

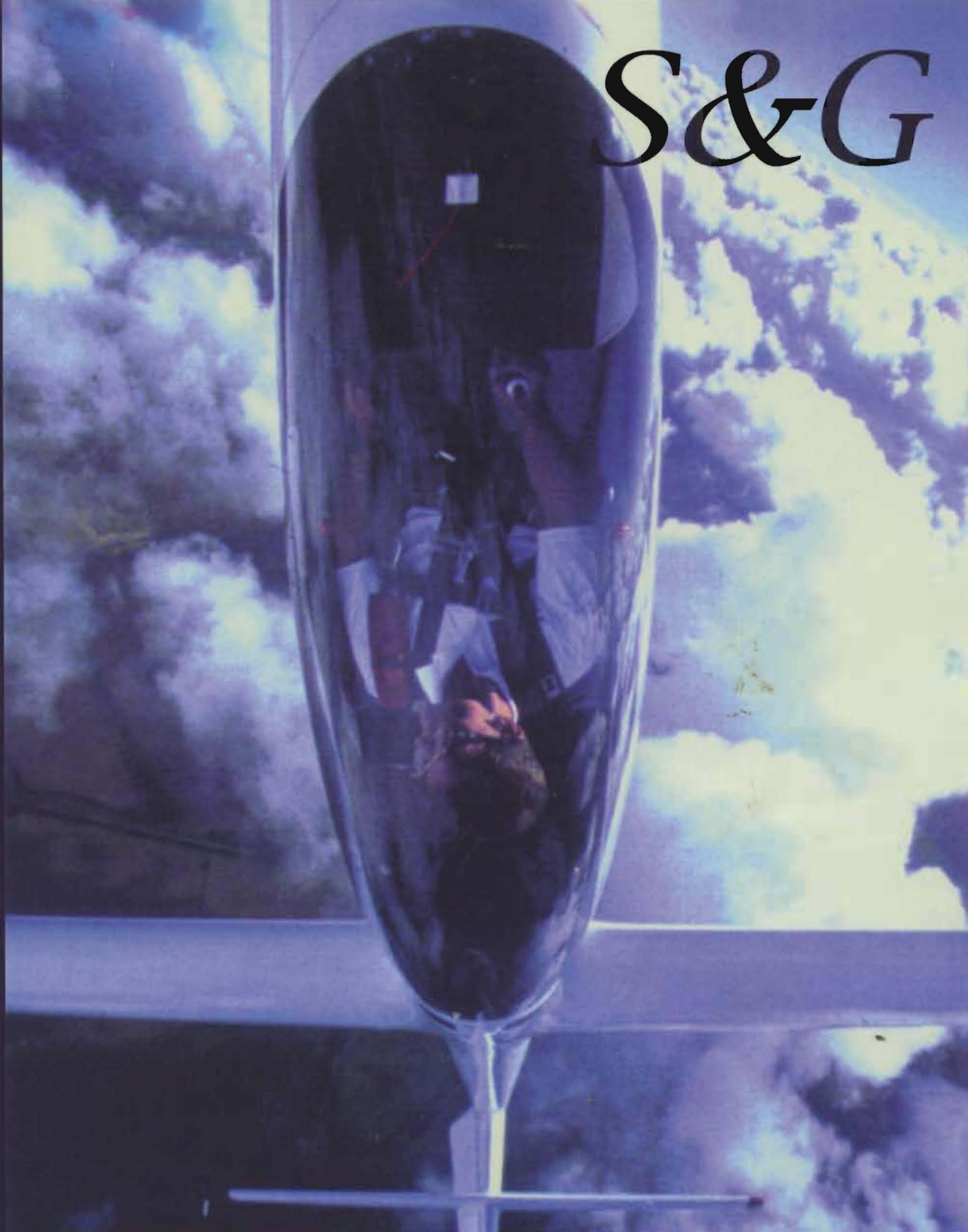
SAILPLANE & GLIDING

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S&G



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British Gliding Association

October ~ November 1998
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For matters relating to *S&G*
please contact the editor.
For matters relating to the BGA,
please contact the BGA office.

Submitting Material to *S&G*

Whoever you may be, please send a SAE for the
new *Guide to Submitting Material to S&G*,
before sending anything to the editor.
Please DO NOT fax articles.

Deadline Dates

(December ~ January issue)

Articles	10th October
Club News	10th October
Letters	15th October
Advertisements	20th October
Classifieds	3rd November

(February ~ March issue)

Articles	10th December
Club News	10th December
Letters	15th December
Advertisements	20th December
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S&G Annual Subscription

Send £17.50 to the BGA Office

Sailplane & Gliding

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Ned Godshall reports on a 'glider carousel' allowing a pilot to get any one of eight aircraft and its equipment, out of the hangar in less than a minute.

281 *The BGA On-line*



The BGA web-site has been fully up and running for two years. This article briefly reports on the information available to those with Internet access.

292 *Open Class Nationals*



Peter Harvey's personal diary was found lying on the peri-track at Lasham the day after the end of this year's Open Class Nationals.

296 *Making Accidents Survivable*



Tony Segal has been working on the subject of glider crashworthiness for thirteen years. He reports on the recent progress made by researchers in the field.

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SAILPLANE & GLIDING

S&G

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Making Accidents Avoidable - Electric Winch Launch

ISSN 0950-0707

Guy Westgate demonstrates the manoeuvrability of a Puchac



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NEW ERA NEW GLIDERS



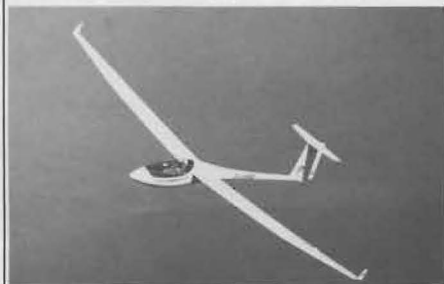
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David Innes direct	01420 88736
Bernadette Pollard Policy queries/Changes, Admin	01420 88706
Clair Greenough Admin/Switchboard	01420 88664
FAX	01420 542003
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BGA *and* General News

A Word from the Chairman

WE HAVE EXPERIENCED AN UNPRECEDENTED SERIES OF FATAL GLIDING ACCIDENTS OVER THE LAST FEW MONTHS. ACCIDENT FREQUENCY HAS ALWAYS TENDED TO BE CYCLICAL, AND IT IS TRUE THAT THE CURRENT SPATE OF ACCIDENTS FOLLOWS A PERIOD OF A COUPLE OF YEARS DURING WHICH THE FATAL ACCIDENT RATE APPEARED TO BE IMPROVING.

However our recent poor accident record must give us *all* cause for *real* concern, and it is appropriate to reconsider our approach to Safety and Accident Prevention in our sport, and to take what action we can to reverse the trend.

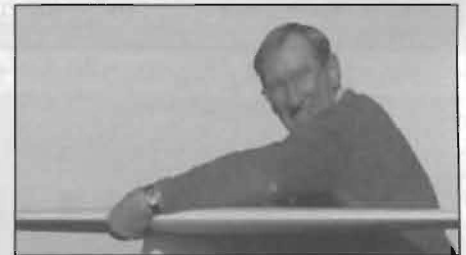
As I see it, the BGA has a duty to take a lead in this, and to that end I have put together a small Working Group under the Chairmanship of Peter Claiden who, the reader will recall, contributed an excellent article to the Aug/Sept issue of *S&G* "There But for the Grace of God" (p.208). Peter is a Senior Inspector with the Air Accident Investigation Branch at Farnborough, and also a member of the London Gliding Club. Our brief will be to review the BGA's whole approach to Safety and Accident Avoidance, and to make recommendations to the Execu-

tive Committee for any changes or innovations which it is felt will improve our performance in this vital area.

But the BGA can only attempt to create an environment in which "Safety" is maintained at a sufficiently high level in all our minds. Collectively and individually we must ensure that our level of knowledge is sufficient to protect us from making the "Fatal Error", and that we remain alert to the dangers which we inevitably encounter in our sport.

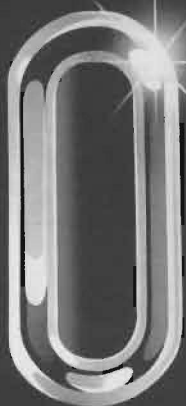
As Chairman, among the items I receive in my post are copies of all the Accident and Incident Report Forms sent in by Clubs to the BGA. This is a salutary exercise, especially as the forms usually arrive just as I am setting off to my own club on a Saturday morning. Summaries of the accident reports are, of course, published in *S&G* from time to time, but a summary cannot really have the same impact as the original report, which includes eyewitness statements, club Safety Officer and CFI's comments, and generally a statement by the pilot - if he/she is fortunate enough to have survived the event. What strikes me so depressingly often is that certain types of accident seem to occur over and over again. We simply do not seem to be good at learning from the mistakes of others. The types of accident I have in mind

include, for example, "Stalling and/or Spinning near the ground", "Dropping a wing during the launch and failing to release the cable in time", "Poor Circuit Planning leading to an Undershoot", "Failing to maintain an adequate Look-out" and so on, *and on*.



The Safety Working Group I have mentioned above will, of course, be considering these and other ways to help to protect our pilots from the trauma and potential tragedy of becoming involved in a gliding accident. Recent events have demonstrated that the experienced pilot can be just as much at risk as the tyro. The only real protection comes from knowledge and an attitude of mind. I do exhort every reader of these words to review his own approach to safety in the air, and to take action to ensure that he does what he can to reduce the risks to himself and to other occupiers of our airspace. Thus we will have a real opportunity to bring about the improvement in our safety record that I am sure we all seek to achieve.

-Dick Dixon



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BGA Lottery

The winners of the July draw were:

R. H. Dixon (first prize) £48.50

Runners up

A. Galbraith	£9.70
D. Eastell	£9.70
D. Holland	£9.70
P. L. Bisgood	£9.70
C. Robinson	£9.70

The winners of the August draw were:

M. F. Davis (first prize) £51.75

Runners up

E. Lackhart	£10.35
J. V. Bradbury	£10.35
C. B. Golding	£10.35
J. Nash	£10.35
R. W. Aspin	£10.35

S&G Cover Price

From the December/January issue the cover price of *S&G* will be £2.75 and the subscription rate £18.50 for the UK and surface mail (an airmail subscription is extra depending on where you live).

Certificates

FAI 1000km Badge

Nº	Pilot		Date
8	Michael Bird	in USA	27/6/95
9	Brian Spreckley	in S. Africa	21/12/97
10	Bradley, Richard	in S. Africa	27/12/97

ALL THREE DIAMONDS

Nº	Pilot	Club	Date
549	Wright, Julian	Lasham (Australia)	8/6

DIAMOND DISTANCE

Nº	Pilot	Club	Date
1-786	Wright, Julian	Lasham (Australia)	8/6

DIAMOND GOAL

Nº	Pilot	Club	Date
2-2598	Peters, Carl	Four Counties	17/5
2-2599	Miles, Tony	Lasham (in Australia)	3/2
2-2600	Copley, Roger	Lakes (France)	22/6

DIAMOND HEIGHT

Nº	Pilot	Club	Date
3-1448	Bardgett, A.	Borders	9/5

GOLD BADGE

Nº	Pilot	Club	Date
2032	Peters, Carl	Four Counties	17/5
2033	Poole, Peter	Surrey Hills	16/4
2034	Hope, Dominic	Deeside	10/12/97
2035	Miles, Tony	Lasham	3/2
2036	Snoddy, Tom	Ulster	2/5
2037	Copley, Roger	Lakes	22/6

GOLD DISTANCE

Pilot	Club	Date
Peters, Carl	Four Counties	17/5
Miles, Tony	Lasham (Australia)	3/2
Dyer, Rhys	Essex (Australia)	17/2
Copley, Roger	Lakes (France)	22/6

National Ladder

Many pilots have managed to make the best of the poor weather so far and a few good scores have been trickling in. At the time of writing (August) it appears that the season is just about to start, with large tasks having been flown towards the end of July. Fingers crossed, it is still hoped that 1998 will not turn out to be the Year That Never Was.

Meanwhile, behind the scenes, I have been molesting Club Ladder Stewards with proposals for modifying the Cross-Country scoring system in ways which are intended to reward the more adventurous pilot. One such proposal is to relate the score for declared, but uncompleted, tasks to the proportion of the task actually achieved, thereby encouraging pilots to carry on with their tasks when the going gets rather less than good. A second proposal is to award a greater proportion of points to those flying O/Rs and triangles, compared to those flying 'wimpy' quadrilaterals and zig-zags. If you would like

more details or want to make your views known (either for or against), please speak to your Club Ladder Steward who will be happy to furnish you with all the information you need.

Final scores for the 'season', please, as soon as possible after the end of September, 1998.

—John Bridge

Open Ladder

	Pilot	Club	Score	Flights
1	J. Bridge	CAM	7,925	4
2	M. Young	CAM	6,130	4
3	A. Hatton	FCO	5,207	4
4	R. Brimfield	LON	5,107	4

Weekend Ladder

	Pilot	Club	Score	Flights
1	J. Bridge	CAM	6,579	4
2	A. Hatton	FCO	5,207	4
3	R. Brimfield	LON	5,107	4
4	R. Hood	FCO	4,537	4

Junior Ladder

	Pilot	Club	Score	Flights
1	R. Hood	FCO	3,939	4
2	N. Foreman	CAM	2,537	1
3	D. Allison	BOO	1,818	2
4	P. Thelwall	CAM	1,398	1

GOLD HEIGHT

Pilot	Club	Date
Poole, Peter	S.Hills (Spain)	16/4
Hope, Dominic	Deeside (Africa)	10/12/97
Johnson, William	Burn (Australia)	4/3
Snoddy, Tom	Ulster	2/5

UK CROSS-COUNTRY DIPLOMA (Part 1)

Pilot	Club	Date
Fielding, Roger	Derby & Lancs	22/5
Langford, Martin	Essex & Suffolk	20/5

SILVER BADGE

Nº	Pilot	Club	Date
10389	Ward, Gavin	Yorkshire	7/5
10390	Heath, David	Shenington	3/5
10391	Ince, Peter	Bicester	2/5
10392	Simmons, Keith	Mendip	21/5
10393	Mottershead, T.	Wolds	22/5
10394	Marsh, David	Bath & Wilts	20/5
10395	Adams, Robin	Shenington	19/5
10396	Corbett, R.	Lasham	17/5
10397	Dyer, Damien	Shenington	17/5
10398	Cattermole, S.	Norfolk	22/5
10399	McVean, Robin	Midland	12/6
10400	Nutley, Stephen	SGC	12/6
10401	Male, Stephen	Midland	12/6
10402	Vella-Grech, John	Shenington	12/6
10403	Pedwell, Mark	Stratford	12/6
10404	Mitchell, Lee	Bowland Forest	21/6
10405	Abbott, Richard	Lasham	17/5
10406	Thompson, Barry	Sackville	17/5
10407	Forster, Mike	Booker	12/6
10408	Davidson, Frank	Wolds	4/6
10409	Heslop, Margaret	Southdown	18/5
10410	Clarke, Jonathan	Glyndwr	11/2
10411	Smith, Peter	Lasham	4/5
10412	Glazzard, Sidney	Shenington	18/6
10413	Lockett, Robert	Essex & Suffolk	21/6
10414	Davis, William	Kent	5/7
10415	Draper, Kay	Shalbourne	12/4
10416	Gossling, John	London	14/7
10417	Thomas, David	Bidford	17/7

Alps Appeal Fund

The fund has received a donation from Mr L. P. Woodage.

A Glider Pilot Bold

In October 1998 a book, written by Wally Kahn, full of funny gliding stories will be available for all to read. Its tales of glider pilots, their clubs, their songs, (and a full bibliography of gliding books published in the UK), have been crafted to amuse most, possibly embarrass some, perhaps infuriate a few, and certainly inform the rest, Wally's fund of stories has been collected during his more than fifty years of active gliding.

At a cover price of £9.99, +p&p, *A Glider Pilot Bold* will be available from the BGA, hopefully your club, bookshops, RD Aviation, and directly from Jardine Publishers.

BGA Development News

BGA Central Media Pack

The BGA Development Committee has been working closely with the Leicester-based firm of PR consultants, Duncan Hopwood Ltd. Production of the media packs is progressing well, with completion scheduled for the end of September.

The pack will contain presentations, both in a "high-tech" and a "low-tech" format. The whole programme will be available as colour slides for a basic projector and screen and also in the latest PowerPoint format for those clubs with access to the more advanced equipment.

Media packs may be borrowed for short periods, free of charge, from the BGA office but clubs may also purchase and retain their own packs, if they prefer.

Regional launches of the pack are planned for October, when nominated representatives from clubs will be invited to receive a full demonstration of them and will have an opportunity to try out the contents for themselves.

Meanwhile, there is excellent advice on the subject in the BGA Marketing Support Manual which was also designed by Duncan Hopwood. Every club should have one! If you have not received yours, please call the BGA now.

Conference for BGA club chairmen

Following the launch of the Central Media Pack, a one-day national conference is being planned for between the middle and end of November for BGA club chairmen.

This conference is born out of recognition that club chairmen have a key role in club planning and decision-making and in providing links with the BGA, as well as managing what, in effect, are small businesses. The conference will address these issues, and provide a structured forum for discussion on "best practice" in club management.

A central venue will be chosen and details will be sent to clubs by the middle of October.

Signposting your Club

How many trial lessons and potential new members are lost, due to poor directions and lack of proper signposting to gliding sites? When visiting gliding clubs around the country, I frequently have difficulty in pinpointing the location and finding the front gate, even with a GPS!

One solution is to apply for the familiar brown or white Tourist Signs, not only for the site entrance, but also to provide directions to the site from the nearest main road junctions.

Under new government legislation, many gliding clubs now qualify for Tourist Signs. Applications should be made to your local Highways Authority which is usually the responsibility of the County Council. Evidence will be required that the majority of visitors are expected from over ten miles away and that the site and its facilities are available to the public, without prior booking. Adequate parking facilities and safety provisions must also be available for visitors.

Costs vary, but good quality brown Tourist Signs have recently been installed at the entrance of a club and at all the nearest main road junctions, for less than £1,000. Expensive perhaps, but likely to prove a worthwhile long-term investment.

The Philip Wills Memorial Trust

For those clubs planning further capital investment, or seeking the necessary partnership funding to support a grant application to the Lottery Sports Fund, the Philip Wills Memorial Trust has resources available for providing loans to BGA clubs for approved capital projects. Loans are normally repayable over ten years at 5% interest and details are available from the BGA Office.

-Roger Coote

Safety Flash

In three months there have been three mid-air collisions and four pilots have been killed, two of them very experienced. The circumstances of each accident were, of course, different but it should be recognised that collisions are the greatest hazard in gliding. Exhorting pilots to "keep a better lookout" is not in itself a solution. Here are some factors to consider:

- ❑ In sharing a thermal you should not accept another pilot disappearing into your blind spot. You should not fly in another pilot's blind spot.
- ❑ Consider that, especially in competition, pilots appear to be accepting closer proximity than is safe. Less experienced club pilots would not accept such close proximity.
- ❑ Be aware that increasing circling speeds, typically 50-55kt, much reduces the margin of safety even if manoeuvrability is better than in days of yore.
- ❑ Preoccupation with instruments, especially GPS, gives too much time with the pilot's head in the cockpit. Remember the maxim:
"If a pilot buries his head in the cockpit, sooner or later someone will have to bury the rest of him".

- ❑ Minimise your head-in-cockpit time, especially when in areas of high traffic density, the circuit, the local area, competition start zones. If you used to set course on a compass heading or with reference to a ground feature then do so again. Set the GPS for the first waypoint before take off or when well on route.
- ❑ Some pilots using GPS say they don't need to look at the ground anymore. Preoccupation with flying the glider may be seriously to the detriment of keeping a lookout.
- ❑ If your glider is damaged in a mid-air collision, the time available to get out may be limited. If the glider is pointing at the ground and isn't controllable then it will accelerate at 19kt per second, i.e. you will accelerate from 60kt to 120kt in three seconds. If you take the time to try the controls it may be too late.
- ❑ A fit young pilot will get out of the glider in about three seconds; an older unfit pilot up to ten seconds and that is at 1-1.5g. Although pilots have baled out successfully from as low as 700-800 ft. the success rate gets better above 1500'. *Get out sooner rather than later.*
- ❑ Think about the possibility of baling out, even practices on the ground with cushions alongside the cockpit. It might just make the difference.

-BGA Safety Committee (July 1998)

Air Sports International

The August issue of *Air Sports International* is now on-line. Apart from carrying the usual articles/features we have built in a new feature in this issue. You will now be able to download the August issue on to your hard disk and view the file off-line.

You can down-load the August issue by clicking on the 'OFF-LINE' button on the cover page. Detailed instructions will then appear to guide you through the new process.

The *Air Sports International* is available, as before, at: <http://airsports.fai.org>

Test Flying of Airsports Aircraft

12th November is the date for the second conference on Test Flying of Airsports Aircraft at Boscombe Down. This time the three main talks will be:

- Problems and Fixes for Permit-to-Fly Aircraft.
- Test Flying of Aircraft Modified for Disabled Pilots.
- Common-sense Test Flying and Planning the Programme.

Following each talk it is intended to allow enough time for questions and discussion, so come prepared to contribute your ideas and knowledge.

The conference should start at 13:45 and finish at 17:00. Last year it was overbooked so please apply early to the Royal Aero. Soc. for a registration form and details, giving your name, address and your telephone and/or fax number. (For contact details, please see the *Calendar* on p.265.)

Ted Lysakowski

IT IS WITH GREAT SADNESS THAT WE REPORT THE DEATH OF TED LYSAKOWSKI FOLLOWING A MID-AIR COLLISION DURING THE 15-METRE NATIONALS IN JULY.

Ted started gliding in his native Poland as one of the privileged sporting elite whose flying was funded by the government. Before he left Poland he had already achieved his Gold certificate. When he and his wife Krystina came to England, Ted joined the Derby & Lincs club at Camp Hill. After a few years they moved south and for thirty years were based at Lasham.

Ted made a tremendous commitment to gliding across a very broad spectrum. He was Chairman of the BGA Competitions Committee for five years, and later a member of the Executive. At Lasham, he was a member of the Management Committee. He was an active tug pilot and gliding instructor.

Ted's own flying was strongly competition orientated. He was consis-

tently highly placed in National competitions and became the UK 15 Metre Champion in 1993. He represented the UK many times in European Championships during the 1980s and '90s.

He was strongly motivated by a commitment to the common good, and by determination to succeed, but he also operated on a much more personal level. He was coach and mentor. He displayed excellence himself and encouraged progress in many by spending time with them individually. He widened others' horizons and helped them achieve their potential, often at the expense of opportunities for himself. There are many whose attitudes and approaches to our sport were moulded by his.



*Ted Lysakowski
pictured in the 1970s*

-George Metcalfe



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email (preferred): le@blot.co.uk post: PO Box 2039, PULBOROUGH, West Sussex, RH20 2FN

Please do not
fax letters

Missing Airfields?

Those of us at Four Counties are very flattered, however, we have just one small question. Why has the Lasham Gliding Society, in its advertisement inside the front cover of the August-September issue of *S&G*, chosen to use a photograph taken at the 1997 15m Nationals at Syerston? They might have got away with it, but our airfield bus is in the background! Yours sincerely,

Ken Reeves

STAMFORD, Lincolnshire.

Dear Editor,

I would like to thank *S&G* for finally providing the answer to one of the great mysteries that occur during the summer in the UK. I'm not referring to UFOs, or the phenomena of

crop-circles, but to the complete disappearance of a grid, airfield, launch-point bus and some decent looking soaring weather.

It transpires that on the day in question, according to the advert on the inside cover of the last issue, Lasham 'borrowed' 1997's 15m Nationals from Syerston and then returned it hoping nobody would notice.

Up to a point they got away with it, but they made one fundamental mistake: they forgot to return the decent soaring weather!

If anybody at Lasham is reading this would you kindly please give us back our lovely fluffy clouds and the sun before the year is finally over. Yours faithfully,

Chris Sheppard

Borrowash, Derby.



Lasham replies:

We never actually said it was Lasham... We know we don't have a bus. We merely wanted to present a pleasing image of gliding. As the advertisement has become such a topic of conversation, since its publication only one month ago [at the time of writing], we consider it to have been an enormous success.

Where Were We?

Dear Editor,

The decline in popularity of gliding is often reported by clubs and on the pages of *S&G*. Opportunities to promote the sport need to be seized upon vigorously and it seems reasonable to expect the BGA to be prominent in identifying suitable events.

I attended the excellent Popular Flying Association rally, held recently at Cranfield, together with thousands of enthusiasts of flying sports; they were real enthusiasts, many of whom displayed their homebuilt aircraft and all of whom shrugged off the poor weather conditions. I was exhorted, at every turn, to spend more time on power-flying, microlighting and ballooning. I was enthused enough to join the PFA.

What an ideal and cost-effective opportunity to encourage sports flyers into gliding! However, the Edgley team were the only representatives of gliding, following up the huge interest shown in their Optimist at last year's rally. Perhaps the BGA was less optimistic about the event and can justify their absence, despite the availability of a small number of vacant stands.

Alan Forbes

Bowland Forest Gliding Club

Motorgliding Training

Dear Editor,

Vic Carr is quite right to voice his concern that the motorgliding element of the cross country endorsement may become mandatory – long may the BGA listen to all sides of the argument, particularly when well reasoned, qualified and backed up with the relevant statistics.

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However, in Vic's letter, we are told that over the last twenty years, the reported field-landing incident-rate has been steady at about one in three, with no improvement shown since motorglider training became less uncommon. I am concerned that some readers may feel that this statistic implies that field landing training in motorgliders is not worth bothering with.

