. Major refurbishment completed this year. New controls and fabric. D Shrimpton, 48 Langdon Road, Bath, Avon BA2 1LT. Tel 0225 315082.

WINTER BAROGRAPH. Good working order. £290ono. Tel 0494-29263.

VEGA. Komet trailer, full panel inc. speed director, A/H, T & S and 720 radio. Complete with detachable 17 metre tips. £16000+VAT ono. Tel 01-706 1382.

LIGHTWEIGHT COVERS made up for your glider. Dust covers or waterproof. Also canopy covers. Details from Ann Woolf. Tel 0256-58540.

IMMACULATE FLAPPED VEGA. Low hrs, including panel, trailer, rigging aids, towing out gear. £15500. Tel AM 0543-372920 PM 0283-762374.

K-13. Excellent condition. Always privately owned. Basic instruments. Open trailer. C of A May 1990. Available October. Based Aston Down. Contact H Johns 0453-83-2065.

PIK 20D. New March 1979. Immaculate. Fully Equipped. Factory fibre-glass trailer. Never had any structural damage. £15500. Tel 0303-68239.

AG CROPSPRAYING Aircraft. In as new condition, with new engine. Ideal tug. Tel 0552-792591.

THE ROVER WINCH

A new, low cost approach to glider winches: you provide the Rover, (SDI, 3.5 Auto, '79 on) and we turn it into a powerful, reliable and comfortable single drum winch.

Introductory price for the conversion, (inc cable) is £2400.

Can your club really afford not to have one?

For more details, contact
Jerry Odell,
on 0362 693898

1990 LAUNCHES THE FIRST BRITISH GLIDING CALENDAR
"SILENT WINGS"

★ STUNNING COLOUR PHOTOGRAPHS TAKEN IN THE UK
★ SELECT YOUR OWN CHOICE FOR ANY MONTH
★ EACH MONTH - PREVIOUS & FOLLOWING MONTHS SHOWN
★ DESIGNED BY MARJORIE HOBBY FOR THE GLIDING ENTHUSIAST
★ PICTURE SIZE 30CM X 21CM
★ LIGHTWEIGHT TO POST
★ ROOM TO MAKE NOTES EVERY MONTH

GET YOUR CALENDAR EARLY - FIRST EDITIONS APPRECIATE!

PRICE £5.95 (UK & EEC POSTAGE INCLUDED)

SEND CHEQUE/POSTAL ORDER/IMO TO: **SWC '90, 9 KNOLL ROAD, FLEET, HANTS. GU13 8PR, UK. Tel: (0252) 615365**

ASTIR CS 77. Good condition, all instruments plus Cambridge speed director, includes trailer with cover. Offer around £11 000 also LS-317 includes basic instruments and trailer gel needs attention. Offers around £12 000. Both prices are less VAT. Tel West Germany 05404-3134.

KESTREL 19 (CZR), SUPERB CONDITION. 500k and several 300+ this year! DITTEL 720ch radio, A/H, T/S, Oxygen, Cambridge and PZL Varios, Tow-out kit 1st class metal trailer. £13 850ovno.

Contact Mike Sesemann
01-668 0112 (day) 01-658 9110 (evg)

SCHEIBE SUPER FALKE. SF-25E. 28:1, 80kt cruise, 2¼gph, 3 positioned feathering propeller. 720ch radio, 2½yr C of A. Imported from Germany 1985. No reasonable offer refused. Tel 0224-641687 and 054-02-885.

KESTREL 20, Metal trailer, barograph, parachute, £12 500. Tel 0903.814961.

ASTIR CS - 77. Very good condition. C of A. Basic panel, oxygen, full rigging and one man tow out gear. Wooden trailer, based Dunstable. Contact 0582 663271 (Day) 0582 606809 (Eves).

STD LIBELLE, excellent condition. Complete outfit, including metal trailer, oxygen, A/H, Parachute and barograph. £11 500. Tel 01-241-6458 or 0378-76731.

