SAILPLANE & GLIDING

June/July 1990 £1.75



Lightweight Pilots Meteorology Tail Feathers

CENTRELINE
Services



CENTRELINE SERVICES provides the gliding fraternity with the complete service – to get you in the air – and keep you in the air.

Our comprehensive insurance and finance facilities are widely renowned – immediate cover – no loading for competition pilots – progressive no claims bonus – agreed values – as is our no nonsense approach to aviation accidents with prompt payment in the event that you come down to earth with a bump.

Call us now and find out what we can do for you – you'll find us very approachable.

20 MIDDLE ROAD
PARK GATE
SOUTHAMPTON
HAMPSHIRE SO3 7AL
TEL: 0489 885998
FAX: 0489 885889

SPECIALISTS IN AVIATION INSURANCE AND FINANCE

A MEMBER OF THE CENTRELINE GROUP OF COMPANIES.

In association with Edgar Hamilton Ltd, Lloyd's Brokers

CENTRELINE SERVICES – THE RIGHT APPROACH

Magazine of the
British Gliding Association

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

June-July 1990
Volume XLI No. 3

SAILPLANE & GLIDING

117	YOUR LETTERS C. Thomas (reply by J. G. Wright), P. L. Cyster, A. Dalgetty (reply by J. R. Taylor), M. F. Cuming, C. A. P. Ellis, R. L. Hunter, Joan Cloke, Phaeton, J. M Bishop, P. Williams	
121	REVIEW B. Morris	
122	BIG CUMULUS LINES T. A. M. Bradbury	
125	AIRSPACE MUST NOT BE REDUCED A. Dumas	
126	THE GROB 103c TWIN 3 R. H. Johnson	
128	TRAVELLER'S TALE M. Haynes	
131	THE BEST OF GLIDING D. B. James WOOFLE BALLS H. Clarke	
132	*S&G* CLASSIC A. W. F. Edwards	
133	LIGHTWEIGHT PILOTS W. G. Scull	
134	LOOKING BACK W. E. Malpas	
135	TWITTERINGS Sparrow	
136	MERRI'S PROGRESS Merri and D. Head TAIL FEATHERS Platypus	
137	SAILPLANE NEWS J. M. Bishop	
138	300KM IN A T-21!!! N. James	
140	A TIGER IN YOUR LAP S. N. Longland	
143	INTERNATIONAL GLIDING COMMISSION REPORT T. S. Zealley	
144	BGA & GENERAL NEWS	
147	OBITUARY - H. R. DIMOCK by D. Ballard and H. M. A. Hayes	
148	GLIDING CERTIFICATES	
149	BGA ACCIDENT SUMMARY J. Shipley, D. A. Wright	
150	CLUB NEWS	
162	OVERSEAS NEWS J. M. Bishop	
163	SOMETHING SPECIAL W. G. Crease	
164	A TOM IN THE MOUNTAINS M. Wilshere	
165	WAY OFF TRACK Penguin	

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
A. W. F. Edwards (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: The old and the new. Tony Hutchings took this photograph in honour of London GC's Diamond Jubilee, being celebrated over the weekend of June 30 and July 1 with a full programme at Dunstable. Robin May was flying the ASH-25 with Geoff Moore in the Dagling Primary. Tony was in the back seat of the ASH firing the camera by radio remote control.

Member of the
Royal Aero Club and the
Fédération Aéronautique
Internationale

Leicester Printers Ltd., Leicester.

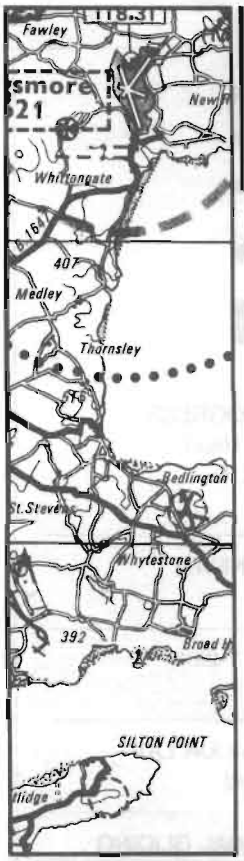


CHART UPDATE

The following revised charts have been published by the Civil Aviation Authority:-

NEW!

1:500,000 - SOUTHERN ENGLAND & WALES - Edition 16

- incorporating new format topographical detail and revised sheet lines, to show more N France and SE Ireland information.

also: **1:250,000 - NORTH EAST ENGLAND - SHEET 9 - Edition 12**

1:250,000 - SOUTH WALES - SHEET 12 - Edition 12

Previous editions of these charts are now obsolete.

You can purchase the latest editions of all quarter and half million aeronautical charts of the United Kingdom, as well as a comprehensive chart catalogue - either in person or by post from:-

CAA CHART ROOM,
T1120 CAA HOUSE,
45-59 KINGSWAY,
LONDON WC2B 6TE,
Tel: 071 832 5569/8.

And from the following accredited chart agents:-

AIRPLAN FLIGHT EQUIPMENT - Open Saturdays-
Building 523A, Southside, Manchester Airport,
Cheshire SK9 4LL. Tel: 061 499 0023/4.

AOPA
50a Cambridge St,
London SW1V 4QQ Tel: 071 834 5631.

BGA
Kimberley House, Vaughan Way,
Leicester LE1 4SE Tel: 0533 531051.

AIRTOUR INTERNATIONAL - Open Saturdays-
Elstree Aerodrome,
Herts WD6 3AW Tel: 081 953 4870.

BRITISH AIRWAYS - AERAD
AERAD House, Heathrow Airport,
Middlesex TW6 2JA Tel:081 562 0795.

EDWARD STANFORD LTD- Open Saturdays-
12-14 Long Acre,
London WC2E 9LP Tel: 071 836 1321.

They are also stocked by most flying clubs and schools.

Civil Aviation Authority CAA

DON'T FLY WITH AN OUT OF DATE CHART

CAMBRIDGE

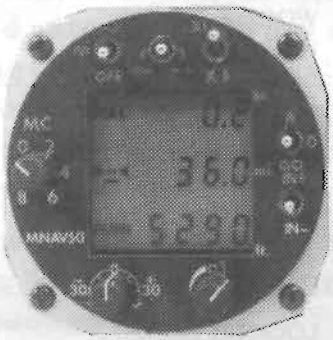
A SELECTION FROM OUR PRODUCT RANGE



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



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



SUNTIGER SUNGLASSES

• IMPROVE VISIBILITY IN HAZE • MAKE OTHER AIRCRAFT EASIER TO SEE •
• IMPROVE CLOUD CONTRAST • ELIMINATE HARMFUL UV •

SUNTIGER™

"Suntiger . . . sunglasses are the greatest contribution to air safety for many years"

". . . These . . . sunglasses should be made mandatory for all pilots"

(Comments by Dick Johnson reported in PILOT, Feb. 1989)

Used by many of the world's leading glider pilots – Ingo Renner and Hans Werner Grosse are two of our customers.

— • — — • — — • —

We can supply glasses or clip-ons. For further details write to or telephone:

SUNTIGER (EUROPE) LTD., 9 Knoll Road, Fleet, Hants GU13 8PR. Tel: (0252) 615365 or 5 Hampton Close, London SW20 0RY. Tel: 081-947 4870



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
Richard Akehurst 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.

MODERNISE YOUR TRAILER FITTINGS

Quick & Easy from AMF ENTERPRISES

Builders of Britain's No. 1 Selling AMF DROOP SNOOT GLIDER TRAILER

Choose from our extensive range of light weight, high strength fittings for all gliders.

• JACKING BELLY TROLLEY • FUSELAGE-MOUNTED TAILPLANE FITTING • • NOSE CONE • WING ROOT BOXES • ROOT & TIP TROLLEYS • • SLINGS • TRIPOD TRESTLES • TIE-DOWN RING BOLTS & RATCHET STRAPS • AND MUCH, MUCH MORE

AND IF YOU'RE STILL TOWING-OUT ON THE END OF A ROPE . . .
GO SOLO!

AMF'S 'THREE-PIECE SUITE' IS DESIGNED FOR EASE AND COMFORT
WINGTIP DOLLY TAIL DOLLY WITH HANDLE
TOWBAR (Collapsible to fit in car boot)

AMF – Specialist in GRP Mouldings

AMF ENTERPRISES

SEND FOR FULL PRICE LIST TO:
AMF ENTERPRISES, MEMBURY AIRFIELD, LAMBOURN, BERKS. RG16 7TJ
Telephone/Fax: (0488) 72224

YOUR LETTERS

MORE ON SUNGLASSES

Dear Editor,

I am considering buying sunglasses suitable for soaring and remember that John Wright's article (June 1989 issue, p124) recommended a brown tint and particularly Cloudmaster sunglasses.

Could John please give some further advice such as is it sufficient to obtain any old brown tint from an optician or can you insist on a lens material with the same performance as that achieved by Cloudmasters? If so, what do you ask for?

I am sure I can't be the only pilot who prefers not to wear clip-on sunglasses so John's answers will be of benefit to many like me who prefer the light weight and simplicity of prescription sunglasses.

CLIVE THOMAS, *Guildford, Surrey*

John Wright replies: Recently several people have asked me the same question. The tint has to be coated on the lens after it is ground to the prescription, rather than ground from coloured glass as the varying thickness of the lens thus formed would result in variations in colour density across the field of vision. But most of the brown tints applied are actually a bit on the pale side, and merely cosmetic. It could be tricky getting a tint that matched the original 1988 Cloudmasters. (RD Aviation had to test several different lenses to get a suitable replacement when the original supply dried up.) RD can now get prescription lenses coated in a suitable tint but I haven't seen any samples yet. But I do think that the original clip-on Cloudmasters are very good and worth a try.

The American Vision Company, 7 Scampston Mews, Cambridge Gardens, London W10 6HW, tell me they can recommend several opticians who can tint lenses to closely match their Randolph Engineering Aviators Tan 3 lens. I tested these sunglasses recently and found them to be very good. (They recommend their Grey 3 lens, used by the US military, for situations where accurate colour recognition is important, but for improving cloud contrast etc the Tan 3 is better.)

If you simply want a brown tint, you should ask your optician if it will be a "UV 400" tint, *ie* if it cuts out 98% or more of the UV. If you have a pair of Cloudmasters' clip-ons or your optician stocks Randolph Aviators (or RayBans), show them to the optician so he can compare his tinted samples for the best match. Remember, if you wear dark tinted prescription lenses, it is best to carry an untinted pair as well when flying for when it gets dull.

Finally to briefly answer another question I've been asked often. Yes I've now tested brown RayBans and yes they are good.

THE END OF STUBBLE FIRES

Dear Editor,

I enjoyed Tom Bradbury's excellent article "Encounters with Thermals" in the February issue, p9, but I was surprised at the difficulty he appears to have with debris in stubble fires. I have found that a gentle stall is quite sufficient, and often the "hitch hikers" depart just prior to the stall, so that no height is lost at all. This may not work on all aircraft but with my old Sky it is very effective. I must confess to not doing it very often, as no doubt the fire risk is much greater with wood and fabric than with a glass ship.

On the question of stubble fires in general, recent legislation is going to outlaw the practice and so, apart from accidental ones, they will no longer be part of the summer scene. As a farmer, I have burnt many fields and the most spectacular ones are those that are lit at the upwind edge of the field. These are obviously of much shorter duration, as Bradbury notices, but in farming terms they are much better as all the straw, even between the rows, is consumed, leaving a cleaner field. This is contrary to the accepted code of practice because the fire can readily get completely out of control.

I always used to do it this way and never had one get away from me because I would spend half a day having a controlled burn right around the headland, often as much as 50 yards wide, followed by a really fierce fire, which would form its own cumulus cloud going to an estimated 3000 or 4000ft. I was often surprised that even with a strong surface wind the core usually appeared to be very close to the vertical.

PETER CYSTER, *Northiam, Sussex*

A PLEA FOR CLUB CLASS CHAMPIONSHIPS

Dear Editor,

In response to Derek Copelands letter in the December issue, p277, and in particular the reply given by John Taylor. I would argue with John's statement that there is not enough interest to justify Club Class Championships.

I have been lucky enough to fly at quite a number of sites throughout Great Britain and in discussion with numerous pilots, of varying expertise/experience, have come to believe that a Club Class series of competitions and eventual Championships would be most welcome.

There is, I am sure, a quietly frustrated body of keen, average club pilots who, like me, desire to taste the fruits of competition flying but cannot find that initial foothold.

I feel sure that the Club Class system will provide an ideal introduction and apprenticeship to the rigours of competition. I believe that in the past we did in fact operate such a system but that it was laid to rest, as so many good ideas are, due to lack of interest. Perhaps the time has come for our Competitions Committee to look again at its merits and contemplate its resurrection.

I have heard that there is a forum after the Nationals that reviews competitions in general and perhaps their deliberations could turn to the less fortunate who do not possess high performance, high priced gliders but who nevertheless would welcome the chance to indulge in competitions. Or is it to remain the province of the more affluent amongst the gliding fraternity?

I would also welcome details on how one goes about entering competitions, licensing, etc as well as those competitions available to the average club pilot.

ALAN DALGETTY, *Holmfirth, W. Yorks*

John Taylor, chairman of the BGA Competitions and Awards Committee until handing over to Ted Richards soon after dealing with this letter, replies: The Inter-Club League, Competition Enterprise and Regionals all offer ideal introductions to competition flying. Competitions are advertised in *S&G* and applications should be made direct to the organisers. Any pilot in current flying practice with a Silver badge can obtain a competition licence from the BGA. Regionals' scoring is handicapped allowing pilots to enter in any type of glider, including the Club Class (15m span, fixed wheel, no flaps, no waterballast).

The issue in debate here is whether pilots flying Club Class should have their own Regionals, or a Club Class Nationals to progress to from existing Regionals, possibly leading to a British team entry to the European Club Class Championships. In order to solicit wider opinion, we will raise this topic at competition forums during 1990. Meanwhile we would welcome feedback from other pilots like Alan with an interest in reviving the Club Class.

SCHEIBE "FALKE" SF25C 2000



Superb Touring and Training
Excellent Take-off Performance
Improved Handling
Classic Construction
Every School in Germany uses one

SOARING EQUIPMENT LIMITED
193 RUSSELL ROAD
BIRMINGHAM B13 8RR
Tel: 021-449-1121 Fax: 021-449-9855

Picking up the pieces. . .



Is something that we, at Mowbray Vale, are quite good at. After all, we have been doing it for over twenty years!

In that time we have seen, and heard just about everything. You wouldn't believe the things some of our clients do with their gliders!

So, if you're with Mowbray Vale and meet with any little mishap, you can be sure we won't get in a spin about it. In fact, you could be pleasantly surprised at how quickly we can get it all together for you!

Contact Carol Taylor or Stephen Hill on
Thirsk (0845) 523018 – 24 hr. Ansaphone Service.

Or write to:

MOWBRAY VALE INSURANCE

8 Castlegate, Thirsk, North Yorkshire YO7 1HL.
Telex: 587470 *Represented at Lloyds* Fax: 0845 525483

AN APOLOGY

Dear Editor,

I have been asked by the Royal Air Force Gliding and Soaring Association to clarify a remark made in my article "Tipping the Vega" in the February issue, p16.

There is apparently a separate service gliding organisation called the Royal Air Force Germany Gliding Association and it was the RAFGGA not the RAFGSA who sold me the Vega.

The RAFGSA point out that they never had anything to do with the aircraft and I must apologise for any confusion or embarrassment this error may have caused.

MIKE CUMING, *London*

CONTROLLED AIRSPACE DISMANTLED

Dear Editor,

Chris Garton's footnote to Tony Watson's letter in the April issue, p61, follows the BGA line that over 40 years has failed to produce the relief from controlled airspace that sporting aviation desires.

At a stage 2 meeting of the Roskill Inquiry I was able to ask the director of NATS "What is the evidence of the need for controlled airspace?" His answer was that this need arose from an international convention in the separation of airliners and ATC was the only means of implementation. Need I state the obvious corollary - if this separation can be maintained by some other means then there is no need for controlled airspace!

Radar surveillance techniques have moved on since then and according to CAA announcements will move even further in the next decade. Systems that can automatically assess the probability of collision and display this to a ground controller are being developed. The vital message that is being overlooked is that the preferred destination for such a display is the flight deck because this is where final responsibility for collision avoidance resides, ATC signals being advisory only. The cost of providing this additional equipment and manpower upon the flight deck can then be borne most equitably by the fare paying passengers.

The main task of the BGA and similar bodies such as AOPA will then be to ensure that controlled airspace over the UK is dismantled in step with the introduction of these advanced systems and that this advance is not retarded by the empire building aspirations of the professional bodies whose members will be affected by the change.

CHARLES ELLIS, *Ilford, Essex*

CAN ANYONE HELP?

Dear Editor,

I am presently researching a glider hangar project, for construction in my local glider area (Southern California, USA). The goal is to shelter from sun and weather as many assembled gliders as possible under one roof. Space considerations require some system of stacking, shelving or suspending the weight and full span of our ships, together with a safe and efficient method of retrieval.

I am unaware of the existence of any such hangar, although I have seen "dry marinas" in this country; these are barn-like structures in which rather heavy (albeit wingless) boats are forklifted to and from thirty foot high perches. I have also heard tell of compact glider storage in Europe.

If any readers have any information on such an undertaking I would appreciate a bit of advice.

ROBERT L. HUNTER, *1211 4th Street, Suite 200, Santa Monica, California 90401, USA.*

SOUTHDOWN GC CELEBRATES

Dear Editor,

The Southdown GC will be 60 this year and gliding in Sussex, beginning with the first soaring flight by Josée Weiss's glider in 1909, will be 81. We are marking our Diamond Jubilee and the long and fascinating history of gliding in our area with a celebration in September. On Thursday, September 13, we shall entertain national, regional and local people of influence and we hope to persuade them that gliding is a sport deserving of the highest regard and worthy of their support. Peter Yarranton, chairman of the Sports Council, will be our guest of honour. The week before will be a flying week with a party on the Saturday. The club will be "at home" to local people during the week and we hope that many will use the opportunity of flying with us.

We are linking our celebration with a festival arranged by our village, Storrington, on Saturday, September 15, to commemorate the 50th anniversary of the Battle of Britain. West Sussex was in the thick of the Battle and our small grass airfield played a part. As many older members in gliding know, glider pilots were involved in all spheres of the war and when hostilities were over returning members of the Forces helped to set up the sport in peacetime. We will be celebrating their achievements as well as contributing to the village festivities.

Members who flew before the war from several sites on the South Downs and after 1946 at Friston, Firle and later at Parham will be very welcome during the week. We are planning an exhibition on "Gliding in Sussex" and we would be most grateful to hear of any material, (photographs, paintings, models and archive papers) which might be used. Please get in touch with me at Southdown GC, Parham Airfield, Pulborough Road, Cootham, Pulborough, West Sussex RH20 4HP.

JOAN CLOKE, *Chairman of the Jubilee Committee*

BE KIND TO THE WRINKLIES

Dear Editor,

I oppose most strongly the assertions by "One of the Evergreens" (February issue, p7) that the retired have time to wait around for launches.

It is a cold and harsh fact that they have, in view of the years left to them and their inevitable slide downwards, far less time than their young colleagues. A fact that indicates that they should actually be put automatically at the head of the flying list as soon as they arrive at the launch point, on even the most promising day and irrespective of their arrival time.

My own view on arriving on site at 1400hrs on an 8 up day has always been that since I am not a private owner there should be a glider held on the ground awaiting my pleasure.

For some unfathomable reason I have been unable to get my fellow Booker members to share my point of view. The object of this letter is to appeal to the BGA to introduce a blanket rule to meet my wishes - and, in view of the passage of time, as a matter of the greatest urgency.

Dum spiro spero and there may not be much *spiro* left.

PHAETON

AIR EDUCATION AND RECREATION ORGANISATION (AERO)

Dear Editor,

Gliding clubs have an ageing membership, and are all constantly on the look out for ways of attracting and retaining new, young members. It is obvious that the gliding movement ➡

Cotswold Gliders
(Prop. T. Cox)

HIGH QUALITY SPECIALIST WORK IN

Glassfibre, carbon, kevlar, wood and metal inc. alloy
All types of repair undertaken - Motor glider engine approval
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

LLOYDS APPROVED
CAA APPROVED COMPANY
AI/9182/89

ANGLO-POLISH SAILPLANES LTD.



STD 51-1 JUNIOR

• EASY TO FLY • 35-1 GLIDE ANGLE • GLASS-FIBRE CLUB GLIDER
• DELIVERED TO UK WITH INSTRUMENTS

PUCHACZ

• GLASS-FIBRE TWO SEATER • LIGHTWEIGHT • CAN BE LAUNCHED BY ORDINARY WINCH

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

depends for its survival on a steady supply of young recruits. The more "air-minded" young people are when they emerge from school, the more inclined they will be to take up gliding, rather than sailing or rock-climbing. Your readers may be interested to hear about an organisation which is not widely known amongst glider pilots, but which has as one of its principal aims "to encourage young people to participate in air leisure activities".

The Air Education and Recreation Organisation (AERO) is a voluntary body which brings together aviation enthusiasts from the worlds of teaching, educational administration and youth organisations as well as representatives from aeronautical industries and air sports. Many AERO members are active in schools and youth groups promoting the teaching of aviation in its broadest sense across the whole curriculum. AERO has produced some excellent teaching materials cross-referenced to key elements in the new national curriculum. Its regular publication *Aeroletter* carries news and articles about all aspects of air education.

Gliding club members can help AERO's efforts in two ways: by becoming a member (£10 for individual membership; institutional rates on application) and by offering help to your local AERO branch (*eg* free trips as prizes in competitions, illustrated talks to schools etc). For details, please write to: The Secretary, AERO, Surrey County Council Education Offices, 14a/b North Street, Guildford, Surrey.

MAX BISHOP, *Oxted, Surrey*

SURVIVAL KIT

Dear Editor,

I have become concerned about the lack of survival equipment carried by sailplanes flying over the moorlands and mountains of the British Isles.

Even in a good summer "harmless" areas such as Dartmoor can produce weather conditions which can kill those foolish enough to walk across them without the proper equipment or training. Until recently all but the pundits avoided this type of "bad ground". Now with BGA encouragement the rabble (to which group I belong) are flying over the mountains of Scotland and Wales in winter.

The probability of a pundit landing in a bad area may be very small but for the rest of us it is much higher. We now have many more people in the air on wave days so it can only be a matter of time before someone is caught.

We had a minor accident at Brent Tor the year before last when an east wind wave triggered a thunderstorm which developed in three minutes. Cloudbase came down from 7000ft to 800ft in heavy rain. One aircraft was caught at 7000ft. Luckily and with good judgment he did not land on the moors.

Can you guarantee that your thermals will keep going across the bad area? Can you guarantee that at 20000ft the gaps will not close and the wave collapse?

If you sail you are expected to carry survival kit with flares, life jackets etc. Surely it is time that better brains than mine devised a survival pack for sailplanes? Obviously it must be light and small. Might I suggest the following for the British Isles?

Waterproof, windproof, anorak and trousers; good walking shoes or boots; space blanket; compass; first aid kit; six metres of cord; whistle; fire making kit (matches, lighters etc); aircraft pickets and rope; groundsheet with eyelets; high energy food; water purifying tablets; metal mug and plastic bag large enough to sleep in.

Some further thoughts: If you get caught above cloud filled with mountains do you bale out? If you land on a mountain do you stay with the aircraft or try to walk out? I would be very interested in other views.

PETER WILLIAMS, *Bideford, Devon*

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

REVIEW

Basic Exercise Notes for Gliding Instructors by Ken Stewart and marketed by Airtour Flight Equipment Ltd. It consists of 16 flip cards of plastic paper approximately 8in×5in each and costs £6 plus p&p.

The notes are concise and clearly printed as an *aide memoire* to flying exercises from *ab-initio* to early post solo. They do not deal with briefing, de-briefing or performance analysis (fault finding) and in fairness do not claim to.

They are good on the well worn and generally well documented exercises but very sketchy in important places, *eg* "Circuit Planning" gets one page and few more words than "Trimming"; "Aerotowing" gets four pages but still doesn't say how to keep the glider in position behind the tug and "Airbrakes, Spoilers, Flaps and Soaring" are not dealt with at all.

The notes do not exactly reflect either the BGA "Revised Patter Notes" or "The Stalling Reinforcement Exercises" which are the basis of preparation for BGA instructors' courses, nor are they in line with BGA teaching on other exercises. A prime example of this is "Difference Between Reduced *g* and The Stall" which makes completely the opposite point to the BGA exercise of the same name and was rejected by the Intructors' Committee when Ken worked for the BGA.

They are stated to be for "all instructors from candidates reporting for the assistant instructors' course through to a CFI attempting a standardisation programme within his club", They clearly are not ideal for this role due to their lack of standardisation with the current BGA teaching.

I think that what has been attempted here is not achievable since it is an *aide memoire* without the benefit of a more detailed publication to back it up. Regretably I will not be recommending that BGA instructors buy these even though most instructors might find some useful reminders of points they have not been emphasising recently.

BERNIE MORRIS, *chairman of the BGA Instructors' Committee.*

EW Barograph: A superb newly developed fully electronic barograph

With the launch in early 89 in the UK, of our new digital barograph, EW Avionics have been surprised by the response to this exciting new product. Already units are being used by 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.

No sealing
Light weight 225 gms
Calculator sized 150×80×30mm

Auto height scale selection to 12km
Full camera and motor detection
Computer analysis available

1-255hrs recording time
Multiple traces

At last a barograph small and light enough to fit into your pocket

EW AVIONICS

45 Wyresdale Crescent, Middx UB6 8TH. Tel: 081-998 1510

BIG CUMULUS LINES

Tom Bradbury continues his popular Met series, helping you exploit the soaring conditions

Cumulus streets were mentioned in an earlier article. This one is about some less regular lines of big cumulus extending more than 100km.

Satellite pictures often show that the distribution of cumulus is far from random. On four out of five days it looks as if the location of cumulus is strongly influenced by the topography. This often produces a long line or band of large cumulus. When there are enough wind observations one often finds that these cloud lines are due to low level convergence of air. Sometimes the convergence is due to minor troughs moving along in the pattern of isobars but at other times the convergence is fixed by geographical features.

There seem to be several types of topographically modifed flow which produce the kind of low level convergence necessary to cause long lines of cumulus. These are:

(a) Sea breeze fronts when the land is warmer than the sea.

(b) Land breeze fronts when the sea is warmer than the land.

(c) Coastal convergence when the extra drag over land turns the flow further towards low pressure.

(d) Flow constrictions causing air to be channelled between regions of high ground.

Sea breeze fronts

Before a sea breeze forms the land has to become warmer than the sea. To get a soarable sea breeze front we usually need an offshore flow in the early morning to oppose the incoming sea air and form a front. No opposing flow means no discernible front. Over the British Isles the land does not usually become warm enough for a sea breeze until March. Then the frequency of sea breeze days increases month by month to reach a peak in June and July. From August the frequency starts to decrease and the season usually ends by mid October.

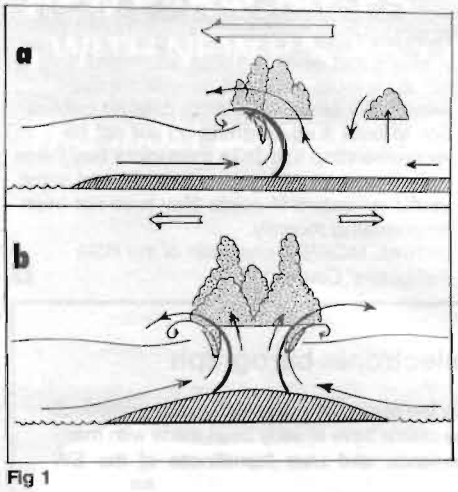


Fig 1

Fig 1 shows two types of sea breeze front. (a) is the common type where cool sea air pushes inland during the heat of the day against an initial flow out to sea. The seaward flow persists at high level above the incoming sea air. The stronger the initial offshore wind the harder it is for the sea air to push in against it, but unless there is such a conflict a front does not develop.

(b) shows what happens when the sea air moves in from both coasts of a peninsula. The two flows meet somewhere near the centre to form a cloud line. When the general wind flow is along the length of the peninsula such a cloud line can grow downwind far beyond its starting point and reach a length of 200 or 300km. Clearly the meeting of two sea breezes starts off a process which is self-maintaining long after the air has moved beyond the initial convergence zone.

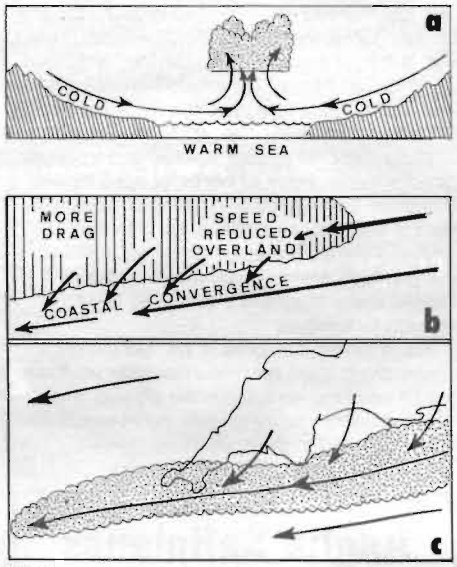


Fig 2

Land breeze fronts

During clear nights when the land becomes colder than the sea an offshore wind can develop. Around the British Isles and NW Europe the effect is more noticeable during the winter months. Then a land breeze front may develop offshore during the second half of the night. Where the sea forms a channel between land masses the land breezes from either side meet over the water to form a stronger convergence zone. The effect is enhanced if there are hills inland; (Fig 2A) then the katabatic wind down the slopes strengthens the land breeze.

Coastal convergence

Over the sea, where there is little drag, the wind speed is usually near the geostrophic value. Overland the extra drag reduces the speed at low levels. Anything which reduces the wind speed upsets the geostrophic balance and the slower moving air then turns across the isobars towards low pressure. When the isobars are roughly parallel to the coast and pressure is lower over the sea, the slower moving land air turns towards lower pressure and converges on the faster moving sea air. This can produce a band of cloud near the coast. Fig 2B shows one kind of coastal convergence, 2C shows an example off Cornwall. In extreme cases, when the air coming off the land is very cold, this coastal convergence can produce such a well marked front that it looks and behaves like the well known "polar front" described in many text books.

Constrictions to flow

A pair of large and mountainous islands such as Corsica and Sardinia may produce a constriction to the airflow in between. This can sometimes produce a line of cloud which grows downwind from straits. Lesser constrictions such as the Cheshire gap with a NW wind and the Severn estuary with SW wind can also produce cloud bands extending downwind.

Maps of convergence zones

The series of eight little maps which follow is an attempt to show where topographic effects may produce cumulus lines. In the next four diagrams areas where lift is usually spoilt by sea air are shown by shading while convergence lines causing bigger cumulus are marked by a dotted line.