Without knocking the statisticians, I can assure any budding Silver Badge pilot that he or she will be far less likely to have an accident when carrying out that first field landing if an hour or so is spent in a suitable motorglider being taught, and then tested, on how to select and approach fields. Landing a K13 in a corner of the airfield does not adequately test a pilot's field selection knowledge, flying skill under pressure or field approach judgement. I also suspect that those of us gliding supervisors who regularly send people on cross country badge flights in club gliders feel happier knowing that the person has been adequately prepared.

I do accept, however, that motorglider field landing training will make little impact on those that choose to ignore the basics of safe field landing techniques, or those that are just plain unlucky.

Yours sincerely,

Pete Stratten
BICESTER, Oxon.

Dear Editor

As the recently appointed Chairman of the BGA Instructors Committee, I read Vic Carr's letter with interest, and make the following comments:

The compulsory use of two-seat motor gliders for the field landing element of the cross country endorsement was well debated at the BGA AGM. A clear majority voted in favour.

One of the clubs keen for the use of motorgliders *not* to be compulsory has had two accidents this year whilst training and testing pilots in field landing techniques in single seaters! These accidents were into a pre-selected field.

Whilst the standard of BGA Rated Motorglider Instructors may not be as high as Vic would like, they are still trained and tested to a very high level before issue of their ratings. We are not teaching cross-country flying in this exercise, but the ability to make satisfactory approaches into unknown

Letters to the Editor

fields. As with many training exercises, the skills improve with repetition, which is normally unavailable in a glider. In the motor glider the instructor can carry out the formal method - brief, demonstrate, student attempts etc.

When the current Instructors Committee discussed the Cross-country Endorsement there was considerable debate on this issue. The prevailing opinion was that using the motorglider was invaluable, and produced significantly better results than any other method. Using a glider is certainly possible, but to teach and test effectively will require the two-seater to be landed several times in fields, a procedure which is time consuming, expensive and hardly 'farmer friendly'.

In a glider you only get one chance at a field landing practice or test - in a motorglider the instructor will usually require the student to carry out a series of field selections and approaches. It is a brave (or foolish) instructor who will allow a pupil to land in a field, (which will of necessity normally be preselected thus destroying part of the training and testing process) without intervention. How many times do you do this before accepting the student as competent?

We fully agree that many instructors are not the most active cross country pilots, whether they teach in gliders or motor gliders. However, this criticism is just as valid however they teach field selection and landings.

Finally, I have placed this item on the agenda for the next meeting of the Instructors Committee in November. We constantly review our procedures, and are grateful for the input of such an experienced pilot and instructor as Vic.

Terry Slater

Chairman, BGA Instructors Committee

Get Some Professional Advice

I understand the need to stamp a new identity on a publication when a new editor takes over but change for its own sake is rarely a good thing, especially when the product has improved steadily over a number of years and evolved into something really quite good. As a designer of some 25 years experience I am sorry to see that the changes instigated by the new editor are a retrograde step. In one issue the magazine has moved from a profession-

Calendar

October - December

November 12th

Conference: Test Flying of Airsports Aircraft, Boscombe Down
Royal Aeronautical Society, 4
Hamilton Place, London W1V 0BQ
Tel: +44 (0)171-499 3515
[email: raes@taes.org.uk](mailto:raes@taes.org.uk)

December 5th-6th

International Airsport Exhibition
Telford Exhibition Centre. £4.00
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dial.pipex.com](mailto:dw.photography@dial.pipex.com)

CAA Safety Evenings

7th October: Newton Hotel, Nairn.
Probably an ATC presentation.
tel: 04179 810733.
2nd December: Southern Air,
Shoreham. Medical Presentation.
tel: 01273 461661.

There are 19 other CAA Safety Evenings in Oct/Nov/Dec . See the latest issue of GASIL for more information.

al looking publication worthy of a place on the newstands to the worst type of DTP [desk-top publishing] by someone with little design appreciation. It would take a long list to detail all of my concerns, but the most serious include:

The cover in its present form is dreary. Why change from a colour cover to duotone? The introduction of three block elements does no favours as far as the design is concerned and the typography is unsophisticated.

The typography inside is weak and dated without the saving grace of being retro. The serif face is difficult to read, unaided by a ragged three column format with a hyphenation regime that can only have been decided by software without any intervention by a human. Where insets are in a sans serif face in some instances the kerning and leading in the fully justified format is much too open, lacking the strength that insets usually portray. In others the kerning is much tighter to its improvement but the

Letters to the Editor

inconsistency is annoying. This same inconsistency allows some articles with sub-titles, such as "Way Off Track", to carry additional leading between paragraphs and others, such as "Tail Feathers", not to. The choice of all small caps for leading paragraphs rarely works with serif faces and then only if carefully chosen, and the position and faces used for titles lack typographical sensitivity. The handling of the drop caps could be more stylish, vertical lines between columns went out in the 80s, ... but I could go on at length.

I do appreciate what a difficult job it is but, for the continued good PR of the movement, at a time when we certainly need it, please get some professional advice on the design of the one publication which is the interface between our sport and the public, who are bombarded with highly sophisticated communication design all of the time from cereal packets to TV adverts. DTP, without design skills or typographical training, serves only to create amateurish, difficult to read and unenticing magazines that encourage no one to read, let alone buy.

That's the complaints out of the way. The content, as ever, continue to be compulsory reading and I trust that our new editor will continue the very high standards set by the old one.

Jon Hall, Chester.

hra@compuserve.com

[this letter has been reprinted verbatim]

Experienced AEIs

Dear Editor,

In reply to Rhodri Evans' letter in the August-September *S&G* (p.202), it is necessary to clarify a few points:

A recent letter from the CAA legal department to the BGA states: '...there is in law no such thing as a trial lesson or air experience flight, merely a first flying lesson which may or may not be followed by others'. Please Rhodri, no more talk of 'Passenger carrying'!

My recollection is that when the Air Experience Instructor rating was introduced it was intended to be an 'interim' rating on the way to assistant instructor. There is a current requirement for Air Experience Instructors to undergo refresher training after five years, which is now common to all BGA instructor ratings. To the best of my

knowledge, we have not removed an AEI rating from an instructor on the basis of refusal to undergo training as an Assistant Instructor. The Committee recognises that some AEIs will not wish to progress further.

Many AEIs do become well experienced and very capable, and this is probably due to their operating with a CFI who takes a keen interest in their progression, and does not regard their annual check as a nuisance formality.

Terry Slater

Chairman, BGA Instructors Committee
BANCHORY, Kincardineshire.

Span is for Wimps

Dear Editor

Congratulations to Chris Davison for his support of us low-tech gliders in "Span is for wimps" in the (Aug/Sept *S&G*, p.234). Commiserations to Plat for the circumstances in which he suddenly realised that he ought to be flying elderly Slingsby products like mine.

S&G could very easily support the cause of low cost, low-tech gliding simply by including in the Gliding Certificates list the type of glider in which the badge was achieved; such information is available on all claim forms. That way the SIFOW pilots will feel an even warmer glow of achievement while the TINSFOS who did his 300km in a 50:1 glider can be regarded a bit like the *in Australia* mob. After all, the badge standards were set when even my performance would have been impressive.

Mind you, if the pilots of those snooty £50,000+ gliders really are having ten times the fun, then they must be the happiest people around.

Yours faithfully

David Weekes, (Skylark 4 'BNK')

WITNEY, Oxford

Voices in the Cockpit

Dear Editor,

In his letter in the August/September edition of *S&G*, Rod Witter was extolling the virtues of cockpit voice annunciators. It may be of interest to readers to know that we manufacture a speech module which can be supplied programmed with two separate messages of up to sixteen seconds in total. The module measures 62x62x18mm and operates from a 12V DC supply.

Although not intended to provide voice output for the vario, this device can be used for other cockpit warnings,

such as 'undercarriage down'. Users can send us an audio tape (or a WAV file) containing their required messages which are programmed into the unit at manufacture. The module is priced at £39 plus a one-off £10 programming charge.

Barry Taylor

btaylor@logico.force9.net

Dear Editor,

I feel compelled to comment on the letter, 'Derek Comments On Reduced G' in the June/July Issue of *S&G*, p.133, as I feel I have the dubious honour of being the pre-solo student, described in the fifth paragraph of his letter, who nearly did Derek in!

The incident occurred on a week's course at Lasham in 1954, run by Derek Piggott. Stalls had been demonstrated to me and performed by me, and had been accompanied by a feeling of reduced-G and were corrected by forward movement of the stick. As Derek correctly realised, some students, me included, then associated the sensation of reduced-G with stalling, regardless of the lack of other warnings; such as buffeting, loss of air flow, sloppiness of control response etc. My movement of the stick only increased the illusion of this being the worst stall I had as yet experienced. I will say, however, that I was prepared to heave back on the stick at the last moment, on the grounds that it could only help to avert the coming crash. Fortunately, and with great skill, Derek saved the situation for me.

Also on this memorable course was a radiologist friend of mine, Louis Dupreez, who had flown Spitfires for the South African airforce in World War II. He was rapidly sent solo in the Prefect after a careful briefing by Derek. He was to do a 360° turn to the left and to the right and then to perform his landing.

After release from his winch launch, he performed two consecutive loops, a beat up of the launch point, a stall turn to finals and a landing that earned a round of applause from the assembled students. Derek, however, was of a different opinion; Louis was grounded for the rest of the course. Sadly this unforgettable character died a few years ago. They were wonderful days. Thank you Derek for being the best instructor I ever met.

John Hearn

BALTIMORE, Maryland, USA.

Technical Safety Matters

Mike Wollard is Chairman of the BGA Technical Committee. He also flies a Std Cirrus

IN THE COURSE OF A RECENT ACCIDENT INVESTIGATION I HAVE UNCOVERED WHAT I HOPE TO BE A PAIR OF ISOLATED INCIDENTS WHICH ARE SERIOUS AND NEED TO BE APPRECIATED BY THE GLIDING FRATERNITY AS A WHOLE.

Trim Springs

The first of these concerns a glider with known lively pitch characteristics which is reported to have been flown on a number of occasions with a broken trim spring, despite repeated mention in the flight manual of the importance of trim settings. Although these flights appear to have been undertaken without incident this does not mitigate the foolishness of flying a glider in a potentially dangerous non-airworthy condition.

In the second case, the broken trim spring of an SZD Junior appears to have been repaired with a different

spring arrangement as a temporary 'lash up' by a licensed aircraft engineer who should have known better. No regard was made to matching the spring rates and some flight control problems are reported to have been encountered although fortunately no incident resulted. Such cavalier action may be acceptable on a domestic lawn mower but has no place on a glider or on any other form of human transport for that matter.

In both these cases the gliders have been flown in a non-airworthy condition, rendering their insurances invalid and exposing their pilots and the local club to potential legal problems if things had gone wrong, which is clearly unacceptable. Gliders are not to be flown unless they are 100% airworthy. Any modification action can only be implemented after authorisation by the BGA Technical Committee and its Chief Technical Officer, Dick Stratton.

Parachute D-rings

And as a final whinge from the technical side of the BGA can I mention the issue of plastic rip cord handles on parachutes. The only reason for their existence is to save a few pence in manufacturing costs, an advantage which is grossly outweighed by the reduction in strength and durability which results from their use.

Plastic rip-cord handles have been the subject of several airworthiness directives in the past and are *banned* by the British Parachuting Association. If you have a parachute with a plastic handle then get it changed for a metal one. Metal handles are available in a multitude of shapes to suit your equipment and any competent parachute company will be happy to find and fit one for you for considerably less than your life is worth.



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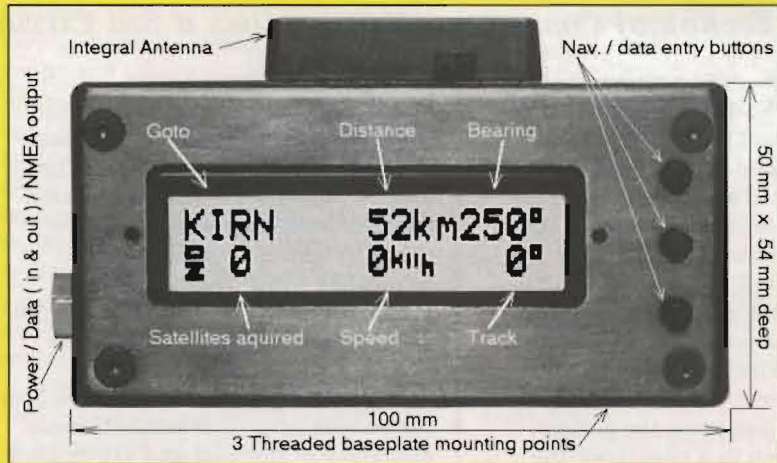
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I FLEW MY FIRST GLIDER IN 1969 AND AFTER EIGHT OR TEN CIRCUITS IN A SCHWEIZER 2-33 I HAD A RIDE WITH AN FAA EXAMINER WHO READ THE QUESTIONS HE ASKED ME OUT OF A BOOK. 'GLIDER' WAS ADDED TO MY POWER LICENCE EVEN THOUGH I KNEW ALMOST NOTHING ABOUT THEM.

I found a dog-eared copy of *Soaring Magazine* and read about a magical place called Black Forest Gliding Club in Colorado. I had to go there, if for no more than just to see what real glider pilots looked like.

When I showed up one crisp January morning and announced that I had come to fly gliders, they informed me that a 'Wave Camp' was going on and I could fly only after all the people on the camp had flown. That was OK because I was basking in the glory of just being around real glider pilots and a whole bunch of real sailplanes. In the midst of all the activity, cryptic messages kept snapping over the radio patched into the PA system, telling that people in sailplanes were actually going up. Other than on tow, I had never seen a vario register anything but down.

At the end of each day they would have a meeting to tell how many golds, diamonds, and the like, had been earned. To hear them talk about flying at 32,000' was almost a sensory overload. Following the meeting, those who had attained the honours would furnish the beer for everyone. I wasn't flying but I could, of course, participate in the celebrating.

One morning while they were assigning ships, I was surprised to hear: "Foreman, check flight in Five X-Ray". It was a blur of activity for the next hour as I was shown the function of oxygen regulators, briefed on maps, given a quick lesson on oxygen masks and dressed like I was going to the North Pole. I waddled out to the biggest glider I had ever seen, a Schweizer 2-32, which had just returned from another check flight. I was introduced to the instructor, Dick Sayer, who looked so young that he should have been going to a high school dance instead of teaching me how to fly a glider.

After the usual strapping, adjusting and canopy closing, we were on tow. Not only was this glider bigger and heavier than the 2-33, it had a totally different feel. It felt and flew more like an aeroplane.

47 Minutes to Diamond

by Jim Foreman

Dick chatted away about landmarks, minimum altitudes and holding position on tow as we hammered through what he termed as 'Light to Moderate Rotor'. Since he didn't seem the slightest bit concerned about all that thrashing about, I supposed that it was just a normal part of wave flying that must be endured in order to get to the good air. I followed the tug until we were eye-level with a mountain called Pikes Peak.

Suddenly the pounding stopped and the air became silky smooth. "OK, this is wave," he said. "pull the release and find your position on the ground." The metallic klunk was followed by the rope snaking away as the tug sliced off to the right. Dick pointed out landmarks on the ground and I realised that we were climbing faster than we had while on tow. It was truly amazing; we were actually going up!

The lift tapered off to almost nothing at 20,000'. Frost was beginning to form on the canopy and we turned out of the wave. Dick pointed out how to find the gliding club from the finger of trees beckoning from the south edge of the forest (this was to help me later). He had me do some slow flying, stalls and a six turn spin on the way back to the field. He entered an hour in my logbook, more than twice the length of any previous flight.

I was assigned a single-seat sailplane, a Schweizer 1-26, and told to go sit in it and get accustomed to where everything was. While I was stuffing a bailout bottle, maps and myself, dressed in the down from at least a hundred geese, into the tiny cockpit, one of the instructors was installing the barograph behind my head. All the time he was telling me that the 1-26 flew just like a 2-33 except lighter and a bit quicker.

We were no more than five hundred feet high on tow when I felt like a rabbit being shaken by a dog. I could

see the ailerons on the tug going lock to lock as he fought the thrashing air. I was frantically trying to hold position behind him, pull the shoulder harness tighter and catch the bailout bottle which had come loose and was bouncing around in front of me. All the time my head was banging against the canopy, and the tow rope was writhing like a crazed snake.

Suddenly, and nowhere near where we had found the wave the previous day, the air went smooth and the tug shot upwards. I pulled back on the stick to follow and catapulted past him so fast it was impossible to react before he disappeared beneath the nose. I grabbed and pulled, but I felt the nose of the glider being pulled downward. I was looking down the tow rope at the tug with its nose pointing straight at the ground. It was then that I realised I was pulling the airbrakes. I snatched the release and we separated with a loud twang. "Well, that *was* interesting," came the calm voice of the tuggie, Dave Johnson over the radio. "Released at ten-eight, four miles east of I-25, don't forget to notch".

I had no more than looked down for ground references when I suddenly found myself back in the beating and slamming rotor. I was well east of the Academy strip, at least fifteen miles from where we found the wave the previous day. I have to get back into the wave, I thought to myself as I shoved the nose down. I glanced at my altimeter and was surprised to find that I had already climbed over two thousand feet since releasing. One second I was held down by the straps and the next slammed into the seat; still I hung on with the nose down, shoving the little ship as fast as I felt safe. The altimeter began to spin down, one thousand feet, two thousand feet; just as I was about to turn tail for a fast return to the field, the air went smooth and I felt the surge of

the wave. I glanced out to my right and there was the towplane just off my wingtip. "Have a good flight," he said, and dropped away to the airfield.

I wasn't about to let myself drift back into that awful rotor again so I held my airspeed between 65 and 70. Even at that speed the vario was on the stop and the altimeter spun like a top. I heard two or three calls over the radio but didn't realise they were for me until they used my name. I tried to answer but they didn't respond. I heard Dave tell them that the last time he saw me I was in wave and climbing, then he added, "This rotor is really rough. Let's not put anyone else up here today."

I reported going through eighteen thousand but received no reply. Then I realised that I was breathing so fast that I might hyperventilate and began to count each breath. The altimeter was passing through twenty-four and the vario was still on the stop. I wondered if it was jammed but the altimeter was still marching round and round; I was going up. I began to try to figure out how high I needed to go for diamond altitude. Was it ten thousand feet? No that was Gold altitude. Eleven thousand feet? It didn't matter anyway because I couldn't remember what my low point had been. At twenty-eight thousand the canopy was frosted over and the vario finally dropped below a thousand up. How high do I need to get for a diamond? Sixteen thousand four hundred four, but what had been my low point. I was in such a sensory overload that I had forgotten.

I remembered that Dick had said something about even with the top of Pikes Peak and thirty-two thousand. I scraped the frost off the altimeter with a gloved finger and watched it reach that magic number — I had made it! I opened the spoilers, turned tail and headed for the airport. The stream of frigid air blasting against the canopy from the air vent was keeping a spot clear that was only about the size of my fist. I searched for that finger of trees through the tiny hole, but where was it?

At twenty thousand feet and still no sign of the guiding finger I decided to make a circle to be sure I hadn't flown past it. As I came around, there it was already a mile or so behind me. I pointed the nose at that beckoning digit and shoved the airspeed up to 80.

I was over the field at ten thousand feet so I pulled off the mask, sucked in fresh air and enjoyed the sting of cold air on my sweaty face as I circled down to circuit height. Someone on the radio reported that the wind was westerly and at forty so I began to set up my circuit. I heard Dick's voice: "Don't get downwind of the field, Jim, or you might not make it back."

There was almost no forward speed as I touched down and Dick sounded on the radio again, "Jim, keep the canopy shut, airbrakes open and the stick forward. We will be right out to get you."

I was euphoric as I walked into the flight office but no one asked about my flight. I couldn't stand it any longer so I blurted out, "I think I got to thirty-two thousand."

"But you were only up forty-seven minutes" said someone, checking the flight book. "We figured you fell out and had to come back."

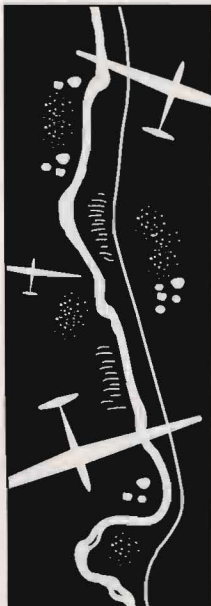
"There's a trace on here," said Dick as he wiped the fog from the window on the barograph. He cut the seal, opened the ticking barograph and rotated the drum to get a closer look at the trace.

"Looks pretty high to me". He carefully taped the foil to the masonite board used for calibrating charts. No one breathed, at least not me, as he checked various points on the foil with his callipers.

He finally announced, "Low point ten six, high point thirty-one eight. Altitude gain, twenty-one two. He certainly has his diamond." "Does he have a notch?" someone asked. "I'll say he has, about two thousand feet worth of notch," Dick replied.

I had an Altitude Diamond and nothing but a Rotary Club pin to put it on; I still hadn't flown a one hour solo flight. I was to learn later that I had stumbled into one of those very rare waves which forms off the escarpment of the Front Range, rips 80mph winds through the US Air Force Academy and boils up in a wave that lasts perhaps just half an hour with vertical speeds that often reach 40kt.

This was the fastest diamond altitude ever flown at Black Forest and just happened to be the 200th earned there. Over 500 diamond altitude flights were flown at Black Forest before it finally closed in 1985. No wonder it was called the Diamond Mine.



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IN ONE OF THE MARX BROTHERS' FILMS, GROUCHO SCANS A LEGAL DOCUMENT, PUFFS ON HIS CIGAR AND DRAWLS "WHY, A FOUR YEAR OLD CHILD COULD UNDERSTAND THIS. GO GET ME A FOUR YEAR OLD CHILD, I CAN'T MAKE HEAD NOR TAIL OF IT!"



"I can't make head nor tail of it!"

Go get me a four year old (well, fourteen year old, anyway) child, I can't make head nor tail of the manuals that accompany today's glide computers. What makes the heart sink is receiving a tome as big as a medium-sized town's telephone directory. The heart sinks even further when it starts off by telling you "This system is simple and easy to use..."

Wading through cold treacle is a sensation that might excite some people, but it does nothing for me. These manuals have all been translated into English from Norwegian or Serbo-Croat by someone whose first language is Gujarati. It is quite clear that no glide-computer manufacturer has done the obvious thing, namely to give the manual, and the electronic gizmo to which it refers, to a sample of pilots of middling ability and intelligence who have never



Wading through cold treacle...

used the device before. You leave them alone with it, then you test them afterwards to see what they have understood. You might even let the punters fly around to use the gadget in the air. If they pile into a housing estate two miles short of the airfield that is *prima facie* evidence that the tiny print on page 73 needs to be revised. You would also listen to the pilots' gripes and observations. Then you rewrite the manual and test it on a new sample till the comprehension scores increase and the failed glides decrease. (Well, you probably should redesign the gadget itself, but that is too tall an order: it's much too late now. A paper document is more easily amenable to revision.)

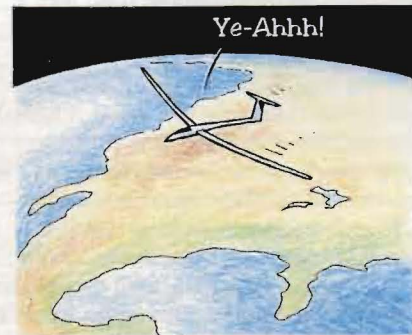
I can imagine suggesting this systematic testing procedure to a manufacturer and either provoking an apoplectic seizure or a gale of laughter, depending on their normal reaction to stress induced by a preposterous and unrealistic demand.



an apoplectic seizure or a gale of laughter...

In the recent Open Class nationals I discovered that my new computer would arbitrarily and without warning change all the settings, so that I would discover at 600 feet, after wondering where all the lift had gone, that the audio vario had turned itself off 15 minutes ago. Or the McCready setting would jump from my cautious maximum of one knot (for booming conditions, that is; zero for ordinary days) to a hair-raising Big-Day-in-Texas seven knots, so that I was being nagged incessantly to fly up to redline speed. Obeying this slavishly, I find myself again back at 600 feet. Likewise the computer would at the critical moment

stop telling me how much height I would have on arrival at the finish line – rather important data – again because it had decided that I would find other information like the outside air temperature or the battery voltage more amusing. I was reduced to trying to buy a John Willy JSW glide calcula-



a hair-raising Big-Day-in-Texas...

tor – you know, the idiot-proof plastic device with a circular rotating bit in the middle. Jardine Aviation did a wonderful job of supplying my multifarious and unpredictable needs during the Opens, but asking Jardines for a John Willy was like asking Aérospatiale for a flint axe. Gales of laughter. After a humiliating public request for this antique tool at briefing - more gales of laughter – Mike Young took pity and lent me a JSW for a 38 to one glider. Since my ship is supposed to do 58 to one I was at least erring on the safe side. On the calculator Mike had written a personal message "TINFOS [sic] SUCKS". He meant TINSFOS (for new readers of this column, that is short for There Is No Substitute FOR Span). He normally flies little ships but came third in a Nimbus 3d, going like a rocket, especially on the big days. I wonder if he still thinks span sucks.

Determined to lick the damn problem, I took off with the manual in the side pocket, and found a quiet thermal all to myself far from Lasham before crossing the start line. There, far from the madding crowd of 117 other gliders



a humiliating public request

competing in the three contests that week, I taught myself how to re-program the computer to my preferred settings rather than its own random choice of settings, while airborne. I did look up now and then to check that 117 glider pilots had not said with one voice "There's that mean old cuss Platypus way in the distance in what must be a corking thermal that he doesn't want to share with anyone else, let's join him!"