KESTREL 19, with A/H, T/S, PZL and electric vario/adc, Bohli compass. Radio and oxygen system. Easy solo rigging. Slingsby grp trailer. Reluctant sale of probably the best Kestrel available. Tel Ian Carruthers on 0228 37044.

MOSQUITO B. Panel includes Bendix A/H, 720 CH, oxygen. 1000hrs, no prangs, al. trailer and roll-out, seen Sleap. £15000. Tel Kirkham 0782-517049.

K6-CR SPECIAL. Audio electric and PZL varios, T & S, accelerometer, parachute, radio, covered trailer with new running gear. £6000ono. Tel 0472-697484 or 0909-730591.

DG 400, 1987, vgc, low hrs, radio, instruments, oxygen. Cobra trailer. Tel 0663 63976 (eves).

JANUS 3C - totally equipped including oxygen, parachutes, full instruments, all rigging aids. Nearly new Angus trailer. 35K. Contact Ralph Jones 0488 71774 or Tony Clutterbuck 0737 833672.

JANTAR STD 2, Dittel 720 and electric vario plus std panel. Trailer. Good condition. £13 500. Tel 0225 314302.

PEGASUS 101A, 1983, hull and instruments only. Factory refinished March '88. Available November. Full details from T. Hurn, 0923 772222 (office) or 0727 43618 (home).

STD LIBELLE with radio, parachute, glass-fibre trailer. Attractive price for a quick sale. Tel Frome 0373 812393.

ASW 19B together with metal trailer, A/H and basic instruments. Good outfit. £14 000. 720 Avcomm radio, oxygen and Cambridge vario also available. Tel H. Middleton 0858 880521 or eves 0858 575763.

ASW 17. 1/4 or 1/2 share available at £3750 or £7500. Extended tips, new metal trailer, instruments, oxygen, rigging aids, covers. At Booker. Tel 01 986 0376.

SKYLARK 2 with trailer. Basic instruments plus electric vario, audio, T&S, radio, barograph. C of A June '90. Vgc. Unbeatable value at £3600. Tel 0635 41803.

DG 101G - 200hrs only, excellent condition, oxygen, instruments, manufacturer's GRP trailer, two man rig. Worth £16000. Les Kaye, business 021 789 7979.

ASW-15B. Alloy trailer, instruments, parachute, high hrs but vgc. New C of A. Suitable for Bronze to Diamonds. £9300. Tel 0494 35005.

WITTER
TOWING BRACKETS
TRUST WITTER
• First choice for safety-conscious drivers with over 3 million towbars supplied
See Yellow Pages for your nearest specialist fitter or stockist.
C.P. WITTER LTD. CHESTER
Tel: 0244 41166 Tlx: 61623 EURBAR G

K-7. Good Condition. £6250. Tel W Munns on 0533-303804.

METAL GLIDER TRAILER for STD/15m. May suit some wooden gliders, eg K-6. New Indespension units 1987. New radial tyres Aug 1988. Very sound construction, good condition. £1500ono. Tel 04862-65174.

BEAUTIFUL ASW-17. Excellent condition, new instruments, actual 48.5/1 LD. Tiplets for 15m. New Blanik brake. Current annual and currently flying. Water bags. Pictures on request. Tel Paul Stone, 414-336-1396. $19 500. Will deliver to port.

WANTED

DAMAGED GLASS-FIBRE glider by private buyer. Top price paid - would consider complete outfit. Will travel in Europe to view. Tel 01-998 1510.

TRAILER suitable for Dart 17. Must be roadworthy. Tel 05422-7223.

ASW-20. VENTUS B or similar. Tel Prestwich 0260 224217 or office 061-834 2332.

FLAPPED VEGA. Contact M Dawes on 0203-384221 (day) or 0203-349408 (eve).

DG300. DG101. PEGASUS or similar in good condition. Full outfit preferred but will consider hull only. Tel 0532-842132.