North-west winds

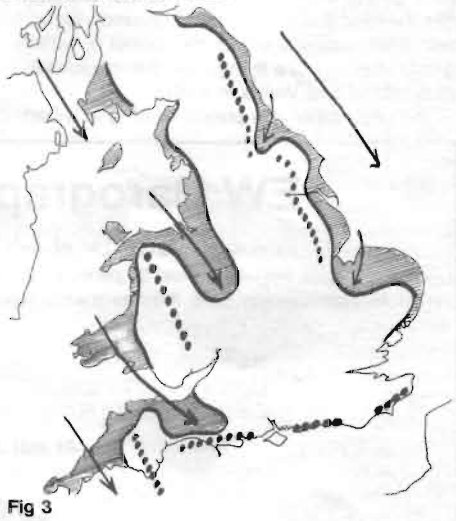


Fig 3

Fig 3 shows a north-westerly airflow. This often produces two long sea breeze fronts. One of the

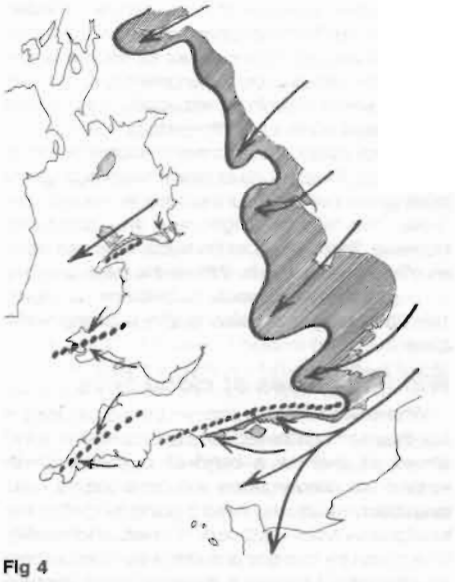


Fig 4

best known sea breeze lines develops along the south coast from Kent down to Devon. The position depends on the strength of the wind; too much wind and it doesn't appear overland at all, but with a 15kt gradient it is often found very close to the shore. It makes very slow progress inland against the gradient and may sometimes be found a little way off shore, especially in large bays. Notice how far the sea air spreads in from the Cheshire gap to the west of Birmingham and also into Somerset where the Bridgwater flats often become unsoarable.

A second sea breeze front develops along the east coast from the Scottish border down to Lincolnshire. This line does make progress inland across the wind and may end up over the eastern slopes of the Pennines. The convergence sometimes makes the cumulus build up far higher than elsewhere so that a line of showers develops along it. North-west winds often bring unstable air down over the North Sea and the front makes the cu even bigger. I have seen midnight temperature soundings showing cu tops would be limited to 7000ft but along the convergence line the tops were later reported to be twice as high, going up to 14000 with frequent showers spoiling an otherwise good day. The end of this line sometimes extends to East Anglia but on many north-westerly days the sea air moves unchecked across the Wash and over Norfolk bringing showers but not forming a front.

On days when there is a lid preventing cu from growing tall, the sea breeze front is often checked by high ground such as the Yorkshire Moors and the cold air tends to curve round rather than flow over the top. On showery days the line pays little attention to these hills and moves inland till it is slowed down by the Pennines.

Two other zones of bigger cumulus may also be found. One runs downwind from the Welsh mountains around Snowdonia and the other from Dartmoor. These two lines are often broader and not so easy to recognise in flight but they do show up on a number of satellite views. They are not sea breeze fronts; the cloud is boosted by flowing over the high ground and once formed seems to produce a long tail downwind.

North-easterly winds

Fig 4 shows how north-easterly winds can bring poor soaring conditions far inland from the North Sea coasts. This dead area is chiefly a summer problem; in spring the north-easterlies are often so cold that they produce good thermals a very short distance inland. The main sea breeze front is once again near the south coast but there are three other zones where cumulus builds up higher. One lies along the narrowing peninsula of Devon and Cornwall, another along a rather similar peninsular out towards Pembrokeshire, and a third along the edge of Snowdonia. These three often develop where the airflow curves inland to produce convergence lines. The Cornish line was much used in days when all long flights from clubs around London (and East Anglia) had to be downwind dashes. The end of this line tends to get shorter during the afternoon and late arrivals used to find the cu stopped long before they reached Perranporth.

West with a touch of north

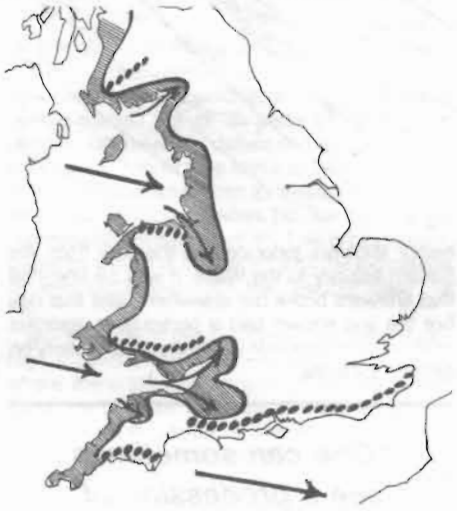


Fig 5

Fig 5 shows the kind of change one may find if the north-westerly backs to become almost westerly but is too strong for the east coast front to develop. Once again the south coast sea breeze front is usually the best developed and it can move further inland during the afternoon because there is less of an opposing current to slow it down.

Satellite pictures sometimes show four lesser convergence lines. One develops north of the Solway Firth and produces a zone of bigger cu over the southern uplands of Scotland. Another build up occurs over North Wales. The third grows along the mountains north of the Bristol Channel across Carmarthen and Glamorgan. A fourth builds over the southern side of Cornwall and Devon from Bodmin to Dartmoor. One then finds that the surface wind near Plymouth goes back to a southerly direction while on the north coast near Newquay it stays westerly.

South-westerly

South-west winds (Fig 6) are seldom good for soaring except in dry summers, and then only well inland. However, the three peninsulars extending into wind from Caernavon in North



Fig 6

Wales, towards Pembroke in South Wales, and especially the much larger peninsula of Devon and Cornwall all produce convergence lines. These lines are started by the sea breezes on either side of the peninsulars curving inland from north and south coasts. This convergence produces a line of cumulus which steadily grows longer and, if the wind is fairly fresh, extends far to the east. Although these lines start off due to sea breeze convergence, they develop a circulation which extends far beyond the originating peninsulars. From Cornwall the row of dots marking the heavy cumulus sometimes runs all the way to London. The alignment varies as the wind direction changes and one may find this line widens out across Salisbury Plain. By the time it reaches the Chilterns it can spread out into several lines of cumulus.

Notice that on days like this the sea air often spreads a long way inland up the Severn valley and also well inland over Dorset, Hampshire, Sussex and much of Kent too. This makes such cloud lines the only way of making progress westwards.

Peninsula cloud lines

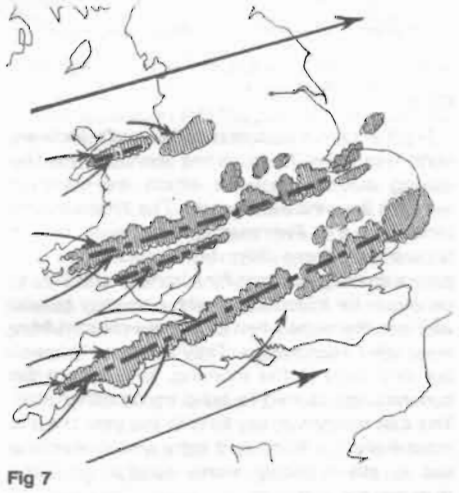


Fig 7

Fig 7 illustrates this effect in more detail. In this map it is the lines of cumulus which have been

shaded in. Their general alignment is marked with a heavy dot-dash line. The straight arrows show the general windflow while the thinner curving arrows illustrate the way the low level winds converge on the peninsulars. The line near Caernavon is usually the least prominent. Over South Wales there may be two parallel lines, one from Pembroke and the other starting near Swansea. The Cornish line is the biggest since that peninsula is much the largest. For these lines to form well the wind needs to blow fairly accurately along the axis of each peninsula. Too much of a crosswind and the cumulus line drifts out to sea at some point and never grows really long.

It seems that once these lines have formed they become self-sustaining and the band of big cu can continue to maintain itself until it reaches the east coast. Although the broadening line can still be picked out well enough on a satellite picture it is not so easy to distinguish from the ground or when flying. Over the Midlands and East Anglia many other clumps of cumulus develop and obscure the original line.

Troublesome shower lines

The preceding figures have all illustrated days when the sea was too cold to produce much cumulus and the main development occurred overland. A different pattern appears when the air is so unstable that showers develop over the sea. Then one sometimes finds that high ground tends to funnel showers along particular lines.

The Cheshire gap effect

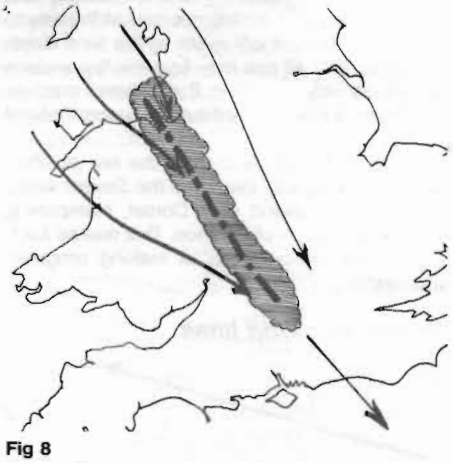


Fig 8

Fig 8 shows a common pattern with showery north-westerlies. The map has been simplified by leaving out the showers which are common along all the windward coasts. The Welsh mountains and the Pennines collect most of the showers on these days but the Cheshire gap allows an easy passage for a band of showers to penetrate far inland. Such showers may persist well into the night when cloud has cleared from most other inland areas. They also tend to break out very early in the morning, long before the cumulus has started to build up on either side. This can happen at any time of the year but it is most likely in autumn and early winter when the sea is still relatively warm so that maritime showers are common.

The alignment of the belt varies as the wind changes and it can be quite narrow. On a winter flight I have seen snow showers lay a white pathway extending down to Tewkesbury while the ground on either side was still green. The Cheshire gap showers are so well known that they are mentioned in BBC weather forecasts.

Bristol Channel shower line

The shower line extending inland from the Bristol Channel is mentioned less often. This is another example of a day when showers, which were already widespread over the sea, formed tongues extending far inland. The gap between Exmoor and the mountains of South Wales acts rather like the Cheshire gap in funnelling showers inland. Fig 9 shows an occasion when a band of

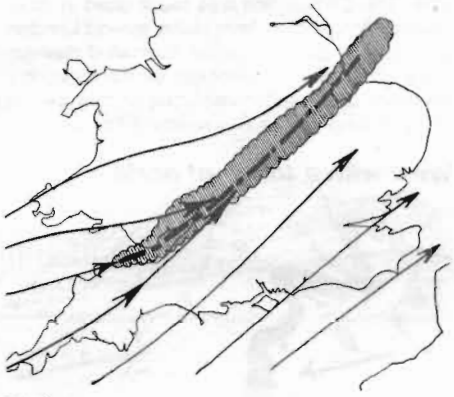


Fig 9

heavy showers extended all the way from the Severn estuary to the Wash. It was so unstable that showers broke out elsewhere later that day but the line shown had a particularly vigorous chain of cu-nim clouds which stood out clearly on satellite pictures.

"One can sometimes see a procession of big cu marching in from the Bristol Channel . . ."

With a westerly flow the shower line tends to lie across the Mendips to Salisbury Plain. One can sometimes see a procession of big cu marching in from the Bristol Channel long before any other clouds have formed inland.

Katabatic convergence

On clear nights in autumn and winter when the sea is still warm but the land becomes very cold there is often a katabatic flow of air from higher ground down to the coast and out to sea. When this happens in confined waters such as the Irish Sea and English Channel the convergence produces a zone of cumulus over the sea. This is a reversal of the cumulus lines which form over peninsulars in summer. Such cumulus lines often start as very narrow tongues and broaden out downwind. For example cold north-easterlies can produce a very thin line of cu starting over the Bristol Channel off Avonmouth and extending out towards Lundy. Without satellite pictures we would remain ignorant of most of these offshore lines. Fig 10 illustrates three of these lines. The positions vary and they do not all appear at the same time, but one can often see signs of them on cold winter mornings, especially if the winds have a light north or north-easterly flow.

In most cases they do not concern pilots in sailplanes, though I have heard reports of good looking cu confined to the narrow waters between the Isle of Wight and the mainland. However, these offshore cumulus lines can have an effect on the winds. Where the land breezes converge the wind tends to become stronger. The band of cu then also marks a strong wind zone.

Wind increases at cloud lines

Where two separate airflows converge along a line they sometimes produce an increase in wind speed as well as a band of cumulus. Once formed the convergence line develops its own circulation which may keep it going long after the katabatics have stopped. I was thoroughly caught out by this one autumn when forecasting for a microlight contest at Haverfordwest. We had light northerly winds round an anticyclone to the west. The skies had been clear overland but a band of nocturnal cumulus formed out over the Irish Sea, rather like the one in Fig 10. The early

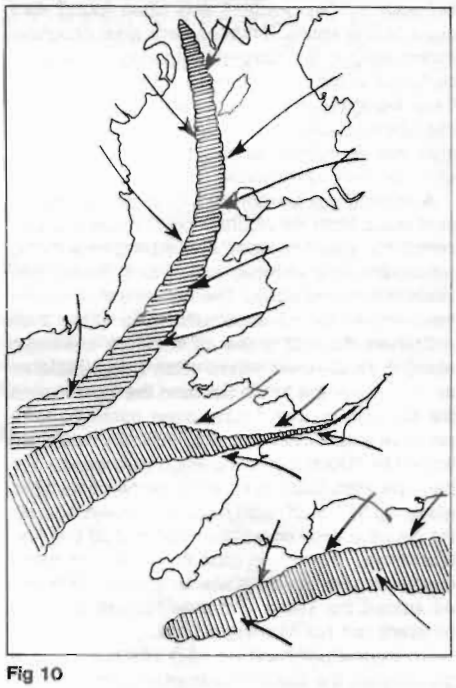


Fig 10

morning chart only showed a 15kt northerly gradient and the speed was expected to decrease during the day. However, the nocturnal cloud line did not fade away but persisted throughout the day and gradually edged sideways until it crossed the Pembrokeshire coast and moved over Haverfordwest.

Now few microlights fly fast and some can only go very slowly. The pilots of the most basic craft found that they were almost brought to a standstill by a wind which doubled in strength when the cloud arrived. A brief and fragile reputation for accurate forecasting was blown away too.

AIRSPACE MUST NOT BE REDUCED

Airspace restrictions became a major concern of the 1980s and as we go into the 1990s the prospects are even more serious. André Dumas, president of honour of the Fédération Aéronautique Internationale, put this into context when he presented a paper to the International Civil Aviation Organisation from which we have taken extracts

Our members represent aeronautics in various types and all need space in the sky. Many of these members become the instructors at the flying clubs and schools and later the pilots and crews of commercial airlines of the world. Through its organising of World Championships in the various air sports, and its responsibility of homologation of world air and space records, FAI has brought the aviators of the world together and helped the cause of world peace.

In this and many other ways ICAO and FAI have common interests and goals. We are all very much aware of the importance of safety and security at airports and in the sky. In Air Traffic Control (ATC), however, I believe that we should be closer together. This is vitally important to FAI because of ICAO's dominant role in ATC planning.

As the airways and airports grow more crowded, the tendency of governments has been to place more airspace under positive control – assuming, as they do, that positive control and safety go hand in hand. The result is that it is becoming more difficult and more expensive for the private pilot to fly his plane. So light aviation is being forced out of the skies and out of the system.

A scramble to recruit enough pilots to maintain their schedules

Now we are witnessing a worldwide decline in pilot starts and a scramble among virtually all airlines of the world to recruit enough pilots to maintain airline schedules. Let me offer a few examples of what I mean:

- The flight experience of new hired pilots of major airlines is on the decline.
- The majority of new hired pilots are ex-military, which means that the problem is being shifted to the military.
- The turnover rate of pilots of some small carriers average 60% a year and in some cases exceeds 100%.
- Trainees hired "off the street" and without a proven interest in aviation have high attrition rates.

What governments are ignoring in this drive for more and more positive control is the fact that light aviation is the principal producer, not only of pilots to fly the airlines, but of mechanics, technicians, controllers, aeronautical engineers, aviation executives, aerospace scientists, astronauts and cosmonauts. Most of these people started out as air sport or small plane people – often aeromodellers and Air Cadets, but in all cases people who loved aviation and were willing to make sacrifices to be part of aviation. This was, and must always be, the base of the "aerospace people pyramid". This is best exemplified by what has happened with the thousands of aero clubs that form the "people base" of FAI.

But this type of person offers something else – high motivation at minimum cost. In countries where there are thriving aero clubs and where these are used as a source of commercial and business pilots, attrition is low because the products of the aero clubs have proved their interest, desire and skills. When commercial pilots are hired "off the street", the attrition rate is much higher – and so are the training costs.

Moreover, those sporting aviation pilots who have entered competition bring another bonus to their airline work – ability to fly under pressure. *As an example:* the FAI Airmanship award was presented a few years ago to the pilots of a well known international airline for their skill of landing a 767 that had lost both engines. Both these pilots were qualified glider pilots. It is no coincidence that in every branch of sport aviation, in every country, large numbers of active airline pilots continue enthusiastically to pursue the disciplines in which they first achieved their flying skills.

Now my point is that it would be a terrible and tragic mistake to continue to reduce the airspace available to general and sport aviation. The result can only be that commercial aviation will run out of people, and the efforts of governments to protect this element of aviation will lead to its breakdown.

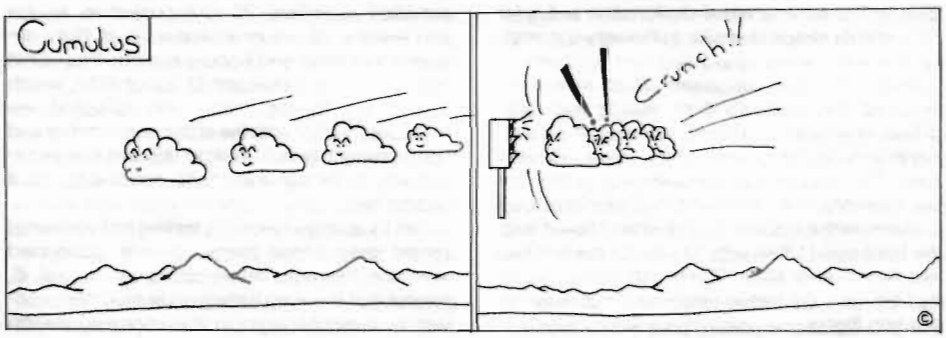
More serious, the ground based system of ATC with ever increasing positive control of airspace does not prevent airborne accidents and near misses. Humans are not perfect and the perfect system of automation has yet to be designed. And what happens when all airspace comes under positive control?

Put more responsibility for aircraft separation into the cockpit

At the same time the technology exists, or can soon exist, to put more of the responsibility for aircraft separation into the cockpit. "See and be seen" may no longer be feasible with the human eye, but it can be achieved electronically. With this approach there is no reason why we cannot devise a system that provides for light aviation and commercial aviation to coexist safely.

In short, FAI strongly believes that safe coexistence rather than ever increasing ground based positive control is the right answer, and the only answer to maintaining a balanced "people pyramid" for the world aerospace establishment.

Since ICAO is the long range planner for the world's airspace, FAI urges that ICAO take the lead in exploring the technological options for achieving a system whereby all elements of aviation can safely enjoy the use of the skies. This would bring aviation to its full potential to serve mankind and the cause of peace.



THE GROB 103C TWIN 3

A flight evaluation test by Richard H. Johnson

The Grob Werke GmbH & Co in southern Germany is increasingly well known for its production of training and Club Class sailplanes, as well as motor gliders, and more recently for the production of light aeroplanes.

Grob entered the glass-fibre sailplane market about 17 years ago with co-production of the Std Cirrus, manufactured under licence from Schempp-Hirth. They soon introduced their own Astir sailplanes; first single-seaters and later two-seater Twin Astirs designated G103. Those low wing Twin Astirs were well designed with tandem seating, excellent cockpit layout and 17.5m wingspan. A relatively new Eppler 603 laminar flow airfoil was featured with a measured thickness-to-chord ratio of about .20 from wing root to tip. The 1982 flight test evaluation of the Grob 103 twin 2 was published in *Soaring*, see ref A.

The newest twin model is called Grob 103c Twin 3, and it began production during early 1989. the fuselage and tail surfaces are only slightly modified from the earlier Twin 2, but its wing design is entirely new. The wingspan has been increased by .5m to an 18m overall span, and its swept back leading edge outer portions are similar to the Discus. See Fig 1.

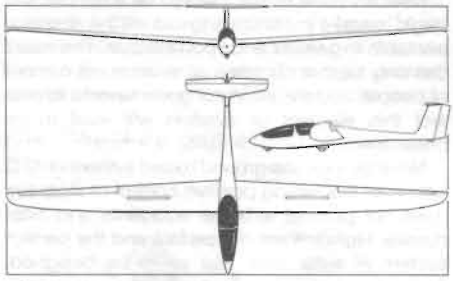


Fig 1

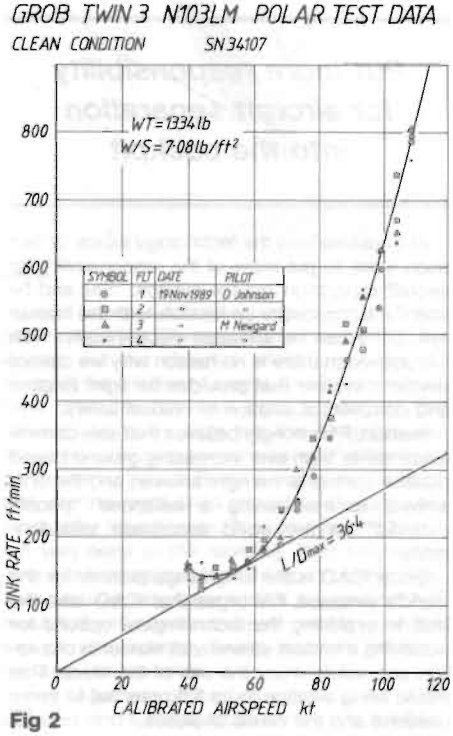


Fig 2

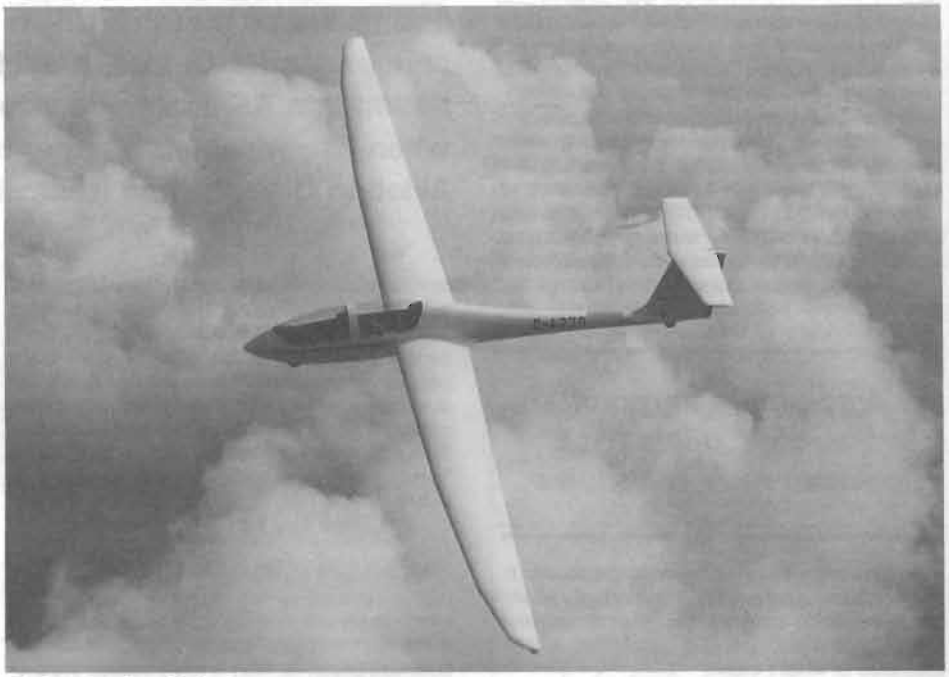


Photo: Soaring Oxford.

A new Twin 3 became available for our flight testing before it was delivered to its owner and N103LM appeared to be of excellent workmanship and well finished throughout. The wing spar caps are of strong and light carbon fibre, compared to glass for the earlier Twin 2. Chordwise wave gauge measurements of the wing surfaces showed little waviness, averaging about .003in (.08mm) peak-to-peak on the top surfaces and about .004in (.10mm) on the flatter bottom surfaces.

The wing airfoil is significantly thinner than on the Twin 2, with a measured thickness-to-chord ratio of .170 compared to .200 measured with the Twin 2. The laminar airfoil designation is Eppler 583, and its shape is similar to the very successful Discus.

Since no flaps or waterballast tanks are included, the Twin 3's flight testing was simplified. Also, with two pilots aboard for all the testing this made the data recording chore relatively easy. The weather was co-operating on November 19 so Mike Newgard and I had four high tows to measure the smooth air sink rates. I flew it from the front seat (172lb with 'chute) for the first two test flights while Mike (234lb with 'chute) recorded the data. We traded places and duties for the last two flights.

The air was relatively still that day and the data scatter was fairly modest, as shown in Fig 2. The measured polar was very good with roughly an L/D of 36:1 shown between about 55 to 62kt. Only after exceeding 70kt did the glide ratio diminish significantly. The airflow appeared to perform well and no high drag regions were found in the polar.

The final test flight that day was with the airspeed system calibration, and those data are shown in Fig 3. Relatively small airspeed errors were measured there. The airspeed system pitot and static sources are from a Prandtle tube mounted on the vertical fin.

Additionally, a small total energy venturi is mounted on the top of the Prandtle tube, and that provided excellent TE compensation to the variometers. Minimum indicated level flight airspeed that Mike and I could achieve was about 38kt IAS. That calibrated to about 40kt, which was close to the same min airspeed we measured earlier with the somewhat smaller and lighter weight Twin 2. At 41kt IAS and slower airspeeds, buffeting was quite noticeable, as it should be.

The following weekend's testing included wing profile drag probe measurements conducted with the instrumentation described in ref B, except that the wing trailing edge mounted problem was reconfigured to the improved design

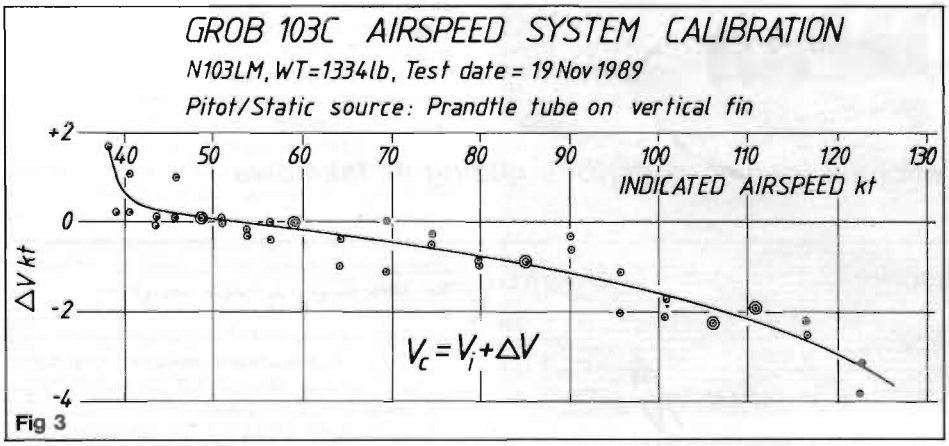


Fig 3

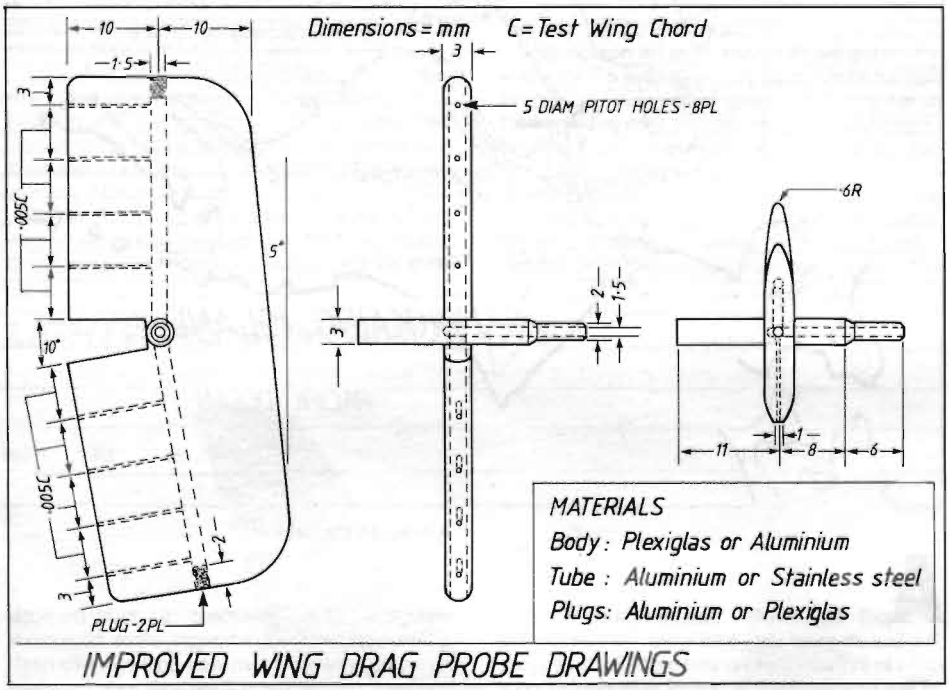


Fig 4

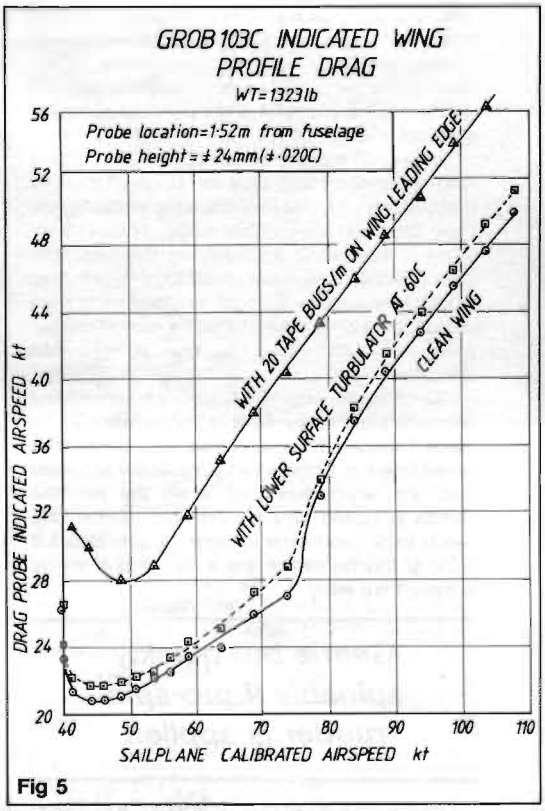


Fig 5

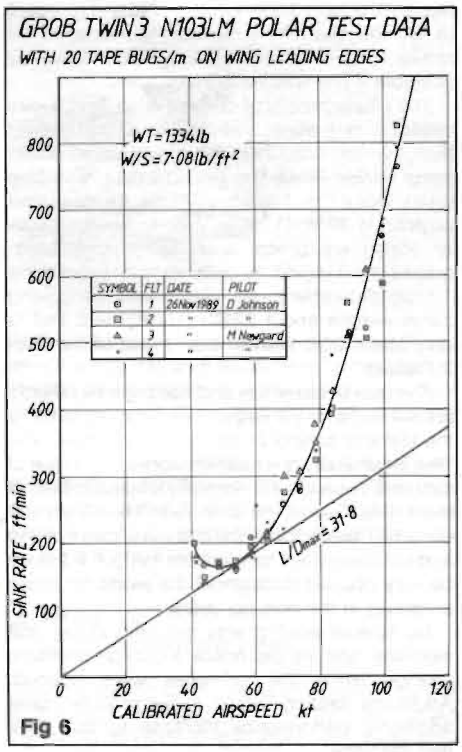


Fig 6

shown in Fig 4. The wing indicated relative profile drag measured data are shown as knots of drag probe system indicated airspeed versus sailplane calibrated airspeed. Low drag probe airspeeds indicate low wing profile drag, although the drag units are only relative values.