Talking about having a thermal all to one's little self, absolutely the best method of getting plenty of privacy and extra room to manoeuvre was exploited by an Open Class pilot on the last day. From the top of a busy gaggle at around 3,000 ft he did two and a half turns of a full-blooded spin, so violent that the undercarriage popped out. Everybody cleared off pronto, as you can imagine. It is a good thing that this technique was not deployed on the first day when gaggles were milling about at less than 500 ft above ground. I exaggerate not about how low the big wings were scratching on that day, and miraculously going up in most cases. Indeed, let us all sing from our hymn-sheets, "There Is No Substitute For Span, Oh Lordy Yeahhh..."

Excuse the digression: back to computers. In another glider that I have a share of there is a new, much more expensive and ambitious, computer than the one I have just described. I should explain that rather than own one glider outright I have modest shares of four gliders: in financial markets this spread of invested capital is known as a *hedge*. That is to say, I always have something else to fly if someone (Plat, for instance) drops one of the fleet into a hedge. The glider that gives the least trouble with instruments is the T21. Nothing in the T21 requires a manual, which is just as well since flying it is a breezy business, and apart from the risk of having the manual blown out of one's hands at cloud-base there would be the problem of turning the pages with ski-gloves. It is Orwellian in its simplicity: Green Ball Good (circle at 30 kts), Red Ball Bad (cruise at 30 kts) and if you are right over the finish line you should be able to reach it.

If it works it's obsolete

Anyway this new computer, and its accompanying data-logger is universally acknowledged to be The Best. It is the State of the Art. No, I won't mention its name either any more than I did the last one. I am litigation-averse, as well as wanting future cooperation from the computer-maker or his representative on Earth. That assistance – known in computer circles as support,



Everybody cleared off pronto, as you can imagine.

analogous, I guess, to a surgical appliance – will not be forthcoming if I slag off this amazing piece of kit. The manual is even larger, and its translator hails from Planet Zorg in Galaxy Thnngurkk IV.

Not once in a whole month of constant trying in the run-up to a championships abroad, was anybody able to show me how to download a trace after a flight into a computer for analysis. This included my partners, who have used this device with apparent success so long as I was nowhere near it, and the contest organisation's scorers, who are of IQ 297-plus and had every kind of information technology skill at their mandible-tips. One expert said to me with genuine shock and dismay "You mean you haven't brought your own IBM laptop from England with you? How can you talk to your glide-computer, or it to you?" Carting £2,000 worth of PC everywhere is apparently a minimum requirement to be considered a serious competitor these days. Heck, I have personal computers the way some dogs have fleas: two non-portable PCs and three portable Macs. However, none of

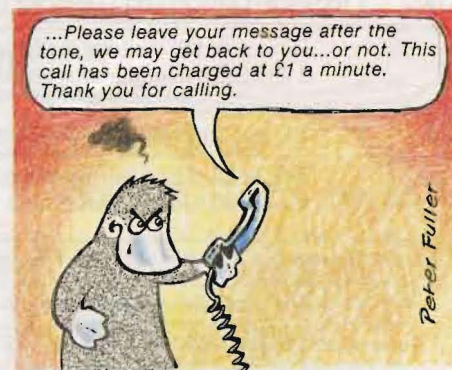
these fitted the bill. No matter, several other people's Windows machines were tried, and nothing was ever downloaded in usable form. The PC screens assured us the data had been ingested by the PC, but they weren't going to let us look at it, so there. From Dick Bradley I borrowed (yet again; scrounging is a talent I have cultivated second only to leeching) a Cambridge logger, and it worked perfectly every time, recording faithfully my every movement till the moment I crashed. I can at least mention Cambridge without provoking writs or a knife in a dark alleyway. I was saved. But only after so much fruitless effort and pestering of so many people. And, having returned the Cambridge to Dick, I still don't know how to make my own device disgorge what it has logged.

Don't tell me that if I were made of the stuff of real champions I wouldn't have

such problems. I could tell you stories of our very best pilots coming unstuck, wasting years of preparation for international success because of glitches with GPS and the ancillaries, that would stain your cheeks with tears. The real horrors (or fun, if you are a scorer) come when new technology meets new competition rules. But I won't talk about such grief. Well, not in this edition.

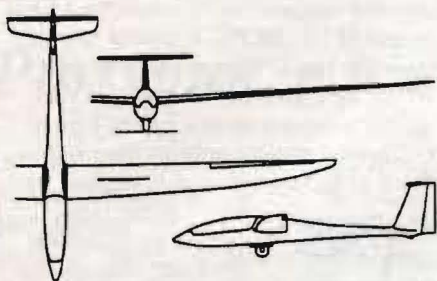
Plat's last word on computer hardware and software helplines:

If it's not a busy line you've dialled the wrong number. ✕



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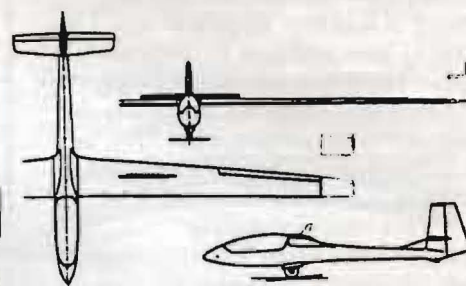


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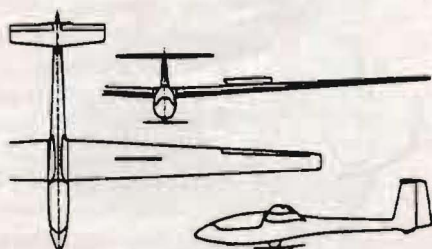
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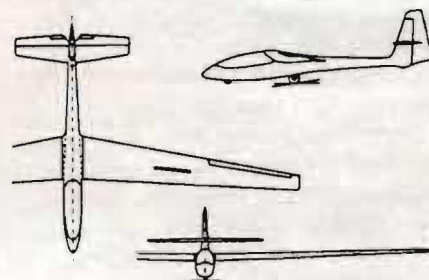
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Salutary Soaring

An anonymous column dedicated to those of us who got away with it



WE FLY ON WEDNESDAYS, THE OCCASIONAL FRIDAY AND, OF COURSE, AT WEEKENDS.

This was a Saturday, an early-in-the-season Saturday, and the day was off to a good start. Enough keen members had arrived early and the black hangar-doors, with some effort, slid back to reveal the first sight of shiny white wings in the early-morning sun, and the promise of a good day's flying.

However, this particular Saturday was not offering the best weather. The training flights were going well but solo pilots, after a few failed flights, were back at the launch point waiting for things to improve. Cloud base was about 2,500' and there wasn't much blue to be seen, just the odd break here and there; I suppose we were getting a little impatient. I looked upwind towards the western horizon, and I saw a gap in the cloud.

My glider was first on line and I asked the tug pilot to take me to the hole. With my parachute comfortable, checks done, brakes closed and locked, tow rope on and secure, surface wind 270/15 the launch was no problem. A steady climb behind the Auster took me straight out to my gap in the clouds. Glancing back I could see the home field with the runways clearly visible, but I had no radio, no artificial horizon,

a turn and slip, but no batteries.

I released under the gap and turned along the bottom of the cloud. The gap was not large but I could see the ground below without any difficulty. The vario was showing just one-up and as I climbed I could no longer see the airfield. That was no problem; I was upwind and would drift back anyway.

Ridge-soaring upwards along the edge of the cloud I noticed that the gap had narrowed. *One last turn and back along the edge again*, I thought, then I would go down. I could see the ground clearly below and pulled the brakes for a moment to fly straight without climbing. The gap narrowed even more and cloud towered up on either side of my wing tips; it seemed that they were almost touching. *Time to go*, I thought and pulled out the brakes again.

Oh Hell! An Engine!

At that moment I heard something. What the hell was it? It was a continuous noise: *Thrumm, Thrumm, Thrummmmm*. Oh hell! An engine! Where was it? Where the hell was it? I was still between the narrowing cloud banks... with no instruments. I closed the brakes and continued to scan quickly, around and down, to see if I

could locate the other aircraft.

There was nothing to be seen, and the engine noise was getting louder. I looked down again. I could still see the ground and, with the brakes in, I was maintaining height. *It's got to be the tug* I thought, *returning to the same hole with another glider*. If that were the case he wouldn't be in cloud, he would still be below.

What to do? I decided that the best thing would be to try and maintain height and, if possible, stay where I was. The vario showed zero, but cloud was on each wing tip. I had to stay above cloud base and out of the cloud.

The engine noise was receding now and suddenly was gone. Was it the tug? If the tug had gone, where was the glider it had just released? All was quiet now and I pulled the brakes, slowly easing down to cloud base. Looking around 360° and below, all was clear; there was no other aircraft in the vicinity.

Drifting downwind I had arrived back over the field. I inspected the windsock, did my checks, flew a circuit and landed on home grass. I think my heart-rate had slowed a little when I arrived back at the launch point.

"Good flight?"

"Found some lift, did you?"

"Yes thanks..."



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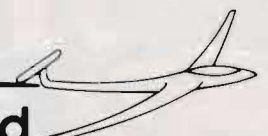
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A Revolution of Sailplanes

Ned Godshall has been a glider pilot for nine years. He flies a Schweizer 1-26C and an H101 Salto from Albuquerque Soaring Club in New Mexico, USA.

THERE IS A REVOLUTION OF SAILPLANES MAKING ITS ROUNDS NEAR ALBUQUERQUE, NEW MEXICO THESE DAYS. 'WHAT?', YOU ASK. PERHAPS A NEW 60:1 L/D SAILPLANE? OR MAYBE AN ANTI-GRAVITY BUTTON ON YOUR INSTRUMENT PANEL TO PUSH DURING THOSE DESPERATE TIMES WHEN YOU'RE LOW OVER BAD TERRAIN AND 20 MILES FROM HOME? NO, WE'RE NOT TALKING ABOUT THAT KIND OF SAILPLANE REVOLUTION, BUT A REVOLUTION OF SAILPLANES.

What we are talking about is a revolution of eight sailplanes in a new hangar at Moriarty Municipal Airport, just outside Albuquerque and was the brain-child of Robert Carlton, a fellow member of the Albuquerque Soaring Club. Affectionately known as 'Dial-a-Plane', this new hangar allows the efficient storage of these gliders on a 'carousel' for fast and easy access from the hangar. The eight sailplanes, with wingspans varying from 13-18m, all sit on a revolving carousel, or 'merry-go-round'. Each glider rolls into its own parking space with its tail toward the centre of the carousel.

The entire carousel and its contingent of sailplanes can be rotated to allow each glider to be rolled on or off the carousel through the front hangar

doors, very much as an item is placed on to and removed from a 'lazy susan' in a kitchen corner cabinet. However, that is where the similarity to kitchen appliances ends, for this carousel is 83' in diameter, easily large enough to place not only the entire kitchen on it, but the house as well.

This sailplane storage design holds three distinct advantages over conventional hangar storage: you no longer have to move all of the other aircraft out of the hangar in order to get the one at the back; the risk of 'hangar rash' is greatly reduced, if not eliminated; the cost of sailplane storage is reduced because the packing efficiency is considerably higher than in a conventional rectangular hangar.

Sailplane Dermatology:

Is It Possible to Easily Reduce Fibreglass Skin Rash?

The circular layout of the gliders on the carousel allows efficient packing of these long-winged gliders because no part of any aircraft is in front of another. Even though it appears in the plan view (*fig. 1*) that the carousel design results in the same hodgepodge of overlapping wings commonly found in most sailplane hangar configurations, this is not the case; no restrictive overlapping occurs when viewed in three dimensions.

The carousel is built with fixed wingtip supports to which each aircraft's right wing is strapped with a removable bungee cord; each aircraft's right wing is lowered to within a few inches of the floor, and the neighbouring aircraft's left wing is raised into the air above it. Combined with the fact that the carousel gliders are stored radially (rather than orthogonally or in parallel with each

other), this aspect allows any aircraft to be moved from the hangar without the need to move anything else. When any given glider is rotated to the front of the hangar, no portion of any other aircraft lies in front of it. Hangar Rash is therefore greatly reduced.

Does One Good Turn Deserve Another?

The carousel was constructed primarily from eight 'I'-beams, turned on their sides; they serve as the spokes of the wheel and also as the tracks on which each glider rests. Although the lateral dimension of the carousel is quite large (83' diameter), it is only 6" (15cm) high; the gliders sit only 6" above the concrete floor on which the carousel rotates. A low inclined ramp in front of the hangar meets the point at which the end of each spoke is aligned at the front of the hangar. This allows just one person to easily push his or her glider onto the carousel unaided.

The carousel rotates around a fixed point at the center of the hangar. Its rolling friction is minimal because it is supported by steel castors rolling on two circular steel tracks. It is powered by a small electric motor and a rope mechanism around the circumference. Should the power fail, the carousel can be manually turned by two people, even with its full complement of eight sailplanes.

Our carousel diameter was chosen to optimize the storage of eight 15m gliders. However, a different number of gliders (or gliders of different sizes) may also be loaded, depending on the best use of available area or the particular mix of gliders to be stored.

The spokes of the carousel can be easily moved relative to each other, so that any given slot can include more or less than the average 45° of the circle. For example, our first complement of eight sailplanes in the new hangar includes wingspans varying from 13m (43') to 20m (66'). Three of the eight aircraft are larger than standard class, and include a 20m Janus, a 20m Nimbus 2, and a 15.3m Salto. Even the two 20m gliders can be



The carousel can accommodate gliders of greatly different sizes. Tow-out gear can be stored on the inboard ends of the beams.

easily rolled into and out of the hangar through its 22m (73') wide bi-folding doors. The Janus and Nimbus wingtips, however, are removed once these gliders are rolled onto the carousel, so that their rotating wingspans become 18 and 13m respectively. The other aircraft presently on the carousel include four 15m gliders (two Pik-20s, a Ventus, and a Grob Astir) and a restored 13m Cherokee.

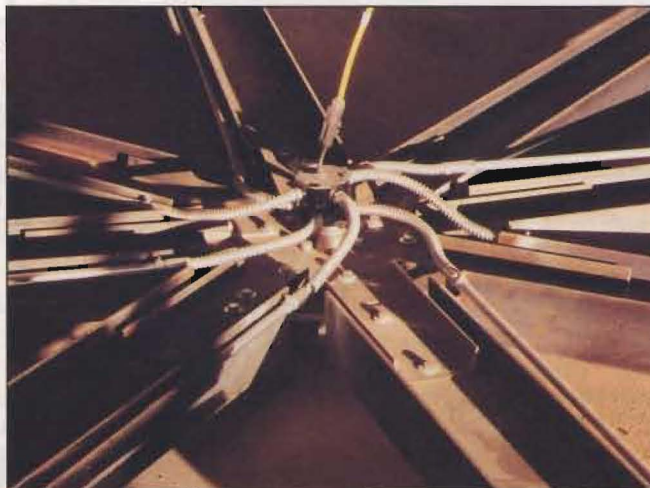
Low Cost Storage or Easy Access:

Why Put Up with Only One?

The carousel was built inside a square hangar with 84' long walls. Normally a hangar this deep (and this shape) would not be good for sailplane storage, since so many sailplanes would have to be moved from the front of the hangar in order to retrieve those at the back. However, with the carousel any of the eight aircraft can be rotated to the front of the hangar in less than one minute. The sailplane is then simply rolled straight out of the hangar; none of the other seven gliders needs to be touched.

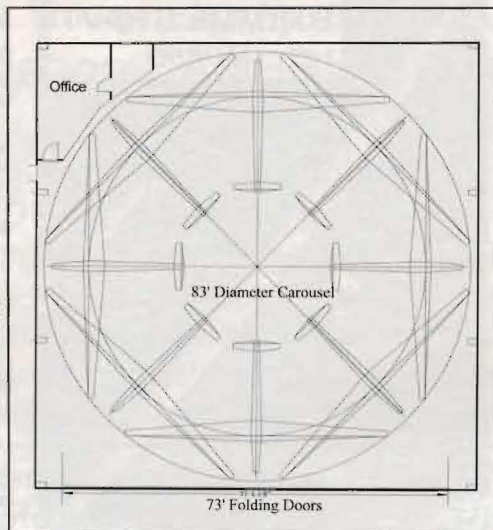
In a simple engineering sense, one might consider two different, but related, sailplane storage 'efficiencies': one based on 'packing efficiency' (e.g., how many square feet of hangar area are required per glider stored there) and one based on 'cost efficiency' (e.g., how many pounds of hangar construction cost are required per glider stored there). Compared with a typical 40' by 75' metal hangar of the same construction type, we found that the carousel hangar was approximately twice as efficient in 'packing efficiency' and nearly four times better in term of 'cost efficiency'. The difference between these two efficiencies is caused by the non-linear cost benefits of larger hangars relative to smaller hangars. For example, the carousel design allowed us to build a larger hangar than would otherwise have been feasible, so that the cost of the relatively expensive folding doors was the same as that for a conventional hangar that is capable of storing only two or three sailplanes. The 'fixed cost' of these doors is therefore considerably less when averaged over eight gliders than it would have been when averaged over just two or three.

It is also worth noting that the carousel achieved these higher efficiencies without even 'pushing the envelope'. We could have quite easily built the carousel to store nine, or even ten, sailplanes in this same overall area. The later design, however, allowed us to achieve a different design criterion that



110 VAC electricity, for continuous battery charging, is run along each beam to an outlet underneath each glider's canopy.

is not so quantifiable: it was important to us that each pilot be able to move his or her glider without having to move a neighbouring aircraft at all. Nine or ten gliders could have been placed on the carousel, but this would have required moving or lifting the wing of a neighbouring aircraft when entering or leaving



Plan of the carousel showing eight gliders onboard.

ing the hangar. With eight, no other gliders need be moved when rolling a glider out.

Furthermore, even the corners of the hangar (that might at first seem to

be 'wasted space' in such a design) can be put to good use. Each of these corners represents approximately 240 square feet of space. The two front corners contain individual storage cabinets for each pilot and space for each aircraft's wing-wheels, tow bars, etc. Each of the back corners is large enough for a clubhouse, bunkhouse, warehouse, or machine shop.

By raising the conventional 14 foot tall hangar an additional 2 feet (for very little additional cost), we were additionally able to include a second set of such corner spaces by building two full storeys in the back corners of the hangar. A large walking-height loft was also suspended over the back of the hangar connecting the second storey corner spaces, resulting in a total area of 1,400ft² in addition to the carousel itself. The 8,000ft² facility can therefore easily accommodate most of the storage needs of an average size soaring club, all in a 90x90' space.

The carousel method of aircraft storage has been applied for in a patent, and engineering drawings and plans are available upon request. You are welcome to stop by and see the sailplane carousel for yourself (merry-go-round rides are free) should you be travelling in the United States. It is located in New Mexico on I-40 just off the highway 30 miles east of Albuquerque in Moriarty (also the site of the new Southwest Soaring Museum). You may also find additional pictures and information about the carousel at our Web site: <http://www.flash.net/~silwings/carousel>

Conclusions

The carousel hangar design is well-suited to any soaring club or group of private owners who desire secure sailplane storage that is easy to access and of low cost. An unexpected added feature of this design is the seemingly innumerable number of bad puns and strange looks that a carousel can bring to your club; but if you don't mind 'thinking outside the box' (or putting something round inside a square box), consider a rotating carousel to reduce your sailplane hangar rash problem and the time you spend putting your glider together when you could, instead, be soaring.

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Correction

In the Aug/Sept issue of S&G there was a little over-zealous editing due to enthusiasm and, no doubt, inexperience. I would like to apologise to John Edgley for mis-correcting Penguin's spelling of his name. I would like to apologise to Penguin for doubting his accuracy.

-Le Forbes

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Way Off Track

Penguin considers the advantages of his membership of Ulster GC

The grass is always greener...?

In the last issue of S&G (Aug/Sep p.239) Brenda Snook told us the French are different, without actually naming the French club she visited – which sounds like a service club to me.

"The hangar doors slid open with no squeaks, groans or jams of course, and inside there were about twenty modern gliders. They were all clean, polished and utterly serviceable. Had I found paradise?... *Vive la différence.*" she wrote.

Quelle différence? Brenda would encounter something very similar should she come to my (fully civilian) club, Ulster GC at Bellarena: lubricated and unsqueaky doors sliding to disclose twenty smart gliders, all hangared, fully rigged, polished and serviceable, many modern but with a bit of variety in the fleet's vintage too.

But, sorry, Brenda, there won't be wine with lunch.

Commended in the Commons

My club has achieved the rare distinction of being commended in Parliament. On 2nd July, Lembit Opik, the Lib Dem MP and BGA parliamentary spokesman, returned to the House for the first time since being seriously injured in a paragliding accident.

Tony Worthington, the then NIO Minister for Education who flew at Bellarena last year said: "I join other members in welcoming the hon member for Montgomeryshire back. He has been missed as he has made a considerable contribution to Northern Ireland matters," Hansard records.

"If he wishes to defy gravity in future", the Minister continued, "may I commend to him the services of the Ulster Gliding Club? I can testify that its members can take one off the Earth and back safely: I think the hon gentleman would enjoy the experience."

-Penguin



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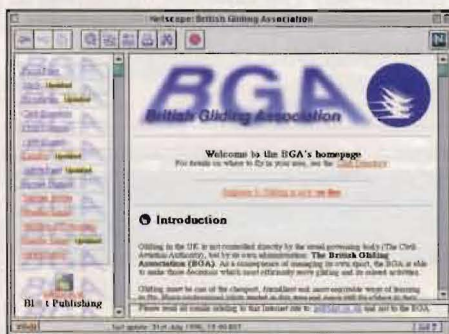
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The BGA On-line

THE BGA'S INTERNET SITE, FIRST DEVELOPED IN EARLY 1996 HAS BECOME AN INTERNATIONAL FOCUS OF GLIDING FOR MORE THAN 700 VISITORS A WEEK FROM 60 COUNTRIES AND FIVE CONTINENTS.

The BGA's website started as a few articles, an unfinished club list, some pictures showing how to thermal and what a glider looked like. Now the site contains over eleven megabytes of information and is updated, in some way, almost every day. As a matter of policy, there are no advertisements or irritating 'visit our sponsor' messages.



The Front Page of the BGA's website at <http://www.gliding.co.uk>.

The site already has many hundreds of users in the UK and around the world, but this brief review aims to bring you a handy reference to what you will find there.

The Club Directory is in three parts. The club directory itself lists all the BGA affiliated clubs, military and civilian. The club's address and telephone number, plus contact details for the secretary (and sometimes a chairman and/or CFI) are given; if the club has its own website, clicking the club's name will take you there.

A separate list, linked to the entries in the main list, gives each club's colloquial name, i.e. Aboyne for Deeside GC, and Long Mynd for Midland GC. This allows you to find details of a club without having to know what its formal name is.



The Club Directory page

A Steve Longland map of the UK shows each club as a little yellow circle; each circle is linked to the entry for the club it represents on the main directory page displayed below the map.

The directory is updated regularly. Please make sure you send details of any changes (e.g. name of your club secretary, website address, etc.) to the editor as well as to the BGA office.

The Newsletter page aims to present the latest gliding information. It includes the BGA Newsletter as well as any interim reports, pleas for help or information, or a BGA stop-press. This 'current information' page will be expanded to include any suitable contributions submitted.

The National Ladders are published, along with the Ladder Rules for 1998. Each ladder (Open, Weekend and Junior) has its own page and, for the last twelve months, they have been published in full. These pages are updated as and when the new ladder editions are brought out.



The National Ladders page

The Safety Page is increasing in size, perhaps not surprisingly at the moment. It began with a few articles about parachute care and when to stop flying, but now contains the latest thinking on winch gullotines and links to other pages including a version of the BGA accident database (1987-97). In the light of recent events, the amount of information on the Safety pages is likely to increase; it might be worth taking a look.

The Turning Point Archive first went on to the Internet in 1996 and that year's version is displayed in full. There are links from the TPA front page to the 1998 update, the full 1998 TPA and an interactive TPA to help you calculate tasks.

The Weather page contains links to on-line weather information. It is possible to obtain, free of charge, T-phi-grams, synoptic charts, satellite images, written forecasts, airfield reports (METARS) and so on.



The Weather page

If anyone is prepared to offer a regular, but reliable summer-soaring star-rating forecast (e.g. Thursday **, Friday ***) to warn of approaching 500k days then please get in touch with the editor! (This is a serious request.)

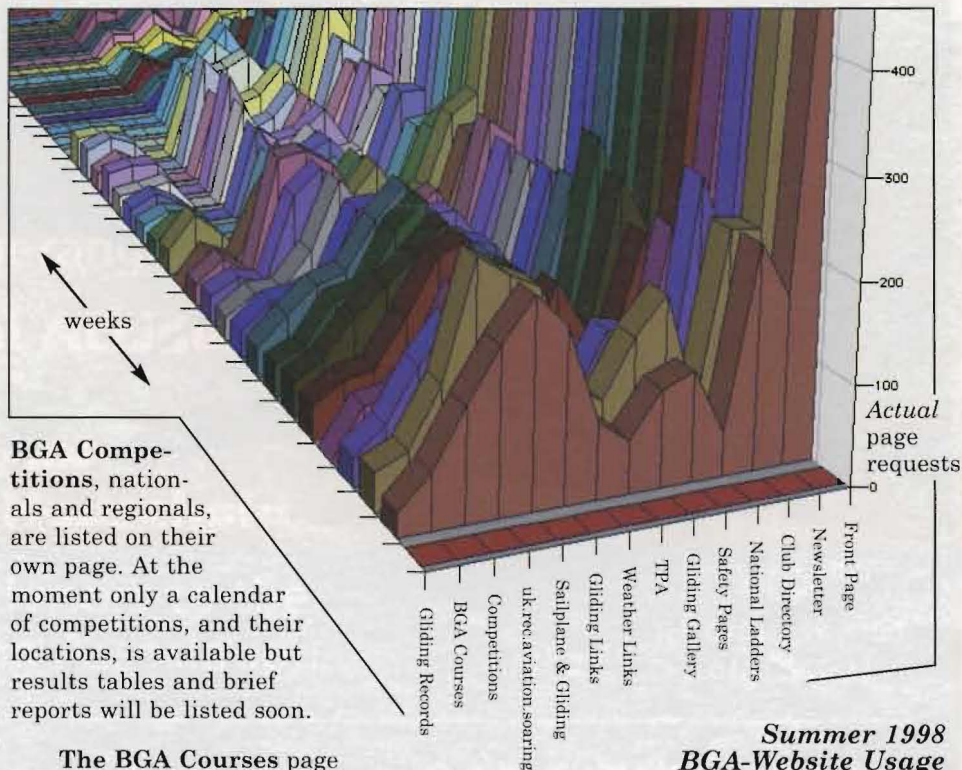
The Gliding Gallery such as the one published in S&G displays attractive gliding-related photographs. The first gallery page shows miniature images of each shot which are, in themselves, links to larger versions. The final pictures are not huge and are in

low resolution, but they're there, and anyone can submit a picture, just as they can to *S&G*.