DG101, 200 or 300 or Libelle 201B - complete outfit, with double brake and low hrs. Immediate decision. Tel 0425-278781.

MANAGER
BOOKER GLIDING CLUB

will require a full time permanent Manager to start December.

The Club has turnover of £500,000 per year and needs a good administrator who enjoys dealing with people. He or she doesn't need to be an ace pilot although some knowledge of and enthusiasm for aviation would clearly be an advantage.

Please address application to:

The Manager, Booker Gliding Club, Wycombe Air Park, Marlow, Bucks SL7 3DR

MARK THEM PRIVATE AND CONFIDENTIAL

SITUATIONS VACANT

THE ULSTER GLIDING CLUB require a full time Tug Pilot and Instructor for the 1990 summer season. Details available from CFI Jim Weston, 16 Pond Park Avenue, Lisburn, Co Antrim BT28 3JN, N. Ireland.

COURSE INSTRUCTOR required for 1990 season at Husbands Bosworth. April to October. Write with CV to H. Middleton, Coventry Gliding Club, Husbands Bosworth Airfield, Lutterworth, Leics LE17 6JJ.



EW Avionics Price List 09/89

Barograph	£295.00
Portable Printer	£157.00
Carry Case	£10.00
Paper Rolls	£2.50
Konica Camera Conn	£45.00
Moto Glider Conn	£30.00

All prices ex VAT

EW Avionics
45 Wyresdale Cres
Perivale
Middx UB6 8TH
Tel 01 998 1510

With the launch in early 89 of our new digital barograph, EW Avionics have been surprised by the response to this exciting new product. Already units are being used by the winning pilots at national competition level as well as regional level. Many badge claims have already been made with many pilots commenting that they probably wouldn't have carried a barograph except for the convenience and user friendliness of the EW Barograph.

Now available: The connection wire to connect your Konica Pop camera to the EW Barograph, to record accurate to 1 second and 10 metres in altitude, each photograph. This is ideal for those record attempts as well as policing competition start line heights.

COVENTRY GLIDING CLUB require Tug Pilot for 1990 season - April to October. Applicants must hold basic CPL. Contact with brief outline of experience, H. Middleton, Coventry Gliding Club, Husbands Bosworth Airfield, Lutterworth, Leics LE17 6JJ.

TUG PILOTS - 500hrs-plus during the summer available to the first three sensible applicants. No pay. Minimum requirements PPL+50hrs P1, Silver C, tailwheel experience. Booker Gliding Club 0494 29263.

COURSE INSTRUCTORS. Well paid summer jobs for enthusiastic gliding instructors. Females preferred. Booker Gliding Club 0494 29263.

HOLIDAYS

GLIDE IN Hungary: Full Beginners course to solo Aerotow Standard. Glider hire or take your own. Diamond and 500km. Mine of Gyöngyös. For full information, send stamped addressed envelope to: Louise Rotter. "Byways" Warrington Rd, Chester CH2 3PA. Tel 0244 326 555.

PUBLICATIONS

SOARING PILOT MAGAZINE - "a breath of fresh air". Bi-monthly - published by Tom Knauff and Doris Grove. $28 annually. SOARING PILOT MAGAZINE, 1913 Fairwood Lane, State College, Pa 16803, USA.

SLOPE SOARING with radio control model seaplane is a fascinating pastime and a typical phase of aeromodelling. Read about this and other aeromodelling subjects in *Aeromodeller* and *Radio Control Models and Electronics*, the world's leading magazines published monthly. Model & Allied Publications Ltd, 13-35 Bridge Street, Hemel Hempstead, Herts.

NEW ZEALAND: "Gliding Kiwi" official Gliding Magazine of NZ Gliding Association. Printed October and alternate months. Write NZ Gliding KIWI, Private Bag, Tauranga, New Zealand. £10.00 Sterling for year's subscription (inclusive of postage).