The first drag probe flight was flown with the wings smooth and clean, and those data are shown in Fig 5. A well defined classical low drag "bucket" is shown by those data between 41 and 75kt CAS. Above 75kt the indicated drag is much larger because the airfoil slips out of its laminar bucket at those airspeeds.

The next three flights were flown with a 2ft (.61m) long strip of standard German zigzag turbulator tape attached to the wing lower surface ahead of the probe, and located at .80, .70 and .60 chord, respectively, during the test flights. The plan was to determine if a turbulator could reduce the airfoil drag even further by eliminating any separation bubbles that possibly existed there, as they do with many modern low drag sailplane airfoils.

With the turbulator strip at .80 chord the drag probe showed only a .1 to .4kt increase in wing drag and no decreases at any airspeed. At .70 chord turbulator location the drag increases were larger, amounting to about .5 to 1.0kt over the sailplane airspeeds. At .60 chord turbulator location the drag increased even further to about .8 to 1.6kt, and those data are shown in Fig 5. It appears that the Twin 3 airfoil functions optimally without a lower surface turbulator.

The final four test flights were flown with the Twin 3's wing leading edges roughened with our standard pattern of 20 duct tape "bugs" per metre of wingspan. The wing drag probe data for that configuration are included in Fig 5, where large 8 to 12kt drag increases are shown, compared to clean wing readings. It is quite apparent that even modern training sailplanes need to have their wings cleaned frequently for optimum performance.

The sink rate data measured with 20 tape bugs/m on the wing leading edges are shown in Fig 6. There an L/D max of about 32 is shown at 55kt, and a min sink rate of about 165ft/min (.84m/s) is indicated at 48kt. The sailplane stall speed increased by about 1 to 1.5kt with the roughened wing leading edges.

With the older Twin 2 Grob we noted that as the ➡

stall was approached, the sailplane airspeed indicators would begin to twitch, apparently due to wing root airflow separation vortices impinging upon the tail fin mounted pitot. That was a good warning to the pilot that apparently did not carry over into the Twin 3 for some reason.

The Twin 3's airbrakes are large 67in (1.70m) long Schempp-Hirth type of single flat plate devices that protrude from the wing top surfaces. They are each 12in (.30m) larger in span than those of the Twin 2, although not quite as high. Their effectiveness is just about ideal for this type of sailplane. Quite adequate for good glide path control, but not so powerful that a relatively inexperienced pilot would be apt to get into difficulty.

Sideslips are easy to perform, and combined with airbrakes really steep approaches can be made if needed. The main wheel is 6×6in and the wheel brake is a powerful hydraulically actuated disc unit which functions when the airbrake handle is pulled fully aft. For that reason one needs to be careful not to force the airbrakes full open at touchdown or the wheel brake will be actuated too early.

Gentle but quickly spinable if pro-spin rudder is applied

The controls all worked efficiently and freely, making the Twin 3 both comfortable and pleasant to fly. The stall characteristics appeared to be similar to those of the Twin 2, gentle but quickly spinable if pro-spin rudder is applied.

The empty weight of our test Acro Twin 3 was 928lb (421kg) which is about 78lb (35kg) heavier than the non-Acro Twin 2 that we tested seven years earlier. Since the Twin 3's max allowable gross weight is 1323lb (600kg), its max total payload is 395lb (179kg). With two heavy pilots or added equipment such as oxygen, barographs etc it would be quite easy to exceed the 1323lb allowable gross weight limit. Each wing panel weighs about 228lb (103kg) and that is only about 20lb heavier than those of the Twin 2 I tested.

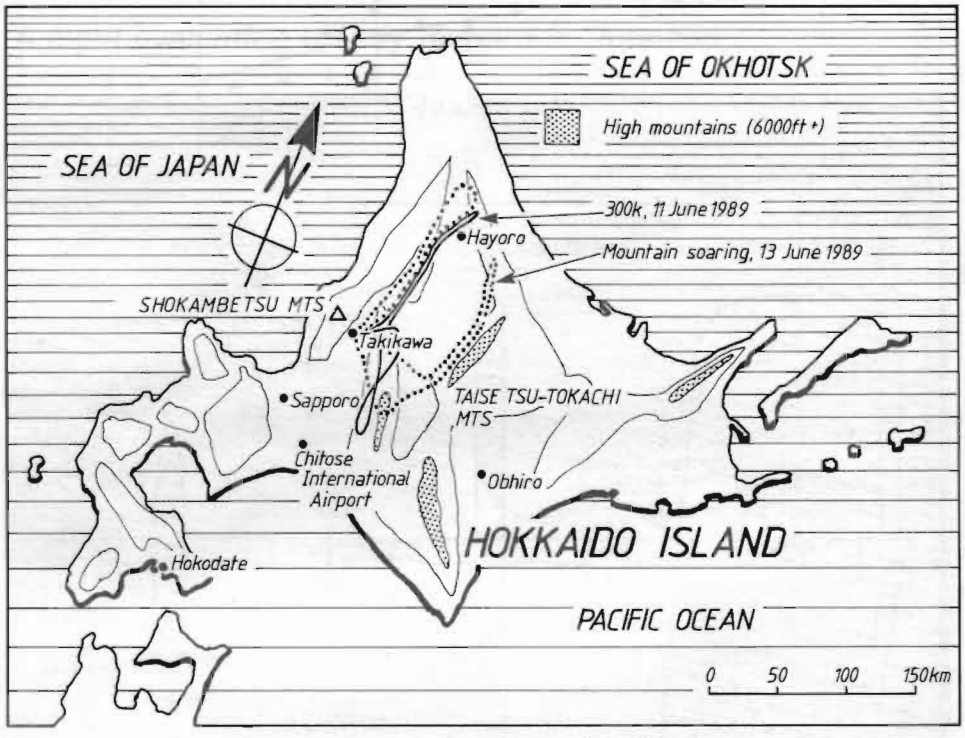
The overall assembly and control attachments are the same for the earlier Twin 2. Good, but only the elevator control is connected automatically. That is generally quite satisfactory for this type of sailplane because it is normally left assembled at most sites. Overall the Grob Twin 3 is really a first class two-seater for *ab-initio* to advanced training and still is excellent for pleasure flying. It will likely be very popular throughout the world for those purposes in the coming years.

No special sealing was included in our test sailplane, and we did notice a cockpit pressure change when the airbrakes were opened. Additional sealing would likely provide some additional performance increase to our flight test sailplane.

References: A. Johnson, R. H., "A flight test evaluation of the Grob 103 Twin 2 sailplane", *Soaring*, February 1983. B. Johnson, R. H., "At last an instrument that reads drag", *Soaring, October 1983.*

JAPAN

Michael Haynes describes gliding at Takikawa



A map of the island.

April 23, 1989: "Spaats-Spaats-Spaats!" The launch point duty pilot calls "All out!" on the radio to the winch driver and a Ubi K-13 whistles off the grass leaving a puff of dust behind on a crisp spring morning. The blue sky is filled with brilliantly clear sunlight and a fresh westerly wind is fanning spring thermals off newly dried fields from the recent snowmelt. Beside the airfield the melting water pours down the Ishikari river towards the Sea of Japan while migrating red crested cranes fly in V-formation overhead.

I had just taken a bus from Sapporo which is the capital city of Hokkaido, the northernmost of the four main islands of Japan. A career change to teaching English as a foreign language had brought me here and one of my students had mentioned an air experience flight at a "Guridar-port". So on the next free Sunday duty called ...

Over the past ten years a hardy bunch of enthusiasts had doggedly built up a small gliding operation here at Takikawa, one of several small groups sprinkled around the island. It's a kind of Japanese Aboyne with the site situated close to wave and thermal generating mountains on each side. There are shades of Benalla about it too since the airfield is at the edge of a small country town. Thanks to the foresight of the city mayor and the club president a multi-purpose clubhouse containing a hangar, office, classroom and civic meeting room was built recently nestling behind a 10m high flood wall, as is the usual practice in Japan.

The climate is roughly equivalent to the American mid-west with a hot and humid mid-summer, a pleasant autumn, a very cold dry winter and, for glider pilots, a large diurnal temperature range in the spring and early summer.

Each spring morning starts with a low level temperature inversion which slowly breaks up as the sun warms the Ishikari plain. Getting away from a winch launch can be tricky as the local meadows are slow to warm and thermals are churned up in the cool spring winds. Meanwhile over the local hills which are drier and warmer cumulus usually forms by mid-morning with a cloudbase rising to 4000ft.

The group found a sponsor to buy a Motor Janus to train students and early solo pilots in wave and mountain soaring. This payed off handsomely as many had their first taste of modern cross-country gliding techniques in its first season of operation.

Oxygen was hastily installed after lots of wave was contacted and a climb to 20000ft made in

the first month. The group's CFI, Mr Marui, could rarely be found on the ground as he built up many hours exploring the variety of soaring conditions together with his fortunate pupils.

June 11, 1989: The previous night was cool and with max temperature predicted in the upper 20s conditions were looking very promising. Mr Ikeda, a helicopter pilot and the group's most experienced glider pilot, waited patiently at the launch point with an ASW-20 at the ready. Healthy cumulus formed to the north as we waited for the rising temperature to pop the local inversion. Buzzards teased us for at least two hours until finally a winch launch at one o'clock took him off on Japan's first declared 300km which was achieved in under 4hrs.

Still sitting on the ground at three o'clock salivating at the cumulus and wondering if I would miss the day, Mr Marui returned from a 100km training flight in the Motor Janus. He advised me to save time rather than yen with a climb to 5000ft for a quick start.

Local thermals were Aboyne like - strong narrow cores which sheared around needing lots of centring until over the hills about 10km east of the site. Cloudbase rose to 8000ft as we climbed and dolphined our way on a 150km O/R to the volcanic Mount Tokachi.

A new Robin tug arrived from France in mid-August which was blessed by a Shinto priest who threw salt over the engine cowling for good luck.



Mount Tokachi photographed by Michael.

This was carefully washed off!

This season an eight year plan will get underway with the airfield becoming a centre for light aviation as well as gliding, ultralights and hot air balloons. The Ishikari river will be diverted slightly to allow a runway realignment to take power traffic noise further away from the town. A leisure and sports complex is planned to broaden the site potential and tap the embryonic but fast developing leisure market in Japan. With a population density of approximately half that of the Main Islands, Hokkaido offers a relatively pollution-free relaxing environment compared to the rest of the country.

If you would like to try some mountain soaring in the Far East and enjoy the unique experience of a visit to Japan then Takikawa glider pilots will give you a warm welcome. Please contact: Mr Ikeda or Mr Marui, Aerosports Desk, City Office of Takikawa, No. 2-1 Higashi 3-chrome, Ninosaka-cho, Takikawa-shi, Hokkaido 073, Japan.

LIGHTWING COMPANION CT6



John Lee, an independent glider pilot from Sussex has developed a lightweight glass-glider, which he has been flying for some three years from a farmer's field using a wheel winch. Lightwing Companion is a cantilever, two-piece, high wing glider built of foam and glass-fibre throughout. Its Göttingen 535 aerofoil has no flaps or airbrakes, although the latter will become available. The two place open cockpit has facility for an in-flight mounted soft plastic windshield to protect both pilots.

John feels that this aircraft is the best thing for pilots who are not so pushy and like the wind blowing through their hair at 20mph. It was recently submitted to the BGA for preliminary evaluation.

Specification Data:

Span	40ft
Aspect ratio	9.6
Length	22ft
Empty weight	320lbs
Max weight	670lbs
Wing loading	2.9lb/sqft
Min sink	3ft/sec
Best glide	20:1 at 20mph solo
Max speed	70mph in rough air

HOWARD TORODE, *Chairman of the BGA Technical Committee*

New BGA Stock



Following the success of the Whispering Wings sweat shirts, the BGA shop have T-shirts featuring this exclusive design in sky blue, navy or dark green (sizes M, L or XL) at £6.35 including p&p.

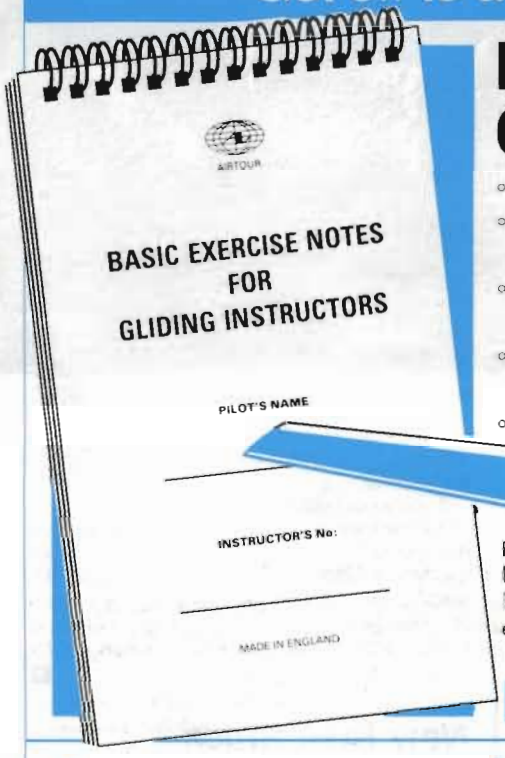
Keep the sun out of your eyes with one of the new white baseball caps decorated with a dark blue single glider design. From the BGA shop at £3 including p&p and shown in the photograph above with the T-shirts.

A Must for French Mountain Flying

A map showing all the areas of potential danger in the southern French Alps has been published by the authorities in the Alpes de Haute Provence. Essential study for all those who propose flying in the mountains of France, it is available at 70fr including p&p from: Association Alpes de Haute Provence Sports Aeriens, Conseil General, Hotel du Departement, Boite Postale 216, 04003 Digne Cedex, France.

AeroShopping

Get off to a flying start



BASIC EXERCISE NOTES FOR GLIDING INSTRUCTORS

- **Exercise Plans** covering training from ab initio to early post solo.
- **Instructor's Notes** giving advice on technique, training sequence and pitfalls.
- **Ideal** for candidates preparing for the **Assistant Instructor's Course**.
- **Good Revision** for all **Gliding Instructors** wishing to improve their technique.
- **A sound base** for **Club Standardisation**.

Written and compiled by ex-BGA National Coach **Ken Stewart**

Produced in a handy pocket size, knee-pad format. Flip over for easy reference. Clearly printed on durable plastic paper.

£6.00 each + p. and p.

The ever popular and practical

KNEEBOARD

The GB-3 Glider Kneeboard with moulded back and velcro strap to suit thigh. Fitted spring clip to retain Flight Log pads etc. Functionally slim and usefully pre-printed with take-off and landing checks. Manufactured in long-lasting durable plastic. Glider Pilots Flight Log pads always available.





The Glider Pilots'

LOGBOOK



Casebound Glider Pilots log book containing sections for gliding certificates and other qualifications, previous experience plus space for handling notes. Page layout incorporates columns for Type, Registration, Holders Operating Capacity, Place and Type of Launch, Time Flown and further remarks.

Books, Charts and more Books in the Glider Pilots

BOOKSHOP

Aero Shopping hold a comprehensive range of books and charts for the glider pilot.





ORDERS AND PERSONAL CALLERS TO:
Aero Shopping, 50A Cambridge Street, London SWIV 4QQ. Just five minutes from Victoria Station to view two floors full with everything for Glider, Fixed Wing, Balloon and Microlight pilots.

TRADE ORDERS TO: Airtour International Ltd., Elstree Aerodrome, Herts WD6 3AW. 01-953 4870/6064

Payment can be made with the following cards

FASTPHONE ORDERS 01834 9307

1st AeroShopping

BRENNIG JAMES

THE BEST OF GLIDING

Brennig James has discovered that soaring the Sierra de Gredos ridge in Spain is the most enjoyable gliding he has ever experienced, particularly the challenge in marginal conditions



A map of the area.

When I flew to Malaga in my SF-27CM in 1979 I could see the slope of Sierra de Gredos and its airfield on my map. When I did my first 1000km in 1986 I saw a line of splendid cumulus along its summit from the north but it wasn't until last summer that I was able to explore the slope properly.

Ingo Renner and I each did a dozen flights along the 140km ridge which runs SW and starts about 50km from Fuentemilanos. The ridge rises from 6000ft to 8500ft and the ground to the south is 1200ft. There are only three problems – getting to the ridge, staying on it and getting back.

The ground within twenty miles is unlandable but there is an airfield at Delta, just to the north, which may eventually be the best wave soaring site in Europe. At the moment it is deserted although it has excellent facilities.

Usually a bit of a struggle which is much more fun

In a southerly wind there is often an exciting combination of wave and thermals to get to the ridge and slope and thermals to fly along it. On a good thermal day you can fly from cloudbase to cloudbase at 10000ft though usually it is a bit of a struggle which is much more fun.

The TP I prefer is Piornal on the slope. You need 9000ft of the ridge near El Almanzor (8500ft) to get to the Avila valley which is landable but sometimes considerable ingenuity is needed to get that height – I was once stuck under a layer of cirrus which refused to budge. I saw a series of cumulus fixed at even intervals along a line west from El Barco de Avila, so flew back to Sierra de Tormantos and picked up the wave system, using the cumulus marking the wave to get back to the Avila valley and fly home.

Once I found wave to 20000ft near Segovia and joined the ridge at the eastern end on a straight glide at 7000ft, and there was the day a series of waves from 12000 to 15000ft got me to the ridge.

Another way is to use thermals to fly to Mengamunos then dive through the gap north of Arenas de San Pedro. This is quite scary and you need about 12000ft before you start for the gap.

Once on the ridge you must first identify the Delta airfield as this is your only funk hole. Nearby to the south are enormous pig farms covered with a shiny aluminum roof which can be seen for miles.

The ridge is fascinating with a full range of rugged scenery. You can fly very fast close to the crest in places but if flying west it is better to stay high because if you get caught behind a bastion you can get stuck while you work for a climb in an area almost full of sinking air. The ridge is very remote and inaccessible so there is plenty of wild life. Ingo gets in very close and assures me the little black spots you can see are in fact wild mountain goats with huge curling horns. It is fun to whiz along a ridge which would take days to reach on horseback.

I think Sierra de Grados is the most exciting flight in Europe because it relies heavily on your ingenuity as well as all your gliding skills. Several other Brits flew the ridge last summer with Ingo and all were greatly impressed. My special thanks to Ingo who found and explored this flight and encouraged us to fly it.

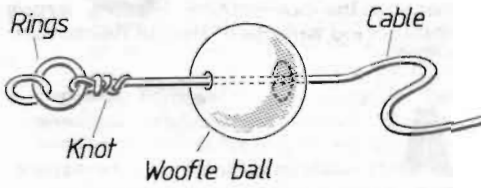
HARVEY CLARKE

WOOFLE BALLS

Harvey Clarke, the DCFI of the Royal Naval GC, reports on a useful device for aerotow ropes used in the USA

During a visit to Soar Minden, Nevada, I noticed an interesting device used on their aerotow ropes, known locally as woofle balls and made by Woolfe Ball Co. USA.

They are a hollow plastic softball, complete with holes, used in training – softball is a namby-pamby version of baseball.



The woofle balls have a small hole, just larger than the diameter of the aerotow cable, cut in one side and another larger hole, about 2in in diameter, diametrically opposite. They are threaded on to the aerotow rope.

The aim is that they are free to slide up and down the rope. The Tost rings are attached using a knot very close to the rings.

The woofle ball stops the flicking to and fro of the cable end and during the approach and landing it lifts the cable end level with the tug, protecting the glider end and rings from abrasion during landing.

It seemed a good idea and we tried it at our club with success. We bought plastic softballs from Toys Are Us at Southampton at £2.00 each.

Clipping. The CAA's General Aviation Safety Information Leaflet quotes a pilot's report in NASA's Aviation Safety Reporting System "Callback". He complains about a widespread practice referred to as clipping – speaking immediately on the keying of a microphone, thus eliminating the first word of transmission. There is often a delay between the time a receiver receives a carrier frequency and when it automatically opens the squelch so that the audio can go through. Crucial first words of the sentence are sometimes missed or misunderstood due to impatience in starting talking.

S & G CLASSIC

CHOSEN BY THE ARM-CHAIR PILOT

THE ARM-CHAIR PILOT

This series of *S&G* Classics is now at an end – nearly. You will remember that as a reward for not printing any of his own articles amongst the dozen he selected, the Arm-Chair Pilot was to be allowed one as a thirteenth, *hors concours* as it were.

The choice was inevitable, if only because of the title. It appeared in the October 1964 *S&G* (pp364-6) and is reprinted here minus three unimportant paragraphs. It introduced the *threshold theorem* of speed-to-fly theory ("Rule Two") according to which one chooses a threshold or *critical rate of climb* depending on the conditions and then flies to the usual theory with this as the MacCready setting, only circling if the lift exceeds the critical rate. It was not proved formally until nearly twenty years later (*S&G*, August 1983, p159).

Like all good theories, it keeps on being rediscovered, for example by René Comte (*Swiss Aero-Review*, 1972) and our own Platypus (*S&G*, August 1982), but it has now become the conventional wisdom, largely through the writings of Helmut Reichmann.

He that observeth the wind shall not sow;
And he that regardeth the clouds shall not reap.

ECCLESIASTES, xi, 4.



An impression of the Arm-Chair Pilot by Peter Fuller first published in the April 1972 issue, p92.

As is well known, the standard best-speed-to-fly theory makes several simplifying assumptions which are explicitly stated. It is less well known that it makes one or two implicit assumptions, and one of these is that the rate of climb in a thermal is constant. "Nonsense!" you will say, "everybody realises that *average* rates of climb are being considered." But let's take a closer look. Suppose, for the sake of argument, that thermals all stop abruptly at the same height, and that we climb to the top of each. If we are at the top of the thermal (point A in Fig 1), then the

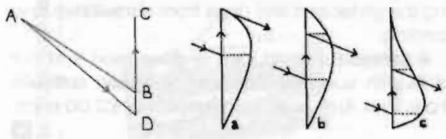


Fig 1

Fig 2

general problem is to determine at what speed we should fly in order to arrive at the top of the next thermal, C, as quickly as possible. If we fly at the best-gliding-angle (henceforth abbreviated to BGA) speed, we will arrive at B in the next thermal, and then climb to C. If we fly at any other speed we will arrive lower down, say at D, and pass point B on the way up. Since there is nothing better than the BGA, the climb from B to C is mandatory, and our problem reduces to that of finding the speed which makes for the quickest passage from A to B, *via* some point such as D.

It immediately follows that *the rate of climb from B to C is totally irrelevant*, and bang goes the standard theory. But wait! If the rate of climb from B to C is irrelevant we may give it what value we like for the purpose of calculating the best speed to fly (henceforth BSF). Let's put it equal to the average rate of climb from D to B, for then, DB being a relatively small bit, the "thermal" has practically the same strength all the way up, and we may apply the standard theory, and thus arrive at Rule One:

Rule One. When each thermal is left at the same height, the best speed to fly between thermals is found from the standard theory, but the "average rate of climb" is to be replaced by the "anticipated rate of climb" at the *bottom* of the next thermal.

In practice, thermals fizzle out gradually, and we know that it is wasting time to squeeze the last drop of height from each. Let us therefore suppose that each thermal increases in strength up to a certain height, and then becomes weaker again, as in Fig 2, where the width of the thermal indicates its strength at the corresponding height. Only if conditions are very weak, and our main objective is to stay as high as possible, will we climb to the top of every thermal (Fig 2a) because it is obvious that the time to climb a given height interval is least when the interval is placed in the strongest part of the thermal – to be exact, when the rate of climb on entering the thermal is equal to the rate of climb on leaving (Fig 2b). We may call this the *critical* rate of climb, for we will neglect any lift which is below this strength. As is well known, the critical rate of climb chosen depends upon the excellence of the day. If it is duff, we choose the value zero, snatch at any bit of lift that's going, and fly between thermals at the BGA speed; but if it is good, we choose as high a value as possible consistent with staying airborne (though other considerations will be advanced in a moment).

Rule Two is now in the bag: if we fly at the BGA speed we will use the smallest possible height interval in each thermal, but it may pay to fly faster, in which case we will go a little higher and a little lower in each thermal, using bits of thermal of strength fractionally above the critical strength. By exactly the same arguments as before, we arrive at Rule Two:

Rule Two. The best speed to fly between thermals is found from the standard theory, but the "average rate of climb" is to be replaced by the chosen "critical rate of climb".

"If we are lucky we will then find that we are still hitting thermals at a safe height . . ."

Let us now set off on a cross-country, armed with Rule Two. Unless we are very skilled at reading the conditions, or are in a desperate hurry, it will be prudent to choose zero as the initial critical rate of climb. After working a few thermals we observe that we are reaching each thermal at a safe height and immediately finding 10 up, so we put the critical rate up to 5ft/sec, say, and fly at the appropiate BSF. If we are lucky we will then find that we are still hitting thermals at a safe height, encountering at least 5 up, but not much more, in which case our critical rate is well-chosen, and we can continue to use it until conditions change. But if we find that leaving each thermal at 5 up makes us arrive uncomfortably low at the next one, or that the initial thermal strength is less than 5ft/sec, we have been too optimistic, and must reduce our critical rate of climb to 3, say. Flying between thermals, we will, of course, neglect anything weaker than the critical rate, unless the ground gets alarmingly near, in which case we will take the usual precautions.

So choose your critical rate of climb carefully, stick close to Rule Two, and, if in doubt, fly a little slower than the corresponding BSF. It need hardly be added that the down between thermals can be taken into account in the normal way.

LIGHTWEIGHT PILOTS

Bill Scull, chairman of the OSTIV Training and Safety Panel (TSP), wrote this paper, "Recent fatal accidents to lightweight pilots", based on work by John Shipley, BGA Safety Panel chairman, who is also very concerned about this problem. It was discussed at the TSP's recent meeting in Stuttgart with the aim of getting more data

There have been three fatal accidents in recent years to female pilots flying at or near the minimum cockpit load limit. The gliders dived into the ground (without turning) from a height in excess of 1000ft (above 2000ft in two cases). Each of the accidents has possible causes absent in many other accidents.

ASW-20

The glider was being flown with the C of G behind the aft limit due to tail ballast being added without the cockpit placards (weight data) being amended. This was not a problem until an underweight pilot joined the syndicate.

The pilot was an ex hang glider pilot who converted to the new type with limited experience (less than 100 hours). The hang gliding pitch control (the bar) works in the opposite sense to the stick in a glider! There are a number of possible explanations for the failure to recover from the dive:

- In a stressful situation did she revert to her hang gliding practice for stall recovery or
- Experience reduced or negative *g* before entering the dive or
- Was the trim left free (unlocked) reducing control "feel" and stability?

The final speed at impact was calculated to be 240kt (340km/hr); at this speed there is not sufficient elevator control to counteract the effects of wing distortion and certainly not to pull out of a dive.

Olympia 460

In this accident the pilot was small and lightweight although extra weight to bring the cockpit load above the minimum was carried. However, the glider is known to be nearly neutrally stable in pitch. The pilot had flown for three hours in strong thermals and without her head being covered. She had 42 hours/107 flights experience with only five hours on type. Also:

- Soft cushions behind the pilot, the reclined seating position and badly fitted straps probably allowed the pilot to slide forward.
- Her small feet may have gone beyond the rudder pedals and it may have been impossible for her to get her feet back on the pedals.
- If she slipped forward then backward movement of the control column may have been limited or impossible.

In the dive the glider appeared to oscillate in pitch. This may have indicated possible attempts to recover from the dive. The glider broke up in flight (wing failure).

Blanik

The pilot was on her fifth solo flight and had a total experience of 71 flights and seven hours; she had recently had a severe head cold. Because of her light weight the pilot had to carry a ballast weight under the seat. It is not thought that this could in any way have interfered with the controls.

Although the glider was seen to dive vertically it had recovered to an angle of 20° at impact. It is uncertain whether the glider:

- Pushed over into the steep dive, or
- Stalled and the recovery was over-controlled, or
- The glider had spun and that there was insufficient height to recover from the dive.

The latter is the most likely to be consistent with the speed of impact.

Conclusions?

Subjective conclusions which are common to these accidents are:

1. The three pilots **were considered competent** for their level of experience; indeed they were considered "reliable" in that throughout training and supervised solo flying they **gave no cause for concern to their instructors.**
2. Most instructors (male over 150lb, 68kg) have no experience of flying gliders near the aft limit and may have little appreciation of how a glider behaves with the C of G near the aft limit - and therefore cannot advise lightweight pilots of the **behavour and sensations** when unusual pitch changes are made.
3. The possibility of a reduced *g* push-over could explain the initial dive. Also a sharp gust could be mistaken for a stall with similar results.
4. The possibility of an excessive pull-up to reduce speed giving an attitude and speed reduction similar to, say, the fourth or fifth stall in a series of "stick-fixed stalls". This gives marked rotation in pitch at the automatic nose drop. The attitude and speed changes might surprise an inexperienced pilot.
5. Having got the glider in a steep accelerating dive the speed would soon be **in excess of the maximum speed at which the pilot had flown before!** Could they have dealt with this situation? None of the pilots opened the airbrakes to restrict acceleration.
6. Once past design dive speed (V_{NE}+10%) the controls may need considerable force to move them or, (as with the ASW-20) it may be impossible to recover from the dive.
7. In the Olympia 460 and the Blanik accidents sufficient ballast weight was carried to be within the minimum limit and was properly secured.
8. There were no problems with the glider structure or the controls before the accident.

Possible Recommendations

1. Use of thick foam cushions should be positively discouraged by all clubs and instructors. Publicity for **slow energy release cushions** to be renewed, also **anti-slip mats should be used for GRP glider seats.**
2. Instruction before solo to be extended to include more practice of:
   - Reduced *g*:
   - Stick-fixed stalls:
   - Recovery from dives (in addition to spin recovery):
   - Flying at speeds up to maximum rough air and, where possible, up to never-exceed.
3. Lightweight (possibly all) pilots to be specifically briefed on the possible problems and the dangers of flying at or near the minimum cockpit load with reference to glider handling and pilot perceptions.
4. Flight without an effective horizon (IMC) to be positively discouraged for inexperienced pilots.

Some Further Thoughts

There is evidently increased awareness of the problems small, light pilots have to cope with. Recent conversations have shown other problems.