Gliding Links to other sites world wide are listed in order of country (club's internet links are with their entries in the Club Directory). Some interesting links include one to the UK Soaring Pages (see: "uk.rec.aviation.soaring", below), a site on which to advertise your glider, etc. (in addition to advertising it in *S&G*!) and where to find gliding-related jobs and other such information.

Sailplane & Gliding is the most recent addition to the BGA's website. Each of the major articles in any given issue will have a page of its own, showing a picture and the opening paragraph of the text. An on-line Guide to Submitting Material is linked to the *S&G* front page as is an order form allowing you to take out an annual subscription to *S&G* over the Internet using your credit card.

uk.rec.aviation.soaring is a newsgroup, primarily for UK glider pilots. It offers the opportunity for pilots at different clubs to air their views and debate matters of interest. URAS is on the same site as the UK Soaring Pages, maintained by Andy Kirkland. It is a *virtual* newsgroup; for those of us who aren't *au fait* with the more complicated aspects of newsgroup-browsing, it is much, much simpler.



BGA Competitions, national and regionals, are listed on their own page. At the moment only a calendar of competitions, and their locations, is available but results tables and brief reports will be listed soon.

The BGA Courses page gives prices, dates, locations and number of places available, for all the BGA courses. This page is updated about once a month so bear in mind that some places shown as being available may have been booked.

Gliding Records is a fairly new entry. This page lists the UK and British gliding records. It has a link to the FAI site where world gliding records are listed.

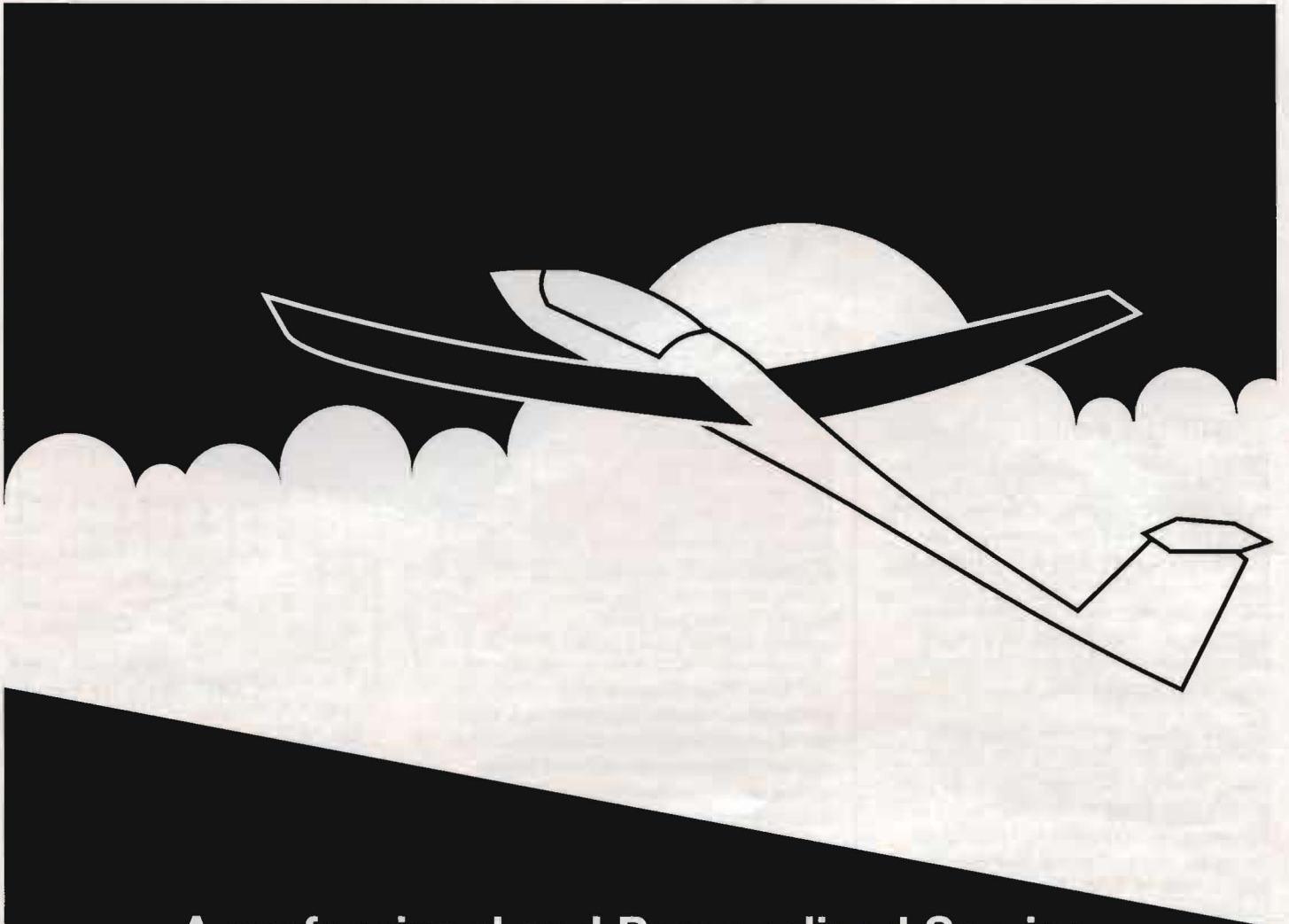
Summer 1998 BGA-Website Usage

The BGA web-site is, in terms of the whole Internet, just a small contribution to the mass of information available twenty-four hours per day. However, it is specific to what we do, and access can be easily achieved without having to sift through lots of rubbish first. Any contributions for the site, suggestions and/or (constructive) criticism will be received by the editor with gratitude.
tel: 01798 874831 email: le@blot.co.uk

- | | |
|------------------|---------------|
| ■ Argentina | ■ Australia |
| □ Austria | □ Bahrain |
| ■ Belgium | □ Brazil |
| ■ Brunei | ■ Bulgaria |
| ■ Canada | ■ Chile |
| ■ Colombia | □ Costa Rica |
| ■ Croatia | ■ Cyprus |
| ■ Czech Republic | ■ Denmark |
| □ Estonia | □ Finland |
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| □ Germany | □ Gibraltar |
| □ Greece | □ Hungary |
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| ■ Japan | □ Kenya |
| ■ Lithuania | ■ Luxembourg |
| ■ Malaysia | ■ Namibia |
| ■ Netherlands | ■ New Zealand |
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| ■ Slovakia | ■ Slovenia |
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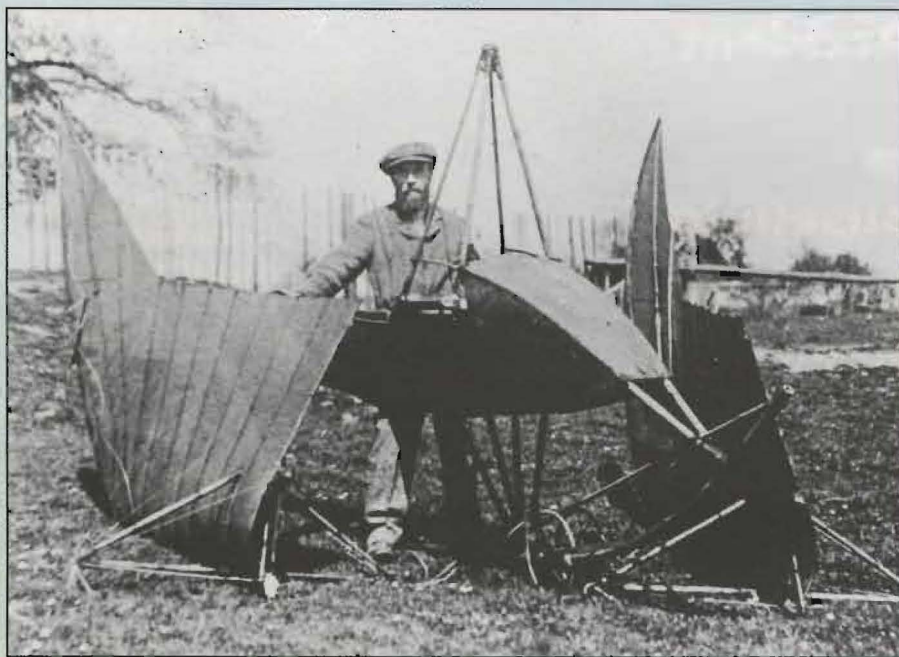
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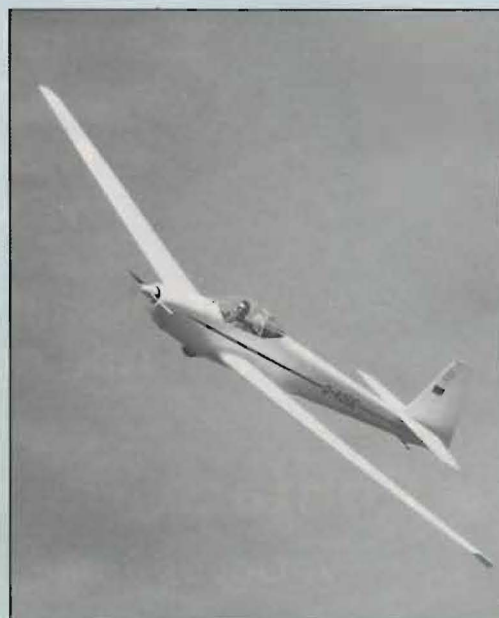
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Gliding



José Weiss with a derigged glider at Amberley Mount, only a few miles from the present-day Southdown Gliding Club at Parham.



Identify this glider. The winner will receive a highly-prized Platypus mug; these are not available in the shops. Answers on a postcard please.

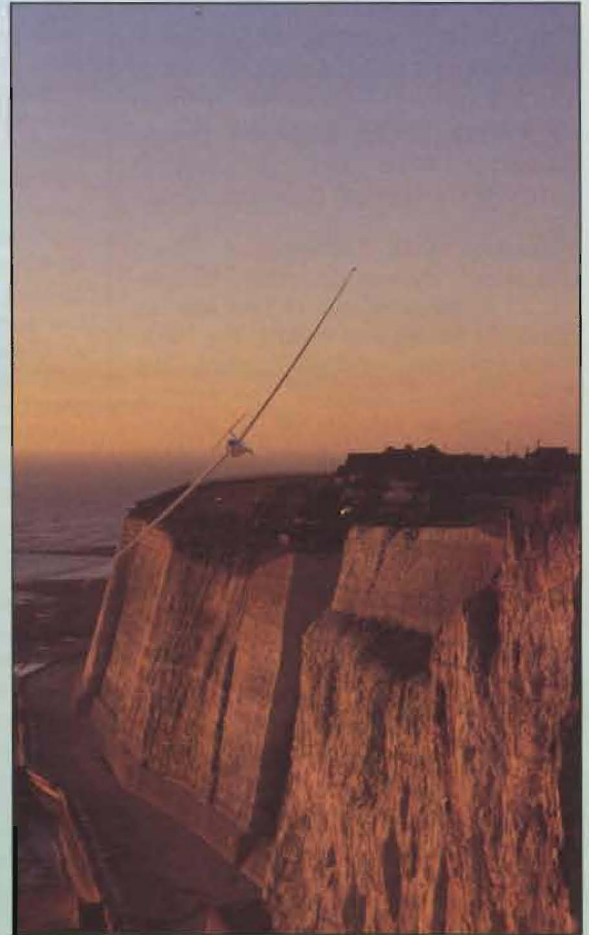
Barry Chadwick: A sensational cloud edge photographed at sunset in the United States



Gallery



Barry Chadwick: When you can't see out of the window, your instruments will tell you all you need to know... 36,000' over the USA.



Guy Westgate: Cliff soaring on the south coast of England

Peter Selinger: The tailless Akaflieg prototype SB13 hooked up and ready to go.



Barry Chadwick: 'Dinner plate' wave clouds.



Competition 1998

Enterprise

THIS YEAR WE RETURNED TO NORTH HILL IN DEVON, HOME OF DEVON & SOMERSET GLIDING CLUB, WHERE IT ALL BEGAN IN 1974, THE BRAINCHILD OF PHILIP WILLS WHO WAS DISENCHANTED WITH THE INCREASING RIGIDITY OF 'RATED' COMPETITIONS.

Saturday: John Fielden, our demon task-setter, showed no mercy. He presented a choice of one of two turning points for an out and return: The Park, 80km downwind, or Brentor, almost the same distance upwind. The scoring system offered 4pts/km for the upwind leg and only 1pt/km for the downwind. Brentor was the other side of Dartmoor, which rises to 2,000', and the cloud base was little more than 3,000'. Most of us including all the blunt ships elected to go downwind. However, Mike Wood (ASW 19) chose to struggle upwind, almost reaching Brentor to win the day.

Sunday: The weather had not changed much. There was slightly less wind (15kt NW) but more cloud, no higher than 2,000' and although a task was set, Sarum (109km), Keevil (107km) and Bodmin (108km) as the choice of turning points, most of us thought better of the conditions and remained firmly on the ground. We were to be totally shamed by three pilots. John Hart (Vega) flew 199km. Paul Kite (Mosquito) flew 109km and the Devon Club's DG505 with Ron Johns and a club member, managed 23km. Now, that really was enterprising.

Monday: even the birds were walking.

Tuesday: We had better conditions with 10kt WNW winds; only average temperatures for a normal summer but pretty good for this season. The task was a choice of an O/R to Fordingbridge (210km) or Marlborough (252km). Scores of 2pt/km in either direction showed just how much the wind had dropped. Rod Witter won with 402km.

Wednesday: The wind was still slackening slightly but veering towards the Northeast, the cloud cover was around

80% and the visibility was poor. Conditions were marginal, so much so that John even offered two points for each minute that a pilot could stay airborne. The main task, however, was a 'cat's cradle' between Meldon, Clatworthy and Chard. Only five pilots managed to get, sensibly, away from the site. The others made valiant attempts but had to make do with extending their local soaring for as long as possible in order to scrape a few points, which might come in useful at the end of the contest. The winner was Malcolm Charles and a club member in the Devon Club's DG505 (358k). The rest of us poor mortals, unable to connect with anything but the weakest of thermals between 400-1,200', would desperately like to know just how they managed it.

Thursday: A much brighter day but with a 15kt easterly breeze. Cloud base was little more than 3,000'. This day the choice was an O/R to either Blandford Forum or Bodmin 216km. Everyone chose Bodmin, the downwind task, where conditions also seemed to be better. Six pilots made it to the turning point, five landed there but Paul Kite struggled back against the wind, getting to within 30km of North Hill and won the day.

Friday: John required us to fly a 146km triangle via Witheridge and Sutton Bingham. The weather was a little better than the previous day with a 10 kt northerly wind and six pilots made it all the way round. Only 1pt/km was on offer for distance, but it was to be our first (and only) racing task with fifteen-points awarded for each kilometre per hour above the individual glider's scratch speed. Rod Witter came first at an average speed of 76kph.

Saturday: Scratched as a task day. It started out promising but soon clouded over. However, John Fielden had invited us all to a party at his superb house where the prizes would be presented to the winners. Also, to commemorate the death of John Cadman (a great supporter of Enterprise) only

three weeks earlier, his widow Inga was there to present a new trophy, a silver bowl, to the pilot who, in the opinion of the task setter and scorer, had made the most enterprising flight of the contest.

Final Results:

Paul Kite	(Mosquito)	1st
Rod Witter	(Ventus)	2nd
Ron Johns	(DG505)	3rd
Malcolm Charles	(DG505)	3rd

The winner of the John Cadman trophy was John Hart for his remarkable flight on Day 2 (the first Sunday).

Sunday: the traditional 'fly home if you can' day, was also washed out.

And so Competition Enterprise came to an end. The weather was not good enough for more than two days in a rated competition but we actually squeezed six contest days out of nine in this pathetic summer. This is, so I believe, more than any other competition so far this year. We flew a total of 10,204km and spent 246 hours doing it. We enjoyed ourselves immensely, had no disputes, (it's against the rules) and we welcomed several newcomers who, I trust, will themselves become regular participants.

Thanks must go to the members of the Devon & Somerset Gliding Club, especially Sandy Harrup; Mike Garrard, our met man; John Fielden for his tasks, and Valerie, his wife, who catered for more than eighty of us.

—Jim Hill

Enterprise '99

Next year Enterprise is being held at Feshiebridge, home of the Cairngorm Gliding Club, with its newly constructed clubhouse, located some 66 miles West of Aberdeen and 25 miles South of Inverness. John's skills at setting tasks in the Scottish Highlands will be tested to the full.

Current Glider Handicaps

THE HANDICAP SYSTEM, WHICH ALLOWS PILOTS WITH DIFFERENT GLIDERS TO COMPETE AGAINST EACH OTHER, IS OFTEN REVIEWED. HERE ARE THE CURRENT VALUES.

Glider	Si*	Sih†
Acro (twin)	96	91
Acro (twin 2)	94	89
Acro (twin 3)	99	94
ASH 25	125	121
ASH 25WL (26.5)	127	123
ASH 25WL (27.6)	129	125
ASH 26	116	112
ASK 13	76	70
ASK 14	80	74
ASK 16	68	61
ASK 21	94	89
ASK 23	94	89
Astir CS	99	94
Astir Jeans	95	90
Astir (speed)	105	100
Astir (twin)	96	91
ASW 12	113	109
ASW 15	100	95
ASW 17	115	111
ASW 19	102	97
ASW 19 (club)	98	93
ASW 20	107	102
ASW 20B	108	104
ASW 20BL	113	109
ASW 20C	108	104
ASW 20CL	112	108
ASW 20L	111	107
ASW 22 (24)	127	123
ASW 22B	129	125
ASW 22BWL	131	127
ASW 24	105	100
ASW 24W	105	100
ASW 27	109	105
Austria (std)	85	80
Bergfalke	74	68
Bergfalke 4	78	72
BG 135	82	76
Blanik	74	68
Blanik (super)	80	74
Bocian	74	68
Calif A21	108	104
Capstan	70	64
Cirrus (std)	100	95
Cirrus 17.7	102	97
Cirrus 18.8	104	99
Cirrus (motor)	96	91
Cobra 15	94	89
Dart 15	84	78
Dart 17	92	87

DG 100	100	95
DG 200	107	102
DG 202 (17)	110	106
DG 300	104	99
DG 300W	104	99
DG 300 (club)	102	97
DG 300 (club) fw	99	94
DG 303	106	102
DG 400	110	106
DG 500	112	108
DG 500M	112	108
DG 600 (15)	108	104
DG 600W (15)	108	104
DG 600 (17)	113	109
DG 600 (18)	115	111
DG 800 (15)	109	105
DG 800 (18)	116	112
Diamant 16.5	98	93
Diamant 18	108	104
Discus	105	100
Discus W	105	100
Duo-Discus	108	104
Eagle	77	71
Falke	52	44
Falke (super)	73	67
Falke (tandem)	68	61
Fauvette	82	76
FK3	98	93
Foka 4	90	85
Foka 5	92	87
Fournier	52	44
Fournier RF 5B	68	61
Glasflugel 304	108	104
Glasflugel 604	115	111
Grunau Baby	62	55
Hornet	100	95
Iris	88	83
IS 28B	88	83
IS 29D	92	87
IS 32	109	105
Jantar 1	114	110
Jantar 2	115	111
Jantar (std)	101	96
Janus A	103	98
Janus B	104	99
Janus C	106	102
Janus C fw	105	101
Janus CM	106	102
Jaskolka	78	72
JP15-36A	96	91
Ka2	72	66
Ka4	60	53
Ka6CR	84	78
Ka6E	90	85
Ka7	72	66
Ka8	78	72
Ka18	86	81
Kestrel 17	107	103
Kestrel 19	112	108

Kestrel 20	114	110
Kestrel 22	115	111
KH 1	96	91
Kite 2a	68	61
Kranich	66	59
L-Spatz	80	74
Lak 12	115	111
Libelle 301	101	96
Libelle (club)	94	89
Libelle (std)	99	94
LS1	100	95
LS3	107	102
LS3 (17)	109	105
LS4	104	99
LS4W	104	99
LS6	109	105
LS6W	109	105
LS6C (17.5)	115	111
LS6C (18.0)	116	112
LS7	105	100
LS7 WL	105	100
LS8 (15)	106	101
LS8 (18)	112	108
M100S	80	74
M200	82	76
Marianne	98	93
Meise	70	64
Mosquito	107	102
Moswey 3	78	72
Moswey 4	80	74
MU 13	66	59
Mucha (std)	74	68
Nimbus (15)	107	102
Nimbus 2	115	111
Nimbus 2cs	119	115
Nimbus 3 (24.5)	127	123
Nimbus 3 (25.5)	129	125
Nimbus 3d	125	121
Nimbus 3dt	125	121
Nimbus 3dt (25.5)	126	122
Nimbus 4	130	126
Nimbus 4dt	126	122
Olympia 2	70	64
Olympia 403	84	78
Olympia 419	87	82
Olympia 463	84	78
Pegasus	103	98
Pegasus (club)	99	94
Phoebus 17	102	97
Pik 20	104	99
Pik 20e	103	98
Pilatut B4	90	85
Pirat	84	78
Prefect	63	56
Puchacz	92	87
SB5	90	85
SB5E (16.5)	92	87
SD 3/15	90	85
SF 26	78	72

SF 27	90	85
SF 27M	88	83
SFH 34	94	89
SFS 31	72	66
SHK-1	100	95
SIE 3	90	85
Silene	97	92
Sky	76	70
Skylark 2	76	70
Skylark 3	85	80
Skylark 4	86	81
Swallow	70	64
SZD Junior	93	88
SZD-55	105	100
SZD-56	109	105
T21	56	48
T53	78	72
Torva	92	87
Tutor	52	44
Vega (15)	105	100
Vega (17)	109	105
Vega W (15)	105	100
Vega (sport)	98	93
Ventus (15)	108	104
Ventus (16.6)	112	108
Ventus (17.6)	114	110
Ventus 2 (15)	109	105
Ventus 2 (18)	116	112
Viking (Grob)	94	89
Weihe	76	70
YS53	76	70
Zugvogel IIB	92	87

* Use Speed Index (Si) for all open-ended or uncompleted tasks.
 † Use Adjusted Handicap (Sih) for completed closed circuit tasks (whether declared or not).
 N.B. There is no handicap penalty for carrying water.

fw = fixed wheel

Cross-country points:

$$P = \frac{d \times [4,000 + (v^*)]}{20 \times (si/sih^*)}$$

where d = distance (km), v = speed (kph)

* whichever is applicable

Incomplete task: P x 75%

Undeclared task: P x 50%

Height points:

$$P = \frac{h - 5,000}{10}$$

where h = height (in feet)

This list of handicaps is on the BGA's website, at the address: <http://www.gliding.co.uk/handicaps.html>. The full UK National Ladders are also on the site. See p.261 of this issue for the current top four scorers in each ladder.

-John Bridge

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Would You Learn to Glide in a Motorglider?

Les Blows flies an LS3-17 and is a full-cat instructor at Southdown.

IN THE ABSENCE OF SUMMER WEATHER, GLIDING SEEMS TO BE OCCUPIED WITH DEBATES. ONE SUCH WHICH COULD HAVE FAR-REACHING IMPLICATIONS FOR THE FUTURE IS THAT REGARDING THE USE OF THE MOTORGLIDER FOR TRAINING. SOME OPENING SHOTS HAVE ALREADY BEEN FIRED AND THIS ARTICLE AIMS TO ENCOURAGE WIDE DEBATE BY PRESENTING SOME ASPECTS OF THE CASE.

Glider pilots are taught, ab initio, to fly in gliders. This might seem to be a fatuous statement; but gliders are not very different from other fixed-wing aircraft – they all fly according to the same rules. So why is it presumed that training for glider pilots must take place in gliders? Experience over the years has demonstrated that learning to fly in a glider is expensive, inconvenient, inefficient, frustrating and hugely extravagant in its demands for time. These hurdles did not matter until recently; those wanting to learn to glide were dedicated, motivated and not easily discouraged. Perhaps they loved gliding *because* of the hurdles and challenges, the general frustration seasoned with occasional reward. People, of course, and their needs, have changed; pressures on time and money have intensified, we hear the siren-call of instant gratification. The very learning process much loved in the past seems to actually discourage the new proto-glider-pilot. There are lots of other aerial sports to choose from. And the sport of gliding appears to be suffering; getting left behind.