PPL TRAINING AND ASSOCIATED RATINGS

including Silver C and Bronze C conversions

A variety of courses available to suit individual requirements including intensive one to one training.

All associated ground studies covered during training. Separate ground study courses for PPL and IMC held monthly.

Telephone, write or visit for full information.

SOUTH EAST COLLEGE OF AIR TRAINING
Lydd Airport
Lydd, Kent TN29 9QL
Tel: 0679 21236

FOR RENT

VACATION HOME for rent in MINDEN, Nevada, site of World Championship 1991. Beautiful comfortable furniture, sleeps 6, 5km to Airport. For information contact Marion Berritt, PO Box 2458, Minden, Nev. 89423, USA. Tel 001-702-782-7353.

SERVICES

TUG SERVICES
HOWARD AVIS AVIATION LTD
Old Buckingham Airfield, Norfolk
offer
• A variety of tug aircraft for short or long term hire including Pawnees. • A large stock of airframe and engine parts for all model Pawnees. • M3 approved premises for competitive Pawnee annuals and C of A renewals.
Call JIM AVIS on (Hangar) 0953 860751 (Office) 0953 453946

N R DOBSON
CAA APPROVED WELDING
OXY/Acetylene, TIG Stainless Steel (24 year experience) Fabrication, tubular fuselage repairs. Tel Kirkbymoorside 0751-32731.

COURSES

WINTER COURSES

AT THE LONDON GLIDING CLUB

★ 2 AND 3 DAY BEGINNERS
★ BRONZE C GROUND SCHOOL
★ AIR EXPERIENCE INSTRUCTOR

FOR FURTHER DETAILS CONTACT:

LONDON GLIDING CLUB
TRING ROAD, DUNSTABLE,
BEDS LU6 2JP
Tel: (0582) 663419

ADVERTISERS' INDEX

Aardman Animations	272
Aero Marketing Associates	267
Adelaide Soaring Club	267
AMF Enterprises	220
Anglia Sailplanes	272
Anglo-Polish Sailplanes Ltd	222
Argyll & West Highland GC	260
The Bartons	257
Benalla GC	267
Black Mountains GC	260
Booker GC	260
Bristol & Gloucestershire GC	260
British Gliding Association	223
Cambridge Aero Instruments	218
Cambridge University GC	260
Centre Line Services	243
Channel GC	260
Chiltern Sailplanes Ltd	254
Classified Advertisements	269-271
Cornish Gliding & Flying Club	260
Cotswold Gliders	269
Coventry GC	260
Enstone Eagles GC	260
EW Avionics	270
Flite Lines Marketing Ltd	264
D. Garrard	267
Glider Instruments	268
Gliderwork	256
HT Communications	231
Herefordshire GC	262
JJ Associates	BC
JSW Soaring	266
Kent GC	260
Lasham Gliding Society	263
London GC	265
London Sailplanes Ltd	264
Lowndes Lambert Ltd	268
Marchington GC	262
McLean Aviation Ltd	246
H. Mendelssohn	219
Midland GC	265
Mowbray Vale Insurance	224
Neogene Paints	272
Norfolk GC	260
Osborn & Lownes	219
Oxfordshire Sport Flying Club	266
Piggott Brothers & Co Ltd	267
RD Aviation Ltd	IBC
Rematic	272
L. Rotter	266
Sailplane & Engineering Services Ltd	268
Roger Targett Sailplane Services	266
Sailplace & Gliding	225
Scottish Gliding Union	265
SE College Air Training	271
Sedgwick Aviation Ltd	220
Skycraft Services	267
J. L. Smoker	272
Soaring Equipment Ltd	266
Soaring Magazine	235
Soaring (Oxford) Ltd	218
Southdown Aero Services Ltd	268
Speedwell Sailplanes Ltd	268
Sunsail	272
B. Weare	267
Wells Design Ltd	271
C. P. Witter Ltd	270
Wolds GC	262
Wynstruments Ltd	267
Yorkshire GC	262
Zulu Glasstek	229