Even with ballast some pilots still fly at only a few pounds over the minimum placarded figure. In some cases it is difficult or impossible to fit ballast weights in the nose. Carrying sufficient ballast on the seat may be a problem in terms of security. Ideally weights should be bolted in place; certainly tied in is not good enough. The risk of the weight sliding forward in turbulence or reduced *g* is significant and potentially fraught. The crash case precludes stowing weights behind the pilot. It is interesting to note that in some countries the airworthiness requirements demand a secure fitting for ballast weights.

The final thought is one on ergonomics. While a pilot may just be able to reach the controls in a static situation will they still be able to do so when the glider is accelerating, say at the start of a winch launch? Small pilots really do need to exercise their minds over such possibilities if they are to fly safely.

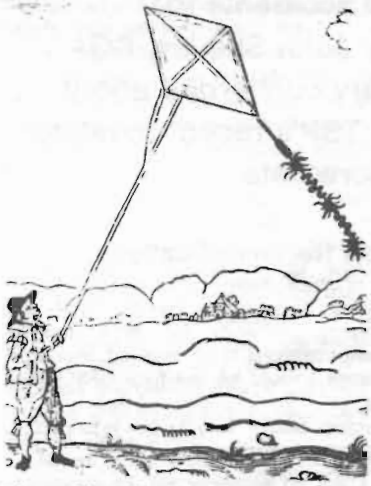
LOOKING BACK



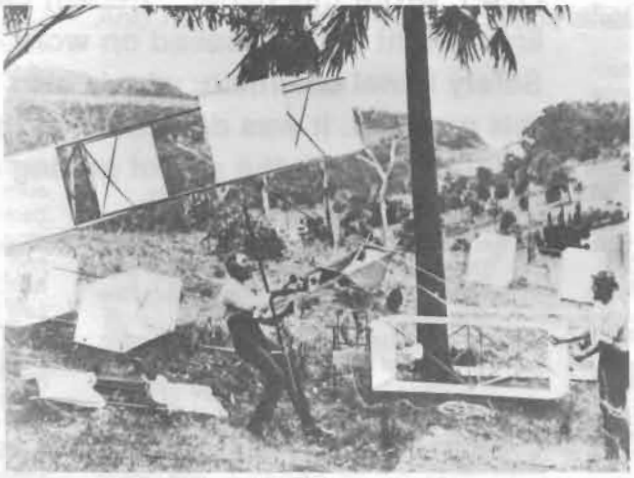
LAWRENCE HARGRAVE 1850-1915

The idea that man might fly has gradually taken hold over the centuries, nourished principally by three phenomena. The first of these is the spectacle of bird flight, which has tempted isolated individuals from time to time into strapping on crude wings and leaping off the nearest eminence. Usually the experiment has had uncomfortable results.

The idea of man-flight has been reinforced by widespread representations of winged gods, winged angels and winged men in sculpture, paintings and literature.



The earliest English illustration of a kite (1634).



Hargrave experiments with box-kites in Australia in 1893.



A box-kite machine makes the first powered cross-country on October 30, 1908. The pilot was Henri Farman.

But to many people the most practical demonstration of the supporting power of air has been the strong pull of a kite when flown in a fair wind. It is impossible to say how long kites have been flown, but it would be as long as 3000 years in the Far East and since Roman times in Europe. Since very early times it is probable that men have been carried aloft by kites, either deliberately or by accident, and since the 18th century serious scientific experiments have been carried out with them.

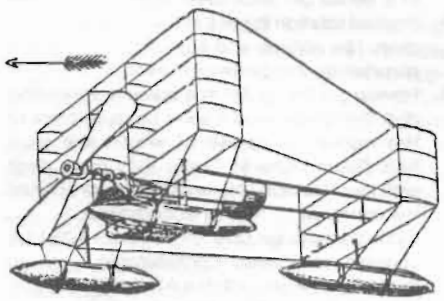
The history of kites includes many famous names and we cannot do justice to them all, so I have decided to write about Lawrence Hargrave, because his work on kites was mainly motivated by the urge to invent the aeroplane, and because he introduced a new type of kite that was to influence profoundly the design of some of the early gliders and aeroplanes.

Lawrence Hargrave was born in Greenwich, England, and emigrated to Australia at the age of 16. He was convinced that man would soon be able to fly and he applied to the problem his exceptional talents as engineer, as mechanic and as methodical and persistent experimenter. He kept detailed notes of his experiments and from 1884 onwards reported results to the Royal Society of New South Wales, which published them regularly.

He designed and built a large number of model aeroplanes which flew successfully, some propelled by "flappers", others by airscrews, and he powered his models with a wide variety of home-made motors - clockwork, stretched rubber, compressed air, and a steam engine that was described by Chanute as "a marvel of simplicity and lightness".

However, his greatest contribution was the invention of the box-kite (1893). He was looking for a kite with more stability than existing models and after building more than 100 different types he found that the passage of wind through a rectangular cell gave excellent stability in roll, better even than a kite with a large dihedral angle. He also found that mounting two cells one behind the other gave good stability in pitch and, furthermore, by making the nearly horizontal surfaces curved instead of flat, the lift of the kite could be increased dramatically relative to the drag. Here is what he reported:

"These kites have a fine angle of incidence, so that they correspond with the flying machines they are meant to represent, and differ from the kites of our youth, which we recollect floating at an angle of about 45°, in which position the lift and the *drift are about equal. The fine angle makes the lift largely exceed the drift, and brings the kite so that the upper part of the string is nearly vertical. A flying machine with curved surfaces would be better than one with a flat body plane, if the form could be made with the same weight of material."



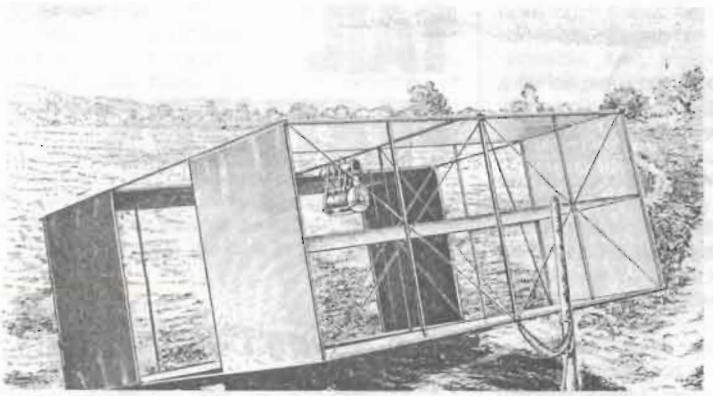
The Hargrave box-kite design which appeared in *L'Aerophile*, August 1902 and may have inspired the Voisin box-kite float gliders.

In 1894 at Stanwell Park, Sydney, he made his one and only excursion into the air, when he was lifted five meters by four box-kites rigged one above the other on the same line.

Hargrave refused to patent his ideas, so his work was widely reported in aeronautical circles and universally acclaimed. It had three principal results. In 1899 he returned to England bringing some box-kites with him and presented them to the Aeronautical Society of Great Britain at a meeting in London. Among those who understood the significance of his work and profited from it was Percy Pilcher, who incorporated some of Hargrave's ideas into the new glider he was designing at the time.

Secondly, his box-kite was adopted for routine meteorological observations, because with its enhanced lift, larger and more complicated payloads could be carried to ever increasing altitudes. For example, by 1900 at the Blue Hill Observatory near Boston, USA, box-kites were carrying meteographs to altitudes in excess of 3000m, a feat calling for a steam-driven winch. The meteographs recorded temperature, relative humidity, pressure and wind velocity, so that tephigrams became available on a much more regular basis than before. However, it was much

*Drift in those days is roughly what we call drag today.



The Hargrave box-kite carrying a meteograph at Blue Hill Observatory, USA in approximately 1900.



A box-kite glider (Voisin/Archdeacon) on the Seine near Paris in 1905. Reproduced by permission of the *Musée de L'Air*, Le Bourget.

later that the significance of these data for the prediction of soaring conditions was understood.

To aeronautical research the main interest in the invention of the box-kite derived from its inherent stability. Whereas by 1905 the Wright brothers had developed unstable gliders and aeroplanes which they had learned to fly by modern three-axis control, European experimenters were still obsessed by inherent stability. Therefore, many of the earliest European aeroplanes were based on the Hargrave box-kite.

For example, the Voisin-Archdeacon and the Voisin-Bleriot float-gliders of 1905 were probably inspired by a Hargrave design of 1902 of a box-kite aeroplane mounted on floats and driven by a tractor propeller. It had been Hargrave's intention to test the design in Sidney harbour but the machine was never built. Both Voisin gliders were test flown on the river Seine near Paris, towed behind a motor boat. The Bleriot glider crashed, but the pilot, Fabriel Voisin, escaped with a ducking.

These gliders were very important historically, because they were the first aeroplanes to incorporate the Hargrave box-kite principle and they launched a classic series of bi-planes. For example, in 1906 the colourful Brazilian Santos-Dumont was thought by many to be the first pilot to fly a powered machine when he made a hop of 220m in his powered box-kite, 14-bis. Unfortunately for him, the Wright brothers had beaten him to it by three years.

Hargrave had been right in 1893. In a letter to Chanute, he had expressed his great confidence in the outcome of aeronautical research: "I know that success is dead sure to come." It did – just ten years later when the Wrights first flew their motorised glider at Kitty Hawk. The news filtered slowly into Europe, where despite general scepticism and some outright disbelief, it provided the spur to a revival in aeronautical experiments. This revival produced many flying box-kites, some quite successful like the Farman machine of 1908.

TWITTERINGS

Some ramblings by Sparrow

A Rose By Any Other Name

Still being a bit of a newcomer amongst the gliding fraternity, I haven't plucked up courage until now to ask a non-technical but, nevertheless, mystifying question. Why is it that the very beautiful, very expensive objects of our veneration don't enjoy the status of a name?

Like yachts, sailplanes are largely glass-fibre nowadays and tend to look like peas in a pod. And like yachts they are often syndicate owned and the apple of their owner's eye. No self-respecting yacht is without her name on the transom, even if it is only "Saucy Sue".

So far I have seen only one sailplane with its own name, the rest being anonymous apart from make and model type. Is there some Freudian reason for this or are we all so busy flying we never get around to personalising our sailplanes?

* * *

Along with striving for perpetual motion and searching for the lost chord, the world has another apparently unsolvable problem; one that concerns our two K-13s. Should you wish to start a lively debate at our club, just comment on their respective flying characteristics. It's just like lighting the blue touch paper and retiring immediately!

Of the two airframes, neither are new – one less so than the other. They are visually similar but one has mass balanced ailerons. It is how they fly, or are alleged to fly, that is the root of the matter and even our instructors and other resident pundits are undecided.

One camp, with which I ally myself, maintains that the older airframe flies more easily and more sweetly. The other camp says "stuff and nonsense, they are identical" and suggest we should stop bickering and get on and fly.

As for the objects of the discussion, I bet they have a good chortle at our expense when the hangar doors are closed!

Six Minutes of Mayhem

Some while ago I had the honour of chatting to a chap who, in the former employ of the King, had delivered unpleasant ordnance to the Third Reich. I use the word honour deliberately as he was a Lancaster pilot in the Pathfinders and has a meritorious record gained on more than two tours.

Between tours, like all crews, he had an obligatory spell to instruct "sprog" crews. Time has dimmed his eyes and his memory but in one matter he was quite certain. The time he spent training others was more terrifying then operations over the Ruhr.

What has this to do with gliding I hear you say? Well, not a lot except that I suspect a number of our instructors may well prefer to risk flak than sit behind me in a K-13.

The problem for this sprog is that the tug won't stay in the right place. It leaps about hither and thither until the gyrations and the bow in the rope reach epic proportions. At this point, "I have control" from the back seat reduce the stress level and cures the problem without too much damage to my ego.

All in all, instructors are amazing people. Only once has my inelegant flying style caused more than amused tolerance from behind and then, after explaining my error, the instructor confided that he himself had experienced trouble in taming the tug when he learnt to fly.

"Don't worry, it'll soon come right," he assured me. At the moment, though, I'm relieved that it only takes about six minutes to get to 2000ft.

Please send all contributions to S&G to the editorial office, 281 Queen Ediths Way, Cambridge CB1 4NH

MERRI'S PROGRESS

A Co-operative Effort



You've been subjected to my ruminations on how I've tried to progress for a while now and I decided that perhaps a change was due. Gliding is a co-operative activity, and I'm fortunate in that my husband shares my interest. He, along with others has been responsible for shaping my ideas and has played a large part in my progress, such as it is. I asked him to contribute a bit on "the care and feeding of a gliding fanatic", and what follows is the result. I had hoped that he would let you into the secrets of teaching the principles of flight *via* sweet nothings whispered in my ear under circumstances unprintable in a family magazine, or the figurative klicks in my posterior administered with a view to getting me to fly in conditions which had me almost in tears from fright. I trusted him, and I knew that he (and the CFI) were right, and I launched. And I benefited. I shall let Derek discuss the impact that gliding has had on our life in his own words, and simply say how grateful I am that I married someone who can bow so gracefully before the inevitable!

Derek's version of events:

For quite a long time I dreamt of what I would do with the terminal grant the RAF was going to give me after more years' service than I would wish to admit to. How about a long overseas holiday, a rebuild of my trusty old MG B or even a bigger house? Unfortunately several years ago I set into motion a series of events, over which I no longer appear to have any control – the fiduciary results of my toils appear to have been converted to glass-fibre and put inside a tin box on wheels currently located just south of Lambourne, Berks.

All this was triggered by an invitation I found impossible to refuse, a four month all expenses paid penguin spotting holiday just north of the Antarctic. My only reservation was what my diminutive American wife would get up to with the family cheque book in my absence. In retrospect I should have given her two cheque books and told her to go to Harrods as I think it might have been more effective as a damage limitation exercise.

I think it may have been the prospect of a cheap (it is in the RAF), time consuming activity which made me take Merri to Bicester in the first place. She was rather unsure for the first few flights, but then Terry Joint recognised an incipient fanatical gleam and fired her off in the Janus. She came back totally hooked. I didn't notice myself at the time; however, next morning's discussion in bed about adverse aileron yaw, began to give me an inkling of what I had let myself in for.

About three months later when I left for my holiday, Merri had already been solo and was eyeing up the single-seaters. Letters heading south to me were rather one-track. I firmly believe that if an H-Bomb had gone off over Oxford the only comment would have been about the thermal strength. On my return I found that the housekeeping money I had left had not even seen the front door. It was found firmly tucked away in a converted form between two green covers with a Leicester address on the front.

As with any extremely enthusiastic person, Merri's desire to progress in gliding is substantially greater than other occasional factors such as weather and experience level. In the beginning a bad weather forecast would mean a quick retreat to the local pub, before a one-sided discussion on the vagaries of the British weather ensued. However after two years of tuition and a PPL course (remember Harrods?) I think she has finally accepted that her influence in this area is somewhat limited.

A patient dissection of events will reveal the faults

Continuing with this learning process, a major triumph was persuading Merri that throwing one's teddy bear into a far corner of the hangar after a bad flight is not perhaps the best way to progress to better things. Rather a patient dissection of events will reveal the faults and thereby allow one to learn from them.

The one great advantage of increased knowledge is a corresponding rise in confidence. No longer is the long-suffering husband or instructor required to almost forcibly close the canopy on a near tearful pilot prior to a first flight on type/new gliding site/new weather conditions, knowing full well the fanatical gleam would reappear on the subsequent canopy opening. An invitation to fly a new type these days brings forth little more than a request for a briefing and a comment about "conversion beers".

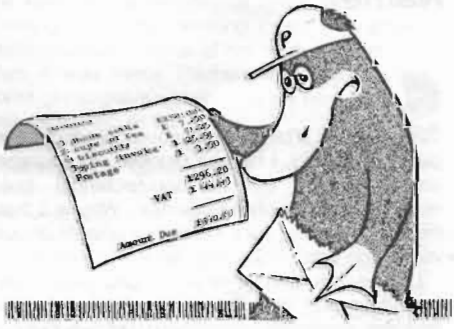
So where do we go from here? The advent of the privately owned glider brings with it the more advanced areas of waterballast, flaps and flight directors. All these will need to be addressed and means that Reichmann will come out in deadly earnest to aid Merri's Progress. Who knows, I might even be allowed to fly it on the odd occasion (Only when it rains, Darling! – M.H.).

TAIL FEATHERS

The Seven Deadly Sins: Avarice

Naturally, my sole interest in money is so I can afford to glide, and anything that threatens to stem the flow of launches or trips to Oz must be taken seriously. A few weeks ago my boss called me in and began talking to me about the amazing opportunities there were to be found in the world of consultancy. He's very subtle fellow, for I was out in the corridor before I realised I'd been fired. Nevertheless he was right about the consultancy racket. With this change of life I had to pay for a financial consultant and a legal consultant (that's the same as an accountant and a lawyer, only costing twice as much). The first one had a plush office in St James's St, right near the Palace, and he oozed charm and reassurance and said "Now, Mr P, tell me all about it *in your own time*" and on his desk is this damn great clock, with the big hand marking the fivers and the little hand quietly sweeping up the hundred pound notes.

The lawyer was even smarter – she operated from a little Victorian house in Fulham, no overheads – and charged £120 an hour. Two pounds a minute! We dealt entirely by phone or post. I don't know whether she fancied me but she kept inviting me round for tea, and I thought "Even Lyons Quickbrew takes four minutes, that's an aerotow – and this could be an oriental tea ceremony – plus VAT – and I'd have to sell the glider!" I felt that anything I said or did in her



Used in an invoice.

drawing room might be taken down and used in an invoice. All the same I suppose I could have done worse than have a lady friend who could earn two pounds a minute without getting up off her sofa.

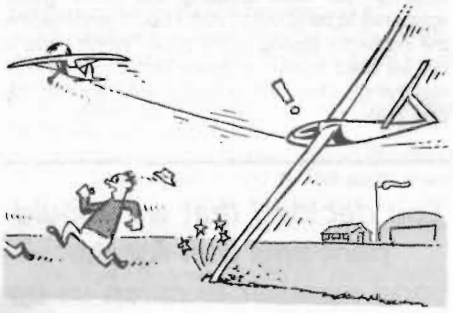
So I have become a consultant myself - and there are two simple mottos which are "the higher the fewer", and "less is more". Have nothing to do with anyone below the rank of chairman or managing director; let them do all the talking; and send them a massive bill so they *know* they have been well advised. I'm hoping to get to the position where I sit crosslegged on a cushion for one hour at breakfast-time, seeing a stream of tycoons for ten minutes each, then my chauffeur can get me up to the club before the thermals start.



Get me up to the club.

The Seven Deadly Sins: Lust

For male pilots it is well established that sex is a substitute for gliding, not the other way round as supposed by Freudian psychologists. The reason is fairly straightforward. Male pilots assume that their womenfolk (I'm talking about those men that have womenfolk; large numbers of gliding men don't want anything to do with women) are available for their pleasure at any



Waterballast in one wing.

time, whereas the marvellous combination of an available glider and good soaring conditions is so rare that it must be seized, and everything else can wait. But I wonder if the men don't assume too much.

There must be huge opportunities for a ruthless seducer at gliding clubs. Think of all those bored, neglected women, their men miles away, in mind if not in body. Now I myself have never stooped to take advantage, not even when it was unsoarable. I have to say it is mainly cowardice rather than conscience. Think, for a moment, of the consequences if you actually stirred a fellow member to a fit of jealous passion. (Hard to imagine at my club; about the only thing that would stir a fellow member to any kind of jealous passion would be if you sneaked your glider into his place on the aerotow queue.) But it is just possible; then, imagine, halfway through the take-off run you discover you have 200lbs of waterballast in one wing and none in the other; or the elevator is disconnected; or you go into cloud and the terminals on the turn & slip have mysteriously been reversed. You are playing with fire. That is why at gliding sites, in comparison with what I'm told goes on at golf clubs or fox-hunting circles, I hear so little scandal. (Or maybe I've just got cloth ears.)

There is one small exception. Well, it is a pretty big exception really, and it's called ******. I am told it is rampant at ******. Rife. Long before those terrible gales it was a rule at ****** that the caravans had to be tethered firmly at both ends with steel hawsers - they didn't worry about the gliders or trailers, so they blew all over the place in the last hurricane, but the caravans have to be secure. I think the committee were more concerned about noise pollution rather than about the caravans getting loose and bouncing their way down the perimeter track in broad daylight.



Caravans getting loose.

So I've often thought, since for the reasons I have mentioned it's not a good idea to do it on one's own doorstep, that it might be fun, on a day when my partner has the glider, to nip down to ****** and make a few low passes, so to speak. But I know that with my luck and my character, at the end of the day it would be an emotional disaster of guilt, remorse and self-recrimination. Because, when the tom-cat crawls home at the end of that day of debauchery he will switch on the answering machine and hear his partner's voice: *"Hello Plat, this is Fred at 9.00am. I have been re-rostered and have to fly a 737 to Frankfurt this afternoon, so the glider's all yours, rigged and ready to go. Looks like a 600km record day. Happy soaring!"*

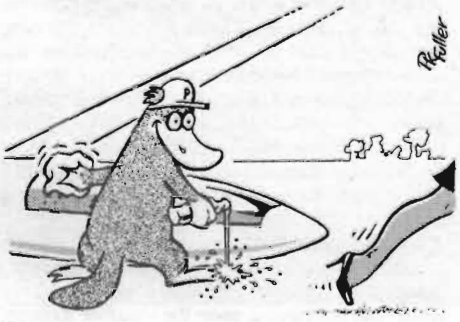
Aaaaarrrgghhh! What have I done? What a



Aaaaarrrgghhh!

stupid, mindless waste! (Bangs head against door.) Miserable, lascivious wretch! This is your punishment; the Day of Days, thrown away in a caravan with the blinds drawn! Where's the gin bottle? etc, etc.

The moral is: men who are tempted to infidelity, stay faithful to your loved one, do not stray, for



Do not stray.

that can only lead to woe. That's right, stick with your glider. Take a cold shower every morning and go up to the club without fail; you never know, the Lord may smile on you and drop the wingroot on your partner's foot. Your reward will be in Heaven - *ie* anywhere over 5000ft clear of restricted airspace. Here endeth the lesson.

PS. My apologies to women glider pilots for leaving them out of this farrago. Researchers into this small but increasingly important group are only just beginning. Offers of information and assistance gratefully accepted. First-hand accounts preferred.

SAILPLANE NEWS

- Wind-tunnel trials have been conducted in Germany on an ASW-24 fitted with the Fischer+TOP auxiliary engine, which is capable of being fitted in only about 5min. At 90km/h the additional drag created by the TOP unit was only 140gm - astonishingly low according to the Akaflieg researchers who conducted the trials. With TOP fitted, the AS-24's rate of sink at 70 and 90km/h was calculated (using a well-proven mathematical model) to be only about 1cm/sec higher than that of the clean version - *ie* negligible for most mortals. At 115km/h it increased to 5cm/sec. The comparison is of course only valid at equivalent wing-loadings. Thus, the "clean" glider was assumed to be carrying 40kg of water. Fitting the TOP reduced the best glide angle by 0.8. (41.2 at 110km/h).

- Lithuania is the only Soviet republic (if Soviet republic it still is) involved in producing modern high performance gliders. The last notable Soviet type was the LAK 9, first seen at the 1976 World Championships in Finland, but details have now been released of two new types: the LAK 8, a 20.6m side-by-side two-seater with a claimed best glide angle of 42, and the LAK 15, a 25.6m single-seater designed to rival the Nimbus 3 and ASW-22; for which 1:59 is claimed. Lithuania hosted the 1989 Baltic Cup, and pilots from all the Scandinavian countries were given a very warm welcome

Max Bishop

300KM IN A T-21!!!

Lou Frank became quite a legend in the 1970s and 1980s with his T-21 flights and two were written up for *S&G* by syndicate member Norman James. But we never got them! However, when Norman was clearing out his garage this spring he found them with the photographs and maps, plus an introduction by Lou. They are such a good read we are pleased to publish them, starting with this amazing 310km flight to Devon.

At the time Lou wrote: "For over 20 years I have crusaded against the myth that gliding is an expensive sport – even the syndicated cost of a modest glass glider is enough to frighten off many would-be participants. When seven Coventry GC members teamed up to buy our T-21 a number of years ago it cost us around £100 each. Since then we have flown well over 20000 cross-country kilometres (many flights in excess of 200km) and have probably had more fun per hour than most pilots. This is our first 300km – but probably not the last. We hope this will inspire more pilots to go balloon racing in vintage gliders!"

It certainly had this effect on Norman who has made a name for himself with some extraordinary flights in his Tutor to win the Firth Vickers trophy for coming second on last season's National Open Ladder. He has promised to write us an article about this but first we can relive his experiences with Lou. The second flight was to the Isle of Wight.

This is an account of the realisation of an ambition by Lou Frank to achieve a Gold distance flight in the syndicate T-21 based at Husbands Bosworth airfield. I was just fortunate enough to be there at the right time.

Now, as we all know, all Gold record attempts are preceded by weeks of meticulous planning and preparation so that all eventualities are catered for and the glider is in absolutely top condition and race prepared with the best instrumentation for the task. That's how it should be!! In this particular case, the preparation consisted of Lou's tremendous enthusiasm and a forecast of a strong north-easterly unstable air mass moving over the country.

The day started as far as I was concerned with a good hearty breakfast and mugs of tea, whilst I perused the paper and decided what sort of day it would be, not having seen the weather forecast because of an urgent commitment at the club bar the previous night.

Threw the basic flying equipment into the car and set off for the club

Having decided it was a flying day, I threw the basic flying equipment, *ie* sunglasses, sunhat and some money, into the car and set off for the club. Having made sure there were sufficient tugs for the day's flying, I had a coffee and started to DI the IS-28 in which I had a share.

It was at this point, *ie* about 9.30am on May 12, 1984 that things started moving when Lou rushed up and said "What do you think you are doing?"

"DI'ing the glider" I said. "Don't mess about with that – we are going to Plymouth in the T-21" came the reply. "Oh" said I, closing the canopy and disconnecting the battery and following Lou. "Who's retrieving?" I asked. "Don't know yet but we'll get someone" I was told. "Let's get it rigged."

Enlisting the help of some volunteers from the clubhouse, we rigged the gleaming re-profiled T-21 and Lou gave it a good DI whilst I went and filled the car with fuel, got as much warm clothing as possible from home and hitched up the trailer.

By this time it was about 10.30am and Lou had persuaded Roger Goodman he didn't really want to fly the K-8 but would much prefer to drive down to Plymouth and retrieve the T-21 and crew!!

The meticulous preparation was over. On to the launch point, dressed up like something from "Scott of the Antartic", we got into the glider with provisions and were away at 11.15am. Lou pulled off at 1500ft in strong lift and we climbed away at about 10 on the green ball. (I believe it was in ft/min but it wasn't important because the speed to fly scale was missing.)

At 5500ft asl we were off on track. Actually at this point we could not have got back to the airfield if we had wanted to because the wind at this height was about 30kt.

Anyway, we were committed and Roger radio'ed to say that he was rolling and would try to keep in contact. "You have control" said Lou. "You can get the feel of it and settle down". I had flown the T-21 before but the crisp rate of roll and critical flying speed always takes one by surprise for a moment. "Head for that big cloud over Rugby masts" instructed Lou, which I duly did. As we approached the point where I would expect the lift to start, the red ball on the rapid reacting Cosim vario started to come down. When it reached the bottom it stopped but the green ball didn't move. "We'll turn then" said Lou, at the same time striking the vario with a blow of which any karate expert would have been proud. The green ball went up. "Sticks a bit" said Lou, "but you will get used to it – fly with you bum". "OK" said I, thinking to myself this is going to be a fun flight.

The lift was good and regular and we were operating between about 3500ft and 5000ft asl where the airways would permit; we were over Gaydon airfield in no time at all. Lou got out his tape recorder and told it that the lift was good and visibility absolutely superb. We contacted Roger in the retrieve car and found that he was already close behind us.

At this point I should explain that Lou had an aversion to left hand thermals, so part of my briefing was that I sat in the left hand seat and took left hand thermals while Lou would take right hand thermals.

We were making good progress over the ground with plenty of good thermals and a strong wind. We decide that with the wind probably having more of an easterly component, the further south we went we would track in a more southerly direction to allow for the drift.

The conditions were still superb as we passed close to Enstone where we saw gliders on the grid waiting for a competition launch. We contacted Roger and found that he was still close behind. We flew over Little Rissington and on towards Cirencester. Approaching Kemble airfield we spotted two RAF motor gliders obviously on a training mission. We cruised on at our best inter-thermal speed of 38kt (some say it should only be 37kt) when suddenly on our port side was one of the motor gliders flying alongside with the pilot waving. It was interesting to note that although we were cruising, the motor glider appeared to be about to stall. I could just imagine the instructor saying to his pupil "When I was a lad we used to train in those aircraft – that was real flying". Then with a typical RAF flourish, he was gone.

Lou decided that we should park and wait for the good weather to catch us up

There were several gliders flying in the area, probably out of Hullavington. The cloudbase was still about 4500ft, but there was not much sun on the ground ahead. Lou decided that we should park and wait for the good weather to catch us up. Now this is a technique which I had not come up against before but it consisted of climbing slowly in good lift and waiting for the weather to break. An interesting fact showed itself – although we were travelling up wind, we were still going over the ground downwind. Chippenham was underneath but we couldn't see Bath which was only about 12 miles away.

We could see some sun ahead and decided to press on. Over Bath we got some lift but it wasn't as good and ahead looked very dark and murky.

We drifted on, things not looking very promising. There were no defined clouds, little or no sun on the ground, a little bit of lift here and there, nothing solid, and we were losing height!! Close to Wells at 1500ft it was very quiet in the cockpit. Lou was flying and searching for any lift, while I was picking suitable fields.

Suddenly Lou cursed and the T-21 swung into a right turn. It must have been lift, and yes we were going up at 10 on the green ball - elation. We climbed for about 500ft and Lou said "Have you got a fix on our position? I replied "Yes that television mast gives a good fix". "What mast?", asked Lou. "The one we are alongside" I explained. "Good grief, I thought that was a straight white road" came the astonished reply. We were by then level with the top of it!

Established again but cloudbase was now barely 4000ft which wasn't much for a T-21. We tiptoed on and could see Taunton in the distance. Taunton came up and there were some more patches of sunlight on the ground but we were struggling for survival in scrappy lift. We could see North Hill but were down to 1400ft and it was doubtful if we could make it, so we decided to burn our boats and go for the sun. It worked and we were climbing again.

Airborne for about 3½hrs the cold was soaking slowly into the body

Conditions were improving and if we could stay airborne we had a chance. We had been airborne for about 3½hrs and estimated the temperature at this level to be between −7 to −10°C which gradually soaked into the body. It also made me wish that I hadn't drunk so much tea at breakfast time.

Navigation became easy - just follow the motorway until we got there.

A good cloud north of Exeter took us into cloud and we set off again at 4000ft. The south coast was now clearly visible and so was the high ground over Dartmoor so we decided that a more southerly route would be prudent.

Cloudbase was only 3500ft but as the clouds were more clearly defined we pressed on. Newton Abbot came up and we could clearly see Torbay. At 3000ft I asked Lou if he had the final glide calculator. "Can you see Plymouth?" came the reply. "Not yet". "Then we can't get there" I was told. We pressed on. The physical pain from my excess tea drinking in the morning was now getting quite severe but I decide that I could make it if conditions stayed good.