In its early days gliding had little competition from other aerial sports. It was a relatively cheap way of learning to fly and glider pilots were trained

using single-seat primary gliders. The step to two-seat training gliders was a big one at the time (about fifty years ago), but once accomplished it became the norm. Although much has changed since then it is not obvious that the current training method (which is basically that of fifty years ago) is still appropriate. Indeed, the observation that about 99% of people taking air-experience flights do not fly gliders again must communicate something about the first impressions gained on initial contact with gliding. And the number of pupil-pilots who fail to achieve the goal of becoming fully-fledged, independent glider-pilots

a trial lesson) is the method of training then gliding has an immediate choice:

(a) it can insist that the training is an important filter and that only the “right” people will survive it to become “real” glider pilots. In the current climate this looks like the lingering-death choice for the sport.

(b) it can look at the training to see if it might actually be time for a change. Perhaps the built-in hurdles are not important after all, and are no longer needed. Perhaps there are better methods of training which would be more appealing to the current pupil (and instructors) and which would actually deliver better glider pilots.



The Super Dimona, a contender for motorglider training in the UK.

(about 90% of pupil-pilots give up before going solo) must say something about the training process.

Might there be a way of training glider pilots which would appeal to the current candidate?

If the first hurdle met by the new gliding pupil (a rare bird – one of the 1% to have taken up membership after

Current training, at an “average” gliding club

(i) Training with aerotow.

Generally a 2000' launch will provide a training flight of about twenty minutes' duration. This will cost a pupil about £20; most will only take one aerotow on any one day and will not fly more frequently than once each week. Hence the pupil has one flight comprising take-off, exercise(s), circuit and landing. Operation of the airfield requires daily inspection of aircraft and vehicles, log-keeping, glider hook-up, wing-running, signalling, glider retrieval, supervision, other miscellaneous tasks and finally hangar-packing. The pupil is expected to be part of the team which carries out all these tasks and this expectation

requires him to be at the airfield all day. Further, the “flying list” system requires that he arrives early; if he does not he might wait until the end of the day for his flight. He might not fly at all.

As a rough guide, somewhere between 50-120 of these flights would be necessary before this pupil would be competent to fly solo.

Costs: £1,000-£2,400 and 50-120 days (at 1 flying day/ week, means 1-2½yrs)
Benefits: 17-40 hrs of flying at ~£60/hr. Flying experience under widely varied weather conditions. Many incidental skills are acquired.

(ii) Training with winch launches.

Winch performance is very varied, but an average flight might last about 4 minutes, costing a pilot about £5. He would probably take three winch launches on a particular day and fly no more frequently than once each week. However on each flying day he would get three cycles of take-off, exercise, circuit and landing, for £15. As above he would be expected to be at the airfield all day (and the winching team is bigger than the aerotowing team), and to take his turn on the flying list.

There are, of course, winch-only clubs but most pupils would probably go solo having been trained on a mix of aerotow and winch launches. A likely mix might be 20 winch and 40 aerotow launches, and it would probably take six months to get 20 winch launches.

Costs: £100 + £800 and 55 days taking about 1½ years.

Benefits: about 18hrs flying at £50/hr. Flying experience under varied conditions. Many incidental skills acquired.

This might not be particularly expensive flying but one reason for frustration is obvious, and that is the length of the learning process: an hour's flying requires the commitment of three full days' attendance (about 27 hours) and it takes at least three weeks to provide these three days. The three flights involved would probably be flown with different instructors; hardly a recipe for consistent and steady progress.

A less obvious cause of frustration is the cost (in time and in money) of learning some of the flying skills. Consider spinning for example; a training flight to learn spinning would probably require a 3000' aerotow and would last about twelve minutes. The cost would be about £22. Competence at spinning would take, say, eight flights, of which the total cost would be £176 and eight days (which would take eight weeks). Learning how to turn, how to side-slip, how to stall in lots of ways, how to make circuit judgments, are other examples of expensive skills.

And finally there is the flying list system of operation; instructors and pupils alike could vouch for the level of frustration arising therefrom.

So, where might we go from here?

Consider an alternative method of training. Take the use of a motorglider, for example. This would not be a new idea: Derek Piggott advocated this solution at Lasham many years ago. Indeed the USAF Academy in Colorado sends about 2,000 glider pilots solo each year after three hours motorglider training and a dozen subsequent aerotows. The use of a motorglider specifically for basic training appears to have many advantages in the gliding context:

The pupil learns to fly. If, with his basic flying skills acquired, he then chooses to fly gliders the conversion is simple. If instead he were to choose to

fly light aircraft, he might have to learn GA procedures and R/T but still the conversion would be simple. The skills that he has acquired would be versatile. (How many glider pilots leave gliding once they have gone solo, or often much earlier, with skills they cannot really take with them?)

A flight in a motorglider can be as long or as short as is necessary; the spinning example above, for instance, might be completed in, say, three half-hour flights. This is about the same length of flying time as above, but (at, say, £40/hr) the cost would be £60, probably over three weeks, compared with £170 over eight weeks.

The case for the motorglider looks similarly compelling for learning how to turn, stall, soar, make circuit judgments, approach and land.

The use of a motorglider for more advanced training such as field-landing training and for navigational exercises is already accepted as enormously valuable, indeed it is now essential for the Bronze cross-country endorsement.

A training flight in a motorglider needs only two people. With no need for a team of people on the ground, there is no longer a need for the pupil to commit a whole day to flying (rather, a whole day to running about on the airfield for twenty minutes' flying). With more control over flight time, it would be possible for a pupil to book a flight, whenever convenient to himself and his instructor. Club flying days need no longer be the only days when training is available. Learning to fly looks more controllable and predictable. Much less frustrating.

Presumably people join gliding clubs because, in general, they want to fly (not because they want to drive retrieve vehicles, drive winches, keep logs, join committees...). It looks as if the use of motorgliders would increase the proportion of time spent flying and decrease the proportion spent on incidental activities. Put another way, it looks as if use of the motorglider would reduce the amount of work necessary to support flying activity.

If motorglider training were to attract many more pupils who then wished to become glider pilots, it would have a very positive effect on the gliding club, and, by extension, on the club community. Having completed their basic training in motorgliders they would then need some conversion training to fly gliders. At this stage instructors could concentrate on the development of flying skills particular to glid-

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ers: gliding and soaring, finding and using the energy in the atmosphere, getting home. The gliders could now be used to their best advantage and for what they are good at; they are not good for basic training.

The use of a motorglider would reduce the requirement for aerotows. (A training flight of one hour would be the equivalent of four aerotows). This would be good for local communities and might reduce the size of tug fleets. Noting that there is on the market a motorglider which can also operate as a tug there is the opportunity for remarkable efficiency: this motorglider could be used for tug-pilot training, it could be used for tugging and it could be used for basic glider-pilot training. Clearly, this motorglider could aerotow a glider whilst it takes-off on a training flight – two jobs at once.

10% of the gliders on the BGA register are self-launching motorgliders, and the trend is towards more of these as landing-out becomes less and less acceptable. So even glider pilots are needing "engine skills". Training in a motorglider will clearly help here, and perhaps the glider-pilot so trained will expect to move on to a glider with an engine, being unwilling to accept the risk of a land-out.

At the very first contact with gliding a motorglider would give a much "better" introductory air-experience flight than a ten minute up-and-down flight in a glider. It could give much better value to the visitor and surely could not fail to give a better first impression to the would-be glider pilot.

What are the negative aspects of motorglider training?

The every-day availability of training would change (and might diminish) the rôle of club flying-days in maintaining club communities. It is likely, however, that most flying would still take place at weekends, and on these flying days, whilst basic-training pupils might arrive just in time for their booked motorglider flights and leave again shortly afterwards, there would be flying by other pupils converting to gliders and by solo pilots at various levels of experience. Of course, if motorglider training were to be successful then there would be more of these pilots, and therefore more gliding activity than there is at present.

It is certain that some pilots trained in motorgliders would choose to leave gliding and to fly powered air-

craft. This would have to be regarded as an acceptable loss to the system, with the consolation that as a result there would be at least some GA pilots who had been trained to fly properly and to keep a good look out whilst flying.

Some instructors would need to become motorglider instructors. Jack Alcock's article (*S&G*, June/July 1997, p.145) draws attention to the expense and the impending regulatory complexity of this process.

Concluding comments

This article set out to consider the training of the glider pilot. Whilst supporting the skills and knowledge transmitted, it finds that the method of training harbours weaknesses which appear serious when viewed from the point of view of the current pupil. It notes the declining interest in gliding and proposes that one reason for this is that the training method has become so mismatched with the ethos of current society that potential pupils are discouraged from learning to glide.

It finds that the training weaknesses are closely related to the use of gliders for basic training, and connected with the obvious need of an external method of launching. For a cross-country flight in soaring conditions this is not a problem: once launched the glider will probably not return for several hours. But for the average training flight the launched glider rapidly returns to earth, yielding a brief and impoverished learning experience.

It follows that a training glider which does not rapidly return to earth would provide training which would be more controllable, versatile, efficient and rewarding. These qualities are important to the current pupil (and, of course, to instructors).

The article pursues this line of argument by exploring the use of a motorglider for basic training. It con-

cludes that the motorglider offers many advantages for both pupils and instructors and some exciting opportunities for club operation; these include tugging support and a reduction in the amount of support-work that is necessary.

There would probably be several effects on club communities; the net result of a successful motorglider operation would be positive change.

Who has experience of using motorgliders?

Clubs which are making successful use of motorgliders include East Sussex, the RAFGSA at Bicester and the York Gliding Centre at Rufforth.

A general conclusion from these clubs is that successful integration of a motorglider is of great benefit to the pupil and to the club. Such integration depends on sufficient utilisation; this depends on a sufficiently large instructing team and sufficiently good maintenance to ensure availability.

Whom to contact?

Clubs considering the use of motorgliders are encouraged to make contact with Jack Alcock (c/o the BGA). Among his many appropriate qualifications and qualities Jack is the Senior Regional Examiner (Motorgliders).

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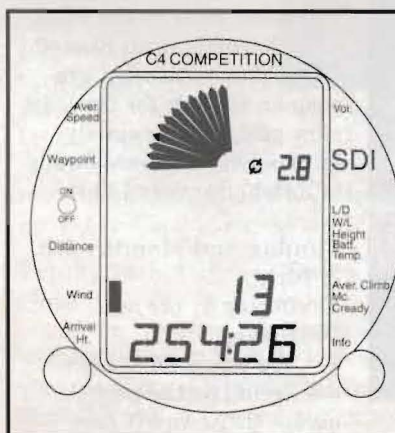
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Friday 7th August

Dear diary,

Nightmare getting to Lasham.

The van blew up en-route, Greenflag delivered me and Pete Sheard grabbed the ASH trailer from the M25 roadside. I must let Pete into a thermal this year. Ha! No chance. He's far too good. He won last year and *now* he has a Nimbus 4.

Interestingly, Herr Direktor – Terry Joint – sent a memo saying this year he's going to police the 750kg weight limit. I must find a slim girlie for the back seat...

Saturday 8th August – Day 1

Dear diary,

Desert conditions.

Woke up to find 100 rigged gliders on the airfield, with a full complement of Open class, plus two regional classes! Terry Joint's last meet as director. Universally regarded by the pilots as an excellent (albeit slightly sadistic) director, he sagely reminded us at briefing that during his millenia as a director there had been no injuries or major damage etc, and since this was his last meet before dementia and a weak bladder took over, mid-air collisions were forbidden. He wasn't joking - it was a sobering reminder of this year's unfortunate events. I'll be very careful.

Of course, he didn't say anything about accidents on the ground though:

Mike Thick was the earliest casualty. With 34°C forecast he had the choice of sweltering under his sunshade, devouring ice cream all day, or driving over his ASH 25 with the Range Rover. Tough decision, but fortunately all Open class Nationals are equipped with a Ralph Jones to get your modified glider quickly airborne again.

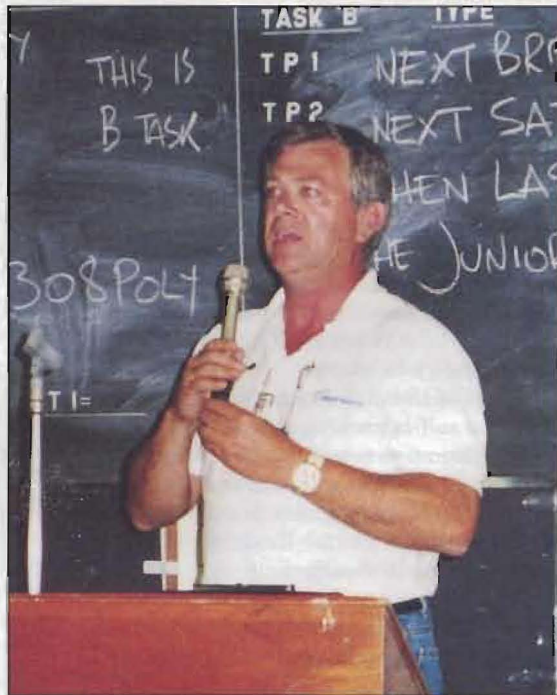
We sweltered, flew and sweltered more in the weak blue thermals, with Russell Cheetham eventually winning an ice lolly for the least slow performance closely pursued by the Jones family of Ralph, Steve and Phil.

Sunday and Monday 9th & 10th

Sweltering by the pool.

Dear diary,

We would have been sweltering by the pool... except there wasn't one.



Terry Joint tells it his way.

Tuesday 11th August – Day 2

Dear diary,

Cooler.

The weather was cooler today – just 28°C. Dave Allison smoked us all today, flying much faster. To rub salt into the wound, not only is he a talented, good looking, all round nice guy, he's flying my (other) glider! Meanwhile, on the tarmac...

Pete Sheard, in 3rd place, sent his mum off to drive into David Innes' Nimbus 4 while he was weighing it – just a smashed windscreen and minor damage to the paintwork. The glider was okay too.

Wednesday 12th August – Day 3

Dear diary,

Clouds again.

Attempting to complete the job on David's glider, 'someone' reversed their Land Rover into his wingtip. To calls of "I told you to use your Granny" his beautiful Nimbus 4 was again given the all clear and we took off into a great sky.

Dad, my trusty (ha!) crew, celebrated by driving over our wingtip too -



The gaggle flying somewhere over Oxfordshire.



The Lasham grid awaiting a rebrief.

luckily on the soft grass so minor damage to his nose only. Pete Sheard won the 265km tour of the Cotswolds (without his Mum's help) at a blistering 116kph.

Practised my cloud flying today. I popped out of one cloud to meet two gliders whizzing just past my nose. It was a tense moment, but luckily I'd packed extra trousers. Later I gave CFI and generally nice guy Graham McAndrew a rollicking for not mentioning that he was halfway up a cloud in the area. Rollicking a CFI is really underestimated and feels great. I think I'll do it more often.

Thursday 13th August – Day 4

Dear diary,

The BIG landout.

Task 4: Terry sent us to Gloucestershire, Northamptonshire, Cambridgeshire, and a return home (except we didn't). Rumours were rife about Terry Joint setting a task longer than his 613km of 1995 as a fitting memento of his last meet. As we approached the Birdlip turn – a crossroads with pub on the Cotswold edge, a warm front appeared from nowhere and shot down all gliders in the vicinity. That included Phil and Steve Jones (both in our last World's team, and their dad Ralph). Eight of us soared the hill for ten minutes in the rain, before the other seven headed low 'over the back' leaving moi to perform some Cotswold gully gobbling. With 400' on the clock for over 40 minutes, I somehow managed to remain airborne and an hour later I scabbled away. Even Dunstable's legendary John (JJ) Jefferies would have been proud.

Eventually everyone landed out (that included the 55 gliders of the regionals too) making the combined

mileage total by far the longest task ever. Terry's a hero task setter and will probably be awarded something to wear around his neck for this. As I waited in my Cambridgeshire pub for Dad, contemplating how things couldn't get worse, I received a phone call informing me that my (other) glider had been groundlooped in a

Cotswold bamboo plantation. The pilot was OK, but then I haven't caught up with him yet. Still things couldn't get worse. Dad arrived, but as we turned into the field, another kamikaze granny crashed into the back of our Cobra trailer. It wrote her car off and left the Cobra mildly scratched. I asked, but she denied knowing Pete Sheard. We arrived back to moon-drenched Lasham at 3am. Now which one is Terry's caravan.....

Some folk aerotowed back. Steve Jones got bored on tow so decided to check the turbo mechanism on his Nimbus 4, ending up pulling the cable release instead of the decompressor. Simple mistake I say. Not to be out done, David Innes also took a long aerotow retrieve. The tug and he climbed above the cloud layer, but had to let down after being sandwiched by airspace. David got down okay, but somewhere along the way he lost the tug when the weak link broke – requiring yet another aerotow retrieve... Demonstrating superb skill, Mike Foreman in a (mere) LS6 is 2nd for the day!

Friday 14th August – Day 5

Wave

We wait above the clouds in wave to start the task. Serene. Less serene was the sight of Graham McAndrew climbing into the wrong glider, then

realising he wasn't halfway up the afore mentioned cloud. Rollicking a CFI is really underestimated and incredibly stupid. I grovel lots.....

Phil Jones wins the day by a colossal margin, claims it was straightforward, but that he made three unnecessary turns. I was above him for the final glide and saw his technique - he flew uphill for twenty miles. Easy. I'll try it tomorrow.

Saturday 15th August – Day 6

Mega day.

Terry set 660km – what a hero. Later falls back to 550km (wimp) to Banbury, Winchcomb, Newmarket and Bicester. Naturally, Phil Jones wins the day again (120kph), but it's getting close at the top. Russell's well in command, but Mike Young, Pete Sheard and I are fighting for the little gongs.

Sunday 16th August – Day 7

Blue thermals again.

Twice around a 140km circuit. We do it all in one gaggle. I couldn't lose Ken Barker in his LS8. He was everywhere – flying twice as far as 'normal' gliders in his endeavours to find better lift. He beat us all home.

Luckily proper gliders took the overall honours, with Russell Cheetham a deserved winner, Pete Sheard runner up and Mike Young 3rd.



Phil Jones installs a helium system into his Nimbus 3.

Well diary, it was a superbly run event. Lasham, as ever, was well-organised and raising money like fury to buy their airfield. Friendly natives, great weather and superb memories – not least was receiving my four-week-old daughter's first smile when I returned that night at 3am. Terry Joint, you're forgiven.

On the Seat of his Pants

Mike O'Neill used to fly at Oxford but has moved recently and is currently clubless

I DON'T HAVE A VAST DRAWER FULL OF GLIDER FLIGHTS FROM WHICH TO DRAW FROM WHEN I WANT TO REMINISCE ABOUT GLIDING, AND AT THE TIME I MADE MY SILVER DURATION FLIGHT THE ONLY THING I WANTED TO REMEMBER WAS TO TRY AND FORGET IT. I NEVER HAVE DONE, AND THE MORE I LISTEN TO HOW OTHERS GOT THEIR 'FIVE HOURS' THE MORE I HAVE COME TO REALISE WHAT A SINGULARLY MASOCHISTIC EXPERIENCE I OPTED FOR, SUCH WAS MY DESPERATION TO GET SILVERED.

John Gibbons always told his pupils not to get pre-occupied with the thought of their Silver duration flights. The 50km, he said, was the essence of the Silver Badge trio and the duration would inevitably come along, if not during that first cross-country, then during some subsequent flight when the pilot would be concentrating so hard on thermal turns and navigation that he would barely notice that the time had passed. To set off with no ambition other than to stay aloft for five hours, he said, was unwise, and likely to lead to fatigue. Had I been younger, with more time, money and fewer commitments I would surely have heeded his advice. As it was, my wife told me in July 1992 that she was expecting our second child, and time, money and few commitments was not what I was going to have.

Earlier in the year John Giddins, a Full Cat instructor at Oxford GC started working at Mike Cuming's newly formed Gliding Centre at Hinton-in-the-Hedges. He invited OGC members to come over and fly during the week. I was keen to overcome my apprehensions about flying away from the familiar field at Weston and, as my line of work naturally falls quiet in the summer, I was able to take John up on his offer. After a couple of visits during which I was checked out in a K13, I completed my Bronze flying test and was cleared for aerotow in a K8.

Tuesday 28th July was a pretty good day. But Hinton were winch

launching and with very little wind, getting a decent launch was going to be a challenge. When I found John he told me that there was a course on, and no single-seaters were available. Sensing my desperation, he thought for a moment and then offered the use of their 'reserve' Ka7, a type I had never flown before.

The machine was serviceable but had no left rudder pedal footrest and only one ASI, which I had to remove from the rear cockpit and fit into the front. Someone had fitted an overlong bolt in such a position that it dug deeply into the left shoulder. John warned me that the rear DV panel tended to slide open in flight and that it would be impossible to close it from the front seat position if it did. The plane also lacked a radio; in 1992, USAAF F-111s still operated out of Upper Heyford, and Hinton airfield was sited within the UHMRA (Upper Heyford Mandatory Radio Area). Flying over 2,000'AGL could only be undertaken after gaining permission from Upper Heyford ATC; this permission was given only on condition that the soaring pilot stayed on their frequency ready for any instructions. Clearly, without a radio this was not going to be possible. Hinton were not keen on dealing with the retrieve of an extra-curricular Ka7 in the middle of a course week, and said that they would much prefer that I stay within gliding range of the airfield. The lack of a radio, airspace, and Hinton's request presented me with a conflict. No problem, said John the Optimist; I could fly north from Hinton until I crossed over the disused railway line, where I would be outside the UHMRA and free to soar to cloudbase.

John told me to prepare the Ka7, take it out to the launch point and wait for his instruction to launch. I waited dutifully, using the time to conjure up ways to make the accommodation more comfortable; it was marginal after two minutes on the ground and I didn't allow myself to wonder what it would be like after five hours. At 12.30, John had still not come back to me and I was worried about having enough day left. I

grabbed him between instructional flights. 'My God! You still here?' said he 'You should have gone an hour ago'.

Despite the best efforts of Hinton's winch, my first launch gave me 900' and I failed to find any lift. The circuit was across and behind the launch point and I was quickly back in line. 800' on the second launch and again, I found no lift. The heat, the concentration and the hurried hauling back into line meant I was hot, bothered and inclined to give up, but John wasn't having any of that. 800' off the winch again and, turning downwind, I saw that John had found a stubble fire. I was at 600' by the time I got to him and I hung on for dear life. My hard work was rewarded as I climbed to 1,800' and headed out of the UHMRA, hoping to take 200' climbs en route to stay high but legal. It was a daft, pre-Silver idea; I had no chance and, after sinking to 1,500' well short of the UHMRA boundary, I scuttled back to the stubble fire. My second attempt went better and I pushed on out of the UHMRA. However, extreme discomfort was starting to affect my concentration and what was that roaring sound off to the left? These bloody F-111s are everywhere, I thought, and then I realised that the rear DV panel had slid open. For the next five hours I had auditory hallucinations about F-111s trying to impale me on their nosecones.

Starting to get low, bottom lip trembling, I headed back to Hinton searching desperately for lift. I found something and summoned up all of my modest soaring ability to centre in it. This was the turning point of the flight. I discovered two things: firstly, the effort of trying to stay aloft had caused me to almost completely forget the considerable discomfort I was experiencing. Secondly, I realised what I needed to do to stay aloft for five hours. Forget centring well, forget pressing on, don't allow yourself to feel inferior as a soaring pilot. Get high, stay high, hang around in anything that is going up (or at least that isn't going down) and use the top of the climb to eat, drink, think, loosen

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straps and generally undertake circulation restoring exercises.

So I circled endlessly and aimlessly over Banbury. No matter how I tried, the Ka7 and I never seemed to settle well into thermals and bruising to my foot caused by using the left rudder bar meant that I circled right wherever possible. I was a beacon for cross country pilots, many of whom were having a very good day; anybody needing to top up at Banbury could rely on finding an Irishman in an old Ka7 marking the top of a decent thermal, his harness straps loosened, pulling his knees up under his chin to ease cramp and numbness of the nether regions. These visitors all joined well below me, turned inside me, shot up past me and disappeared. From time to time John Giddins and pupil would stooge past in the green and white K13 of the Gliding Centre, flying short out and return cross-countries between Hinton and Edgehill.

Although I was worried about increasing high cloud and the declining strength of the thermals, providence kept me aloft. I still wondered if I could endure five hours of such discom-

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fort; until I reminded myself that you couldn't just pull a glider over on to the hard shoulder. Finally, at around 5pm I realised I had a good chance of making it. At 5.30 I knew I just had to come down slowly in order to finish and my spirits started to soar.

After a stonking climb over a stubble fire I headed home at speed and landed 5hrs 46mins after launch and struggled, stiff legged from my cramped cockpit. F-111s roared in my head, my left shoulder bore the deep imprint of a bolt thread and I could hardly stand on my left foot but I, and the old dog of a plane, had done it.

And that should have been that. But John Giddins came up, offered congratulations and asked if I had ever flown an L-Spatz. A minute later I was back being released from 600' after a horrendous launch in another strange type (no trimmer and rather poor spoilers) and left to sort it out. Great days, crazy days. To John Giddins, and all those other instructors who seem to know better than you what you are capable of, my sincere thanks. Five days later, my bottom still hurt.

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Tony Segal flies at Lasham and began researching glider crashworthiness 13 years ago

ALL ACCIDENTS INVOLVE THE GROUND SOONER OR LATER, BUT SERIOUS INJURY TO THE PILOT CAN BE AVOIDED IN TWO PARTICULAR TYPES OF ACCIDENT: THE PILOT CAN BE PROTECTED BY AN ENERGY ABSORBING COCKPIT UPON IMPACT WITH THE GROUND (AS DISCUSSED IN THIS ARTICLE); IF THE ACCIDENT OCCURS IN MID-AIR (THE RESULT OF STRUCTURAL FAILURE, COLLISION OR CONTROL DISCONNECTION) A GLIDER-PARACHUTE MIGHT SAVE THE PILOT'S LIFE; THIS WILL BE DISCUSSED IN A FUTURE ARTICLE.