The "LS" Agent in UK — Sales • Spares • Repairs

MARTYN WELLS
(Wells Design Ltd.)
Brailes, Banbury, Oxon.
Home Tel. 060 884 217
Workshop Tel. 060 885 790

FULL REPAIR AND MAINTENANCE FACILITIES FOR ALL GLIDERS IN OUR PURPOSE BUILT WORKSHOP

LS 7 — **STANDARD CLASS**
(WINNER OF '89 STD CLASS NATIONALS)
LS 6 — **15M CLASS**
(WINNER OF '85, '86, '87, '88 15M NATIONALS)
LS 6 — **TIPPED TO 17.5M 15M/OPEN CLASS**
LS 4 — **STANDARD CLASS**

Anglia Sailplanes

C of A Inspections and repairs to all sailplanes and motor gliders.

Phone or write to:

Stu Hoy (BGA Senior Inspector)
Crown Cottage, Lower Street
Gissing, Diss, Norfolk IP22 3UJ
Tel: Tivetshall (037977) 4114

SUNSAIL (Andrew & Lyn Davis)

AEROGRAF - The Barograph - electronic seal, sailplane/motor glider, 6/12000 metre range, camera interface £497.00

AEROGRAF BASIC - simple version of Aerograf for club use, hang-gliders and balloons, 6000 metre range £367.00

FOTOTIME II - time recording camera - elapsed time resolves to within one second £242.00

AT7 WING TAPE - 19mm × 20m £1.00

JACKING BELLY DOLLY MECHANISM
- 4 inch lift - with wheels £85.00
- without wheels £65.00

IFR SUNGLASSES - no longer available

Prices include delivery and may fluctuate with exchange rate

Clarebourne House, Shortwood
Nailsworth, Glos. GL6 0SJ. Tel: 045 383 4931

LIFTIN' the Blues



An impressive celebration of soaring flight, shot during the British Standard Class National Championships at Nympsfield, England in 1988. With its breathtaking aerial photography and sharp insights into the people and attitudes that circulate within the sport, this 52 minute film will appeal to the pundit and novice alike.

£27.00 inc p & p.
Available in VHS and Betamax.

Please make cheques payable to:-
Aardman Animations Ltd.,
14 Wetherell Place,
Clifton, Bristol.
BS8 1AR.



Please allow 28 days for delivery.

CANOPIES

★

LARGE RANGE OF SHAPES AND SIZES FOR GLIDERS AND LIGHT AIRCRAFT

★

GOOD OPTICS

★

FROM MAKER

★

BOB REECE, Rematic
School House
Norton
Nr Worcester WR5 2PT

Tel Worcester
(0905) 821334

Neogene Paints

Your specialist paint manufacturer

C664 High Tautening Dope To C/E DTD 753

C665 Aluminium Surfacer To C/E DTD 753

C666 Scheme "Z" Type Enamels For Unsupported Fabrics

C667 Scheme "Z" Type Thinners

C668 Low Tautening Dope To C/E DTD 751

C965 Fabric Adhesive

C966 Fabric Adhesive Thinner

C762 Transparent N/C Non Tautening Dope

The above have been selected from our range of Aircraft Finishes.

Colour Matching Service

Large or small quantities supplied

Consult our Technical Advisory Service:

Printa Inks and Paints Limited,
Neogene Works, 65 Alfred Road,
London W2 5HQ.
Telephone 01 289 2271

Neogene Paints (Scotland) Limited,
45 Lanark Road, Edinburgh EH14 1TL
Telephone 031 443 8793

C OF A OVERHAULS

TO ALL TYPES OF SAILPLANES

FULL TIME SENIOR INSPECTOR

JOHN SMOKER

9 ANSON WAY
BICESTER, OXON
Tel: Bicester 0869 245422

RESTORATIONS

and repairs to wooden gliders of all ages a speciality

SKIDS

Laminated ash skids for most of the popular gliders supplied from stock.
Others made to order

FABRIC

Ceconite Fabric any Quantity supplied

RD AVIATION LIMITED

for all your soaring needs!