Ivybridge and climbing with only ten miles to go - we were going to make it! As we reached 3000ft it started to snow - we were very cold but the elation of being so close to the goal put the pain into the background. A gentle final glide and we reached Plymouth with 1500ft to spare. Absolute elation. We then had to look for a place to land, having been refused permission at Roborough airfield three days earlier as we didn't have radios. We climbed over Plymouth looking for a likely landing spot.



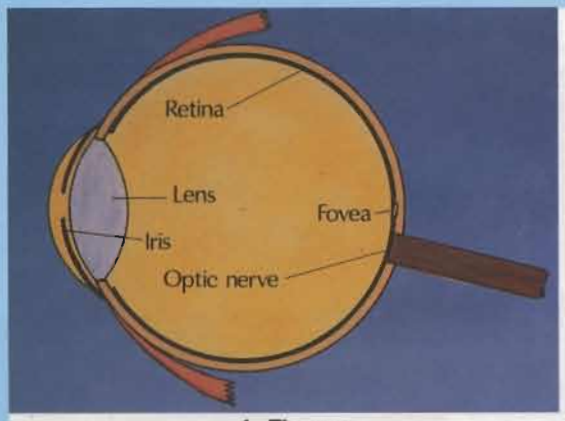
Above: Norman took time off navigating to photograph Lou at the controls.

After some discussion we decided that a field in the centre of Plymouth with a cricket pitch offered a good spot. We circled around and lined up for landing directly into wind. It was a steep approach with the strong wind, then over the hedge and we stopped with hardly any ground roll, which was fortunate because about 20 yards further on the ground sloped away at about 20°. We had made it. Central Park, Plymouth, a Gold distance and Diamond goal in a T-21. People gathered round and we were looked on with some curiosity, especially the way we were dressed, but everyone including the police were very helpful and we were soon drinking mugs of hot tea. We had a tremendous feeling of elation and incredibly Roger arrived with the trailer within 20 minutes of us landing - a further incredible feat since we had lost radio contact with him since Bath.

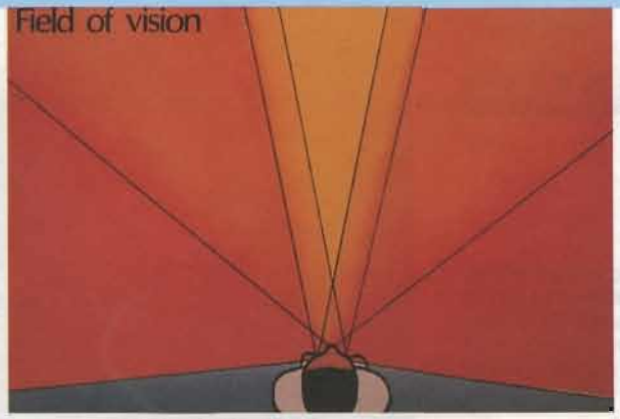


Below: The start of the adventure - wrapped up and waiting for the launch. On the right, Norman relaxes after the flight.





1. The eye.



2. Field of vision (from above)



3. Glider blind spots

STEVE LONGLAND

A TIGER IN YOU

Good lookout requires a lot more ahead, writes Steve Longland in In the next issue he concentrates conflict.

We are probably more conscious of our physical than psychological drawbacks. The **body** is not the right shape, parts of it aren't as big/small as we might like; perhaps we aren't as handsome or as pretty as we feel we deserve. Quite apart from such largely irrelevant "faults", there are definite physical limitations that come built into the human package. The eye has its share of these, as does the brain behind it. The basic structure of the eye is shown in picture 1. The brain was "illustrated" in the previous article – April issue, p72.

Light enters the eye *via* the iris – which controls the amount of light that passes through the lens – to be focussed on the retina inside. A small portion of the retina, the fovea, is especially sensitive. Close by is the area where the optic nerve which carries information to the brain enters the eye. This is the blind spot. Any image small enough to fall into this area is invisible. The eye is rarely still and even a small image is highly unlikely to fall consistently on this spot. The overlapping viewpoints offered by binocular vision also enable the brain to "smooth over" any discrepancies.

Our field of vision is quite large (see picture 2), though gazing straight ahead it extends slightly further sideways than up and down. Within this slightly flattened cone the yellow area represents where our vision is most acute **and** stereoscopic. It becomes progressively mono and less acute as we move out towards the boundaries of the cone – where it fades out completely. The peripheral area (which is actually quite large) is good at detecting movement but not detail nor small objects a long way away – or those which are surreptitiously increasing in size! Couple this with the blind spots of gliders (see picture 3) and it is clear that **good** lookout requires a **lot** more than just looking straight ahead!

One of the most remarkable things about the eye/brain is the staggering volume of information that enters the system and is almost instantly understood. We take this completely for granted, but the true complexity of the process has only become obvious during attempts to make computers do the same thing. Exactly how the brain processes the information from the eye is not well understood, but it is adept at producing comprehensible results, often on the basis of minimal information. As a result quite a lot of what you see has probably been made up.

Any limitations are not design errors but excellent adaptation to deal with relatively slow moving objects at ground level and quite short range: *ie* not ideally suited to an aerial environment – particularly one full of fast moving objects. No tiger on earth can jump into your lap at 450kt plus from 15 miles away, but a jet aircraft certainly can. Even other gliders may be whizzing around at speeds relative to you approaching 200kt. In addition, all this aerial hardware is flown by people with a similar biological background to yourself.

As you might expect, birds are better adapted to being up in the air. The eyesight of predatory birds is particularly acute. The central portion of a vulture's field of vision is magnified several times, for example.

The most obvious point about good **lookout** is the necessity to both look **and** "see" in the right places, at the right times. Anything (however necessary) which slows lookout, such as gazing enraptured at the vario, **shortens** the time available for you to appreciate if you need to take any avoiding action, and if so, what!?

Clearly (and literally), for an object to be visible it must stand out from the background. It can do this by being a different colour (military aircraft are camouflaged to provide as little colour contrast as possible); or it can be any colour and brighter or darker. If the brightness contrast is high, an object may easily be hidden from you in a pool of shadow. For example, on a bright clear and sunny day, your airfield may be lost in a cloud shadow, whereas under complete overcast it would have been perfectly visible! If brightness contrast is too low, as on a very hazy day, (or twilight) your eyes may relax and focus, restfully, on a point a few inches in front of your nose. This is called "empty field myopia" and is not very useful! In addition, if the flying object you are looking at is insufficiently illuminated or too starkly contrasted with the background you may get the following problem:

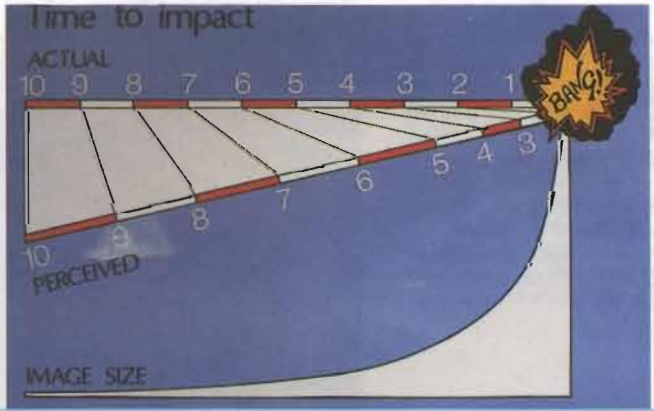
Which way are the two gliders in picture 4 going? The glider on the left could be either turn-



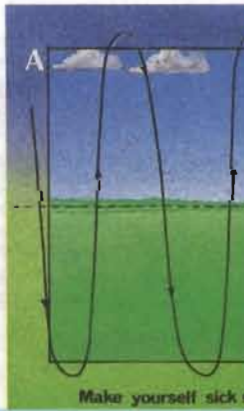
13. Main area of scan.



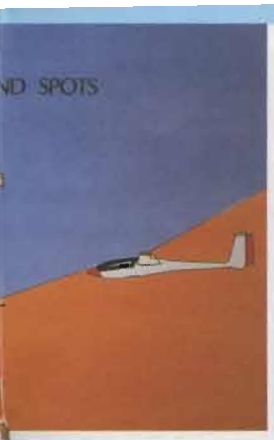
11. Coming at you! Image size.

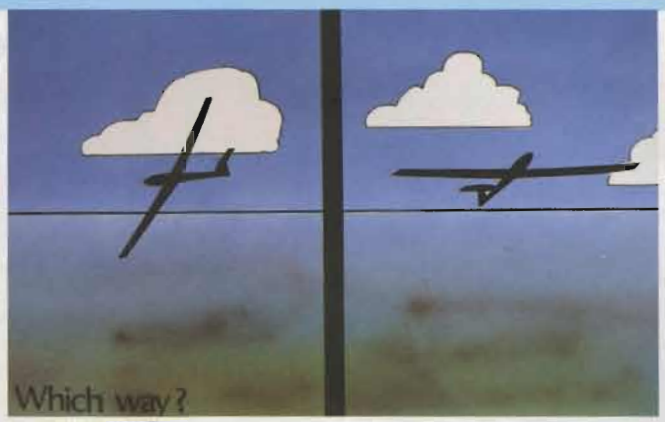


12. Countdown to impact.

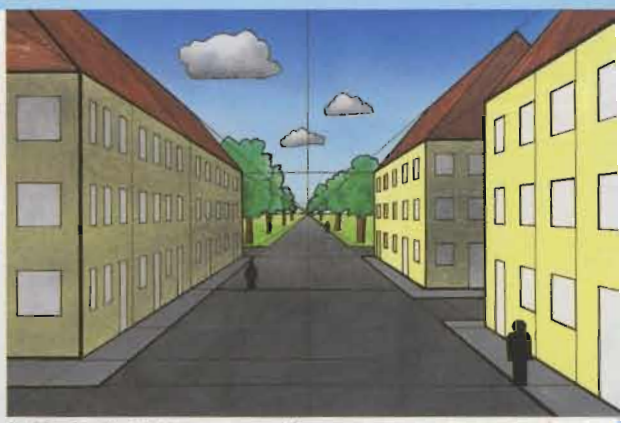


14. How to be ill.





4. Which way?



5. Vanishing point perspective.

R LAP

han just looking straight
s second of three articles.
n thermalling without

ing left **or** right, banked in one case away from and in the other towards you. The glider on the right is pulling up into a climb, but is it going away from or coming towards you? The additional clue to the solution of this problem is only given by the subsequent behaviour of the object. **Time** is needed to work this out.

It is important to know what type/size of moving thing it is. This has always been the case. Millennia ago, creeping through the forest after food would have been your primary interest. Your second would have been not becoming a tasty snack for something else creeping through the forest. Finding thermals probably comes in the first category, but avoiding death by collision is most definitely in the second.

Most of our cues about the distance and size of objects come from perspective effects which are most obvious in relation to the **ground**. A small white dot against a blue sky may be a Jumbo at 45000ft or a small, drifting fleck of dandruff. On the other hand, look down a long street where the perspective lines to the vanishing point are emphasised by the boxiness of the surroundings (see picture 5) and it is much easier to tell how far away an object is and whether it is moving towards you or not. In the air there may be fewer or none of these perspective clues, indeed, very often our appreciation of the distance of an object is entirely based upon prior knowledge of its size. In addition, what you see is coloured by what you **expect** to see. If what is really there is not what you expected, it may take **time** (not much, perhaps) to work out exactly what it is that you **are** looking at. All this **time** gradually adds up to a fairly sizeable pause before you are likely to decide what to do (and that takes **time** too).

To illustrate the point about expectations, look at pictures 6 to10. The first is of an airliner. They are usually quite large. The second is a cloud which, because of its shape and density we may assume to be fairly large as well. The next picture shows the airliner **behind** the cloud. No problem so far. The next illustration shows the airliner in **front** of the cloud. Two possibilities here; 1) The cloud is smaller/further away than we thought or 2) the airliner is smaller/closer. The last illustration speaks for itself. If you look through the sequence you may find you are no longer sure of the real size of these objects, and hence how far away they are.

In the worst case, *ie* imminent collision, the **only** clue you may get is the increasing size of the object. There is a major problem here. A fast jet



6. Airliner.



7. Cloud.



8. Airliner behind cloud.

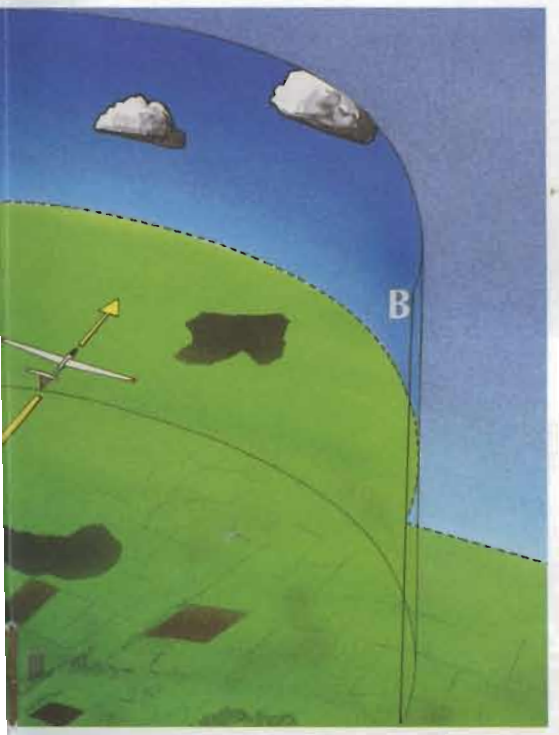
Drawings also by Steve.



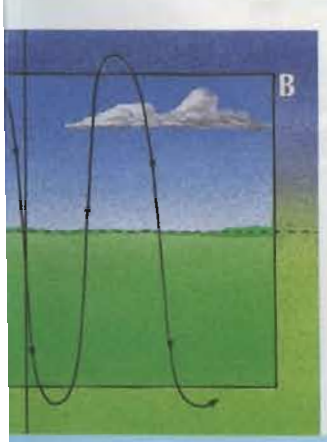
9. Airliner in front of cloud.

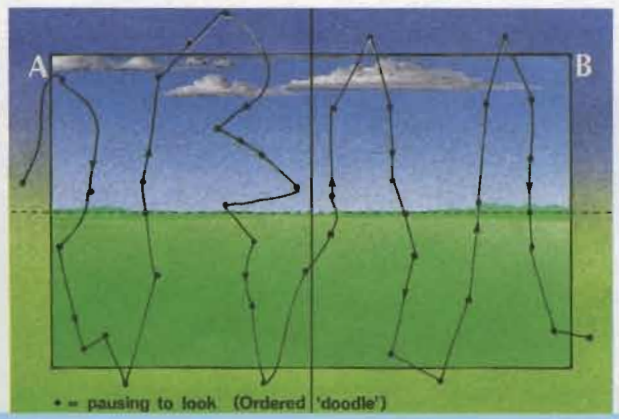


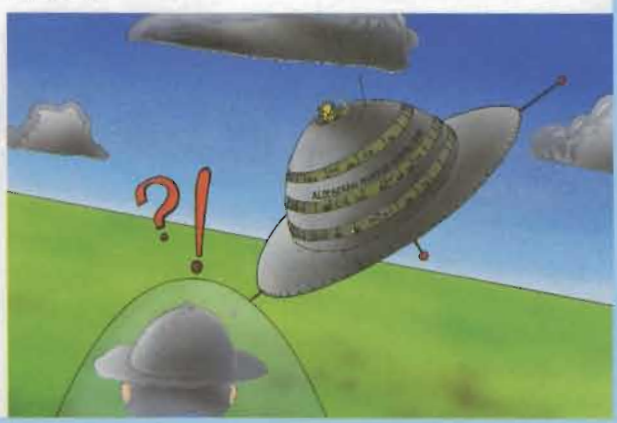
10. Hand launching!



15. An ordered doodle.







16. UFO.

McLEAN AVIATION

THE AERODROME, RUFFORTH, YORK, YO2 3QA

FACTORY TRAINED AND APPROVED REPAIR AGENTS FOR GLASER-DIRKS SAILPLANES

TELEPHONE 0904-83-653 **FAX 0904-83-8146**

REPAIRS IN GLASS, CARBON, KEVLAR, WOOD & METAL STRUCTURES

SOLE UK AGENTS FOR O.K. CLOCKWORK BAROGRAPHS NEOGENE DOPES AND PAINTS STOCKISTS, CECONITE FABRIC STOCKISTS



D-G 500 trainer



SELF-LAUNCHING VERSION
600M IN PRODUCTION!

D-G 600

GLASER-DIRKS D-G FLUGZEUGBAU

GLASER-DIRKS UK

BOB McLEAN 0904 83653 **JOHN ELLIS 0765 89431**

Sole UK Agents for the complete range of D-G Sailplanes

Please ask for details

LS3a complete outfit, with Costabel trailer – OFFERS?

D-G 200/17 – complete outfit – £18,000

Carmam JP15/34 – complete outfit – OFFERS?

15 miles away will be a dot about the size of a full stop. You probably won't see it! As it approaches you it gets larger, but the rate of increase in size is not linear, so at two miles away it is still not much larger than a capital O. You will see it then if you happen to be looking in the right direction. At that point it is just 16 seconds away. This is not a tiger stalking you at close range in the bush, it is probably a heavy, extremely fast and not very manoeuvrable (whatever the manufacturers claim) piece of metal which might just have well have been thrown as piloted at you. (See picture 11).

A distant observer would see the countdown to your grand exit (picture 12) as a steady

5 4 3 2 1 BANG!,

but as the target you would see something much less agreeable

5 4 3 2 1 BANG!

In the last few seconds the image size increases with frightening rapidity. The object seems to rush at you. It is a bit late to realise that if an object stays in the same place relative to you and simply gets bigger then it is GOING TO HIT YOU!

The cells in your eye responsible for sending information to the brain require a constantly **changing** level of stimulation for them to even bother to send a message. If, after the initial "start-up" message no further changes occur (such as you shifting your gaze a fraction or two) the cells' "interest" gradually declines and they go back to "idle". In an extreme case, staring (which is what most of us believe to be "searching" or "concentrating" – mesmerising ourselves would be a more accurate description) may mean not seeing anything at all! **Staring** is not part of any sensible lookout procedure, nor is diligently and methodically (and inevitably **slowly**) searching every square millimetre of the heavens.

As if these things weren't enough, any scanning procedure has to occasionally include what's on the panel, and focussing on this and then outside again can take several seconds, always assuming that you spent no time at all interpreting what the instruments told you. Any scanning procedure you adopt will also take longer if you are tired, under stress etc, etc, (see the first article).

As you are travelling forward in your glider you need to scan an area like a huge bowl. The most important parts of this are those on your level, so you will spend most but not all of your time scanning around an area like a huge wrap-round cinema screen, as in picture 13. Don't adopt a scanning procedure that moves around this "screen" in loops and waves (picture 14) as you are very likely to be sick! Examine sectors of about 30° at a time, focussing both near and far. Whatever you do, **don't stare**. Keep relaxed, moving your eyes quite quickly over the area you want to cover. Think of it as a kind of ordered "doodle" rather than a rigid pattern, (picture 15). If the visibility is poor, you must refocus regularly on points on the ground as far away as possible to avoid the dreaded "empty field myopia".

Remember, you *must* look out before you turn and that when you are turning, the "bowl" you are scanning needs to be displaced in the direction you are turning.

When you do see a flying object (picture 16), then obviously look at it more closely. It may not be the only one in the vicinity! **Lookout!**

INTERNATIONAL GLIDING COMMISSION REPORT

Paris, March 23-24
Extracts from the report by the BGA delegate, Tom Zealley

Some 25 countries were represented with a higher than normal representation from Eastern Europe. For the first time part of the meeting was devoted to the discussion of particular subjects in working groups of seven or eight, later reporting back to the plenary meeting.

Special awards. The FAI General Conference will be held in Berlin in 1991 in celebration of the centenary of Lilienthal's first flights. Special awards will be made for the best glider flights in a Standard Class machine between August 15 1990 and August 15 1991 in three categories – max speed round a 300km triangle, max distance (any course) and max altitude. These flights should demonstrate the progress made during the last 100 years in motorless, heavier than air manned flight.

Airspace and regulations. A working group (chaired by Tom) discussed the growing trend for national airspace authorities to demand that gliders should carry transponders. In the plenary meeting it was mentioned that there was now a drug testing programme in the USA for glider pilots.

New equipment for flight documentation. An amendment of the **Sporting Code** for gliders and specifications for electronic barographs should be ready for approval at the IGC meeting next March. Information currently in use and any other input should be sent to the chairman, Andreus Deutsch (Switzerland), at least four months before the meeting. A proposal by Tom to amend the **Sporting Code** to include certain electronic barographs currently on the market was accepted on a temporary basis pending the more comprehensive revision.

Championships calendar. There had been criticism of the large number of gliding Championships on the IGC calendar and Tom had prepared a paper for IGC on the subject. Max Faber (Austria) chaired the working group and it was agreed that formal "Pre-Worlds" competitions will be abolished (at least in name), though it would not be practicable to forbid entry of foreign pilots to competitions on sites where a World Championships would be held the following year.

It was agreed that Worlds will be held in "odd" years and Europeans in "even" years and the Female, Motor Glider, Junior and Club Class Championships will be spaced so that no more than two occurred in any one year. The rules for Championships will be agreed 12 months in advance and circulated eight months in advance.

Rules. A working group attended by Peter Purdie (the second BGA delegate who was also at the meeting with Bill Scull, chairman of the OSTIV Training and Safety Panel) finalised a complete set of IGC rules and scoring systems for Championships. Until now IGC has approved complete set of rules produced by the host for every Championships. The rules for Minden 1991 have already been agreed by IGC and won't necessarily conform to the new set.

A list of information to be provided by countries bidding to host Championships was also agreed.

Tor Johannessen (Norway) pointed out errors in the record claim forms attached to the latest issue of the **Sporting Code** section 3 – Gliders. Ross MacIntye (New Zealand) is revising the **Code** and will accept suggestions up to August 31, 1990.

Motor Gliders. The 1992 Championships will be at Rieti, Italy.

World Championships, 1991 – Minden. Bernald Smith (USA) said that the penalty for late return after a *POST task would be reviewed after Ameriglide this summer. He mentioned that as many as 50% of the tasks might be POST.

European Championships, 1992. Bids were from Russia, Hungary and Bulgaria with a majority in favour of Hungary.

Club Class Championships, 1991. This will be at Landau, W Germany in celebration of the Lilienthal centenary. The dates have been changed to July 13-27 with a training period from July 10-12.

European Female Championships, 1991. There were bids from the UK (Husbands Bosworth) and Finland ((Räyskälä) and the meeting voted in favour of Husbands Bosworth.

Junior Championships. This will be recognised as a European Championships and held at Alleberg, Sweden, in 1991.

World Class Glider. By the February closing date 81 had shown preliminary interest, including one or two manufacturers. The deadline for design papers is August 31 and it was hoped to decide at the IGM meeting next March which designs should go to the prototype stage.

World Badge. The USA has decided to implement this badge (cumulative distance of 40000km) within their country – it was rejected as an international badge at a previous IGC meeting.

Honour for Ann. Ann Welch will be the first recipient of the Pelagia Majewska medal presented by Poland for outstanding women pilots in memory of their famous pilot who was killed two years ago.

**Pilot Option Speed Task.*

BGA CONFERENCE

This year, over the weekend of March 3-4, Coventry GC hosted the BGA Conference at the Crest Hotel on the outskirts of the city. This may be the last time the AGM will be set around this format as however interesting and professional the speakers, it still doesn't seem to have a wide enough appeal or very much support.

The programme was stimulating with a good range of lectures and trade stands. Nick Goodhart, still the current holder of the British National absolute altitude record (11 500m in SGS-1-23 in the USA) from 1955 and the UK goal distance and 500km speed record with a Skylark 3 flight of 579.36km at 90.7km/h in 1959, was an inspired guest speaker at the dinner.

He was a household name in the gliding world, in the British team for 16 years and flying in seven Championships winning the Two-Seater Class with Frank Foster, the holder of No. 1 for all three Diamonds and chairman of the Airspace Committee when the foundations were laid. It was a great pleasure to hear him recall his flying days with such infectious enthusiasm.

Mrs Goodhart presented the annual awards as follows: **Wakefield** trophy (longest distance) and **Furlong** trophy (longest triangle) with 704km, Lasham/Gt Yarmouth/Hereford on August 18 and the **Volk** cup (longest O/R) with 617km, Lasham/York on August 28, Chris Garton (Surrey & Hants), both flights in an LS-6A; **California in England** cup (longest distance by a female pilot), Jane Nash (Kestrel) with 528km of a 650km O/R, Odiham/Dishforth on April 15 in a Ventus; **Seager** cup (longest distance in a two-seater), Barry Elliott and Robert Braithwaite (RAFGSA Centre) with as 407km triangle, Bicester/Newark/Ludlow on September 2 in a Nimbus 2DT; **Frank Foster** trophy (fastest 500km) with 89.79km/h, Nympsfield/Marchington/Cray reservoir on July 4; the **Manio** cup (fastest 300km) with 105.25km/h, Pewsey/Caxton Gibbett/MI/M69 on August 28, both flights in a Discus, and the **Goldsborough** cup (highest placed in the World Championships team, Andy Davis (Bristol & Gloucestershire) - Justin Wills was also 2nd but the trophy went to Andy on the percentage of winner's points; **Rex Pilcher** trophy (earliest 500km triangle by a pilot completing the task for the first time), Sally Wells (Booker) with a 503km Booker/Sherborne/Ely on August 9 in a Discus; **De Havilland** trophy (max gain of height), Graham McAndrew and William Waller (Booker) with 27 392ft at Aboyne on October 20 in a K-21; **Douglas** trophy (winners of the Inter-Club League), Bannerdown GC; **John Hands** trophy (for outstanding support to the organisation and running of competitions), David Oliver, Lasham tug master; **Enigma** trophy (National Ladder Open winner), Andy Davis; **Firth Vickers** cup (2nd place on Open Ladder), Norman James (Coventry); **Du Garde Peach** trophy (National Ladder Club winner), Jonathan Walker (Coventry) and the **Slingsby** trophy (2nd place on Club Ladder), Paul Crabb (Coventry).

At the AGM Ben Watson (who was elected a BGA vice-president) handed over as chairman to Don Spottiswood with Chris Nicholas becoming the vice-chairman. Don paid tribute to Ben's hard work over the last five years. Bill Walker, the MP who has been such a friend to gliding behind the parliamentary scene, was made a life member.

Phil Andrews, Max Bacon, Mike Cuming, Tony Mattin, John Spencer and Robin Worters were elected on to the Executive Committee.

BGA diplomas for services to gliding were awarded to Vic Carr and George Collins.

Claude Woodhouse and his Coventry GC team are to be congratulated on making this an enjoyable well organised weekend and Michael Bird for his professionalism as the conference chairman.

NEW FORMAT FOR AGM

The Annual General Meeting of the BGA next year is to be separated from the traditional weekend conference structure and will be expanded as a single meeting in the hope of attracting as many members as possible.

The AGM will be held at the Northampton/Rugby Post House Hotel, which is right at the side of the M1 motorway at Crick, Northants, on Saturday, February 23. As there will be no requirements for overnight expenses and the venue should be reachable within a few hours drive either way for the majority of people, we expect a larger audience than normal.

In addition to the AGM and an open session we hope to organise a session of particular interest to club officials such as chairman, treasurers, etc, and items for discussion will be requested in advance.

Some members had expressed a feeling that the AGM had become buried amongst social events in recent years and this is an attempt to bring it back into prominence and to give everybody a fair chance to raise any BGA matters for a full discussion.

Barry Rolfe, *BGA administrator*

AUSTRALIAN GLIDING SUCCESS FOR RAF TEAM



Barrie Elliott of RAF Bicester and Jed Edyvean of RAF Brize Norton won the Australian Inter-Services Championships at Narromine in January, this being the first time a non-Australian team had been invited to compete. There were four flying days with two tasks in excess of 340km. Barrie and Jed flew a loaned ASW-19 on alternate days. In return for their outstanding co-operation and hospitality, two RAAF pilots have been invited to compete in this year's Inter-Services Regionals.

The photograph shows Air Marshall Sir Michael Graydon, president of the RAFGSA, with Jed (on the left) and Barrie.

POLITICS ARE A BORE . . .

Well they are, aren't they? Everybody knows that if politicians took up gliding they wouldn't have time for all those speeches and wars and things. Mrs T. always going on about the EEC and how they are taking away the powers of national governments to run their own affairs. What a load of old codswallop. Give me a blue sky with puffy cus and I'm on my way.

Or are you? Have you heard about this "harmonisation of flight crew licensing across Europe?" That can't mean your BGA certificate can it? Can it? Well you see these chaps in Brussels (you know where they have all those Europe MP things, or is that Strasburg?) reckon everybody in the EEC should have the same standards and qualifications so they can all have flying holidays in one another's countries without any bother or argument. It makes sense, doesn't it?

So you are not going to object to having a full PPL medical every year (costs a fair bit)? What about having a good professional engineer (licenced of course) to do your C of A? Of course you are going to get a proper certificate, not one of those cheap BGA things. This will be a pukka pilot's licence endorsed for ➡

gliders. Think what an impression that will make in The Dog and Duck.

If you want to know more ask you chairman or club committee member for details. The BGA have sent him all the information. Then perhaps politics will not seem quite so boring. And you may perhaps think the system built up over the years in the UK, that has produced some of the cheapest flying in the sporting world and some of the world's best soaring pilots plus a safety record second to none, is worth fighting for.

How do you fight? You get all the information, then you take up politics and write to your Euro MP and even your local variety and tell them what you think.

John Holland, *chairman of the BGA Political Committee*

LUCKY ESCAPE

On January 20 Michael Sesemann had his first flight in his new Ventus CT and at around 2000ft with the engine retracted, he extended the airbrakes to test their action. The machine pitched nose down violently and the negative *g* was sufficient to force his head through the canopy. Fortunately he landed safely.

Drawing attention to the incident in a letter to Dick Stratton, BGA chief technical officer, Michael says he couldn't account for this but when the Ventus came back from Southern Sailplanes complete with a new canopy he took special care with the harness before his second launch.

Two pundits helped strap him in and one thought the shoulder straps had a "dog-leg" in that they dipped down from the anchorage to the holes in the seatback (it was an optional adjustable version), then back up again over the shoulders.

"Tests showed" he writes "that although I was satisfied I was strapped in tightly, when someone pulled on my extended arms I had about six inches of shoulder movement with the seatback moving forward with my back.

"Since then I have flown the machine, ensuring that the shoulder harness goes round the head rest rather than through the holes in the seatback. Using the same test, I am then firmly held by the harness."

Michael believes the sequence of events on his first flight was:

1. Airbrakes caused deceleration.
2. He moved (*ie* shoulders) forward and in doing so pushed the stick forward.
3. Negative *g* pushed him further forward and up.
4. Canopy shattered.

NEW AGENCY TO PROTECT AERODROMES

Although all sectors of aviation are growing, there are fewer aerodromes in Britain than at any time in the past 50 years. In view of this the newly formed Aerodromes Protection Agency will use all available influence to promote the need for more, rather than fewer, aerodromes in the UK. Three aviation organisations, the Aerodrome Owners Association, the Aircraft Owners and Pilots Association and the General Aviation Manufacturers and Traders Association, are involved.