Safety features may be built into new gliders with little or no effect on performance, but fitting some of these improvements into existing gliders is more difficult. Moreover, the incentive for the manufacturers to fit safety features in new gliders as standard has to be led by pilot-demand.

Survivable Loads on the Pilot

The survivable load on a pilot depends on the direction of the impact, the acceleration, and the duration of the impact. A load in the direction of the pilot's spine (the z-axis) is the limiting case compared with the fore-and-aft case (the x-axis). The sideways impact (along the y-axis) is considered to be less significant.

During a z-axis impact there is a risk of severe spinal injury as well as injury to the internal organs; a vertical impact causes the heart, diaphragm and liver to move up and down as a single unit. If the heart tears away from its main connecting blood vessels, the pilot will die.

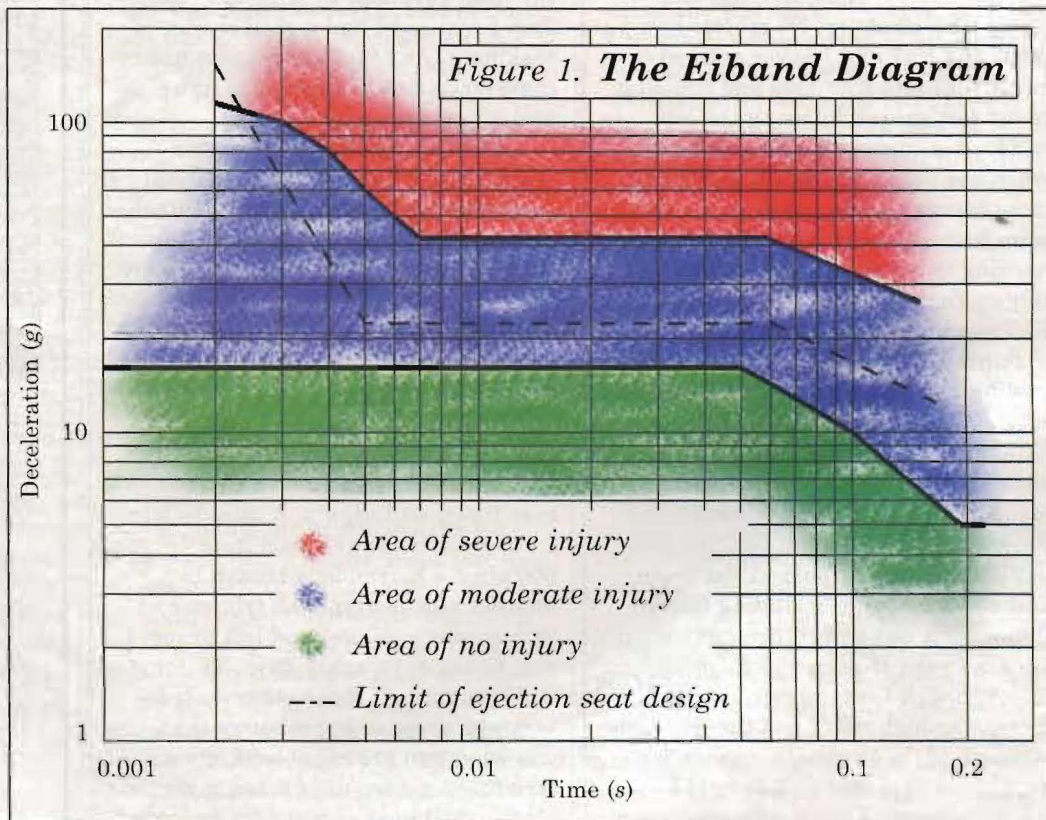
The effect of deceleration and duration of the impact are shown in the Eiband diagram (fig.1) where deceleration in terms of g ($g = 9.81\text{m/s/s}$) is shown with respect to the duration of that deceleration in seconds. It will be seen that the shorter the duration of the deceleration, the higher the value of sustainable deceleration the pilot can tolerate, and vice versa.

There are three areas shown in figure 1: green represents the area of voluntary human exposure, (i.e. the amount of g to which we are voluntarily prepared to expose ourselves) after which we remain uninjured and undebilitated. The blue represents an area of moderate injury, such as slight injury to bones of the spine. This is the region to which the limits for military ejection seats are designed.

Lastly, in red, is the area of severe injury or death. One special region is shown at 0.2s (5Hz); this is the frequency at which the spine resonates, and to which we have an especially low tolerance.

These limits apply to young, fit, seated, harnessed pilots. The limits are reduced for the elderly, for those with previous spinal injury, or for those in an unfavourable seating position. Yamada produced a table showing the reduction in the breaking load of lower spinal (lumbar) vertebrae with age, as follows:

Age Range (years)	Breaking Load (kN)
20 - 39	7.14
40 - 59	4.67
60 - 79	3.01



The aim of improved aircraft design is to ensure that a pilot is exposed to forces arising from only the green or blue areas of the Eiband diagram. Initially, design to minimise decelerations along the x-axis (the fore and aft direction) will be considered.

Impact in the Fore & Aft Direction

Improvements are based on the concept of a strong survival cage around the pilot, with an energy absorbing structure in front. This is the method used in modern car manufacture.

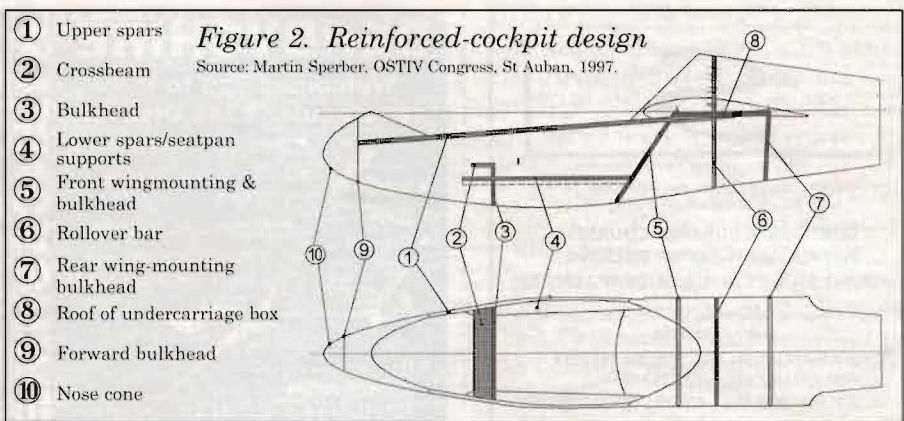
In 1991 I asked Frank Irving if he would calculate the effect on drag and hence performance of increasing both the length and depth of the glider fuselage by 0.5m. The decrease in maximum L/D was 5%. The decrease in L/D at 80kts was 10%. Clearly this decrease in performance was not acceptable; I devised the aphorism 'better broken legs than dead'.

The structure from the nose cone to the plane of the control column should collapse progressively on impact, with a consequential risk of injury to the legs. The cockpit structure aft of the control column should form a strong cage protecting the vital organs of the pilot's body. The external design of the glider would be unaffected, as would the length and fittings of the glider trailer.

In 1997 Prof. Loek Boermans, of Delft University, Holland, studied the effect on fuselage drag of extending the nose alone (the fuselage depth remaining unaltered). Prof. Boermans showed that the increased drag is insignificant when the depth of the fuselage is not altered. This finding offers the opportunity of extending the energy absorbing nose of the glider without adverse



Figure 3: Martin Sperber's 'racing car cockpit' being tested at TÜV Rheinland in January 1998. Photo: Jochen Ewald.



effects on performance, and hence offering some protection to the pilot's legs.

Test of a New Design of Cockpit

Martin Sperber, of TÜV Rheinland, Cologne, carried out a significant test in January 1998. A glider cockpit was designed using Formula-1 racing car technology, the test impact being into a skip of earth. I was invited to observe the test.

Eight out of ten glider accidents in Germany occur on grass or bare soil. Allowing the glider to penetrate the soil would help to absorb the energy of the impact. This theory required the provision of a very stiff cockpit structure. A skip of "standard earth" was provided, the load-bearing power of its compacted soil being tested by an ingenious Russian instrument usually used to test airfield surfaces. The cockpit was built from a composite material consisting of carbon fibre and Dyneema fibre (Dyneema is made out of polyethylene).

The cockpit was built in a Glasflugel "Hornet" mould, although the final construction was, of course, entirely different from that of the standard glider (fig.2).

Two upper spars passed from the nose cone, along the cockpit sills, to the rear wing-mounting bulkhead. Two lower spars passed from the plane of the control column back to form the support for the seat, then to the front wing-mounting bulkhead. In front of the control column was a strong crossbeam and a bulkhead. There were bulkheads in front of

and behind the undercarriage area, supporting the wing fore and aft cross tubes. This region had a strong roof, forming a box behind the pilot to prevent the wings folding forward and crushing him. A ring structure lies between these two bulkheads supporting the structure to the rear of the cockpit, also acting as a roll-over bar. The longitudinal midline joint of the fuselage had considerable overlap and was very strong.

The crushable nose cone was attached to the front of the cockpit, separated from the pilot's space by a bulkhead. The aero-tow hook had to be attached to the main cockpit structure rather than the nose cone as tests showed that the hook would interfere with the energy absorption.

A pilot manikin was not used, but the mass of the pilot's feet and thighs were simulated by sandbags. It was considered that the mounting points for the seat harness were so strong that testing wasn't needed.

An accelerometer was fitted at the CG behind the cockpit. The wings, rear fuselage and pilot loads were simulated by metal sheets bolted to the wing mounting area.

The test simulated a fully loaded glider weighing 525 kg of 15 metre/18 metre wingspan hitting compacted earth at 45° at 70 kph (45mph), a considerably greater velocity than that specified for car impact testing (fig.3).

The accelerometer trace showed an ideal trapezoidal pulse shape, with an easily survivable 18g maximum deceleration. The distance from the front of the nose cone to the forward bulkhead was 0.3m. The nose penetrated 0.9m into the earth, in line with the longitudinal axis of the glider.

The cockpit structure was intact following the test, excepting for slight delamination, but without displacement of either cockpit sill. The forward



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bulkhead had failed, but this was known to be weak before the test; it is to be strengthened. Earth entered the cockpit through the open cockpit (no canopy was fitted), and through the broken forward bulkhead.

The test was considered to have been highly successful, but more tests need to be carried out with a longer nose and the glider impacting onto a hard surface. The roll-over structure needs to be tested as the stiffness of the cockpit results in a greater risk of rollover. Finally, the canopy has to remain in place and not be broken by the earth and stones thrown up during the impact. This might require that the canopy transparency is made of stretched acrylic, polycarbonate, or a laminated material.

Further Points of interest to avoid injury in a fore-and-aft impact

The pilot should be prevented from 'submarining' down and forward under his seat harness, which can be achieved by the use of a five or six-point harness. Alternatively, Martin Sperber has devised a method using a steeply raked seat pan and a suitably positioned lapstrap (avoiding the use of crotch straps) for which the lapstrap passes from the pilot's hip down to the anchorage point at an angle between 0-20° from the vertical.

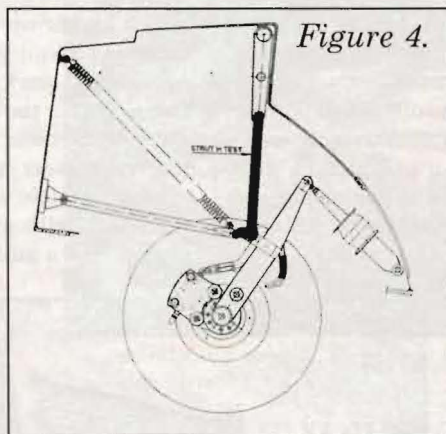
A head restraint should be provided. The OSTIV Airworthiness Standards give detailed requirements for head restraints: each head restraint must not be less than 250mm wide; it must be faced with energy absorbing material; it must be able to withstand an ultimate load of 3kN; and it should not foul the parachute during an emergency exit. Where possible, head restraints should be mounted integrally with seatbacks.

To protect the pilot in emergency landings, moveable parts, such as batteries, should be restrained to withstand 20g. There should be no sharp edges, such as those often found on the lower edges of instrument panels, or sharp fittings, such as switches or catches, in the cockpit.

Impacts in the Direction of the Pilot's Spine

Undercarriage design

Gerhard Waibel observed that, under severe perpendicular impact, an undercarriage first collapses then comes to a sudden halt, imposing a considerable load on the pilot's spine. He has designed an undercarriage that, rather than reaching the end of its movement with a jolt, collapses progressively from there on, thus avoiding sudden loading on the pilot. The resulting distorted undercarriage tubes are easily replaced.



Waibel's collapsing undercarriage design. Source: *Technical Soaring*, Vol.15, no.4, Oct 1991, p.105.

As mentioned before, the spine

is susceptible to resonance at 5Hz (five cycles per second) at which frequency its strength is greatly reduced. Vibration at 5Hz should therefore be avoided in the design of the undercarriage and the wings of the glider.

Seat Pan Design

In modern gliders, the pilot is semi-reclining rather than sitting vertically in the cockpit. Impacts directly along the axis of the spine must also be taken into consideration. Studies at FH Aachen by Prof. Wolf Röger, and at TÜV Rheinland by Martin Sperber, have both shown that aluminium honeycomb material placed under the seat pan makes maximum use of the limited crush distance available between the seat pan and the under surface of the fuselage. The load should be applied as far as possible along the axis of the honeycomb to prevent it buckling prematurely.

Martin Sperber has designed a seat pan suspended from the cockpit wall by four swinging arms. The resulting movement of the seat pan means that the seat will be correctly aligned. The honeycomb material can be easily replaced after an accident.

An energy absorbing seating cushion may be used on the seat

pan, in conjunction with the aluminium honeycomb. The cushion will absorb the effects of minor impacts and heavy landings, leaving the aluminium honeycomb unaffected and in reserve to deal with serious accidents.

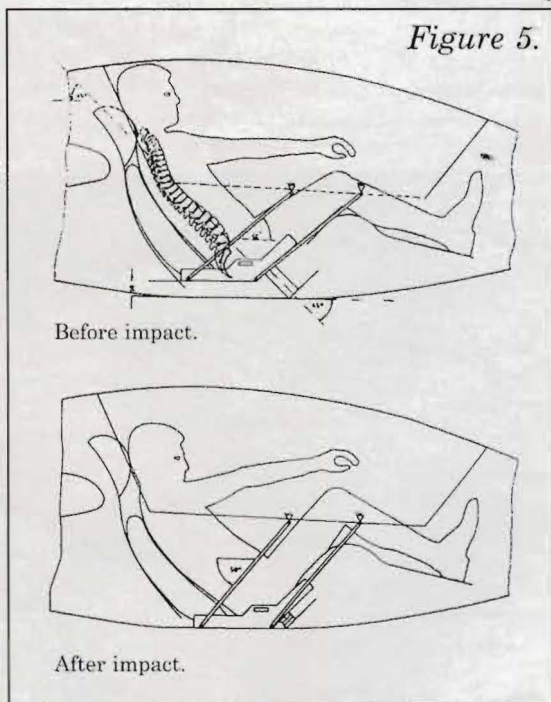
A test using Dynafoam (called Sunmate in the USA) was carried out at DERA, Farnborough in 1994. The impact was at 17g with an impact velocity of 9.4m/s (21 mph). Using 1" thick Dynafoam at room temperature, the following resultant forces (kN) were obtained:

Pilot	No Cushion	1" Dynafoam Cushion
Manikin		
Light female	5.558	4.619
Medium male	8.993	7.520
Heavy male	7.198	5.985

The use of an energy absorbing seat cushion significantly reduced the load on the pilot throughout the range of pilot weights.

In addition, if the seat back structure and parachute pack fully support the spine, risk of injury will be reduced. A lumbar support pad, to maintain the shape of the curve of the back, will increase the compression loading strength of the spine by 80%.

There have been great advances in the study of crashworthiness, and unless pilots insist on them being incorporated into their new gliders, avoidable injury and death in gliding accidents will continue.



Collapsible honeycomb under the seatpan. Source: *Technical Soaring*, Vol.19, no.2, April 1995, p.52.

Electric Winch Launch

Jochen Ewald is a gliding photo-journalist in Germany

FOR A LONG TIME, DESIGNERS TRIED TO BUILD AN ELECTRIC-DRIVEN WINCH FOR LAUNCHING GLIDERS. THEY FOUND THAT IT WAS LESS EASY THAN THEY HAD IMAGINED; THERE HAD BEEN NO REPORTS OF SUCCESSFUL OPERATION OF SUCH A MACHINE.

At the German Alpine Flying School (DASSU) at Unterwössen, about 100km east of Munich, a four-drum electric winch has been designed and built, and has now been operating successfully for two years.

The Unterwössen gliding airfield is situated in a valley that runs from the Alps towards the Ciemsee lake. The special geographical and meteorological situation makes this airfield 'one way'; usually only one runway direction is in use. The designers of the DASSU winch, Rüdiger Ettlbrück and Paul Möller, decided to build a stationary winch on a little artificial hill to protect it from floods (every spring the airfield is flooded by meltwater from the mountains). The winch was built quite close to the village, so that installation of the power cable was not too expensive.

The winch itself consists of four units: Two big boxes, which can be opened from the front, contain two drums. Each drum is belt-driven by its own 90kW electric engine. For those

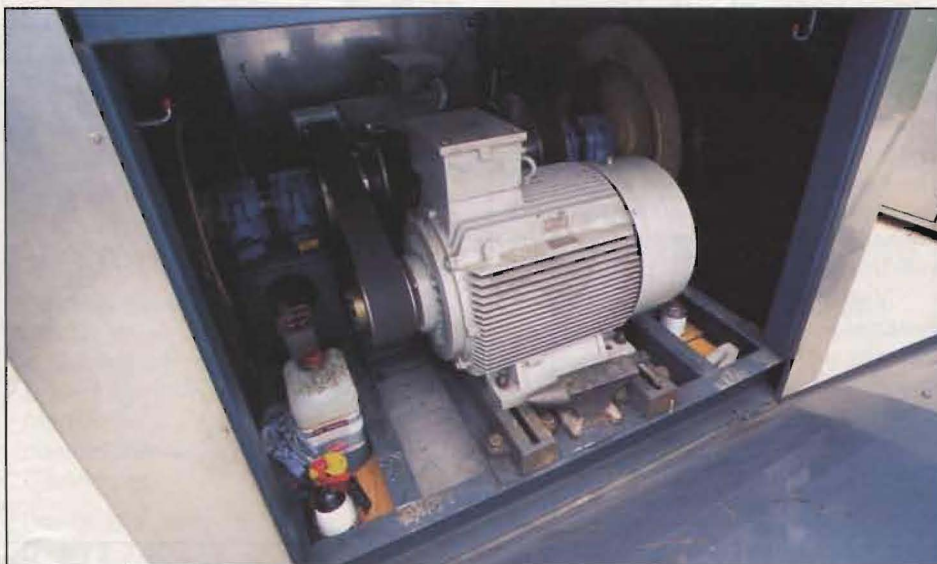
who operate modern petrol or diesel winches with 300-400hp, 90kW, doesn't sound like very much power, but it is enough to launch even the heaviest gliders. The electric engine offers full power with enormous torque at extremely low rpm, and may also be overloaded for a short time. The use of one engine per drum was chosen to avoid drum switching units wearing out and to allow continuous operation even if one of the four systems fails. Each drum was designed to be narrow but with a large diameter, so that a pay-on mechanism is not needed. Things that are not built in, can't cause problems!

The rollers for guiding the cable to the drum swing upwards as the cable rises during a launch, so that the cable is not bent more than necessary as it is rewound. The drums fit closely inside the box, so the forming of 'cable salads' [this is a wonderful German expression for what we call birdsnests!] after cable breaks is avoided.

The control room is behind the winch higher up the hill, where a comfortable cockpit gives the winch driver an efficient workplace. Another little house beside the winch contains her heart: the power connection, and the electronic steering and controlling system. A little air compressor provides the winch with pneumatic pressure for brakes and a guillotine.



Two of the cable drums and, behind, the control room.



One of the four 90kW electric motors showing the belt that drives the cable drum.

To discover the most efficient and safe parameters for the control system, many experimental flights were necessary – the electric theory had to be equated to the practical things that happen on an airfield. A lot of research, particularly with 'interesting' situations, had to be done in order to reach the safe state of reliable operation found at Unterwössen today.

To make multi-drum operation safer, the four cables are colour-marked. The same colour-markings are found on the retrieve-car's hooks, the glider take-off preparation places at the launch point, and the drum operating buttons at the winch. The cables are brought to the side of the launch point, so that the used cable is being pulled away from the others when the launch starts. A visit to the winch-driver shows how easy his job is: depending on the type of glider to be launched, he turns a knob for the required power setting according to a list of glider types. When "Take up slack" is called, the winch-driver releases the pneumatic brake and pushes the relevant

drum button; the drum turns slowly. When 'All out' is called he pushes his little 'throttle' (which is really a maximum rpm regulator) fully forwards; the engine accelerates smoothly, and is automatically run at the optimum speed. In the last third of the launch the winch-driver reduces the rpm by pulling his 'throttle' back a bit, to make the glider release. The ammeter of the winch gives a reading of 150amps for light gliders like a Ka8, but an ASK 21 takes as much as 250amps during the lower part of the launch.

After pulling in the cable, by normal use of the rpm-regulator, pushing the STOP button finishes the launch. For the cable retrieve, the pneumatic drumbrake lever is set to RETRIEVE, for which the pressure can be fixed.

The cable cutting device is an important thing for the safety of winch operation although, thanks to today's back-release hooks it is rarely needed. For the rare occasions when the guillotine is needed all four spring-loaded cutters operate at the same time at the touch of just one button. In an emergency it seems better to save the glider and to have four cables to mend, than to cut the wrong one!

The energy costs for a winch launch are very interesting. In 1997, 13,640 launches were made, and the bill from the electricity company calculated that there had been 12,927kWh used. This means less than 1kWh per launch: a low consumption! Of course, electricity costs are different in each country, and are dependant on the maximum current taken from the electricity grid during operation. At Unterwössen they paid 7,972DM (£2,723) for 1997, including all fees and taxes, meaning that each launch cost DM0.585 (20p). Compared to the energy costs of the Diesel winches used previously, this means a 40% reduction of energy costs. The maintenance and repair costs of the electric winch are close to zero, and the cable doesn't wear out so fast thanks to the better drum design and the smooth operation of the electric motor. However, the costs for building an electric-winch are significantly higher than the price of a conventional winch. In particular the



The control panel showing the view to the launch point over the backs of the motor-houses and winchdrum boxes.

costs for the power-cable installation may be very high, depending on the distance to the nearest sub-station.

The most interesting question is "How good is an electric-winch launch?" If you should be passing Unterwössen (not far from the motorway A-8 south-east of Munich) you should go and try it yourself. I had a go in a K13. The CFI suggested a trim setting position for the initial phase of the launch. The acceleration was powerful, but very smooth and without any jerks. With the pre-set trim, the K13 left the ground and soon reached the optimum launch speed of 100kph (55kt) at the correct climb angle. As everything was so smooth, no elevator corrections were really needed; such movements would just disturb the perfection. There is no 'thinking controlling' needed by the pilot to compensate the torque and power characteristic as usual with conventional winches. With 1000m cable in use, I reached nearly 1,500'. It was a wonderful way to become airborne!

The system also has a slight disadvantage: those pilots, who have only winched 'electrically', have several things to learn about the behaviour of normal winches and winchdrivers before they can launch safely at other airfields.

The electric winch at Unterwössen operates not only reliably and economically. It is also very much liked by the inhabitants and holiday guests of the village of Unterwössen, which is a health resort in the picturesque alpine valley. The winch position is close to the village, but there is no engine noise to be heard, just the whistling of the winch cable. There are no exhaust fumes near the village. There is, of course, an exhaust, but it comes

from the power station somewhere far away. The DASSU plans equipping a big roof near the airfield with 250 square meters of solar panels, which will provide all the electricity needed for electrical winching. Then the DASSU folk really can say: "We are gliding with solar energy!"



An electric-winch launch in progress at Unterwössen.

A First of a Different Kind

WE HAVE SO MANY STORIES OF FIRST SILVER DISTANCE FLIGHTS, FIRST SOLOS AND FIRST FLIGHTS OF ALL OTHER TYPES THAT I THOUGHT, FOR A CHANGE, I'D WRITE SOMETHING DIFFERENT. YESTERDAY I HAD MY FIRST FULLY-AEROBATIC FLIGHT.

I am lucky, in so far as Guy Westgate, an ex-UK Unlimited Aerobatics Champion, is a fellow club-member at Southdown. What is more, for the last week, Guy has had charge of the German Fox demonstrator. For those who missed Sam Mummery's hilarious skit at the 1996 BGA AGM, (or the article in *S&G*, Feb/Mar 1997 p.16) the Fox is a fully-aerobatic two-seater glider, with Polish ergonomics (meaning that it's impossible to get into, or out of, unless you're inverted).

At the very end of the flying day I climbed (carefully) into the Fox's front cockpit and pulled my straps as tight as I could; Guy pulled them tighter (aerobatic flights last such a short time that you don't really need to breathe). After the usual checks and a briefing on the instruments centred on the accelerometer (which somewhat alarmingly, for two-up, goes from -5 to +9g) we took a launch to 5,000'. In the air my briefing continued with instruction on how to execute an aileron roll, which I was to perform early in the flight, and we discussed the other manoeuvres we wanted to fly. It wasn't until later, in the clubhouse, with the help of a wooden model-glider that I was able to appreciate what we'd been doing.

I'd heard an exclamation earlier in the day along the lines of 'I've never seen anyone come off tow like that

before', and as soon as Guy pulled off I realised why. From release he went straight into what he would only call a 'tumble'. It was my first aerobatic experience save for a couple of chandelles and a quick flight off the winch with Bill Craig. I was glad I was strapped in.