A SELECTION FROM OUR AUTUMN 1989 CATALOGUE - NOW BEING MAILED

DISCOUNT HANDHELD TRANSCEIVERS - DISCOUNT HANDHELD TRANSCEIVERS

ICOM ICA2 £299+VAT (£343.85) **ICOM ICA20** £349+VAT (£401.35) **TR720** £349+VAT (£401.35) **Narco HT870** £329+VAT (£378.35)

INSTALLED TRANSCEIVERS AND NAVIGATION SYSTEMS
GL72A £499+VAT (£573.85) **ATR 720A** £798+VAT (£917.70) **AR 3201** £928+VAT (£1067.20) **FSG 70** £875+VAT (£1006.25) **NR3301-(S) VOR** £1056+VAT (£1214.40) **APN4/A** - *NEW* CAA approved version of Decca Navigator by AP £1050+VAT (£1207.50)

ANCILLARY SYSTEMS
Locat LDT 26 ELT £139.70+VAT (£160.66) **PA400 Portable Intercom (4 place)** £75+VAT (£86.25)

HEADSETS - Just a small selection from our wide range
C40 £109+VAT (£125.35) **H10-30** £125+VAT (£143.75) **PA 11-40** £95+VAT (£109.25) **Peltor 7002** £115+VAT (£132.25) **Anticoustic** from £109.50+VAT (£125.93) **Telex MRB600** £49+VAT (£56.35) **Telex Airman 750** £115+VAT (£132.25)

MICROPHONES
HM1040 Hand Mic £11.93+VAT (£13.72) **SHM 1010 Swanneck Mic** £46.85+VAT (£53.88) **SHM 2000** £39.50+VAT (£45.43)

INSTRUMENTS - We list here a small selection of Flight Instruments. We stock ENGINE INSTRUMENTS including WESTACH
RCA 26 DC Horizon £999 (£1148.85) **IFR 85** Air Horizon £279+VAT (£320.85)) **RCA 15** DC Direction Gyro £898 (£1032.70) **TF1020/1** Turn & Slip £156 (£179.40) **9501-1** Mini Turn & Slip £445+VAT (£511.75) **TF45M** Altimeters £169+VAT (£194.35) **RV/S** Mini Voltmeter £14.45+VAT (£16.62) **TF10-101** 3 inch 'G' Meter £89.90+VAT (£103.39) **RD/ACC** Elec Clock £35.75+VAT (£41.11) **Airspeeds** - Single Turn £109.75+VAT (£126.21) 1½ Turn £132+VAT (£151.80) Most speed ranges stocked **C2300** Compass £43.25+VAT (£49.74) **VC100** Hamilton £169+VAT (£194.35) **Bohli** £346+VAT (£397.90) Globe Car Compass £2.40+VAT (£2.76)

OXYGEN
A24/630 Oxygen Kit £287.95+VAT (£331.14) **Air 24** Regulator £109.44+VAT (£125.86) **AAV/GM** Mask £40.98+VAT (£47.13) **A14A** Regulator £235+VAT (£270.25) **659.275** Demand Mask £172+VAT (£197.80) **RD/FM** Flow Indicator £10.78+VAT (£12.40) Cylinder Recharge £8.00+VAT (£9.20) - Valid Test Certificate is required before recharge is undertaken

VARIOMETERS - Peschges, Cambridge, Avionic Dittel, Westerboer, Hudis (Delta), Winter - **VP3 Basic** £1467+VAT (£1687.05) **VP4E NAV** £1143+VAT (£1314.45) **Hudis** £3290+VAT (£3783.50) **LX100** £286+VAT (£328.90) **LX 1000** £560+VAT (£644.00) **LX 2000** £947+VAT (£1089.05) **CAV II** £329+VAT (£378.35) **M NAV 50** £998+VAT (£1147.70) **SNAV** £1674+VAT (£1925.10) **VW900** Compact £289+VAT (£332.35) **5253** Winter with flask and MacCready £195+VAT (£224.25)