GLIDING FOR DISABLED

In the February 1988 issue we reported that Robert English had reached the £15000 target for the Monica English Memorial Trust to buy a motor glider to give flights to the disabled. Another £5000 was needed to cover rising costs and later that year the Motor Falke was bought and operated from the York Gliding Centre at Rufforth Airfield.

Robert tells us that the scheme "is succeeding beyond my wildest dreams". They give flights to six disabled people every Monday and Thursday afternoon and the response is excellent.

In fact Robert says it is so beneficial to the disabled they are now planning to buy a second glider. If anyone would like to contribute, please send donations to Robert at The Waldemeath Hotel, Flat 9A, Cornwall Road, Harrogate HG1 2NE, tel: (private line) 0423 521383.

CODE OF CONDUCT
For Glider Flights Through Special Rules Airspace

Present legislation (Rule 36(3)(c)(i) of the Rules of the Air and Air Traffic Regulations) permits gliders to fly in certain specified Special Rules Zones and Special Rules Areas without the need to obtain Air Traffic Control permission, provided they remain 1nm horizontally, 1000ft vertically clear of cloud, and in a flight visibility of 5nm.

Following recent complaints about glider activities in the East Midlands SRA, including an airmiss involving a Boeing 737 and a glider, NATS has expressed its concern to the BGA, and warned that further incidents could result in the removal of this valuable dispensation.

There is no suggestion that glider pilots have behaved illegally in their transits of Special Rules Airspace, but there is evidence that in some cases a lack of consideration may have been shown to the needs of other airspace users, thereby creating a potential hazard.

To address this problem the BGA has agreed to publish the following code of conduct for glider flights through Special Rules Airspace that take advantage of the exemption from the need to contact Air Traffic Control. In addition, the CAA is to publish an Aeronautical Information Circular which will reinforce this message and also draw the attention of other airspace users to the potential presence of gliders in Special Rules Airspace.

1. Glider pilots should plan to route their flights through Special Rules Airspace only when it is clear there are significant advantages from so doing, such as better soaring ➡

BGA MAIL ORDER **WHISPERING WINGS**

THE shirt to be seen in this year is a TEE shirt from the exclusive BGA WHISPERING WINGS range.

New for 1990 are T-shirts with this striking logo on NAVY, SKY BLUE or DARK GREEN, M, L or XL, and priced at a very reasonable £5.99 each (plus 36p each for p&p).

Promote your sport by wearing our message, available only from the BGA SHOP.

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

The most satisfying thing in the aircraft repair business is the knowledge that your work standards and quality control are really appreciated. Well, we've built Chiltern on the principal of consistently high quality work at a reasonable price and backed it by a customer protection policy with full liability cover for both the products and our workmanship.

All this has attracted the high grade type of work we like best, and as well as repair support licences for Grob products, we are also appointed by Hoffmann, Scheibe, Valentin and Tost, all of whom were impressed by our knowledge of their products and quality control approach.

Recently we were awarded our AQAP 4 certificate by The Ministry of Defence, after a thorough examination of our technical knowledge, practical application skills, quality and cost control systems.

Now, MOD added to our CAA, PFA and BGA Approvals make us the only GRP glider, motorglider and light aircraft repair organisation in the UK with all these qualifications.

It's worth bearing these in mind when you have a repair problem. We will recover and look after your aircraft and the repairs will be handled by the same staff, using the same high standards that have earned us these significant awards. Our commitment to private flyers remains undiminished and our skills are at your service at any time.

CHILTERN SAILPLANES LIMITED

AUTH. V/A/038

DATE:

The best.
And it shows.

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

Qualifications from the ground up.



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

CAA Approval No AMR/286.
MOD AQAP 4 Approval No. 3LHCO1

weather and a shorter track distance.
2. Flights should be arranged so that the minimum amount of time is spent in Special Rules Airspace. Pilots should avoid circling on or close to the runway extended centre lines, since this may interfere with aircraft carrying out instrument approaches or departures.
3. Good lookout is vital at all times, and glider pilots should be prepared to initiate avoiding action notwithstanding their right of way priority. Gliders are not always visible on radar and other aircraft, including commercial jets, may not have been warned of a glider's presence.
4. Competition tasks should only be set through Special Rules Airspace after consultation with the appropriate ATC unit. Where a task leg has to be set close to but not through Special Rules Airspace, the ATC unit should be informed. When possible, photographic control point(s) should be established to help ensure gliders remain outside the airspace. This includes club level competitions, not just BGA rated contests.

WE CAN'T PLEASE EVERYONE!

Against our better judgment we were persuaded by several female readers to stop identifying them in the gliding certificates and competition results by their Christian names. Since then, twice as many women and countless men have asked for the old style to be reinstated which we are happy to do.

WORLD RECORDS

Having failed to get a reply from the FAI to several requests on queries about world records long before our list in the April issue was due – we apologise to Hans-Werner Grosse for omitting four 1988 records which had been homologated.

They are all triangles in the Multi-Seater Class flown in January, 1988 from Alice Springs, Australia in the ASH-25 with his wife Karin – 300km at 170.90km/h on the 8th; 500km at 163.03km/h on the 20th; 750km at 161.33km/h on the 10th and 1000km at 157.25km/h on the 11th.

On January 14, 1990 they also broke the straight distance and goal flight with 1091.86km, taking off from Newman, West Australia.

In the Motor Glider Single-Seater Class, Walter Eisele, W. Germany is claiming trianglular distance, 1117km flown in an ASW-22BE on January 3, 1990 from Vryburg, S. Africa. In the Multi-Seater Class Otto Wegscheider and Peter Eich, W. Germany are claiming a 100km triangle at 179km/h on January 5, 1990 and a 750km triangle at 136.7km/h on December 31, 1989, both flights in a Nimbus 3DM.

In New Zealand, M. W. Walker and T. Delore are claiming the goal and return with 1260km in the Multi-Seater Class (Gliders) in an ASW-22 on December 1, 1989. The straight distance and goal flight of 1020.78km on January 4 in an ASH-22 has since been broken by Hans-Werner Grosse. The New Zealand and Motor Glider claims are subject to homologation.

British National Single-Seater Motor Glider: 100km triangle at 86.10km/h by Angus Munro in a DG-400 on July 6, 1989 flown in Norway, has now been homologated.

Rika Harwood

OBITUARY

HUMPHRY ROGER DIMOCK (1906-1990)



Photo: Michael Bird.

Anyone who has been acquainted with British and International gliding since World War 2 must have heard of Humphry Dimock; one of the sport's most colourful and delightful characters. It is my sad duty to report his passing in March after a steady decline in health, the recent death of his wife, Patsy, and a short spell in hospital following a stroke.

It is not possible to recount with full justice, all his achievements and exploits. He was born in Waterbeach, Cambridgeshire, in 1906 into a farming family and trained as a electrical engineer. From the age of eight years his ability and enthusiasm were directed progressively toward kites, model aircraft, motor cycles, powered light aircraft and gliders. He learned to fly in 1934 (Moth) and promptly erected a windsock in his garden to monitor the weather. He owned a succession of aircraft, including a new Miles Hawk (£550) with his own conversion to a three seat layout and his greatest pleasure was in stunt flying and displays. His first glider flight was in a Primary with the Cambridge University GC from their Caxton Gibbett field.

Such flying talent was soon snapped up by the Royal Navy and during WW2 Humphry found himself flying Swordfish (Stringbags) over the North Atlantic from Orkney. He was well known for his skill, reliability and homing instinct in an era of rudimentary navaids and, for such aircrews, an average life expectancy of just seven weeks. He lost two thirds of his friends during that period. Later in the war, he flew Spitfires from Lee-on-Solent and commanded 781 Squadron prior to leaving the Navy in 1946.

At the end of the war, Humphry was instrumental in bringing back to his station a number of German gliders in crates; a part of the then reparation programme. These he assembled and flew at Lee-on-Solent with such success that "the powers" decided the whole venture should be legitimised in the creation of a Royal Naval Gliding Club at HMS Siskin near Gosport, Hampshire. As well as being a gliding instructor with the ATC, he became a founder member of the Portsmouth Naval GC. This club still exists, now at Lee-on-Solent, and amongst others, still possesses its first aircraft, a splendid T-21.

Following his departure from the Navy, Humphry and Patsy started a furniture business, but this activity did not prevent him becoming chairman of the PNGC in the approximate period 1950-1958. During this time he owned various aircraft such as a Eagle, (bought from the late naturalist, Sir Peter Scott), Motor Falke, Skylark 3F and 4 and a Dart, all of which he made freely available to his club. His last aircraft was a carbon Mini-Nimbus equipped with his own design of differential temperature wing sensors, as a form of thermals direction finding.

Apart from instruction, competitions were his greatest pleasure, winning events in England, France and Switzerland – once finishing 5th in the British Nationals and winning the French Open Class of their Mountain Championships in a Swiss 18m Diamant. He was still competing after the age of 70 and was at one time reputed to be Britain's oldest gliding instructor. He held all three Diamonds badges.

Stories about Humphry are legion. In Switzerland at 3000ft he found his retrieve car keys in his pocket. With all eyes glued to his glider from below, he dropped them tied to a piece of cloth. Needless to say, they were never seen again! On August 9, 1958, Humphry, together with Peter Davies, flew what is believed to be the first helicopter aerotow behind a Sikorsky S 55 at Lee-on-Solent. The towrope was almost half the length of the runway. Finally, it is said that, in creating a fire outside the control tower at Lee-on-Solent to guide some Barracudas home through the early mist, Humphry consumed most of his office files!

As an individual, Humphry was always dignified in appearance and courteous in manner. His knowledge and experience were readily available to anyone, especially the young; he was an unfailing optimist, positive in attitude and always competitive. In later years he was occasionally known to be selective in the use of his hearing aid! An abiding memory of Humphry is of many a weekend with no lift and instructors lucky to get a 15 minutes flight from 1500ft. Humphry would appear, dapper in a thornproof tweed suit, climb into his glider and disappear aloft for a couple of hours. No ➡

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)

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

NOW, A QUALITY LOW PRICE CAR PHONE WITHOUT STING-IN-THE-TAIL FIRST MINUTE CHARGES.

SAVE LONG TERM WITH THIS PANASONIC E-SERIES CAR PHONE

£199.00
Including Fitting



'MINUTEBREAKER'
A 24 second call 25p with everyone else

10p WITH US
NO whole or even half-minute billing

COMPLETE RANGE

SHORT/LONG TERM HIRE

CALL NOW

TRUST INTAFACE SYSTEMS

0256 840874

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. Tel: (0272) 744802.



Please allow 28 days for delivery.

expression of surprise nor achievement was made by him upon his return. Gliding has lost a great man.

God bless you Humphry.

DERRICK BALLARD

After this beautifully written obituary we had an equally splendid appreciation by Murray Hayes from which we have taken the following extracts.

Humphry had been a pre-war member of the London GC and also ran a small flying school equipped with Drones. When war came he joined the Fleet Air Arm and became one of that select band of communications pilots (which included Ralph Richardson and Laurence Olivier) employed on second line duties throughout the UK.

He was a bold and resolute pilot, accustomed to flying in all weathers with minimal navigation and radio aids. It was while ferrying a Swordfish south through the Highlands in atrocious weather that he was almost scalped when he flew into a mountain-side; nothing daunted he replaced the top of his head, jammed his flying helmet back to front over the wound and hiked down the glen to civilisation. This episode was typical of the Humphry I knew and first met in 1949.

He had an ingenious, and some would say eccentric, mind; he experimented with thermal sniffers and was one of the first to install a solar panel in his glider to keep his batteries charged. Back issues of *S&G* contain a number of his contributions.

But above all, he and Patsy were immensely kind hearted; their caravan at the Nationals was a centre of hospitality and Patsy could be relied on to produce a seemingly endless supply of bacon butties and other goodies for his frequently all female crew plus any other callers.

They were very fond of children and often acted as surrogate grandparents for ours when the exigencies of the Service took us abroad . . .

GLIDING CERTIFICATES

DIAMOND DISTANCE

No.	*Name*	*Club*	*1989*
1/434	Andrews, R.	Midland	18.8
1/435	Hurd, P. L.	London	3.9
1/436	White, J. A.	Booker	17.7

DIAMOND GOAL

No.	*Name*	*Club*	*1989*
2/1802	Hastings, M. J.	Oxford	24.6
2/1803	Blows, L. G.	Southdown	18.6
2/1804	Airey, J. M.	Buckminster	3.9
2/1805	Jennett, N. P.	Bristol & Glos (in Australia)	17.2
2/1806	White, J. A.	Booker	27.7
2/1807	Wright, N. J.	Avon	23.7

DIAMOND HEIGHT

No.	*Name*	*Club*	*1989*
3/937	Kohnstamm, S.	Deeside	26.10
3/938	Browne, R. A.	Humber	4.3.90

3/939	Taylor, B. T.	Culdrose	6.10
3/940	Donnelly, I. M.	Deeside	4.3.90
3/941	France, S.	South Wales	4.3.90
3/942	Wheeler, A. P.	Derby & Lancs	22.3.90

GOLD BADGE

No.	Name	Club	1989
1420	Masters, C. J.	Bannerdown	1.11
1421	Blows, L. G.	Southdown	18.8
1422	Williams, P. W.	Dartmoor	6.10
1423	May, J. I.	Bicester	16.10
1424	Toon, R. J.	Wrekin	17.10
1425	Hibberd, G. P.	Portsmouth Naval	4.3.90
1426	France, S.	South Wales	4.3.90

GOLD DISTANCE

Name	Club	1989
Hastings, M. J.	Oxford	24.6
Blows, L. G.	Southdown	18.8
Jennett, N. P.	Bristol & Glos (in Australia)	17.2
White, J. A.	Booker	27.7
Wright, N. J.	Avon	23.7

GOLD HEIGHT

Name	Club	1989
Bunyan, Caroline	Kent	13.10
Yates, R. A.	Avon	6.10
Masters, C. J.	Bannerdown	1.11
Stretch, M.	615 VGS (in USA)	31.5
Williams, P. W.	Dartmoor	6.10
Boneham, J. P.	Derby & Lancs	16.9
Taylor, B. T.	Culdrose	6.10
May, R. I.	Bicester	16.10
Toon, R. J.	Wrekin	17.10
Stephen, W. P.	Borders	21.1.90
Wright, A. C.	Yorkshire	3.3.90
Browne, R. A.	Humber	4.3.90
King, R. A. F.	London	16.9
Pike, M. I.	Fenland	26.10
Smith, R. G.	Fenland	26.10
Hibberd, G. P.	Portsmouth Naval	4.3.90
France, S.	South Wales	4.3.90
Collins, C. G.	Yorkshire	15.3.90
Ramler, C. J. B.	Derby & Lancs	20.3.90
Wheeler, A. P.	Derby & Lancs	22.3.90
Carruthers, M. J.	SGU	25.3.90

SILVER BADGE

No.	Name	Club	1989
8280	Stretch, M.	615 VGS	31.5
8281	Mulkens, M. J. M.	Cranfield	20.9
8282	Westgate, G. C.	Coventry	21.8
8283	Rendall, B. W.	Trent Valley	28.8
8284	Kelly, M. R. J.	Phoenix	13.5.
8285	Smith, Jean	Bath & Wilts	3.9
8286	Jennett, N. P.	Bristol & Glos	12.2
8287	Taylor, D. R.	Midland	1.8
8288	Hogarth, T. A. D.	Mendip	4.3.90
8289	Saint, R. C.	Avon	10.8

UK CROSS-COUNTRY DIPLOMA

Name	Club	1989
Manktelow, S. A.	Cotswold	28.8
Turner, J. P.	Farnborough	29.5
Endean, P. W.	Cornish	10.6
Jones, D. W.	Humber	5.8

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

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 Age	Pilot/Crew Injury	Pilot/Crew Pl/Hrs	Summary
125	K-7	2665	S	23.7.89 1058	Old Sarum P2	69 48	S S	730 0	After seeing the glider's wing drop during the ground run the signaller stopped the launch. However, by the time the driver reduced power the glider was 30ft in the air. P1 had taken control and **tried to reduce the roll before the speed fell but he was unable to prevent the glider stalling in.**
126	Nimbus 2cs	2680	M	15.4.89 1430	Sleap	71	N	810	Just after releasing from the tug the canopy fell off. On returning to the airfield the pilot did not lower the undercarriage. A warning was given on the radio but this was unheard due to the wind noise. The glider landed safely. It was later noted the canopy bolt fitted during a previous repair was too short.
127	ASW-20L	2635	S	1.5.89 1635	Nr Oswestry	53	N	264	After trying unsuccessfully to contact wave lift the pilot decided to land in a field. The field chosen was large but he landed across wind, without landing flap and failed to control his airspeed during the approach. The glider was substantially damaged during the violent groundloop that followed.
128	K-10	2678	S	13.8.89	Rhigos P2	43 47	M N	312 23	At 300ft the winch cable broke. P2 handled the recovery well and turned left to allow enough room for an abbreviated circuit. During the 270° turn sink was encountered and P2 asked P1 to take over. **P1 could not prevent the glider hitting the ground wing first.**
129	Junior	3505	S	23.9.89 1400	RNAS Culdrose	27	N	10	The aerotow launch started normally but the glider bounced and the pilot over corrected, pushed the nose down and hit the ground heavily. After five PIO bounces the pilot released, brought the glider back under control and landed.
130	K-21	2817	M	29.9.89	Long Mynd P2	55 61	N N	2550	After a normal launch P2 lowered the nose for release. As this was done an unusual noise was heard. Realising that they had a **cable hung up**, P1 took control. He dived towards the airfield and made a safe downwind landing. **Unknown to the ground crew, the retrieve winch cable had fouled the airframe over the wing.**
131	ASK-13		M	6.8.89 1230	Snitterfield	43	N	-	This ground handling accident occurred when a club member was towing a K-8 to the launch queue with a tractor. Upon reaching the end of the line he halted and waited for the rope to be released. While doing this his **wet feet slipped off the clutch pedal** and the tractor lurched forward, pulling the K-8 into another glider.
132	Blanik		W/O	8.7.89 1000	Waldershare Park P2	35 30	S S	472 20	While on final approach P1 saw that another glider was being winch launched off the strip and, to avoid running into the cable, started a 360° turn. During the turn he allowed the speed to decay and **entered a spin from about 150ft.** The glider hit the ground right wing first during spin recovery. Both pilots were seriously injured.
133	K-6CR	3370	M	24.9.89	Gamston	45	N	17	After a slow start to the winch launch, in calm conditions, the wingtip holder let go before the pilot had aileron control.The left wing dropped and the **pilot was slow to release the cable.** By the time he released the glider was about 3ft into the air, with yaw. With a low airspeed the glider landed heavily on its nose.
134	Blanik		M	28.7.89 1720	Talgarth P2	41 42	N N	606 0	The pupil was landing into sun and on to an uphill slope. He rounded out high and the glider fell heavily on to the mainwheel before P1 could take control. The low sun, uphill slope and a lower seating position than normal, combined to distort the height perception for the instructor.
135	BB-138	1741	M	13.8.89 1430	West Grinstead	29	M	40	While on a 50km distance attempt the pilot had to make a field landing. He chose a field with power lines on the approach, a bump in the middle with trees straddling the landing path. Having cleared the power lines the pilot selected full brake then stalled in from about 4ft as he rounded out into the upslope. Several better fields in the area available from 1500ft.
136	Super Cub	Tug	M	3.9.89 1755	Lee-on-Solent	54	N	-	Gliders were parked to the left of the runway while tow rope drop and aircraft recovery took place to the right. The tug pilot approached with the rope still attached and caught the end around the wing of a parked K-13 which rotated 90°. The glider wing was damaged but the tug landed safely on the runway.

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

CLUB NEWS

Copy and photographs for the August-September issue of *S&G* should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, to arrive no later than June 5 and for the October-November issue to arrive no later than August 7.

GILLIAN BRYCE-SMITH
April 11

ANGUS (Arbroath)
The high winds have curtailed much of the flying with our launch totals well down on last year.

At the annual dance and prize-giving in February service awards went to Cameron Braidwood (auditor), Peter Murray (inspector) and Alex Black (retiring CFI) with flying awards to Dave Porteous (club ladder), Les Horribine (best flight) and Susan Burke (best progress).

We are indebted to Alan Middleton at Aboyne for repairing our Bocian which looks well in its new red colour scheme.
M.G.D.

AQUILA (Hinton in the Hedges)
The annual dinner was a great success - many thanks to Bob Murray for his excellent organisation. The Best *Ab-initio* cup was presented to Steve Blackmore; Best Flight cup to Jon Crewe; the Most Improved cup jointly to Martin Lewis and Dick Williams (a clean-up for the Eagle syndicate!) and the Jim Wright cup and the Whoops award to John Rayment.

At the AGM there was a little changed committee who will have a critical look at the glider fleet. We had another successful skittles night in March.
J.R.

BATH & WILTS (Keevil Airfield)
Our old winch has been given a 3.5 litre Rover engine and gearbox and a continuous loop retrieve system.

Congratulations to Dick Yerburgh on becoming a tug pilot and assistant instructor, also to Gabrielle Barton on his Bronze badge.

Another Pegasus joins our private fleet. Unfortunately the coming season is being disrupted by the resurfacing of the main runway.
B.H.

BICESTER (RAFGSA)
The following were presented with awards at our AGM - Dave Aknai (most meritorious flight); Max Kirshner, who with Mark Critchlow built a beautiful winch, (hardest worker) and Amanda Tilney (*Ab-initio* pot).

Dave Pemberton has a Bronze badge and Robin Barnes and Nick Paterson have gone solo. Barry Elliott, CFI, won the BGA Seager cup for the longest distance in a two-seater (see BGA News).

We had super wave in March which is most unusual for us.
M.H.

Obituary - Ken Barker
Ken recently died from a heart attack and we offer our condolences to his family. He played a significant role in the club, particularly as an instructor who gave great encouragement to young pilots. He will be sadly missed.
Merri Head

BLACK MOUNTAINS (Talgarth)
We have removed a hedge and opened up a new SE/NW runway which has already proved useful.

Congratulations to Martin Brockington and Alister Mackintosh on their AEI ratings.

We have had some good wave flying with the club Junior reaching 10000ft on March 31.
J.G.

BLACKPOOL & FYLDE (Chipping)
Obituary - Bill Barcroft
It is with great sadness that we report the death of Bill Barcroft who died tragically on March 14.

Bill first joined the club in 1967 and the following year reached the finals of the national "Win a Swallow" competition for *ab-initios*. Sadly he was a hay fever sufferer and his medications prevented him from flying solo. Nevertheless he has been our treasurer since 1969.

He was the quiet force that guided the club's growth by keeping a tight though flexible control of the pursue strings. At a recent AGM he was presented with a rose-bowl for over 20 years' service to the club, and our present secure financial position is Bill's legacy to us.

We shall all miss him and extend our deepest sympathy to his wife, Gill, and Andrew and Lisa.
V.H.

BORDERS (Galewood)
High winds curtailed us on several weekends but when we've launched before the winds increased there have been some good wave flights. On March 17 Leon Adamson and Ken Fairness (Eagle) climbed rapidly to 12000ft, stopping through lack of oxygen. During their 4¾hr flight, with 2hrs between 10000 to 12000ft, they covered over half of Northumberland - no one else flew that day.

Congratulations to John Familton on his Gold height and to Richard Horan and Arnold Venus on going solo.

Our Bijave, re-covered and sprayed in red, white and blue, is looking very French. Our thanks to Tony Moss, Bill Fleming and helpers.
A.B.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)
Record breaking spring conditions have produced a 15000ft wave day with 90km ridge runs and many 300km flights.

At the annual dinner Bill Davis collected an armful of trophies on behalf of Andrew, including the Club Ladder pot. Robert Hanks was best novice and other prizes went to Gordon Bishop, Dave Greenhill and Mike Philips.

Mita Barnes takes over as vice-chairman from Ian Smith who returns to his workshop.
S.R.

Club News contributors: If some names have been left out of your report or are spelt wrongly this is probably because it was handwritten. It doesn't matter if you can't get to a typewriter, but please print all names. Ed.

CAIRNGORM (Feshiebridge)
We are working frantically to finish converting the winch from single to twin drum.

Our AGM on April 7 produced a consensus to buy a tug for this summer now that the Falke has been sold.

Our task week is from May 26-June 3 and visiting gliders will be welcome.

Stewart Baxter and Alan Carnegie have retired as chairman and treasurer respectively and we thank them for their hard work.
S.M.

CLEVELANDS (RAF Dishforth)
Constant high winds have had a dispiriting effect, but one good wave day gave Gold and Diamond heights to three visitors and a 5hrs to Bob Little.,

Things are now improving with our first good thermal day completing Silver badges for Garry Mennell (with a 5hrs) and Vince Suttle (50km). Steve Harper brought the K-18 home after Vince's flight, missing his 50km by yards at the end of the day.
J.P.

CORNISH (Perranporth)
The recent storm "ventilated" the glider hangar and clubhouse roofs but fortunately didn't damage the gliders - mainly due to Tony Turner, Ernie Hayman and Pip Phillips who covered them in old carpets and nursed them through the worst of the weather.

We have already had some good thermal days and a 5hrs on the ridge by John Shaw (Skylark).

Our AGM in March was well attended with the trophies presented by Ruth Phillips.

We have sold our Blanik and the new Junior is proving very popular.
G.A.H.

COVENTRY (Husbands Bosworth)
After expeditions to other clubs, including the Long Mynd and Dishforth where Steve Crabb achieved his Diamond height, the season started here on February 16 with Alan Kangurs claiming the first 100km O/R of the year. Since then there have been many cross-country opportunities and tasks are set every weekend during the season to be scored for an end of season award.

The club's new Pegasus has arrived. Our task week is from May 26 to June 3 with 30 privately owned and club gliders entered.

Rory Ellis entertained those not soaring on a good April day when he landed a Dakota on the site.
D.L.S.

CRANWELL (RAFGSA)
Our new turbo Ventus has arrived after many teethings problems. Our expedition to the Long Mynd at the end of March went extremely well. We flew in thermals, ridge and wave on four days





Mike Cuming of Booker GC sent us these photographs of the effect of the January storm on two of their aircraft, emphasising the need for more care when high winds are forecast. The Grob (on the left) was held down with half filled water cans and the Puchacz, picketed with tyres, was blown on to the TA Centre in one single leap and held in place by the fin which punctured the roof. Mike said that ironically they recently opposed the building of the Centre on the grounds that "sooner or later there will be a glider on the roof. But we thought pilot error more likely a cause than wind!"

out of five in pleasant weather and clocked up over 60hrs between nine people.

Congratulations to Agnes Lawson on her Bronze badge.

We are running a sweepstake on the maiden flight of Steve Benn's rebuilt Skylark and plan to organise a fun competition for the May Bank Holiday.
B.S.

DARTMOOR (Brentor)
At the AGM in March the retiring chairman, Roger Matthews, said that we were in our third stage of growth with a firm base - a long lease from our president and improvements being made by a small band of keen workers. Though the 1989 launch rate was down, flights were much longer as we became more proficient pilots. We hope to increase trial instruction flights in the T-21 this season.

Phil Jarman is the new chairman with Chris Matten (vice-chairman), Bob Hawley (treasurer), Jan Langelaan (secretary), Mike King (technical officer), Dave Mawhinney (site engineer) and Frank May and Karon Corley (PR).
F.G.M.

DEESIDE (Aboyne)
We have a new Puchacz with a second about to arrive. Both will be fitted with oxygen for high altitude wave soaring and cross-countries. We hope to hire one out from Monday to Friday during the autumn wave season.

If interested in an autumn visit, and we only have a few slots left, contact Fiona Bick on 05055 4382 for details.

The season started early with Alan Middleton reaching 30 000ft and our tug pilot, Steve Carver, getting Diamond height in his first flight in the Sport Vega. At the AGM Kevin Kingsland became treasurer and Fiona Bick joined the committee.
G.D.

DERBY & LANCS (Camphill)
We are flying seven days a week until the end of September with full time help - Fred Neal (winch driver) and Stuart McArthur (instructor). Recent soloes were by Chris Fowler - the right way up this time (her first being in Australia) - and Jonathan Thorpe.

Chris Ramler gained Gold height and Arran Wheeler Diamond height at Aboyne.

Thanks to our permanent concrete fixings we didn't suffer any trailer damage in the recent storms.
G.W.

DUMFRIES (Falgunzeon)
Despite the high winds, we have increased our launch rate compared with this time last year and ➡

Below: Michael Dodd of Herefordshire GC photographed the club's K-6CR at sunset over Shobdon.





Cranwell GC's fleet photographed in the early evening.



The remains of Kestrel GC's Besseneau hangar after the recent storms.



Above: Dartmoor GC members at work on building their hangar.

Below: Malcolm Carpenter about to displace Vernon Schuler in the K-13.



with the re-covering of the club's K-2 near completion and a flying week from April 16, flying should be on the increase.

We have more privately owned machines and our hangar extension will soon be finished. Our T-21 is having an engine fitted to give *ab-initios* and those on trial lessons more time on the controls on marginal days.
I.Mc.

EAST SUSSEX (Ringmer)
Thanks to Henry Weston we have super de luxe new toilets in a (third time lucky) hurricane-proof building.

Congratulations to Steve Barter (AEI rating); Henry Weston (Silver distance and height and AEI rating); Ray Brown (Bronze badge) and Sacha Beard (going solo).
L.M.

ENSTONE EAGLES (Enstone Airfield)
The strong winds wrote-off six caravans, one trailer and badly damaged another.

Gordon Camp, Larry Griffiths (who has gone solo) and Mike Somerset joined the committee at the AGM when subs and various fees were modestly increased to keep in line with inflation while the annual fall off in membership seems to be the usual 12%. But inquiries for membership, courses and trial lessons are greater than ever.

Peter Bailey has bought a Speed Astir from Hanover and we expect to have a club K-8 to replace the K-6CR and at least one more Blanik.

Ken Sparkes is expecting a record entry for the Regionals with 36 already, so hurry if you don't want to be disappointed. They will be an exercise for our hosting of the 1991 Open Class Nationals.
R.J.P.-B.

GRAMPIAN (Nr Laurencekirk)
We are on our way with the first flights on March 17. The enthusiasm in the club is beyond belief and we have had many inquiries about membership.

We will use two caravans for flying/ground handling lectures The Capstan flies well, our Rover winch should give launches in excess of 1000ft and we hope to use thermal and wave lift.

The two main gliding clubs nearest to us, Deeside and SGU, have been most helpful and we have a long list of people from as far away as Kinloss and as near as the next door farm we would like to thank.

We should have a second glider by the middle of the summer and a tug is coming soon. We hope to cater for visitors in the very near future so if you enjoy a challenge get prepared to come and meet us.
A.E.

HEREFORDSHIRE (Shobdon)
March gave us some reasonable wave of 10000 to 12000ft and marked the end of the wet winter. Don Towsen and Ken Martin launched their new turbo Ventus after two months' fitting it out in Ken's living room.

A group from Dunstable enjoyed their weeks'

flying at Shobdon. John Jeffries alone accounted for nearly 60hrs of their logged flight time.

We have a new clubhouse for which we thank Steve and Kerry Blundell. It is currently being furnished with funds raised by members.
M.D.