Once we were flying straight and level I performed my aileron roll to shrieks of delight from the back. It's easy, this aerobatic stuff. No problem.

From there we went through various other manoeuvres, including a series of rolls (mostly involving the word 'snap'). The Fox is an extremely responsive aeroplane and stick input is rewarded, immediately, with a result. Guy is not a gentle pilot and the discipline of aerobatics suits his style; I felt as though I were in a simulator...

After several 'are you sure?'s I persuaded Guy to take me through an outside loop. We registered -3.7g, but, apart from being able to see my hideously distorted features in the reflection from the programme panel, the experience wasn't nearly as bad as I'd been led to believe. My eyeballs went up (or was it down?) inside my skull and every drop of blood in my body was pumped through my forehead within the space of two sec-

onds, but the same amount of *g* in the sudden shock load of a snap roll was much more uncomfortable.

Once down to 1,500' or so Guy had run out of things he wanted to show me, so we finished with what Guy affectionately calls a *BOOM! POW!* manoeuvre another snap roll of some sort. Declining the earlier challenge from our CFI to fly the circuit inverted we completed our flight with just an 'unusual' downwind leg, and landed.

Once back on the ground I became aware of a gentle throbbing in my head and a vague feeling of nausea; during the flight I had gone completely deaf in my right ear, but other than these, I suffered no ill-effects. The most interesting feeling I remember was, when flying upside down, trying to hold my legs down (that is, up) away from the instrument panel; few muscles exist for defying gravity in unconventional attitudes.

Having never flown aerobatics before, I will say that my flight was *enormous fun*, and I would recommend it to anyone.

—Le Forbes

A report of the Aerobatic Championships at Buckminster Gliding Club will be published in the next issue of *S&G*.

Derivatives of the Me7 are Available

KENA AVIATION ARE DELIGHTED TO ANNOUNCE THE NEW DERIVATIVES OF THE ME7 GLIDER THAT ARE NOW AVAILABLE.

The Me7 has been so vastly improved in the last year that the new version will now be called the Me8. All the minor mouldings have been changed in this new version in order to improve maintenance accessibility and pilot comfort. The significant points of improvement include;

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- New canopy release levers.
- New aluminium control levers.

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Overheard on the Airfield

Tuggie:

You seemed to be having trouble holding position on that tow I gave you this morning.

Pilot:

Oh, sorry! I was programming my GPS...

Cotswold Regionals at Aston Down – 1998

The first regionals flown from Aston Down

HOLDING THIS CONTEST WAS THE CULMINATION OF A LONG-HELD DREAM TO USE THIS EXCELLENT EX-RAF AIRFIELD FOR GLIDING COMPETITIONS.

When the Cotswold Club moved to Aston Down in 1967, they knew that the airfield had hosted the National Championships in 1962. Not only had that been one of the most successful events ever, but the first 300km triangle was set on the opening day and one pilot was heard to mutter: "This'll sort the men from the boys". I was attending my first competition and knew nothing of this. So it was in June 1998, when a team of innocents led by seasoned competitors welcomed the 36 entrants to their club.

The weather ensured that this contest was not to be one for the child racers. Despite the Director, David Roberts, holding power at the Met Office, the task setter Paul Gentil and

Chief Marshall Chris Swann were challenged to make maximum use of the sequence of tiny suitable air masses which prevailed. The Control team soon became experienced; the first task, 224km, produced a nearly 100% land out rate. Only Ken Barker in the aptly named Dream Machine (Duo Discus), using a mixture of cunning and patience of a genuinely character-building kind, used the continually shifting thermal, wave and convergence-zone lift managed to complete the task. Two heads had proved invaluable that day; their speed was 48.9kph. A scorer's nightmare was to follow! Tim Newport-Peace gave invaluable assistance and all went well thereafter.

Despite an agonising 8% finish rate over the four contest-days, a good time was had by all, and pilots and crews went away looking forward to next year.

—Jane Randle

Sparrow is Airborne

Geoff Weston flies from Southdown Gliding Club

WITH APOLOGIES TO JACK HIGGINS, WHOSE EAGLE LANDED, SPARROW IS AIRBORNE – AGAIN. HAVING REACHED THE DIZZY HEIGHTS OF BEING AN EARLY SOLO-PILOT FIVE OR SIX YEARS AGO, ALONG CAME THE WORST DOWNTURN IN THE CONSTRUCTION INDUSTRY IN 70 YEARS AND MY PURSUIT OF DÆDALUS CAME TO AN UNCEREMONIOUS END.

Between then and now, to misquote the current vernacular, I have been 'in deprival'. I have made the odd pilgrimage to Parham and had the opportunity of a bash around the block in a Falke by courtesy of some special friends but, otherwise, there has not been much of consequence. Another unfortunate meeting with men in blue gowns with scalpels proved something

of a turning point however and, after assaulting the piggy bank, I'm back. I digress. My re-introduction to gliding was a flight to Lasham and back in a Duo Discus and, within a few minutes, I was kidding myself that I could still fly. This mistake was swiftly debunked when I signed-up for the Southdown's Friday-evening Course.

The guy in the back issued strangled 'I haves' and muttered mild expletives mentioning the inadvisability of spinning off the wire. After a few repeats of this embarrassing behaviour, one of the lessons drummed into me during my pre-solo training returned to what I laughingly call my consciousness.

When I got home, I sat down, reviewed each flight, analysed what had gone wrong and looked for the root of the problem. The penny soon

Straight for the Horse's Ear

A glider pilot in the Netherlands recently redefined the meaning of the expression *beat up* when he performed a competition finish over his club's airfield after a cross-country flight. Rather than observing the minimum flying-height he passed over the perimeter fence at an altitude of 6'. Unfortunately a horse was standing near the fence and, unbelievably, the wingtip severed the poor animal's right ear.

Not surprisingly perhaps, the glider was damaged and the pilot (who was subsequently removed from the club) had a visit from the 'airpolice'. The horse recovered, and was promptly rechristened Vincent...

—Ary Ceelen

dropped; while I had been away, I'd built up false memories of myself as pilot whilst, in reality, what little ability I'd had was gone. The solution was, thankfully, fairly simple. Memories and the consequential expectations are one thing, real life is another; I had to go right back to basics and start again. Procedures have changed, anyway.

Winching routines have changed and cutting the corner between downwind and base legs (sorry – the 45° leg) is new to me, but *ab-initio* is where I am and where I will remain until I make some decent progress. Happily, I think that is now beginning to happen.

As an aside, I read somewhere that it took a glider-pilot to explain to the ornithologists that oyster catchers fly close to the surface of the sea to be in ground effect... surely it should be 'water effect'.

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Club News

Material for the next *Club News* can be sent to the editor before the **10th October**. Email: le@blot.co.uk (preferred)
Post: PO Box 2039, PULBOROUGH, West Sussex RH20 2FN (disk or *crystal-clear* hardcopy). **Please do not fax *Club News***

Bannerdown (RAF Keevil)

The longest day reunion was a happy event with lots of old faces on the airfield during the day and line-dancing later in the hangar.

Good soaring conditions arrived at last on 26th July when John Hull (Astir) flew 500km from Bicester, and Peter Desmond (DG200) a 300km from Keevil. Simon Foster (Ventus) and Jon Arnold (Discus) flew over 400km. At the Halton AGM our CFI, Al Stacey was voted RAFGSA member of the year.
D. C. F.

Bath Wilts & N. Dorset (The Park)

We are welcoming new members, recruited following a recent advertising drive. We have held a schools' course which has given young people a taste of gliding. We are also continuing Friday evening Air Experience courses to introduce more people to the sport. We have welcomed visitors from S. Africa and Germany, who found us on the Internet.

In spite of mixed conditions, Ian Macdougall flew his Silver Height and both Mike Jenks and Dave Marsh have completed five-hour duration-flights. Congratulations to Mike Edwards for winning the Dan Smith Memorial Trophy for aerobatics.

Dick Yerburgh has his Full Instructor Rating and Steve Wareham has qualified as an Assistant Instructor; Nick Bowers is our new AEI.

The club expedition to Sutton Bank, where we received a very warm welcome, gave us some exciting flying. A group of pilots also went to Le Blanc where Peter Dixon-Clarke completed his first 300km to add to a Silver Distance he recently flew from The Park.
Diana Wright

Bidford (Bidford Airfield)

Matthew Weinle and Nigel Howard have flown solo, Jan Ozimkowski flew for five hours, Alais-

tair Hill has his silver height and Mike Pope, after thirty-eight years, has all three Diamonds.

Our regionals were marred by the death of Gordon Camp, in a mid-air collision, on the third day of the competition. Bob Sharman eventually came first after only three competition days.



Andreas Gliding Club's Auster tug at the airfield on the Isle of Man

Obituary – Gordon Camp

At 12.47 on Monday 27th August we lost one of the gliding world's names following a mid-air collision during the Bidford Regionals.

Born in 1942, Gordon started gliding as a teenager at Dunstable, first flying solo in 1959 and going on to hold most BGA ratings possible.

After university, he followed a career in the RAF engineering branch, during which time he was a founder member of the RAFGSA Crusaders Club in Cyprus. Gordon returned to the UK in 1972 and started to become a regular name in the competition results-tables, completing all three diamonds in 1979.

Gordon left the RAF in 1982 and founded Gordonair at Enstone, the flying training side of which became Oxfordshire Sportflying Club. In 1986 he left OSF and took a job with the US Dept. of Defence where he remained until his death.

Gordon spent many years as FAI Badges Officer and Chairman of the Competition Committee. He was also responsible for directing both Enstone and Bidford's first regionals. Unlike so

many directors Gordon never took himself too seriously and was always keen to encourage the younger and less-experienced competitors.

The accident has cost us all a good friend and great pilot and our hearts go out to his wife Rosalind, stepson Tim and the rest of his family.

Dave Bland

Obituary – John Cadnam

John Cadman died on June 14th, aged 72, after a short illness. He started flying with his University squadron before entering the RAF with whom he flew a number of aircraft including Spitfires.

He started gliding in 1948 and had his Silver C within six months. His Gold Badge was completed in 1974 and his Diamond (no. 213) in 1986. John was

president of the Coventry Gliding Club at Husband Bosworth and owned a number of different gliders including an ASH 25.

John was a very capable pilot and twice won the Enterprise Trophy. Last Summer he flew from Sutton Bank to Bidford on a day when most clubs were restricted to local circuits. We will miss his quiet charm and kind nature.

Mike Pope

Booker (Wycombe Air Park)

The weather began to relent just before our regionals, giving us the somewhat unexpected achievement of seven contest days out of nine. The winners were the team of Aspland and Brice, with Dave Allison and Ed Johnston in second and third places. Nine out of the first ten positions were occupied by LS gliders with the Club Class champion, G. Dale, the sole intruder in his DG100.

Jan McCosham has been making a good recovery from her injuries sustained in the spring, and we have been delighted to see her back. She sends her thanks to the huge number of people who sent her get-well messages and sustained her by their visits.

Club News

Congratulations to Tim Scott and Dave Watt on their excellent placing in the Europeans, and best wishes to staff instructor John Dobson who has left us to take up employment at Cranfield.

We also have to report the sad loss of Mike Birch after a heart attack.

Mike was an enthusiastic instructor and key member of the vintage group at Booker. Our sympathies go to his widow Pat and daughter Nikki.

Roger Neal

Borders (Milfield)

Flying has got back to normal, with both our tugs back in action, but we sustained a further setback with severe damage to the Motor Falke in a take-off accident. Fortunately both pilots survived, although one did sustain a back injury, and is making a gradual recovery. The Falke should be back in use mid September.

Andy Bardget has stepped down as Chairman and is taking a break from Instructing, needing a well earned rest after steering the club through the extended negotiations over the move of our site from Galewood to Milfield. He is looking forward to spending much earned stress free time in his LS4.

We hosted a flying week for our neighbours at Northumbria in June, as a thank you for keeping us flying. Everyone had a good week, with hill and thermal soaring, as well as some cross-country flying; the local pubs saw a significant increase in trade!

Our month of wave flying in late September/October is fully booked, and we look forward to some good climbs.

Bob Cassidy

Bristol & Gloucestershire (Nympsfield)

Our man, Mike Strathern (LS7), won the Rolex Western Regionals in August with 2,720 points. Second was Jack Luxton ((LS8, Booker) and brothers Matt and Henry Rebbeck (LS4, London) came third. There were three flying days, and a lot of sunbathing.

Bernard Smyth

Buckminster (Saltby)

CFI Les Merritt has a CAA SLMG instructor rating so we are teaching motor gliding to PPL; a Venture motor glider arrived on August 1st.

Thanks to all who helped and took

part in the interclub land-out in July, and especially to Cathy and

Brenda for organising the hog roast and ceilidh.

We are now soaring in cyberspace so check out our website at: <http://www.btinternet.com/~buckminster.gc/>

Neil Rathbone

Burn (Burn Airfield)

We have ordered a new PW5 which will be collected from Poland soon.

Sunday 5th July produced remarkable wave conditions in which Bob Baines, Martin Ellis and Jack Sharples all flew over 10,000' and Dave Peters finished his Gold Badge by reaching 19,500 feet. All climbs were made within a few miles of the site.

Phil Turner and Derek Wilson have imported a turbo Discus from Germany and Bob Handslip has acquired a smart Wassmer Javelot.

Oliver Peters and Dave Bell have Bronze Badges, Ian Stoddart flew 50km and Derek Crabb has resolved after a thirty-year break.

S. J. K.

Cornish (Perranporth)

Congratulations to both Jack Barnes and Danny Ferandes-Davies for flying solo on the same day! Colin Drummond and John Trick have flown their Silver duration flights. Our entrants for the 100 Chateaux Competition at Tours Le Louroux in France came in 18th out of 21 – not as bad as it looks; spotting the right Chateau for the first time is not that easy and there was plenty of local competition!

Shaunne Shaw

Cranwell (RAF Cranwell)

Summer finally happened on Saturday 25th July with our CFI Jim Coughlan flying his first 500km. Richie Browne broke the club 500km record flying the same task. Jim Mills also flew Diamond distance in his SHK in Spain. Trev Beney completed his Silver duration and Nick Smith flew 50km to complete his Silver Badge.

Frank Kennedy has flown 1,000 hours in gliders. Welcome back to Ray Walker who, with Porky Wood, has re-qualified as a Full-cat Instructor

Pete Clarke

Dartmoor (Brentor)

The open weekend was held on June 20th-21st and was a huge suc-

cess. For once this summer the weather co-operated and about 150 visitors (visitors sometimes exceeding club members!) were flown with the help of a K13 from North Hill. The star of the show was the new launch caravan built by Franz Lotz complete with leaded windows and full communications.

The publicity drive has worked very well and we are gaining new members. Yet again the Inter Club League was stopped by poor weather.

Daniel Massey, who featured in last month's *S&G*, flew his first hour, in weak wave, on his sixth solo flight.

Peter Williams

Cairngorm (Feshiebridge)

Competition Enterprise is coming to Feshie next year, starting on Saturday 3rd July. We already have twelve bookings, and can only accommodate a maximum of twenty. Telephone Bill Longstaff (01540 661 098) for details.

Several members have been working hard in kind on the interior work of our new hangar/clubhouse and it should be habitable by now. Our Octoberfest is in full swing and continues until October 24th.

Ray Lambert

Deeside (Aboyne)

At our AGM James Davidson was appointed Chairman. Glen Douglas is the new Treasurer and Ed Colver new Secretary. Fergus Foster has gone solo and Fiona Fleming has completed her Silver Badge. Jack Stephen won the Sport Class at the Northerns.

The Scottish Inter-club League had a successful weekend's flying at Aboyne. Cairngorm won the weekend with Deeside coming second. Nick Norman of Cairngorm won the pundit class.

Ed Colver

Derby and Lincs (Camphill)

Jonathon Thorpe has flown his Silver distance and Brian Curran and Martin Harbour passed their AEI courses. Trevor Butcher has flown solo. Ginny and Paul Schweizer (of Schweizer Sailplane fame) visited Camphill for the first time since Paul flew in the 1954 World Championships, missing the Camphill Vintage rally by a few days. Both Ginny (who used to own a Slingsby Kite 2, and had not flown for over 25 years) and Paul flew with Ian Dunkley. Unfortunately the weather was a typical 1998 summer day.

Wendy Thompson

Devon & Somerset (North Hill)

Our Summer courses and Air Experience evenings are in full swing. With weather improving many members have made successful cross-country flights while others have received Cross-country training in our new DG505. Our Open Week in early August proved extremely popular despite the very hot anticyclonic conditions limiting opportunities for cross-country flying. The 25th Anniversary Competition Enterprise produced some interesting results as usual, with tasks set by John Fielden on most days. Gill Meakin completed her Silver Badge with a 50km flight to The Park, Steve Bushell and Charles Artur have flown solo and Phil Morrison has become an AEI. Visitors from other clubs are welcome; we have free reciprocal-membership.

Simon Leeson

East Sussex (Ringmer)

After many months of hard work, crossing our Ts and dotting our Is, our application to the lottery has been accepted! We will be collecting a K13 and are awaiting delivery of another from Germany. Not content with that, a K21 will also be arriving. This will finally enable us to replace our venerable K7s and indulge in some advanced cross country training. We have applied for planning permission to level the field so that our new gliders won't have to cope with the bumps.

John Little, Randall William, Alex Jones and Derek Gibbard have flown solo; a recent BGA cross-country course at Bicester was enjoyed by a number of our pilots even though the weather was poor. We look forward to our Open Days on 22nd-23rd August.

Adrian Lyth

Essex & Suffolk (Wormingford)

Club member John Kelk, who has recently flown solo, applied for a special grant from the "Shell Employee Action" scheme, which promotes community involvement among employees; the club gratefully received a £350 donation from Shell UK Limited to help buy an electronic weather station. Sergei Kotomin has also flown solo.

The club hosted another successful Inter-club League competition on 1st-2nd August, and although the Saturday tasks were scrubbed, we won all three classes on the Sunday.

Andy Sanderson

Fenlands (RAF Marham)

Despite the weather, we have had a few decent days in thermals. The trophy for "the most meritorious flight by a lady pilot" went to our beloved AJ Padgett, and Mark 'Sicky' Pickersgill completed his Silver Badge with a rapid downwind-dash to Coltishall.

A very successful AEI week was held at RAF Coltishall. This event took eight months of organisation on the part of Colin McKinnes, Dave Chappel and Paul Moslin, who was an excellent and 'very laid back' tug-pilot. Many thanks go to the RAF Cranwell who provided us with the tug, tug-pilot, a K21, and an excellent instructor in the form of Mark Crocker.

Highland (Easterton Farm)

1998 continues to be monsoon-like. The lake and fountain have gone but the rain has not. David Chalmers has completed his Bronze Badge and has been accepted into the family ASW19. We had a successful expedition in July with eight gliders at Hinton in Hedges and afterwards at Bicester. A big *thank you* to all at both clubs who made our trip very enjoyable. There were lots of hours, but few kilometres except Phil Penrose's 300km (Gold & Diamond goal) and also David Chalmers's Silver distance.

Angela Veitch

Kent (Challock)

In spite of the indifferent weather preventing our usual cross-country flying, there have been a number of Bronze and Silver legs, including a Silver Badge for Richard Davis. Our holiday and day-courses have been progressing well and we are doing a large number of trial lessons. Jerry Bass has recently joined our team of tug pilots.

The vintage glider rally which we hosted at the end of June was a complete success.

Caroline Whitbread

Lakes (Walney Airfield)

Roger Copley completed a 300km flight in France in June. Here the weather has been rubbish - what more need I say?

Alan Dennis

Lasham (Lasham Airfield)

Ted Lysakowski died after a mid-air collision, and John Southeast was

killed in a hill-soaring accident.

Ten out of the twenty six entrants in the Club Class Nationals at Sutton Bank were from Lasham. Gee Dale came first, Pete Masson second, and Damian Le Roux fourth. Private expeditions have been to Austria, France and Spain. Chris Garton competed in a Swiss competition.

Ray Whittaker organised an Elliotts of Newbury [EoN] Rally on behalf of the Vintage Glider Club. Twelve gliders were flown, including the repaired EoN Olympia 463 of Ian Smith and Robin Hood. A large contingent of vintage gliders from Booker made for a pleasant Rally.

The field at the North West edge of the airfield is being converted to a site for temporary caravans.

Tony Segal

Obituary - John Southeast

John Southeast flew at Lasham with the Thursday Morning Group. His tragic death in a gliding accident at Dunstable saddened us all. His wide range of interests included travelling, bee-keeping (the occasional pots of honey were always welcome) and flying. He was involved in light aircraft at Popham as well as gliding at Lasham. He was a quiet gentle man with a keen sense of humour and our condolences go to his wife, Kay, and his family.

Bob Johnson

Lincolnshire (Strubby Airfield)

Our summer has been like every-one else's: bad in parts and mediocre in others, but we carry on. The First Hour of the Year trophy went to Harry Fleet

Phil Pickering has flown for five hours and has his Silver height, Dave Fenn has completed his Silver Badge and Martin Thompson has flown solo. An M100 and a Std Cirrus have joined the private-owners' fleet. We also now have a tea bus and a thriving social section currently saving for a new two-seater. The heliport which used to share the airfield with us has now closed so we have no circuit restrictions.

Dick Skerry

Mendip (Halesland)

Orographic cloud ruined our open day although a few flights were possible eventually. Paul Croote's radio model flew in cloud at the top of its loops. We ran away with the Inter-club League, ▶

Club News

well, we won by one point; at least this year there was some flying involved. Local GP, Robin Joy, who got hooked after a three-lesson voucher birthday present has made his first solo flight.

Keith Simmons

Norfolk (Tibenham)

Phil Foster, Michael Ison and Paul Jackson have gone solo. Barry Furness has done two Bronze hours and Alan Harber has his second hour. Vic Long completed his Bronze with a cross-country endorsement, and flew a Silver distance the following week.

We are in third place in the Anglian League, but only five points behind the leaders. Our team manager, Steve Bradford has organised a rota

of experienced cross-country pilots to fly two-seaters with novices as part of an on-going programme of cross-country training.

We have a new Junior on order to boost our single-seater fleet. The recent



Southdown syndicated T21 being manhandled through Storrington on its way to its CofA in Jim Tucker's (left) workshop.

AGM was very lively, with plenty of discussion. The Club is gearing up for the 18 Metre Championships in August.

Bonnie Wade

Northumbria (Currock Hill)

We were invited by Borders to share their club flying week – an offer which resulted in our operation being apparently transferred for the week. We had an enjoyable visit and an opportunity to envy their first class facility. This trip was immediately followed by a successful expedition to Portmoak, in Scotland.

Back home, it seemed that we were forever waiting for two consecutive good days. Gee Dale arrived with the BGA Duo Discus to lead a cross-country course, but flying was weather-limited to a Wednesday afternoon. Gods and forecasters were instantly forgiven when weak wave led excursions to

fourteen thousand feet.

Dave Humphreys

Oxford (RAF Weston on the Green)

The weather is nearly all we've had to talk about, but it didn't stop Carole and Ian Shepherd flying solo on the best day of the year so far, Steve McCurdy managed to stay aloft for just over five hours to complete his Silver Badge.

Annette Shaw returned to the club after a long absence and re-soloed, as did Claudia Bungen who joined us from Germany.



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On the days when the Inter-club League could be flown, OGC again featured at the top of the results and, during our host weekend, Paul Rogers organised a night of feasting, dancing and falling off things, which was enjoyed by all who can remember it.
Steve McCurdy

Peterborough & Spalding (Crowland)

New solo-pilots include Peter Kettle and Martin Hill. Sheena Fear won the novice class at Tibenham's Inter-club League event. At the moment, with the duff weather, Crowland social events outnumber Crowland cross-country flying, which is not necessarily a bad thing. Joan Pybus organised a successful barbeque in July. Mike Edwards flew his first 300km.
D. R. L.

Shalbourne (Rivar Hill)

At an age when most of us are ripping up our driving licences, Bert Gallagher went solo, at the age of 83.

Bert was flown by his daughter on his 81st birthday. After two years and 200 launches he flew on his own. His first solo landing was not as perfect as he would have liked, so he went back up twice more to prove that he could get it right. Bert is a delightful and enthusiastic club member and a great joke-teller. To celebrate his achievement he treated many club and family members to a champagne supper at the local pub.

Clive Harder

Shenington (Edgehill)

Matthew Race, Nick Heller and Simon Whittaker have flown solo and Barry Ellis completed his Bronze badge and a

Silver duration. In a sudden bout of summer, John Vella Grech and Sid Glazzard finished their Silver badges, while Andre Stokes also gained a Silver duration, Phil Strangward, Daryl Burton and Frank Broom flew Silver distances. Shaun Badby has become an Air Experience Instructor, and Mike Miles has his PPL.

Our '4th of July' party organised by Mary Meagher was a tremendous success. We had many visitors and members fly in, to be entertained by a Dixieland Band, line dancing demonstration, fireworks, baseball and a bar



A daring pilot preparing to fly a primary.

becue. Our President Reg Curwen recently celebrated his 75th birthday and was presented with a painting of a Catalina. Mary Meagher has had a painting accepted by the Guild of Avia-

tion Artists for display in an exhibition in London. She will be displaying more of her gliding paintings at Shenington in the autumn.

Our courses have been fully booked up and we are now taking bookings for the Autumn. Our website is at <http://freespace.virgin.net/fisher.m/sgc>.
Tess Whiting

Obituary - Tom Green

We are very sad to report the sudden death of Tom Green. Tom had been a member of Shenington for many years and was popular for his good natured grin and wry sense of humour. Work and family commitments did not always allow him time to fly (though he was a regular visitor to Sutton Bank on family trips to the area), but the gaps in his flying did not affect his natural ability.


Sadly Tom did not live to fulfil his full potential in gliding, though it was always an important part of his life. We will miss his enthusiasm, hard work and easy going nature.