BAROGRAPHS
12 UHS Winter £335+VAT (£385.25) **12 UHSM** Winter for Motor Gliders £399+VAT (£458.85) **5 UHS** Mini Winter £326+VAT (£374.90) **EW** Electronics £357+VAT (£410.55) **Aerograf** with Accessories £564+VAT (£648.60) **Replogle** (8hr) £312+VAT (£358.80)

TRAILERS - Shroeder 15m - price guide £3250+VAT with all fittings

TOWING OUT
Wing Dolly with suspension £173.50+VAT (£199.53)

WINDSOCKS
3ft with hoop £49+VAT (£56.35) **12ft** with hoop £101.20+VAT **7ft** lace-on £47.30+VAT (£54.40) **12ft** lace-on £52.90+VAT (£60.84)

BATTERIES AND CHARGERS
12v 6AH £21.50+VAT (£24.73) **12v 12AH** £37.15+VAT (£42.72) **12v 15AH** £47.50+VAT (£54.63) **CHR 3** Charger £29.70+VAT (£34.16)

POLISHES
Carlack £13.03+VAT (£14.98) **M700** Soft Wax £7.78+VAT (£8.95) **MZW** Hard Wax £5.20+VAT (£5.98) **MGH 10** Canopy polish £5.20+VAT (£5.98)

WHEELS, TUBES AND TYRES - A wide range **WINCH CABLE** AND ACCESSORIES - Available **RESIN/GEL COAT** - Available

PARACHUTES - End of season bargains - telephone 0865-841441 RD hotline for details

BOOKS - Galore **CLOTHING** - Popular flying lines stocked **CLOUDMASTERS** - Latest models now available £20.85+VAT (£23.98)

NEW CATALOGUE contains GIFT ideas - ALTIMETER WATCH - CASIO - SPECIAL INTRODUCTORY DISCOUNT PRICE - ONLY £55 inc VAT.

POSTAGE IS CHARGED AS AN ADDITION TO ABOVE PRICES

AS And Schleicher Spares (by arrangement JJ Associates)

You can find us at:

E and OE

RD Aviation Ltd
Unit 23, Bankside, Kidlington, Oxon OX5 1JE
☎ 0865-841441 (2 lines 24 hr)
Fax 0865-842495

ACCESS VISA

Mon-Fri 10.00-18.30 Sats 10.30-12.30

Free Catalogue on Request

ARE YOU ON OUR MAILING LIST?

Congratulations to

ROBIN MAY

on becoming British National Open Class Champion – again
flying ***SCHLEICHER'S ASH 25***
and beating all other two-seater types in the contest –
(to say nothing of all single seater types too)

DAVE WATT

on becoming Standard Class Champion of the Issoudun International Championships
(better known under the alias European Championships)
AND
on taking 2nd Place in the British National Standard Class Championships
flying in both ***SCHLEICHER'S ASW 24***

JEAN-CLAUD LOPITAUX

on becoming World Open Class Champion
flying ***SCHLEICHER'S ASW 22B***

To follow in the footsteps of Champions like Robin, Dave or Jean-Claud needs well above average soaring skill, ability and dedication.

To follow in their footsteps and fly the same glider types that they do requires only average competence –
and a cheque book.

For full details of the ***ASH 25, ASW 24*** *and* ***ASW 22B*** *(all available in motorized versions) or any of the rest of the comprehensive Schleicher range, please contact:*

John Jeffries
JJ Associates
PO Box 61
Dunstable
Beds LU6 2LB
Tel: (0525) 222111
Fax: (0525) 382293

Sole UK Agent for
ALEXANDER SCHLEICHER