HUMBER (RAF Scampton)
We still haven't got our K-13 back from repair after almost a year. We thank Chilterns for the loan of their K-13 for a few weeks.

Fred Lacey has gone solo and gained a Bronze leg. Bruce Davidson flew 130km on March 25 with 5000ft in thermals.

Dave Cockburn has taken over as CFI from John Dobson who is posted to Valley – our thanks to John – and Dave Jones is going on an instructors' course.
K.M.G.

KENT (Challock)
At our AGM Tim Gardiner, chairman, Andy Street, treasurer and Mike Moulang, secretary, were re-elected with Bob Shallcrass and Jim Crouch joining the committee.

A turbo Ventus has joined the ASW-19B, Sport Vega, Nimbus 2B and K-6CR on site and should make for some interesting competition during our task week in mid August.
A.R.V.

KESTREL (RAF Odiham)
Our hangars were severely damaged during the recent storms. Many thanks to Sqd Ldr Clive Joosse who supplied us with materials for the repairs and much of his time, to Iain Legge who spent much of his time in the rafters and to Paul Ellis for organising the "Army guys".

We are grateful to Dave Dripps for his work on the new Tost winch.

Congratulations to the prize-winners at the AGM and to Jane Nash on being presented with the California in England trophy at the BGA dinner (see BGA News).

Our first cross-country flight was in March.
J.N.

LASHAM (Lasham Airfield)
We had some good cross-country soaring in March and the expedition to Aboyne was successful with several Diamonds and Golds. Our advanced courses are booking up well but there is still room if you want to join.

The memorial service to Tony Norris, on March 17, was attended by a very large number of his gliding friends.
M.T.C.

LONDON (Dunstable)
Congratulations to B. Deacon, D. Price, R. Robertson, D. Sparrow (on going solo); Jill Jeffries (re-soloing); M. Gander, C. Taunton, N. Tillet (5hrs); A. Beatty (300km); M. Birch, D. Brain, R. Dyer; R. King and C. Pullen (assistant rating) and K. Lillywhite and M. Young (full rating).

The 60th anniversary celebration plans (June 30 and July 1) are well underway and all past and present members are welcome.

The restaurant and bar have been extensively refurbished.

The plate returned to Dunstable in March after the winter at Lasham and left two weeks later so it could be cleaned before we collect it again!
B.E.V.A.

MARCHINGTON (Marchington Airfield)
Congratulations to Ivor Ridout, Andrew Chapman and Adam Oakley on going solo, Adam on his 16th birthday, and to Mick Morely on resoloing after a few years' break.

The winch lost some windows in the recent gales but the site survived.
P.A.W.

MIDLAND (Long Mynd)
We have been invaded by the British Geological Survey as our site appears to be very close to the epicentre of the earthquake on April 2. The way they are prodding and digging holes in the Mynd we may not have a hill left soon!

Our wave has been holding up well with Diana King achieving 10500ft on March 11 when Martin McCurdie gained Silver height.

Since the start of our courses John Stuart has been cross-country most days with advanced students and has frequently coaxed them up to 9000ft.

Jonathan Ballard has a Bronze leg, Clive Polkey and Charles Williams have soloed while Bill Brewis failed his Silver distance by 4km.

The dinner-dance at the end of March was well attended with much pleasure from the award of trophies and great mirth with the presentation of the whoopsie cups.
R.D.

NENE VALLEY (RAF Upwood)
Paul Winterton and Len Dunster are doing a super job building the winch which should be ready by May 1. Gordon Reece and Dick Meayers have nearly finished refurbishing our No. 1 K-7.

Roger Emms is our first member to have an AEI rating. Horace Bryant, CFI, has plans for lead and follow cross-country flying and is determined to get the bomb back to Marham in the T-21. He's also said Plymouth in the T-21 is under consideration!
R.E.

NORFOLK (Tibenham Airfield)
The Tibenham work weekend was a major success with members working on the clubhouse,

BRIAN WEARE
GLIDER WORKS
DUNKESWELL AIRPORT
HONITON, DEVON
Tel: Luppitt 891338 (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

aircraft, hangar and runways with great skill and enthusiasm.

Chairman Mike Bean's informal lectures and practical sessions in radio procedures have been well attended. There has been a fair amount of buying and selling amongst the syndicates.

Congratulations to the many members who have gained AEI ratings and MGPPLs and to the driving force behind all this aerial activity, Roy Woodhouse, who seems to run courses non-stop and is hosting an assistant Cats course here in May.

It is with great regret that we learned of the death of John Aldridge, who was killed when his motor glider crashed in Suffolk on March 18. Our deepest sympathy is extended to his family. (See also Rattlesden.)
R.J.H.

NORTHUMBRIA (Currock Hill)
During the weeks of Irish winds we had two flying days – on one Martin Arrowsmith got to 8000ft in wave (when no one else could) in the club K-8, but returned without the DV panel!

Members enjoyed flying the Puchacz demonstrator, some sampling glass-fibre for the first time.

Lynn Greenwood and Eddie Clayton are doing the annual on the Pawnee.
R.A.M.

OXFORD (Weston on the Green)
Congratulations to Neill Lawson-Smith and Paul Morrison on going solo. We have replaced a K-8 with a K-6CR and have a DG-202-17c syndicate.

The winch is being improved and we look forward to extra performance on marginal days.
F.B.

PORTSMOUTH NAVAL (Lee-on-Solent)
Our AGM was well attended. With a healthy bank balance we have bought two new gliders and on the three *ab-initio* courses last year achieved a record first solo rate of 10/1000 launches including all solo flying, despite many interruptions and extended bad weather.

Ray Lambourne was thanked for organising our excellent canteen service and Ian Hammon given life membership for his valuable contribution in many ways over many years.

The Corner cup (gliding achievement) went jointly to Yvonne Clarke and Kiera Hibberd; the Goodhart trophy (most notable achievement) to Chris Jolly; the Humphry Dimock trophy (most valuable service by a civilian), Geoff Clark and the Peter Sharp award (most valuable service by a serviceman) to Mike Budgen.

Sadly Humphry Dimock, a true gliding character and one of our oldest members, died in March. He was an inspiration to many young pilots and will be missed. (See BGA News.)
H.C.

RAE (Farnborough)
A Nimbus joins the private fleet and Mick Wells has renewed his obsession with 14km "cross-countries" to Odiham. We enjoyed trying the Junior and Puchacz – food for thought as we consider adjusting our club fleet.

Our thanks to Gp Capt Beazley, our guest ➡

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 and major overhauls undertaken on all glider types and most PFA aircraft

Main agents for 'Aerolene' light heat shrink fabric

LASHAM AIRFIELD, ALTON, HANTS GU34 5SR
Telephone HERRIARD (0256 83) 359

GLIDE ON

Automatic Electronic FINAL GLIDE Computer based on the powerful CASIO FX 730-P.

Stores full Wet and Dry Polars. Allows ' **WHAT IF** 'calculations.
Calculates Minimum Height required,
Optimum Height for minimum time,
Speed and Course to Fly,
Fully corrects for Wind and Variation
Resolves Wind into crosswind and headwind,
Screen updates in REAL TIME at 15 second intervals, showing Time Remaining on Glide, Distance to go, Height of Glide path at present, set of Polars used, Course and Speed to Fly.

GLIDE ON	with FX 730-P	£150
BALANCE IT	with FX 730-P	£120
Both co resident	with 16Kb FX 730-P	£185

BALANCE IT

Where does your GLIDER balance?
Is it on the AFT C of G Limit?

BALANCE IT enables you to instantly calculate the balance point and wing loading in any configuration. Then calculates the adjustments needed to the ballast to put the C of G where you want it..

Microsoft FLIGHT SIMULATOR V 4.0

Now with Glider, Ridge and Thermal Soaring. Experiment with designing your own Glider! Random Weather and Dynamic Scenery. Superb comprehensive documentation £47

Prices INCLUDE VAT and P&P

92 TAYLER ROAD
HADLEIGH
SUFFOLK IP7 5RT
TEL & FAX 0473 822868

speaker at the dinner-dance. He and his wife presented trophies to Daphne Knowles (Chairman's award); Alex Truman (Chatfield cup) and Ali Tanner (Instructor's award).
M.T.D.

RATTLESDEN (Rattlesden Airfield)
Our annual dinner was a success, thanks to social secretary Mark Wright, and the President's cup (greatest contribution) went to Peter Neeves; the Landlord's cup (most progress) to Mark Wright and the Numb Bum trophy (most epic flight) to Keith George.

On June 2 we are hosts to the veterans of the 447th Bomber Group who flew B17s from our site during the last war. We are unveiling a bronze plaque in their memory on the wall of our restored control tower, finishing the day with a barbecue.
R.W.

Obituary - John Aldridge
We are sad to report the death of John Aldridge on March 18 from a tragic accident while flying his beloved Fournier.

John lived for flying and was one of those steady, conscientious and thoroughly nice people who are the backbone of a successful club. A bank manager, he gave freely of his time and used his professional experience to strengthen club financies in a most significant way.

With a twinkle in his eye, John was always ready for a laugh. His willingness to help, whether digging holes or clearing the runway of stones, earned him the respect of all. He will also be sorely missed for his friendly companionship and wise counsel.

We extend our deepest sympathy to his wife Janice, to Michelle, Martin, Maggie and the rest of his family.
R.W. & H.C.

SACKVILLE (North of RAE Bedford)
Our tug has a new engine in readiness for our Talgarth expedition and the Blanik and K-2 have their Cs of A.

Now that we have a large four wheel drive Chevvy truck we are trying reverse pully launching (which should be ideal for early training) as well as winching and aerotowing.
T.J.W.

SCOTTISH GLIDING UNION (Portmoak)
We had some good thermals and wave at the end of March giving a good start to our course season on April 1 and task weekends. We welcome Anna Domonkos from Hungary who we hope can be our course instructor if we can overcome the bureaucratic difficulties.

A third tug, a Piper Pawnee, is being bought with a grant from the Scottish Sports Council following long negotiations - many thanks to all concerned. The package includes a contribution towards an extension to the tug hangar for the newcomer which we hope will be in service by June.

Congratulations to Ian Poole on resoloing and to Justin Kennedy on his Bronze badge.
M.J.R.

SHALBOURNE (Rivar Hill)
We are bringing more of our extra land into use and continue to get impressive launches (anything less than 1800ft draws complaints from K-8 pilots). A second Zugvogel joins our private fleet.

We are looking forward to the Inter-Club League and are sending a team to fly our Bergfalke 4 at Competition Enterprise.

Congratulations to Steve Glassett on his AEI rating.
S.C.O.

SOUTHDOWN (Parham Airfield)
At our AGM Hugh Woodsend replaced Angus Buchanan as flying operations' officer - our grateful thanks to Angus for his tireless effort over a number of years. Our thanks also to Peter and Fiona Howe (classical guitar and flute) for entertaining us.

Congratulations on becoming regional examiners to CFI Don Irving, and his immediate predecessor, Dick Dixon; also to Tony Lewer and Derek Payne (Bronze badges); Les Blows (Gold badge) and to Richard Cooper, Paul Fritche, Chris Hancock and Steve Way (AEI ratings).

Chairman Brian Bateson led a highly successful expedition to Talgarth and been persuaded to organise another. Derek Piggott ran a very well attended one day seminar in April.

Friends old and new will be welcome to our Diamond Jubilee celebrations during the week starting on September 10.
C.M.R.

SOUTH WALES (Usk)
During the March wave Simon France, Dave Jeffries and Mike Dunlop gained Gold height and a week later Simon flew Diamond height.

This summer we are operating seven days a week and if successful it will become permanent. Our task week is from July 22 to 29.

There have been some changes to the committee - our thanks to outgoing members for their service.
N.P.

STRUBBY (Strubby Airfield)
The new committee was elected at the AGM with John Storrey retiring as chairman - our thanks to him for his invaluable five years when his tact and diplomacy has guided us through many incidents. John Best takes over as secretary with Steve Crozier as air tech.

The T-21 is flying again after a long lay off for repainting and is a credit to all who worked on it.

The winter gales blew away the launch point caravan and left the contents strewn over an enormous area. Thanks to Jim Evans a replacement was soon found.

The winds have curtailed flying this spring with many weekends unflyable. However, April started well with Gordon West getting his 5hrs to complete his Silver badge on one of the best soaring days on memory. Steve Crozier forgot his watch and blew the First Hour of the Year trophy by landing after 53min.
S.C.

SURREY & HANTS (Lasham Airfield)
Graham Wilson, our treasurer, has accepted a job in Moscow and we wish him all the best while thanking Paul Davis for taking over as treasurer.

The Astir is in Aboyne (again!) and we understand that Clive Thomas has his Diamond height. Our club fleet is back to full strength.
T.L.

THRUXTON (Thruxton Airfield)
Following winter refurbishment of the club fleet, we are looking for a metal two-seater trainer (for purchase or loan) to replace our IS-28B2 which is for sale.

We also have vacancies for weekend instruct- ➡



JOIN THE QUEUE -

More and more 'Pilgrims' each year follow the sun to fly at Australia's largest and most progressive soaring site

- BENALLA!

Courses for all standards of pilot; sailplane charter, single or shared, Junior to Nimbus; Badge flights to 1000km; possible National and International records.

High performance training in Janus.

Write or phone John Williamson for details - but soon.
We are booking now for 90/91 season.

GLIDING CLUB OF VICTORIA
Box 46, BENALLA, VIC. 3672, Australia
Phone 057-621058; Fax 057-625599

Special-rate travel and details of alternative Aussie holidays from:
TRAVELBAG, 12 High Street, ALTON, Hants. GU34 1BN. 0420-82133

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 April to October. Visiting gliders and tugs welcome. **Take advantage of the superb soaring conditions and course prices early in the year.**

ONE DAY COURSE £55
FIVE DAY COURSE FROM £230
ACCOMMODATION INCLUSIVE FROM £295

For information and free brochures, contact:
ARGYLL & WEST HIGHLAND GLIDING CENTRE
Tel: Connel (063171) 243
Connel Airfield
North Connel
By Oban
Argyll
Scotland

The Scottish Highlands and Islands

BOOKER



All types of course from absolute beginners to experts • All aerotow launching for longer flights. • We are open every day all year including summer evenings until sunset • Only 35 mins from London (M40 junction 4)

Write or phone for our colour brochure:
BOOKER GLIDING CLUB
Wycombe Air Park, Marlow
Bucks SL7 3DR Tel: 0494 29263

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) 77305

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

Gliding in the Black Mountains?
THE TOWER HOTEL
Family run hotel - rooms with en suite, showers or basic facilities available
Bar, Restaurant and Residents Lounge
Situated one mile from Black Mountains Gliding Club
Tel 0874 711253

HEAD WEST FOR THE BEST



IN RIDGE, THERMAL AND WAVE SOARING.

Soar the Cotswolds and into the Welsh mountains. Come for a day or a week. Clubhouse or caravan/camping accommodation. Holiday courses. AEI courses by arrangement. Easy access M4/M5.
Details from: The Manager, Bristol & Gloucester Gliding Club, Nympsfield, Nr. Stonehouse, Glos. GL10 3TX.
☎ 0453 860342/860060

Shobdon
JULY HOLIDAYS



Aerotow from a big flat site - Blanik, TAIFUN and K-8.

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

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

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

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, Mrs G. Edwards, Gt Stones, Hare Street, Buntingford, Herts SG9 0AD. Tel: 0763 89460.**

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)

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

ors and pupils. Do come along and we will make you very welcome.
J.B.L.

TRENT (Kirton in Lindsey)
Robin Parker and Roy Dell set a new site record of 12100ft in wave and after Rex Flint and Patrick Gogan reached 10200ft, Rex returned the K-13 and flew to 8000ft with Norman Stumm.

We welcome back Malcolm Carpenter after his illness. Congratulations to Ray Walker and Mike Morton on going solo.

Our next flying week is from May 26 to June 3.
M.P.G.

ULSTER (Bellarena)
We had a longer winter break than we budgeted for but missed the worst of the spring storms although many of the surrounding farms have been under sea water.

G-TUGG is back after being partially re-covered at astronomical expense.

We have a mass invasion from the Dublin Club (in limbo while their tug has major surgery) during Easter week. We have an open day in May and a healthy interest in our five day courses in July.

John Lavery returned from an American holiday with tales of unbelievable hospitality from the gliding fraternity and six new types in his logbook. He modestly almost forgot to mention a wave flight to 25200ft.
B.T.

VALE OF WHITE HORSE (Sandhill Farm)
Jane and Ralph Jones were guests at the annual dinner where the prize-winners were Gerry Brown, Howard Davies, Paul Mansfield, Steve Parsonage, Stuart Pepler and Eric Winning.

A lively AGM in January produced some major changes with Alan May back as chairman.

Congratulations to Lee Tyack who went solo on his 16th birthday. John Ashcroft, who now has his PPL, joins our small team of instructors.

LONDON GLIDING CLUB

7 days a week, year round operation
Thermal, Hill and Wave soaring
Modern all glass solo and 2 seater fleet
• 2 & 5 Day courses
• AEI ratings
• Soaring courses
Full catering, licenced bar and accommodation

Details from:
LONDON GLIDING CLUB
Tring Road, Dunstable, Beds LU6 2JP
0582 663419

THE LONDON GLIDING CLUB

David Freeman has joined the ASW-15 syndicate and John LeCoyte has bought a LS-7. John Ashcroft is flying his LS-7 in the Standard Class Nationals.

We hope our new clubhouse, which is a considerable improvement on the caravan, will be in use this season.
J.P.A. & E.J.W.

VECTIS (Sandown Airport, Isle of Wight)
We have just celebrated our sixth anniversary and with the addition of John Kenny's SHK, we have six gliders. Our thanks to members who helped with the winter maintenance of our Blaniks and for the care bestowed on the tug by Neil and Co – having a tug has given us much more flexibility.

The season started well with wave over Ashey Down and ridge soaring over Luccombe. Congratulations to Chris Bacon (Bronze badge), Andy Taylor (Bronze leg) and Mike Chambers (going solo).
L.T.

WELLAND (Lyveden)
March 31 saw a hive of activity as we completed Cs of A. Our thanks to all who assisted, especially John and Jim from Duxford. In the evening Michael Bird kept us well entertained in his usual witty manner as our guest speaker at the annual dinner. Thank you Michael.

Trophies were presented as follows: *Ab-initio*, Steve Algeo; Ray Clarke trophy, Dave Strachan; 267 trophy, Andy Parrish; Duration shield, Keith Scott and the Distance cup, Barry Chadwick.

The following day we had our first flight from our new airfield at Lyveden, which somehow seemed appropriate.
R.H.S.

YORK GLIDING CENTRE (Rufforth Airfield)
The season started well with a 15000ft climb in late March while Richard Kalin flew 500km at Benalla, Australia.

Our *ab-initio* and advanced courses are virtually full, despite us having twice as many this year with a course every week to October. The evening groups are also heavily booked. It's a good job we've given the Pawnee tug a new engine.
A.P.

YORKSHIRE (Sutton Bank)
The wave in March gave us some superb soaring and a clutch of badge claims. On March 4 Adrian Hatton flew 450km and David Hayes 250km in wave.

Congratulations to G. Jennings (Diamond height); C. Collins, D. Holland, C. Clark, M. Dale and C. Lynch (Gold height); D. Adamczyk and R. Hudson (Silver height) and J. Lindley (going solo).

At our enjoyable annual dinner-dance trophies were awarded to S. Dale (best novice); M. Brook (open ladder and Dick Stoddart trophy); D. Taylor (club ladder and handicapped speed around a task); I. Stromberg (height gain) and J. Hart (longest flight).

Courses started on Easter Monday with catering daily in the clubhouse.
C.L.

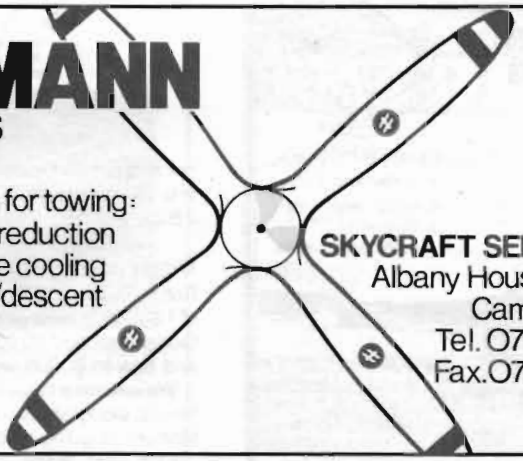
SAILPLANE & ENG. SERVICES LTD.

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.

HOFFMANN PROPELLERS



4-blade propellers for towing:
★ dramatic noise reduction
★ excellent engine cooling
★ improved climb/descent

SKYCRAFT SERVICES Ltd
Albany House, Litlington
Cambridgeshire
Tel. 0763 852150
Fax. 0763 852593

MIDLAND GLIDING CLUB
THE LONG MYND



ADVANCED TRAINING COURSES

Courses from mid March to Bronze standard or Cross Country.

Ab initio courses also always available.

AEI by arrangement.

Detail from:
ROY DALLING
Midland Gliding Club
Long Mynd, Church Stretton
Shropshire SY6 6TA
Tel: Linley (058861) 206

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.

Details from:
TOM MILLER
ENSTONE EAGLES GLIDING CLUB LTD
Enstone Airfield, Church Enstone, Oxfordshire
Tel: 0608 678204
(0608) 677461 or 677535 (daytime)
(0869) 50767 (evenings)

SOAR THE BIG SKY



SPECIALISED TRAINING RANGES FROM *AB-INITIO* THROUGH BRONZE C TO ADVANCED WAVE SOARING
SEVEN DAY FACILITIES
VISITORS WELCOME
5 DAY COURSE FROM £170

YORK GLIDING CENTRE
RUFFORTH AIRFIELD
YORK TEL (0904) 83694

SOUTH WALES GLIDING CLUB
USK, GWENT

COURSES FROM MAY TO SEPTEMBER UNDER BGA INSTRUCTORS

AEROTOW OR WINCH LAUNCHES

BEGINNERS WELCOME

TASK WEEK, ALL LEVELS OF PILOTS, JULY 22-29

WAVE, MOUNTAIN AND THERMAL SOARING

LIZ PHILLIPS (COURSE SECRETARY)
9 TRELAWNY CLOSE, USK, GWENT NP5 1SP
(02913) 3477 or (0291) 690536 (Club)

WORLD'S SMALLEST - WEATHER STATION



DIGITAR's new TWR-3 Micro Weather Station includes a computer, precision wind vane and speed sensor with mounting hardware, and 40 feet of cable. For only £169.95. With the optional, automatic-emptying RG-3 Rain Collector (£46.95) you can even monitor rainfall!

Delivery 28 days, P&P £5

MasterCard VISA

*Wind Speed	*Temperature	*Time of Day
*Wind Direction	*Hi/Low Temp Record	*Auto Scan
*Wind Chill	*Rainfall (Optional)	*Metric/Standard
*Wind Gust Record		*Nicad Ready
		*One Year Warranty

SKYCAM WEATHER SYSTEMS LTD

37B, New Cavendish Street, London W1M 8JR, England

Made in the USA — Above prices inc. VAT at 15%

Information: 071 486 5353 — Fax: 0923 853637

ALT-6, as above but with barometer pressure, £269.95. PCW PRO IBM-PC conversion, £389.90. Wind Wizard hand held wind indicator, £28.20. Weather satellite and radio facsimile receivers, details on request.

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

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

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 32670ft. Club record gain is 31050ft

Our rates are amongst the best - £10.30 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

IRVIN

EB80: THE GLIDER PILOT PARACHUTE OF THE NINETIES

- Competitive price includes travelling bag
- Designed and built for long-duration comfort
- Clean, contour-styled pack and harness giving snag-free cockpit entry-egress
- New, state-of-the-art, fast opening canopy with optional steering
- Chosen by the RAF for ATC cadet glider training



For details contact:

Sales Department, IRVIN GREAT BRITAIN LIMITED

Letchworth, Herts SG6 1EU

Tel: (0462) 482000 Telex: 82198 (IRVLET G)

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 Cruise 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 HT870 incl. VOR	£325.00
ICOM ICA-2	£299.00
ICOM ICA-20 incl. VOR	£349.00
KING KX99 incl. VOR	£369.00

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

ROGER TARGETT
Sailplane Services

Bristol & Gloucestershire Gliding Club
Nympsfield, Nr. Stonehouse
Gloucestershire GL10 3TX

Tel: Office (0453) 860861
Home (0453) 860447 (0453) 545316

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)

Neogene Paints

Your speciaiist 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

SUNSAIL (Andrew & Lyn Davis)

AEROGRAF - The Barograph
- electronic seal, sailplane/motor glider, 6/12000 metre range, camera interface £536.00

AEROGRAF BASIC - simple version of Aerograf for club use, hang-gliders and balloons, 6000 metre range £398.00

FOTOTIME II - time recording camera - elapsed time resolves to within one second £260.00

AT7 WING TAPE - 19mm × 20m £1.08

JACKING BELLY DOLLY MECHANISM
- 4 inch lift - with wheels £87.00
- without wheels £67.00

Prices include delivery and may fluctuate with exchange rate

Clarebourne House, Shortwood
Nailsworth, Glos. GL6 0SJ. Tel: 045 383 4931

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

JSW SOARING

"STILL AT 1988 PRICES UNTIL CHRISTMAS 1989"

'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

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

THE NEW L23 "SUPER BLANIK" FROM CZECHOSLOVAKIA



A superb trainer
All metal construction
Easy ground handling
Empty weight 310kgs
Fully instrumented
Certified to JR 22 and OSTIV-X
Delivery from July 1990
Demonstrator available from early June

SOLE UK AGENT - PETER CLIFFORD & Co.,
15 Home Farm, Crowmarsh Gifford, Wallingford, Oxon, OX10 8EL. Tel: 0491 39316/680420 Fax 0491 39316 Telex 847516 CAIRFT G

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*

COME MOTOR-GLIDING AT ENSTONE

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 0608-677208 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: 0608 677208

SOARING EQUIPMENT LIMITED

Exchange Propellers for Motor Gliders
Fixed price overhauls and repairs
Delivery and fitting included
Quiet Propellers for Towing
Leading-edge Protection Tape

HOFFMANN PROPELLERS

193 RUSSELL ROAD
BIRMINGHAM B13 8RR
Tel: 021-449-1121 Fax: 021-449-9855

PROTECH
AIRFRAME REFINISHERS

Protect, enhance and appreciate your cherished investment with
UK's first specialist glass sailplane refinishing studio

- ★ Simultaneous and accurate re-profiling
- ★ Guaranteed workmanship by qualified GRP specialists
- ★ Double wax buffing protection
- ★ Customised or standard colour trim
- ★ Cockpit re-spray or spring clean
- ★ Competition numbering
- ★ Back to glass gelcoat removal
- ★ Technical advice and written quotation upon inspection
- ★ Replacement glider arranged (with advance booking)
- ★ Turbulator tapes and seals
- ★ Quality tow out gear
- ★ Collection and delivery service throughout UK

10-28 day turnaround possible with advance booking *10% of quotation secures booking*

PROTECH **Sailplane Studios, Booker Airfield, Wycombe Airpark, Marlow, Bucks Telephone 0494 438581 or 0753 887829**

OVERSEAS NEWS

Please send news and exchange copies of journals to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, England

- The BGA's decision to authorise a Nationals level competition in France, at Roanne, has attracted wide coverage in the European gliding press. Most of the reports home in on Britain's rotten weather and the British propensity for finding an original solution to an insoluble problem!

- For the man who has everything - or as Sweden's *Segelflygsport* snidely puts it, strictly for "paté eaters" - Casio has brought out a wristwatch incorporating a digital altimeter and barometer. I bet it beeps every thousand feet.

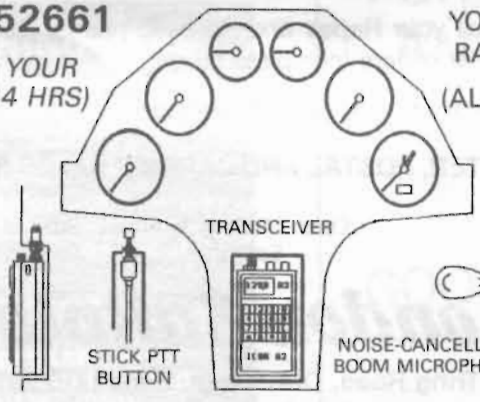
- Trials have been completed in France on the use of a SF-25 Motor Falke fitted with a Limbach L2400 engine with constant-speed prop as a glider tug. The rates of climb achieved were: K-8 - 2.7m/s; LS-3 - 2m/s; K-13 - 1.7m/s. The lengths of the take-off runs were not reported.

Translated from various magazines by Max Bishop



CONTEST **Tel (0962) 52661**
CALL US FOR YOUR CATALOGUE (24 HRS)

ALSO THE BEST OF:
ALTIMETERS, VARIOS, ASI'S
COMPASSES, DECCA NAV
ILEC ADC'S & VARIOS
MOTOR GLIDER I/COM RADIO
THERMAL CLOTHING ETC. . . .



YOUR BEST COMPLETE RADIO/NAV SYSTEMS:
(ALL 760 CHAN 5WPEP)
ICOM BASED:
A2: £269 (10 MEM)
A20: £299 (16 MEM & VOR NAV)



OXYGEN EQUIPMENT

The Sabre-Air Apparatus & Valve A.I.R. 24 series oxygen equipment for gliders, comprising a control head and 680 litre oxygen cylinder, is now available for self installation. With all the in-flight oxygen controls situated in the one position, this control head has been developed from the Company's highly successful Domiciliary oxygen unit to Drug Tariff Specification 01B.

The 680 litre cylinder is of British manufacture in aluminium to BS 5045 specification and is supplied valved and charged to 2000 p.s.i.

The company also supplies oxygen equipment based on 230- and 680-litre cylinders, and face masks complete with valves and economiser bags.

In the unlikely event of servicing being required, the company operates a 24-hour turn-round postal system.

NOW AVAILABLE - SLIMLINE 630 CYLINDERS



SABRE-AAV LTD
Unit 1, Blackwater Way, Aldershot, Hants. GU12 4DL
Tel: **Aldershot (0252) 334581** *Fax:* **0252-21993**

SOMETHING SPECIAL

At the south edge of the Bristol Channel the sea cliffs of north Devon and Somerset stretch 30 miles in an east-west line from Minehead to Ilfracombe. They rise in high rock turrets and deep-cut wooded gullies to upward of 1000ft before levelling out into the wide spread of Exmoor.

Sometime in the late 1960s, the early years of the Skylark 4, I was flying in competition at Dunkeswell. There came a day when the wind was north, 56km/h, and competition was declared off, for the morning at any rate. The opportunity was too good. I opted out of the competition and scrounged a tug to take me to the north coast.

In the strong wind it was a long and rough tow but just before mid-day I dropped off the tow at 4000ft between shredded cu and set course for Minehead. I rounded the corner of North Hill, Minehead, and although I was pushing the Skylark along at some 70kt at once found strong lift. A couple of beats along this four mile slope of some 600ft in height took me to near 2500ft. Sea cliffs always give much more powerful lift than hills inland because the lower layers of air are very little slowed over water.