Our sympathies go to Sarah his partner, their young daughter Tess and his family.

Tess Whiting

South Wales (Usk)

Clive Pickering and Andrew James have flown first solos (rapidly followed by two Bronze legs for Andrew). Dave Brown has a Bronze badge, Allan Donnelly and Bob Thompson have Silver Badges, and Brian Crow has become an AEI. A poor soaring-season was broken by the best task week for many years; tasks were completed on almost every day.
M. P. W.

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Southdown (Parham)

We entertained the public for our Longest Day celebrations, and a pleasing number of local residents took, and enjoyed, trial-lesson flights.

A nameless pilot, damaging his undercarriage on take off, contemplated baling out at five thousand feet. Best of all was the performance of our Flying Dutchman Joe Klemm, who reached the astonishing height of FL105 over the Isle of Wight. He was still connected to the tug but no matter, a success is a success.

The task week ended with a mass fly-in to Lasham for rock cakes, lunch, and a convivial reunion with old friends before a relight back to our own airfield.

Peter Holloway

Staffordshire (Seighford)

Although it has been an appalling summer for us so far, our members are still piling on the achievements.

During our club members' Ab initio and Early Solo Course Week Azzam Taktak flew solo on the second day. Greg McAvan went solo on his 16th Birthday, closely followed by a 1h 12m solo flight towards his Bronze and Cross Country Endorsement.

Derek Heaton and Don Craven have completed their Silver distances with flights to Husbands Bosworth. Paul Hodgetts has flown a Silver distance, and height, on a flight to the Long Mynd. John McLaughlin had to make do with a miserable 500km flight and Alan Birmingham completed his Silver five-hour duration in his Olympia.

Lara Davies has completed her Silver height, Simon Kirkland has completed a two-hour flight and Nick Rolfe completed his first Bronze leg. Simon Watson now has his Full-cat. instructor rating. Andy Kirkland completed his second Bronze leg with a 2h 40m flight to 4,400' in wave over the airfield.

The sun shone for most of our Open Weekend and, thanks to a superb team effort, we had a very successful time, enrolling seven new members as a result.

Our thanks to Diamond Aircraft for bringing their Super Dimona on the last day of our Course week and to Edgley Sailplanes for bringing the Green machine. Several members had the opportunity to fly both gliders.

Andy Kirkland

Stratford-on-Avon (Snitterfield Airfield)

Scott Dumbleton, Dennis Gorman and Richard Pashley have flown solo. Mike Coffee's 500km (the first flown from Snitterfield) awaits ratification.

Three of the Dutch Bermon family flew solo on their summer course: Tjerk (jr), 16, Willem, 17, (both of whom flew with us last year and their father Tjerk (sr). Richard Lyon flew solo on the final day of the course having flown gliders some years ago with the RAF.

One of our K13s had a minor mishap with a lamb slightly damaging the port wing, but was back on line within days. We now have a web site thanks to Geoff Butler and Tim Duckett. The address is: <http://www.gbutter.demon.co.uk/soagc/>

Harry Williams

Ulster (Bellarena)

By early August we were weathering a truly dreadful summer in reasonable shape, though figures were far down on recent years. There had been no cross-country flying beyond a 300km O/R by Jim Weston to Oldcastle (a milk run in better seasons). Cavan Weir flew a Silver height in his Ka-6E.

The brightest event was the training, virtually at a stroke, of our female flying force; Morag McClurg and Jane Johnston flew solo two days apart in July. They ended Rachel Neill's isolation as our only solo female-pilot.

The second of two week-long courses scheduled for this so-called summer is to begin soon after this note is filed. August 29th is to be an open day in a bid to recruit new members and make up the lagging launch figures and generate some revenue.

Bob Rodwell

Welland (Lyveden Airfield)

A former CFI, Barry Chadwick, has completed all three diamonds at Minden, USA. Michael Neal has flown 300km to complete his Gold Badge and also reached 10,500' in wave during our Flying Week.

Robert Leacroft, Jenny Leacroft, Mark Rushton and Howard Barnard have all made Silver duration flights. Howard also gained his silver height, and Jenny finished her Silver Badge with a 50km cross-country.

Phil Edgar and Laura Lindell have completed their bronze Badges and Laura added the Cross-country Endorsement.

Dick Short

York (Rufforth)

Chris Malpas has flown solo, and Harry Clarkson has finally completed his Bronze. The new four-blade propeller on our Scout has given excellent noise reduction which has pleased the local villagers, and we are hoping to replace the two blade prop on the Pawnee in the not too distant future.

Our Open Day, and the Motor Glider fly-in, were successful, as was the 1940's Ball organised in the hangar by the local PTA, with many arriving in wartime uniforms or dresses and stockings!

The poor summer has given little opportunity for good cross country flying, but we are still hoping for a few more badge claims before the end of the season.

Mike Cohler

Contributions to *Club News* can be sent by email or post. Please do not send faxes when submitting material to be published.

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Just One of Those Days

Brian Goodspeed flies from Andreas Airfield on the Isle of Man, which is home to a gliding, microlighting and general aviation community.

OURS IS A VERY SMALL CLUB. WE HAVE AN ELDERLY TWO-SEATER, AN EVEN OLDER TUG, AND A POSITIVELY VENERABLE WINCH. ALL ARE COSSETED AND NORMALLY RELIABLE, ALLOWING US TO GET AIRBORNE WHENEVER IT IS POSSIBLE.

Saturday was to be a special day. Not only was the airfield free from lunchtime onwards, but we had a tug-pilot and an instructor available on the same day. Aerotows? Yippee! (it doesn't happen too often).

The usual crew had all the aircraft and equipment out of the hangar and inspected well before noon. As soon as the last of the motor-cycle racers had finished their practice session, at 1pm, we pounced and re-took the airfield...

However, as the glider and equipment were being taken out to their various positions, it was discovered that the tug, which always starts on the second swing, was not going to work. After all four of the club's prop-swingers had given themselves sore shoulders, the pilot and a mechanic were left to investigate; the rest of us went off to start winch-launching.

However, the second winch-launch broke the cable. The tractor and winch drivers grabbed the repair kit and set off in a most efficient manner to fix it.

However, someone had put the wrong size ferrules in the winch so we were delayed while the correct box of bits was located and repairs effected and we started launching again.

However, after a few more runs up and down the airfield the tractor blew a core plug and was retired to the hangar. The other tractor was brought out, to take its place, and we started launching again.

However, the wind quite suddenly backed 90° bringing matters once more to a halt while the launch-point was moved to the other run, and we started launching again.

However, after a while, the cable formed a massive bird's nest at the winch; but (ha!) the tug had been fixed and we started aerotowing.

After sorting out the cable, the winch-driver went to grab a cup of coffee and let the tuggie do some work in stead. As the evening grew calm the CFI asked for a winch cable; he had a student needing a couple of check-flights before flying a first solo. The

winch-driver was quietly briefed to expect a simulated cable-break at a 'reasonable' height. Signals were given, the slack was taken in, 'All out' was called, the winch's throttle opened wide and the glider climbed... at least to begin with. At 200' the f@L\$%&* winch-engine stopped!

The glider landed safely and while we were trying to find the problem the police arrived! They'd had a report of a microlight down about two miles away. Following a check to ensure that none was missing from our hangar and a quick look around the area by the tug, the police, no doubt impressed by our efficiency, thanked us and left.

During the following twelve months not one launch was lost to mechanical failure.

It was just one of those days!



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Learning from Others

It was in 1980 that I had my first powered flying lesson in atmosphere redolent of the twenties:

lots of old aeroplanes with some instructors to match.

The club's C152s were as complicated as I wanted to get. It was all rather laid back and it suited me to perfection.

It was fun, but it didn't last. The price of an hour's flying went steadily upwards – and even worse was to come. The instructors all began wearing uniform pullovers with little gold wings, and a computer was installed in the office. The Tower, which had once been a welcoming haven, now sported a "Staff only, this means you" sticker on the door. The club and I parted company...

–Peter Lichfield

(Pilot, December 1997, p.38)

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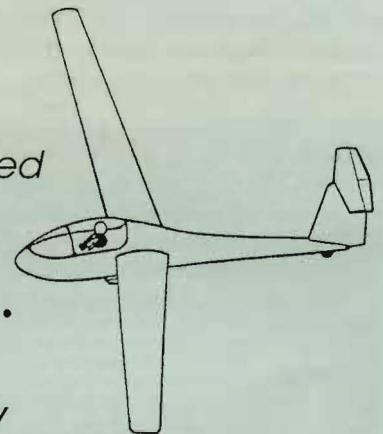
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When are You Most at Risk? - Part II

PT3s: Premature Terminations of the Tow

*And all your future
lies beneath your hat.*

John Oldham (1653-83): English poet.
Lines to a friend leaving University.

The squadron commander flying from the deck of a nuclear aircraft carrier was a grizzled veteran of many combat missions. With a mighty rush and roar the steam catapult shoved his jet fighter at a terrific acceleration past the end of the flight deck; but this time something was terribly wrong and the acceleration was not strong enough. The fighter was not travelling fast enough and was falling towards the sea.

Members of the flight deck crew witnessed the events as the fighter was thrust past the end of the flight deck; in one and a half seconds it would be in the water. The canopy was seen to barely precede the rocket powered ejection seat with the pilot. A few seconds later a helicopter gracefully plucked the pilot to safety.

That evening, a very young pilot asked the commander, "Everything happened so fast! When did you decide to eject?" The officer paused slightly and then replied, "I made that decision eighteen years ago".

The pilot survived because he had mentally gone through the scenario thousands of times. He fully expected an emergency to occur some time, and had a specific plan of action in case, no when, it finally happened. As mentioned in the first instalment of this article (S&G Aug~Sept 98), accident statistics suggest that approximately 20% of all fatal glider-accidents occur during the first few seconds of flight.

What are the odds of an emergency occurring on any particular tow? A tow plane uses full power to climb, then no power to glide back to earth. Full power, no power. Full power, no power, for thousands of tows. It rarely flies straight and level. A winch engine or car tow is similar. Full power, no power, full power, no

power. Failure of some critical part, operator error, or running out of fuel, are only a few of the many things that can, and do, go wrong. To believe you will not experience a failure during the launch is naïve.

What are the odds of something happening on your very next tow? The odds are exactly 50/50. Either it will happen or it won't! With odds like this, you must have a plan of action before the launch begins.

The frequency of tow emergencies emphasizes the importance of emergency training. During flight training there are relatively few opportunities for flight instructors to present realistic emergency situations. Early tow emergency instruction is excellent training that emphasises life saving techniques such as plans of action, proper use of checklists, stress management, human response, aircraft performance, environmental considerations, and more.

"...emphasises life-saving techniques"

At Keystone Gliderport, in the USA, rope-break emergency training occurs shortly before a student's first solo flight, and in calm conditions. The first practice emergency occurs at an altitude that allows a straight-ahead landing. Most pilots will not respond well to this simple emergency. A discussion about how humans respond to an emergency immediately follows this flight. Major emphasis is placed on the expectation of an emergency during every launch and the need to have a specific plan of action.

The second launch fails at a height that permits a 180° return to the airfield. For aerotow training, this will occur slightly above 200' for most normal training environments. Usually, the student still does not perform satisfactorily. Common errors include failure to lower the nose of the glider to a

safe gliding attitude, failure to execute the plan of action quickly, failure to keep the yaw string straight, failure to attain and maintain safe airspeed, and failure to establish an appropriate bank angle.

After a discussion, the third launch repeats the situation experienced during the second, and the student usually performs within limits.

Which of these three flights is the most important to the learning process? Is it the first flight, often being the first type of emergency to be simulated during flight training? Perhaps the second flight is the most important as such failures can be tragic if the pilot performs badly; or, is it the third type, once the pilot has finally realized the importance of being fully prepared at the beginning of each flight? The most important flight is flight number four during which, as the glider is climbing past 200', the instructor leans forward and asks the student, "What are you thinking right now?"

The student has just experienced three emergency rope breaks, and is fully expecting another rope break. The student is primed, ready to act with a logical plan of action. The student knows exactly what to do. This is how every pilot should feel at this moment from this time on.

There are often signs of potential trouble that can be spotted before the flight begins. A frayed tow rope, oil on the towplane, strong winds, turbulent conditions, an unwell pilot, distractions, all give reasons to decline the offer of a launch; no one is forcing you to go.

Emergencies at the beginning of the launch are common. They are so common it should be more of a surprise if the launch proceeds without incident. Pilots should fully expect an emergency at any time during every launch. There is no reason for anyone to die during a glider launch.

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One Good Turn

AFTER A LONG WINTER LAYOFF, I WAS HAVING A CHECK FLIGHT FOR SOLO WITH GEORGE, AN INSTRUCTOR DOWN FROM WIGAN. GEORGE WAS A GREAT BLOKE. WELL, ANYONE WHO CHECKS ME OUT AFTER ONE FLIGHT AND COMPLIMENTS ME ON MY FLYING HAS TO BE A GREAT BLOKE!

I pulled off at 2,000' and we ambled up wind chatting amicably. Quite soon we noticed the vario registering lift: zero, one... Then, as it nudged two, I did that thing with the stick and rudder and we banked right. From behind came George's voice. 'I was sure you were going to turn left,' he said. I

replied. 'Well, some years ago I would have done, but now I seem to favour turning to the right'. 'That's funny' exclaimed George. 'I did exactly the same! I started off turning one way, then changed over at some point'.

I explained that, many years ago when I first started gliding, I was flying a T21, (as one did in those far-off days) the instructor was Roger Neaves (another great bloke!). I happened to mention that I felt more comfortable thermalling to the left than to the right. He told me that it was because I was right-handed, and right-handed people find it more natural to turn to the left, whereas left-handers favour turning right. For some reason

I did not follow up this intriguing theory. I probably fell out of the thermal at that point.

While I would not wish the Editor to be deluged with letters from people saying 'I am left-handed but I prefer turning to the left!' and similar letters from right-handed people, it would be interesting to know if anyone out there has read, or indeed written, a learned paper on *Rotational Preferences of Glider Pilots in Rising Air Situations*, or something along those lines.

I never did establish George's preferences, (thermalwise, that is!) and if he changed from left to right or vice versa. Perhaps it's a mid-life crisis thing, we suddenly have the urge to change our ways. Anyway, thanks George for the most entertaining and enjoyable check flight in a long time!

-Peter Fuller

Information Board at Sutton Bank

A NEW GLIDING INFORMATION PANEL HAS BEEN INSTALLED AT THE YORKSHIRE GLIDING CLUB. THE PANEL WAS UNVEILED BY MOYRA JOHNSON, THE PRESIDENT OF THE CLUB, IN AUGUST.

Moyra Johnson is one of the founder members of the Yorkshire Gliding Club, having been heavily involved from the very beginning. The club was established in 1937. Moyra, who still lives in York, is the first female President of the club.

The information panel is the result of a partnership between the North York Moors National Park Authority and the club.

The Panel is situated on a major walk route on the scarp edge (beside the runway), between the Sutton Bank National Park Centre and the White Horse of Kilburn. It explains the principles of gliding, introduces the Yorkshire Gliding Club and warns members of the public to stay off the runway at all times.

David Arnold-Forster, the Chief Executive of the North York Moors National Park, said: "This Information Panel is indicative of the partnership approach which the National Park is

increasingly following. It is fantastic to be involved and associated with such a leading light in the gliding world. Gliding is an integral part of the landscape at Sutton Bank and the Information Panel acknowledges this. The panel will help visitors appreciate the importance of gliding in the area and the rôle which the YGC has played in the development of the UK gliding movement."

The Yorkshire Gliding Club is one of the leading clubs in the country, having played a pivotal role in the development of the UK gliding movement. The Club is based on the western edge of the North York Moors National Park, commanding a stunning position overlooking the Vale of York.

The unveiling took place during the annual 'Slingsby Week', when owners of vintage Slingsby gliders put their gliders through their paces. Fred Slingsby, the founder of Kirkbymoorside-based Slingsby Aviation Ltd, was also one of the early members of the YGC.

The Yorkshire Gliding Club was the centre of attention on Bank Holiday Monday when Radio York's Jonathan Cowap took a trip in a glider. This was part of the all-day Radio York event 'Bank Holiday on the Bank' broadcast from the Sutton Bank National Park Centre.

Airspace Problems in Sweden

- At a meeting in Norrköping, at the office of the Swedish Air traffic administration board, the Swedish Soaring Federation chairman, Robert Danewid, presented the organization's view on airspace restrictions and fallacious transponder requirements. Officials said there could be minor adjustments in the future to create specific sectors for soaring but the problem remains. After a cross-fire of criticism on Airspace '98 the concept will be launched.

- The Swedish board of civil aviation authorities said recently that all gliders must be equipped with transponders before the millenium shift - otherwise they will limit gliding activities "to secure increasing safety standards". There are still no useful transponders on the market so the logic is simple.

Taken from - <http://www.segelflyget.se/>

Accident Summaries

by Dave Wright

153	SF-34	3325	Minor	12.7.97 15:00	Nympsfield	45	None	3581
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During AEI training P1 was demonstrating recovery from a bounced landing. While very familiar with the SF-34 he had demonstrated this before in K-13s which have a lower stall speed and better elevator response. He started the demo with 5kts too little airspeed and was unable to roundout in time to prevent a heavy landing.

154	K-8b	4045	Minor	18.9.97	Edgehill	63	Minor	0.5
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After four solo flights the early solo pilot was making his third K-8 flight and, finding himself rather high in the circuit, opened full airbrakes to correct. As he touched down he closed the airbrakes and seemed to pull back on the stick, causing the glider to balloon into the air. He opened the brakes again resulting in a very heavy landing.

155	LS-4	3298?	Minor	18.8.97 14:30	Nr Bedford	58	None	517
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On a competition flight the pilot had to land out so chose a large stubble field in which another glider had already landed. A normal landing was made but at an angle across "tram lines" which made it rough. The wheel collapsed in a rut and the glider halted on its belly.

156	K-21	3705	Minor	15.9.97 11:10	Dunstable	47 65	None None	9000 1.9
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The early solo pilot flew a wide circuit resulting in a low final turn then used too much airbrake on the final approach. The glider undershot the normal landing area, touched down early and bounced. P2 moved the stick sharply forward and P1 was unable to prevent a heavy nose wheel first landing.

157	ASW-15b	4359	Minor	14.8.97 16:00	Dunstable	30	None	56
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The pilot was making his third winch launch on type when at about 100-150ft in a full climb attitude, for reasons unknown, the cable released. He pushed the stick forward and almost immediately opened the airbrakes despite the low speed and proximity to the ground. Consequently the glider landed heavily, collapsing the undercarriage.

158	ASH-25	4039	Minor	27.7.97 16:00	Sutton Bank	70 48	None None	3000 500
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The very experienced pilot was taking part in a competition and had returned to the hill top site. He flew a conventional circuit and approach to land into wind. During the flare the glider was caught by the curl-over from the hill and dropped 2-3ft on to the ground, collapsing the undercarriage.

159	Pawnee	G-ATFR	Minor	28.9.97 15:43	Milfield	49	None	339
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The tug aircraft made a normal landing after an aerotow. As the weight came on the wheels there was a bang as the left undercarriage collapsed. The pilot kept the wing up as long as possible but the wing dropped as the aircraft slowed and a groundloop followed. The undercarriage hungy/damper rod connection had sheared.

160	RF-4d	G-AWLZ	Subst	22.9.97 11:30	Nympsfield	49	None	
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The motor glider pilot returned to the airfield then decided to spend a few more minutes in the air so climbed away. When he landed "it became depressingly clear" he had raised the undercarriage to land after lowering it on his initial return to the airfield.

161	Motor Falke	G-BPZU	Minor	15.4.97 08:10	Parham	42 57	None Serious	1000 2413
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The motor glider was jump started from a car due to a flat battery. P1 started the engine, then passed the leads out to P2, who stood between the aircraft and car. While closing the car bonnet he inadvertently stepped back into the prop. Seriously injured, he was promptly treated by a club member doctor while the emergency services were called.

162	Zugvogle 3A	4013	Subst	12.7.97	Brentor	41	None	32
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Before take-off the pilot was briefed to land well up the field to avoid an area of severe turbulence at the threshold. Despite this he made an approach to this area and at about 5ft he hit the turbulence and had to use large control movements to keep wings level. The glider was dropped on to the ground from about 4ft, bending the fuselage.

163	Grob Acro 2	3223	None	8.8.97 20:30	Camphill	40	None	151
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On a solo aerobatic flight the airbrakes sprung open at 90kts while pulling 3g recovering from a loop. These then jammed open and could not be closed. The pilot made a hurried but successful landing in a small field. The pushrod had been bent by the rapid deployment and locked. Poor adjustment/wear had caused several prior deployments.

Classifieds

Please send your the text of your advert, and your payment, to **Debbie Carr at the BGA office** (not to the editor). The deadline for classifieds to be included in the Dec/Jan issue of S&G is **3rd November** after which any adverts received will be published in the following issue. All prices include VAT. Text: 80p/word, minimum twenty words (£16). Black and white photographs: £6 extra Box number: £3 extra.

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GLIDING & SIGHT-SEEING TOURS IN CHINA

I wish to make contact with experienced cross-country glider pilots who may like to join an exploratory gliding and sight-seeing tour of China in the second half of this year, or follow-up tours in May-July 1999.

Gliding would be from the Sports Aviation Centre at Da Tong in Shanxi Province, (300km west of Beijing) where the weather and terrain is highly suitable for cross-country soaring. Da Tong is the site of the Chinese Gliding Nationals each year. On visiting the site in March I found the conditions, equipment and facilities to be of an international standard.

The planning for the exploratory tour is at an early stage and we are open to suggestions from would-be participants.

To receive information about gliding conditions around Da Tong and the ongoing arrangements for the gliding and sight-seeing tours send your contact details (e-mail address, fax number, or postal address) to Robert Dornig at softdawn@ozemail.com.au, fax: +61 3 9489 4298, or PO Box 206, Brunswick East, 3057, Australia.

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1 MARCH 1997

DEAR TERRY

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British Gliding Association

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Please complete the form below and return it to the BGA with your payment. Please note that only BGA members and their families may participate and that the BGA is registered under the Lotteries And Amusements Act 1976 with Leicester City Council.

Barry Rolfe
Promoter

To: Barry Rolfe, British Gliding Association, Kimberley House, Vaughan Way, Leicester LE1 4SE

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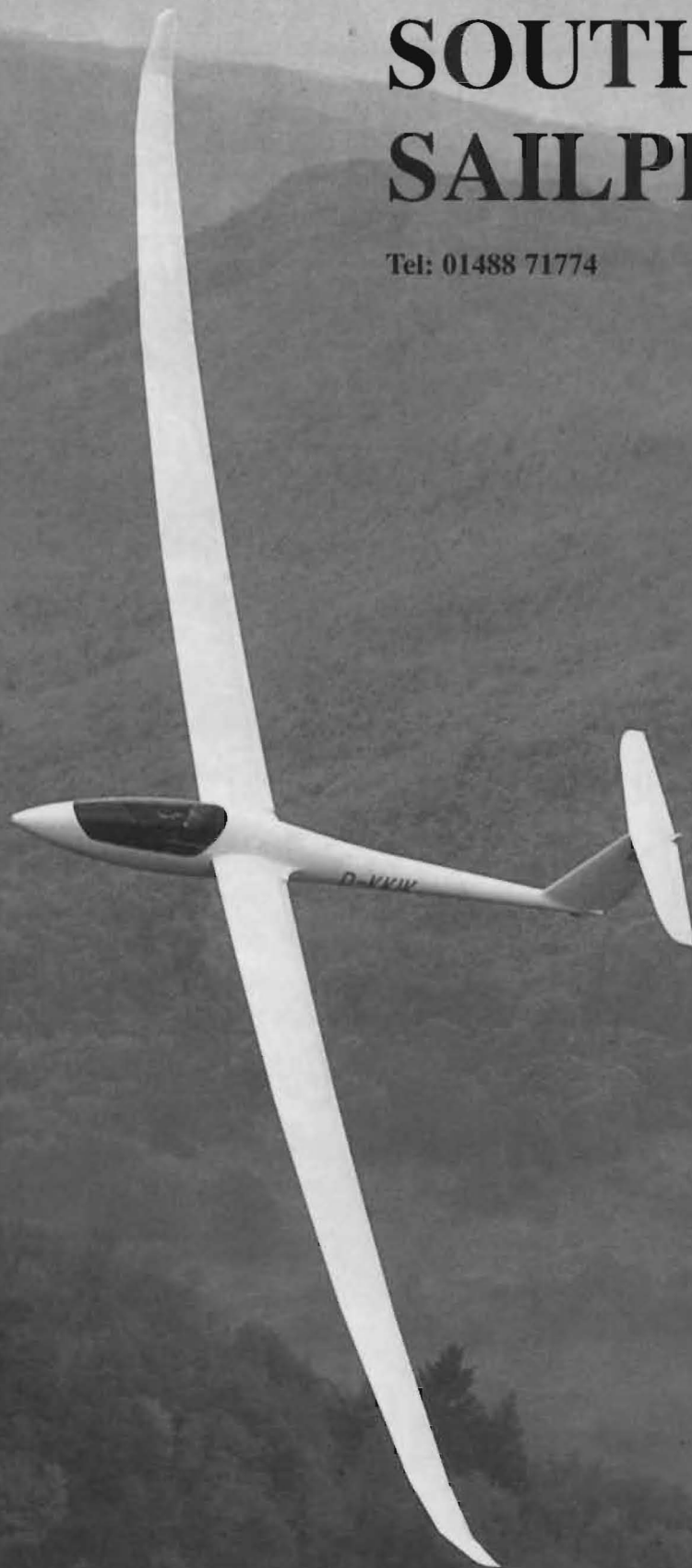
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