The belt of lift was consistent, wide and remarkably smooth. I put the nose down again, crossed the Porlock gap and was soon over Lynton and Lynmouth. The view here was magnificent. Across the channel the Welsh coast was a dapple of sunshine and shadow. Below me the sea was an infinite variety of blues and greens beyond the white of waves breaking against the rocks. Lying back a little from the sea cliffs rose a great, conical, green hill flanked by two silver threads where the falls of the East and West Lynn poured down to Watersmeet. Behind me the deep cleave of the Badgworthy Water (shades of **Lorna Doone**) ran back into the purple of Exmoor. I beat round there for quite some while, fascinated by all I could see, before heading on to Coombe Martin where the cliffs rise to their best height of nearly 1000ft. Here I found lift to well over 3000ft even though flying at 60kt or so.

Beyond Coombe Martin the cliffs extend another eight miles to Morte Point beyond Ilfracombe where they turn sharply south. I made my turn over Morte Point – negligible lift here as the cliffs are no more than 200ft – and found lift again at 1200ft as the cliff rose higher towards Ilfracombe. Having made it to my intended TP I could now really relax and enjoy the flight. Never before, or since, have I been in such strong, spacious, certain lift. In time, I suppose, such lift could become too easy – like sitting in an armchair on a magic carpet – but that afternoon it was sheer delight. I flew loops and stall turns and found myself no lower than when I started. I flew out over the sea to let down and get a closer look at the gulls. I spotted a family of ravens, five of them, having a whale of a time and doing aerobatics way beyond my capability. Half roll and fall out in the second half of a loop was popular but so was a cold stall, half fold the wings and just fall, looking rather like black feather dusters. When I got near three went down to the cliffs below but two, the parent birds I presumed, set out firmly to drive me off. As ravens have a two inch pickaxe of a beak I gave them best and dived away.

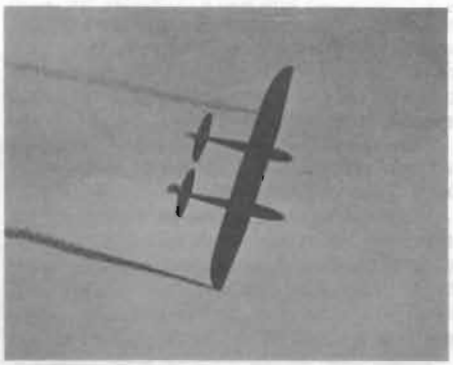
"... reduced sink right out to mid-channel before packing up."

East of Lynton, where the Bristol channel narrows to about 12 miles, I could see a cloud street coming right across from Wales. It wasn't strong but it added 3 or 4ft/sec to the hill lifts and took me to cloudbase at 3800ft. I turned towards Wales and flew out under it. It gave me reduced sink right out to mid-channel before packing up.

Up to now I had not hoped to get back to base. Behind any strong hill lift there is always a wide belt of down and thermals weren't likely to start until well back from the sea. However I thought the street, even though dying, might partly cancel out the down and let me get through to thermal again. I blew away with it hoping to reach clouds I could see forming away downwind.

The street did its best for me. Unfortunately the wind during the afternoon had veered quite a bit easterly and by the time I found any thermal again I was well back into the heart of the moor, still most of 30 miles from Dunkeswell, and the thermals were shredded and difficult in the strong wind. I managed to scrape east a fair bit but was being blown south of track all the time and when I found myself at 1300ft over Tiverton – base still 12 miles away and almost due east while I was fast drifting SSW – I gave the wind best and landed. A slightly disappointing end to an otherwise *perfect* day.

ODD SHOTS





Peter Treadaway of the Cambridge University GC took these unusual photographs of the aerobatic Lo100s during a display at Biggin Hill.

Sailplane & Gliding

The magazine can be obtained from most Gliding Clubs in Gt. Britain, alternatively send £12.40 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 £5.50 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 £12.40 or US $20.00 (or $30.00 by Air Mail) but International Money Orders preferred, direct to the British Gliding Association.

A TOM IN THE MOUNTAINS

Mick Wilshere from the Chilterns GC illustrates how gliding helped during a Tomahawk flight to Switzerland

I recently flew a Piper Tomahawk to Lausanne and back. What's that got to do with gliding? Well, I would like to point out some of the ways that a gliding interest helped with this trip and to show how all forms of aviating are inter-related and of help to each other.

I was flying with my friend Eris Lilienthal (great grandson of Otto, who really started the hang gliding movement in the late 1880s, see the February issue, p22), when in the Reims area all the vacuum powered instruments went crazy - no artificial horizon or gyro compass. But thanks to my gliding experience there was no problem flying on a limited panel using the magnetic compass and the T&S for a safe landing at Reims. The engine driven vacuum pump had sheared its spindle.

After repairs we continued south and took on more fuel to fly non stop to Lausanne. This involved a cruise climb to clear the mountains before descending to Lausanne airport which is just a bald grass strip with a Dunstable like dip in the centre. This means that if you don't get the wheels firmly on the ground before the beginning of the dip there is a strong chance of missing the down hill bit and hitting the rising ground hard enough to damage the nose.

The constant practice at Chilterns of "dropping in" over the hangars at 02 meant that a short landing wasn't a problem.

When we took off on the return journey the afternoon temperature was over 100°F in the sunshine. Despite having less than half tanks we barely staggered off the end of the field and nearly came to grief on the electricity cables which passed very close to the undercarriage.

The normal rate of climb of a Tomahawk in English type weather is around 500ft/min or 8ft/sec in gliding parlance. We were making less than 1ft/sec with the motor flat out due to the heat and altitude. The mountains we had to cross at 7000ft were about ten miles from the airfield, so it was pretty obvious we weren't going to make it.

Now this is where the gliding experience came in again. By steering for the sunlight faces of the mountain flanks and beating up and down for a couple of runs, just like slope soaring, we trebled our climb rate until we cleared the inversion and the aircraft's performance became more normal.



Eris Lilienthal at Southend prior to clearing customs.

We hopped over the mountains and had a downhill run to Dijon. Once again gliding experience was used to climb up the front of a thunderstorm coming in behind us until we could set a northerly course at about 3000ft.

Many times I have flown with power instructors with many hours but no gliding experience who have been surprised at the performance you can get from a power plane by reading the weather in the same manner as any glider pilot. Last autumn I found a stubble fire, dropped flaps, throttled back and gave my CFI passenger a lesson in thermalling.

GLIDER INSTRUMENTS
(M. G. Hutchinson)
Repairs and overhauls carried out
Approved for PZL and Winter Instruments
Barograph Calibration centre
Write or phone:
'Tanfield'
Shobdon
Nr. Leominster
Herefordshire HR6 9LX
Tel: 056-881-368
(answering machine)

THE AVIATION BOOKSHOP
HAS
THOUSANDS OF BOOKS
THOUSANDS OF MAGAZINES
in many languages — as well as
THOUSANDS OF PHOTOGRAPHS
All on Aviation: WW1, WW2, Civil, Military, Engineering, Aero Modelling, Navigation, Pilotage, Helicopters, Meteorology etc.
Call in —
or send £1 for large catalogue
THE AVIATION BOOKSHOP
656 Holloway Road
London N19 3PD
Tel: 01-272 3630
Access and Visa welcomed

NOW IN OUR 29TH 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

WAY OFF TRACK



Nicked

I was writing a piece on law-and-order costs the other day and was amazed to find that the cost of keeping someone as a guest of the Queen in one of our local lock-ups is now £66 000 a year. In my book that would keep you with someone very shapely for many weeks at Cap d'Antibes.

Alternatively, you could buy something even shapelier and racier in Kevlar and carbon fibre to call your very own.

But back to prisons: they've impinged several times on my gliding life over the past 20 years or so. "Quite right too" I hear some readers say.

My club was evicted at three days' notice from its then site, Long Kesh, in 1971 for it later to become a house of correction well up in the scale of public consciousness as HM Prison Maze. Later still, the club settled at its present site, Bellarena, only two or three miles south and within a siren's call of a newer nick, Magilligan.

It was while thermalling overhead this cooler about ten years ago that I was able to turn soaring into real cash for the first and only time.

I was in a tight turn at about 2500ft with the prison compound, newly cleared of Nissen huts, rotating slowly beneath my inside tip.

A number of small white ground markers could be discerned. Peering harder, I found they formed three large H shapes, with a big rectangle between one pair and the third.

The phrase "H blocks" had just been made a dirty word by various para-military propagandists, after the first two or three such buildings had come into use at the Maze.

"You're building three H blocks and a workshop block with sports hall at Magilligan," I challenged a government spokesman, by phone, the next day.

"How the hell do you know?" he asked, playing for time to formulate a response as the foundations had been staked out only 48 hours earlier and the project was still very hush-hush.

"Oh, your bloody glider," he then cottoned on, without any help from me but remembering the obsession on which I waste most of my leisure time.

In the best journalistic practice, I charged the *Guardian*, which broke my H-blocks story, the price of two aerotows on my swindle sheet.

The first launch, you'll understand, was for spotting them.

The second, as befits an *authoritative* paper, was to verify.

Another Cock up there, Holmes?

Still on prisons, is there a Sherlock Holmes or Miss Marple in British gliding's ranks?

An opportunity is now open to investigate the fate of one of history's great unflown prototypes – the Colditz Cock glider which Allied PoWs built secretly in the roofspace of the forbidding clifftop fortress near Leipzig in 1944. The plan was that two inmates would be catapult-launched aboard the Cock from the roof to glide over the ramparts, cliffs and barbed wire, the guardposts and the encircling moat-like river, to land in the meadows beyond.

With Allied forces approaching and liberation at hand its one-shot operational career was put on hold – and the castle was freed before the Cock was flown. It was seen in the open air only once – rigged in the courtyard on the day after liberation. Thereafter it disappeared in the confusion virtually without trace for only the rudder is *thought* to have survived.

From April 1 Coldtiz Castle has been open as the latest tourist attraction in cash-strapped East Germany, complete with an exhibition of such PoW-built structures and implements as a 45 yard tunnel and a wooden sewing machine for making escape uniforms.

With total openness now the Eastern European rage, perhaps a motivated gliding enthusiast cum skilled investigator can determine what really happened to the Cock.

Among its builders was Lasham's Lorne Welch; sketches of the Cock show its resemblance to the Grunau Baby. Albeit using improvised non-aeronautical materials it closely followed the structural technology of the time.

But what might have happened at Colditz if the Rogallo concept of flex-wing gliders had evolved during the 1930s, rather than during the 1950s and 1960s, in response to the needs of impending space flight.

Given the availability of a few structural members – and it is hard to think of anything which might have been at hand and suitable – might not a whole squadron of foot-launched rag-wings have been built for a veritable platoon of escaping inmates to descend like bats from the castle tiles to the noctural valley far below?

They certainly could have been built with less difficulty, and thus less risk of discovery, than a conventional glider in the roof.

I put this point years ago to Lorne Welch, whose reasonable reply was that the Cock was like it was because the Rogallo concept did not exist at the time.

With many conventional military aviators among Colditz's international and multi-service inmates, there was clearly none so desperate as to be thinking in the then unproven birdman mode.

CLASSIFIED SECTION

TO PLACE AN ADVERTISEMENT IN THE CLASSIFED 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 of publication. 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.

FOR SALE

PEGASUS. The best all round performance and handling at affordable price. Delivery July 90. Nine Four Aviation (Steve White). Tel 0494 436888, Fax 0494 449549.



TAIFUN 17-E



Choice of two of these desirable motor gliders. Both have 90HP Limbach engines, comprehensive avionics, low hours, always hangared and in excellent condition. Contact Steve White, Nine Four Aviation Ltd, tel 0494 436888, fax 0494 449549.

INSTRUMENTS – 2 altimeters, £65 and £95. Konica Pop £38. Combined boom mike and speaker £55.00. Tel 0238 563797.

PEAKIN PARACHUTE exc condition £300. BAROGRAPH hardly used £250. CIRRUS HEAD REST £50. Tel John Giddins (day) 0734 500206 (eves) 086 735 663.

OPEN TRAILER with soft cover and fittings for SF-27A. Please ring 0444 450891 (evenings).

LIGHTWEIGHT COVERS made up for your glider. Dust covers or waterproof. Also canopy covers. Details from Ann Woolf. Tel 0256 58540.

SKYLARK 4. Exc cond having undergone much restoration in recent years. Good panel with Cambridge electric vario, parachute, two man rigging aids, good wooden trailer, new C of A, ready to fly. £6500. Tel Tony 0703 694163 or Anne 0742 437091 (evenings).

BAROGRAPH Winter £290. Tel 0676 33162.

BERGFALKE docile 28-1 two-seater. Closed trailer with steel frame and new plywood, also parts to convert to 4-wheeler. New C of A £30 000. BENDIX J8 horizon £60. COMPASS 80mm £25. TWO OXYGEN demand regulators £30. Tel 0225 767528.

DART 17 WR completely recovered and painted by McLean Aviation. New canopy, 12 months C of A. Instruments including T/S A/H mech and electric varios, radio and parachute, with good GRP covered wooden trailer. £8000. Tel 0302 850913 (evenings).

STD LIBELLE 1/3rd share £4000. Fully instrumented, metal trailer, excellent condition. Based Camphill. Tel 03317 5223 (home) 0298 871207 (Camphill).

PFEIFER trailer, rear loading. Metal frame with glass top, good condition and tows very well. £1800. Tel 071 379 6397 (am) 071 242 8037 (pm).

PEGASUS. Completely refinished in gel coat. Hull plus basic instruments plus wooden trailer. £15 000+VAT. Tel 0494 29263.

WINTER BAROGRAPH £270. AEROGRAPH with engine sensor £440. Tel 0494 442501.

630 litre oxygen bottle either for outright sale or as part exchange for 370 litre bottle. Tel 0302 772106.

NIMBUS 3 - No. 7, plus trailer, oxygen, parachute, instruments. Dollies covers, radio etc. Tel D B James 06284 3509.

K-7 good condition, new canopy, long C of A. Tel J Graham 091 385515 for details.

STD JANTAR excellent condition. 12 mths C of A, audio vario, ASI, altimeter, compass, A/H, turn and slip, oxygen, radio, excellent wooden trailer £10900. Tel 07456 2642 or 0492 593454.

M-100S 15m sailplane. Recovered in Seconite 1988. C of A till Jan 1991. Excellent wooden trailer. Offers £7000. Tel 0745 591255.

SLINGSBY SWALLOW low hours, as new condition. C of A from date of purchase. Tel 0935 814454 or 0225 315082.

FAUVETTE 905-S French 15m 30:1 L/D. PZL+audio, ASI, altimeter, T/S, air path compass, TM6 radio, parachute and rigging aids. Complete outfit with sound metal trailer. £5000. Tel 0533 545876 or 0536 770978.

SKYLARK 2/4 excellent condition. C of A to April 91. New glass-fibre trailer, radio, audio vario £4300 ono. Tel Edwards 0964 623442 (eves).

K-7/13 in good condition with closed aluminium trailer £9500. Tel 0656 880395 or 0656 741191.

TWIN ASTIR, basic instruments only £17 300. Wing bolts modification worked, new C of A. Tel 010 358 17 21675 (Finland) or fax 010 358 17 532361.

ASK-21 + trailer, full panel, electric vario, radio - only £21 500. Tel 010 358 17 21675 (Finland) or fax 010 358 17 532361.

COMPLETE LEFT WING and a right wing aileron from a K-7 Schleicher two-seater sailplane £200. One complete J8 Bendix, horizon £150. Tel 091 221465 (Ghent, Belgium).

TWO-SEATER GOBE demonstration model. Low hours, as new, with open trailer and C of A £9500 no VAT. Tel Louis Rotter 0244 326555.

CLUB LIBELLE immaculate, accident free, privately owned in same club, hangared all its life, 439 launches, 478 hours only, full panel, oxygen, parachute, accessories, repainted trailer. Offers over £11 000. Repeat immaculate. Tel 0229 87 5311 (daytime).

SKYLARK 4 C of A, basic instruments/radio. £6000 + VAT. K8 C of A, instruments, trailer £5000 incl. VAT. Details from John (Ben) Bennett 0489 882196 (work) 0329 664927 (evenings).

WANT A CHALLENGE? American Eaglet including trailer. Flew 1981. Needs dedicated builder. All manuals. Numerous spares £1250 ono. (McCulloch engine extra). 0734 785577 (Tel/Fax).

SKYLARK 3B (F mods) PZL vario, altimeter, ASI, accelerometer, T/S and battery, parachute, 12 months C of A, aluminium covered steel frame trailer. Tel Bryan Johnson 0283 812257 or Syd Brixton 0785 51452.

ASW-15 C of A, fully instrumented, fully equipped, incl. trailer, para etc. 1/5th share available. Based at Lasham, £2000 ono. Contact Richard Lovell-Butt 04868 6737 (evenings).

K-6E, 1/4th share based Dunstable. Wooden trailer, full panel, parachute, barograph, radio, oxygen, etc. £1600 ono. Tel (0277) 231438.

SHK-1 (Schempp-Hirth) V-tail wooden topglider, no damage, in good condition, including trailer. Full instruments, tl electric Cambridge vario/audio + radio. Flown only 1258 hours/756 starts. Photos available. £6900. Tel 010 358 55 363211 or fax 010 358 55 363244.



SKYLARK 4. Very good condition. Full kit including closed trailer, full instruments, radio, parachute and barograph £4800. Tel 0252 549861 (evenings) 0344 856232 (daytime).

DUE TO CLUB RATIONALISATION K-2, K-2b, T-31 Tandem Tutor. All with C of A. Tel D Johnstone 0555 892558 (evenings).

SKYLARK 2B with enclosed aluminium trailer, parachute, full instruments, complete with two man rigging aids, C of A Apr 1991. Barograph available £2400 ono. Tel David Harrison 0904 707781 (evenings).

SF-27 in near perfect condition, open trailer, basic instruments £6700 ono. Tel 0904 703171.

CARMAM 15/34 15m, 37:1, single seat sailplane. Metal trailer 2 man rig. Oxygen, barograph and parachute. 4 channel radio including Volmet. Panel includes audiovario and Sollfahrtgeber. £9500. Tel 0532 506992.

FALKE SF 25B motor glider excellent condition, current C of A, hangared, offers. Tel 0283 215667 (ansaphone).

GLIDING—OVER ROYAL DEESIDE—SCOTLAND

Enjoy the serenity and excitement of the mountains and glens from a different viewpoint.

Gliding, hire and lessons, are available from Deeside Gliding Club, Aboyne; with advance notice bookings being made on your behalf.

The proprietor—a gliding enthusiast—offers special discounts for visiting Gliding Club Members on accommodation, dinners and bar meals.

A wide range of activities and special events are available for all the family, please contact: *Gillian.*



Monaltrie Hotel

Monaltrie Hotel, Bridge Square, Ballater, Aberdeenshire AB3 5BR.
Tel: 03397-55417. Fax: 03397-55180

ASTIR CS-77. Very good condition. C of A. Basic panel, oxygen, fuill rigging & one man tow out gear. Wooden trailer, based Dunstable. Any reasonable offer accepted. Contact 010 31 1719 83910 (Tom Meaker - Holland).

ASH-25E (sustainer engine). Immaculate, with Schroeder trailer, equipment negotiable. Available August 1990. Tel Dickie or John 0865 841441, fax 0865 842495.

DG-400 with waterballast. Hull and instruments in pristine condition. New October 1988. 80hrs airframe, 8½hrs engine. Full panel including Peschges VP4 nav and new A/H. Demand oxygen system. Best offer over £39 000. Tel 0484 715948.

M-100S - completely refurbished. Basic instruments, excellent timber/glass trailer. Tel 0763 89460 (evenings).

ASTIR CS-77 1979. Full panel and flight director plus 760 channel radio, oxygen, barograph - 650hrs. Aluminium trailer £12 500. Tel 03398 86719.

SIE 3 15m excellent condition, K-6E performance. Wooden trailer, barograph, parachute. Further details and photograph on request £7900. Tel Steve Ferguson 0272 211228.

TALGARTH. Std Cirrus second glider syndicate. Immaculate aircraft, professionally maintained, little used. Price £1250 for 1/10th share. Contact syndicate organiser Simon Roberts on 053 185 375.

NIMBUS 3, 1981, 25.5m wing span, extensively refurbished, including all mods, reprofiled, and gel coated wings. Fully competition sealed and fettled with new glass-fibre double axle trailer, including rigging, towing out aids and wing covers.

New design instrument panel includes VP2 Peschges Nav. System.

Schuman and Winter mechanical varios, mini altimeter and ASI. A/H and T & S, 720 radio. Stopwatch. Airpath compass and Bohli. Also Drager 02 system 2 new bottles. Mounted Phototime cameras and Aerograph barograph. Fantastic outfit with astonishing performance.

Contact:
John Bally
Tel 04975-605 (eves)

SERVICES

WING, FUSELAGE AND CANOPY COVERS made to your requirements from waterproof/breathable heavy duty nylon. (Gortex type material). Tel 02912 70296 Fax 0291 622787.

PENNINGTONS
CHARTERED ACCOUNTANTS

For accountancy and taxation services.

Havard House, Harmondsworth, Middlesex UB7 0AW.
Telephone John Gorringe,
Day 01 759 1967, Evening 01 948 3799.

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 341166 Tlx: 61623 EURBAR G

ACCOMMODATION

FAYENCE. 3km airfield. Accommodation in new holiday village. Use of swimming pools, tennis courts etc. Studio sleeps 4, house 6. From £70 per week. For details phone 0489 572278 evenings.

COMFORTABLE, well appointed cottage available in Talgarth. Three double bedrooms. Tel for details 0532 665036. Sorry no pets.

NEWLY CONVERTED GRANITE COTTAGE. 10 minutes from Aboyne gliding strip. Families welcome. Peaceful country, plenty of parking space. Brochure available on request. Tel 03398 86089.

HAZLEHURST LODGE
Ballater Road, Aboyne
A home from home close to Deeside Gliding Club
Comfortable accommodation - Breakfast or Brunch
EXCELLENT FOOD
Tel: 03398 86921

SITUATIONS VACANT

TUG PILOT on holiday? PPL(A), CPL(H), 100hrs and bronze gliding available two weeks summer, four weeks winter. Reply Box No. 004.

COME TO SOUTHERN IRELAND!

Tug Pilot with tail-wheel experience wanted for five weeks July/August. Air-fare and caravan accommodation offered.

Applications to:
CFI, Dublin Gliding Club
1 Oakdown Road, Churchtown, Dublin 14
Tel: 0001 983994

WANTED

OXYGEN SET suitable for a K-6CR, portable or fixed. Tel 0372 376319 (evenings).

K-6CR or K-6E or similar. Good condition, complete outfit preferred. Tel 0759 303161.

AUDIO VARIOMETER age immaterial if in good working order. Tel 0403 65831.

ASW-20 or similar in good condition - preferably complete outfit. Tel 0452 741260 or 0432 276488 (evenings).

PILATUS B-4. Tel Phil Duffin 01 528 4427 (daytime) 0206 21 2226 (eves).

DAMAGED GLASS-FIBRE glider by private buyer. Top price paid - would consider complete outfit. Will travel in Europe to view. Tel 01 998 1510.

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. £15.00 Sterling for year's subscription (inclusive of postage).

AUSTRALIAN GLIDING, monthly publications of the Gliding Federation of Australia, Editor Allan Ash. A complete coverage of Australian Soaring and exclusive features of international interest. Subscription. Surface mail $A38.50, airmail $A60.00pa (12 issues), payable Mastercard, Visacard or international money order. Box 1650, GPO, Adelaide, South Australia 5501.

FREE FLIGHT, the bi-monthly journal of the Soaring Association of Canada. A lively record of the Canadian soaring scene, and relevant international news and articles. $US28pa. Suite 306, 1355 Bank St, Ottawa, ON, Canada K1H 8K7.

PERRANPORTH

ST GEORGE'S COUNTRY HOTEL

Near miles of golden sands and minutes walk from Perranporth's well known Gliding Club.

10 delightful bedrooms, most en-suite, all with extensive countryside views, satellite TV and tea making. Licensed bar and games room. Ideal base for touring.

Children and pets welcome.

(0872) 573226



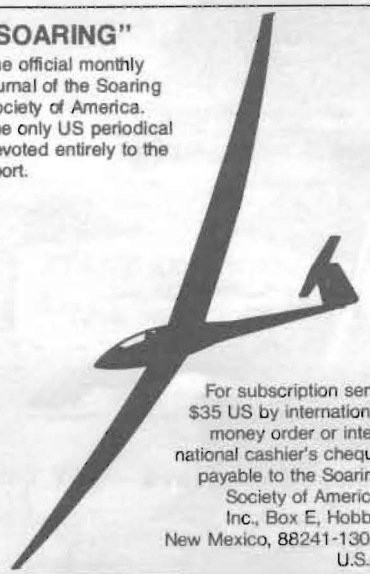
GLIDING AT ABOYNE, ABERDEENSHIRE THIS YEAR!

Try the Charleston Hotel, Aboyne. Five minutes drive from the Club. Family-run Hotel, excellent food and comfortable accommodation. Also self-catering cottage to sleep 5 in Hotel grounds. We specialise in serving food until 10.30pm daily.

Tel: 03398 86475

"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.

ADVERTISERS' INDEX

Aardman Animations	148
Airtour International	130
AMF Enterprises	116
Anglia Sailplanes	121
Anglo-Polish Sailplanes Ltd	120
Argyll & West Highland Gliding Centre	156
The Bartons	149
Beaumont Aviation Literature	164
Benalla GC	155
Black Mountains GC/Tower Hotel	156
Booker GC	156
Bristol & Gloucestershire GC	156
British Gliding Association	145
CAA	114
Cambridge Aero Instruments	114
Cambridge University GC	156
Centre Line Services	IFC
Channel GC	156
Charleston Hotel	167
Chiltern Sailplanes Ltd	146
Classifieds	165-168
Peter Clifford & Co	161
Connevans Ltd	Insert
Contest	162
Cornish Gliding & Flying Club	156
Cotswold Gliders	119
Coventry GC	157
Desk Top	154
EW Avionics	121
EW Avionics	121
Flite Lines Marketing Ltd	159
D. Garrard	160
Glider Instruments	164
Goodison Glider Instruments	168
HT Communications	168
Herefordshire GC	156
Intaface Systems	148
Irvin (GB) Ltd	159
JSW Soaring	160
Kent GC	157
Lasham Gliding Society	157
London GC	157
London Sailplanes Ltd	161
Lowndes Lambert Ltd	154
Marchington GC	156
McLean Aviation Ltd	142
Media Publishing - Sabre AAV	162
Midland GC	158
Mowbray Vale Insurance	118
Monaltrie Hotel	166
Neogene Paints	160
Norfolk GC	156
Oxfordshire Sport Flying Club	161
Piggott Brothers & Co Ltd	148
Protech Sailplane Services	162
RD Aviation Ltd	IBC
Rematic	160
Sailplane & Engineering Services Ltd	158
S&G	163
Scottish Gliding Union	158
Sedgwick Aviation Ltd	116
Skycam Weather Systems	158
J. L. Smoker	148
Soaring Equipment Ltd	117, 162
Skycraft	158
Soaring Magazine	167
Soaring (Oxford) Ltd	115
Southdown Aero Services Ltd	154
Southern Sailplanes	BC
South Wales GC	158
Speedwell Sailplanes Ltd	164
St George's Hotel	167
Suntiger Sunglasses	115
Sunsail	160
Roger Targett Sailplane Services	160
B. Weare	153
Wells Design Ltd	167
Wolds GC	155, 158
York Gliding Centre	158
Yorkshire GC	159
Zulu Glasstek	168

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

BGA MAIL ORDER

GLIDING BOOKS AND ACCESSORIES



BGA SALES DEPT.
FREEPOST
LEICESTER LE1 7ZB

Telephone orders to:
0533 531051
ALL MAJOR CREDIT CARDS ACCEPTED

COMPLETE SHOP CATALOGUE SENT FREE ON REQUEST



ZULU GLASSTEK LTD

Glass-fibre repairs & maintenance.

Repair agent for 94 Aviation.

Peter Wells
(08444) 3036





David Goodison

INSTRUMENTS
CALIBRATED, SERVICED AND REPAIRED
PZL WINTER AND SMITHS
CALIBRATIONS RETURNED WITHIN THE WEEK

4 BROADACRES AVENUE
CARLTON, Nr. GOOLE
NORTH HUMBERSIDE DN14 9NE
Tel. GOOLE (0405) 860856

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

RD AVIATION LIMITED

SERVICE AND CHOICE with a wide range **IN STOCK**

CASIO ALTIMETER WATCH



★ All the usual watch and chrono functions

Plus

★ Height up to 13,000ft
★ Altitude Alarm
★ Memory
★ Barometer

Special Discount Price

£49.95 *inc. VAT (***£43.43** *before VAT)*
by post in UK - ***£52.45***

DISCOUNT HANDHELD TRANSCEIVERS



ICOM
ICA2 720 channel
£299+VAT
ICA20 720 channel plus VOR
£349+VAT

NARCO
HT 870 720 channel plus VOR
£320+VAT

AOR
TR 720 720 channel
£349+VAT

Add ***£3.45*** *for UK post/insurance*

TRAILERS

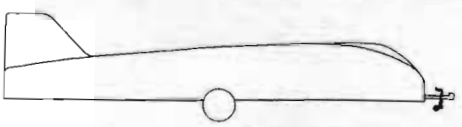
All are supplied with fittings and spare wheel

Price guides - for 15 metre glider (subject to exchange rate)

Standard Model -
£3800 plus VAT
Lift Top Model -
£4000 plus VAT



STANDARD MODEL



LIFT TOP - available Sept. 90

by SCHROEDER

★ Rugged
★ Low Drag
★ Excellent towing
★ Light weight
★ Proven - over 500 in use
★ Twin axle option
★ GRP clad to minimise condensation problems
★ Auto-reverse

CLOUDMASTER sunglasses

in widespread use



★ New - Quality frames (black or gold)
★ UV reduction
★ Improved cloud contrast
★ Virtually no colour distortion
★ Relaxing

Our top of the range model ***Free Case***
is £27.99 *inc. VAT (UK post, add* ***£2****)*
*(****£24.34*** *without VAT)*

VYNAFOAM Energy Absorbent

★ ½"×16"×18" ..... **£16.96 inc. VAT**
★ 1"×16"×18" ..... **£19.95 inc. VAT**
★ 2"×16"×18" ..... **£24.09 inc. VAT**
★ ½" body hugging comfort pad **£22.14 inc. VAT**

VYNAFOAM *can be cut easily and can be joined with impact adhesive. Cushion covers available.*

Cushions

VYNAFOAM

Cheerful, Friendly Service
☎ **0865 841441 (24hr) mail order**
Fax: 0865 842495 (24 hr)
Open to callers: **0930-1830 Mon-Fri**
1030-1230 Sats, or by appointment

WE'VE MOVED

Free 1990 Catalogue From
R.D. AVIATION LTD,
Unit 25, Bankside, Kidlington,
Oxon OX5 1JE
(Just outside the airport)

E & OE

VISA

NOW IS THE TIME!



IF YOU PRANG YOUR GLIDER

WE WILL MAKE IT PRETTY AND WHITE AGAIN, AND GUARANTEE IT WILL FLY AS WELL IF NOT BETTER THAN BEFORE

JUST TELEPHONE
0488 71774

SOUTHERN SAILPLANES

(Ralph and Stephen Jones)

Membury Airfield, Lambourn, Berkshire **Fax No. 0488 72482**