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August-September 1996

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Cover: The Chilean Air Force Nimbus 3DT being flown by Pete Stratten, who took the photograph, and Jorge Calderon at 11 000ft asl over the Andes. Pete writes about the RAFGSA's exciting expedition to Chile on p231.

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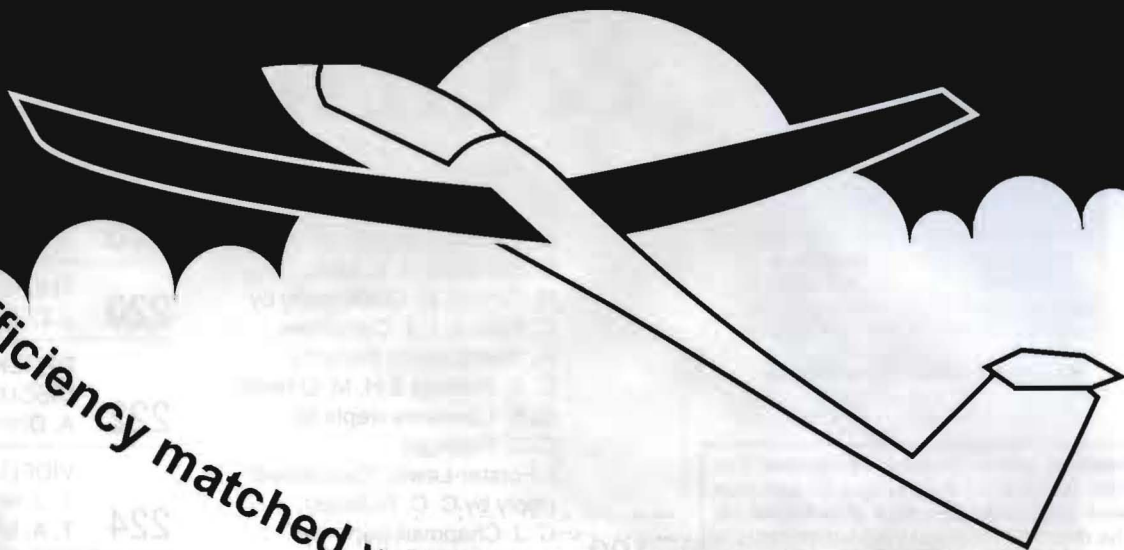


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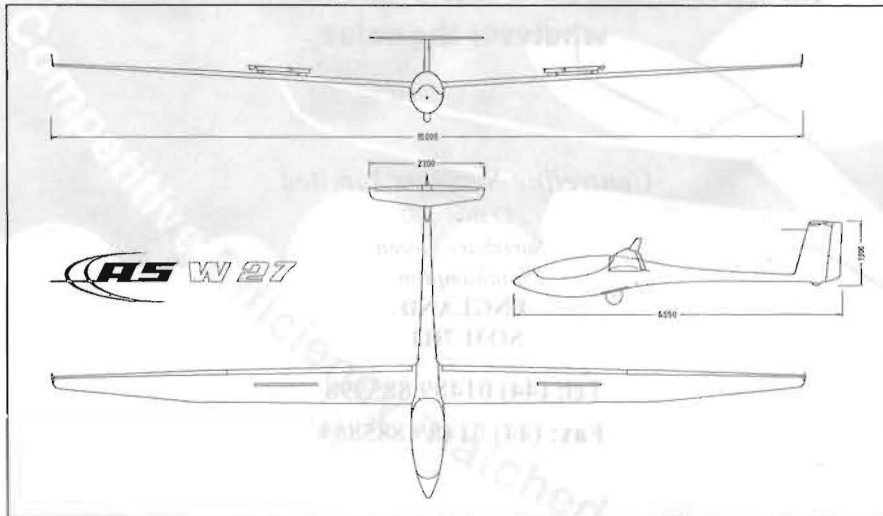


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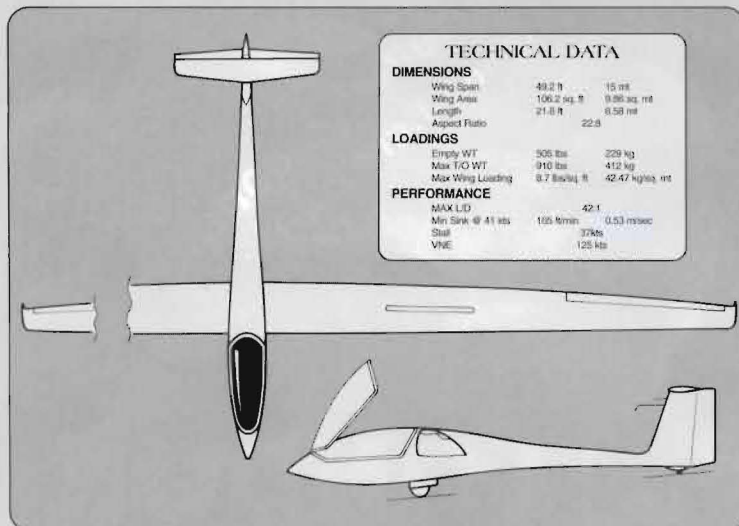
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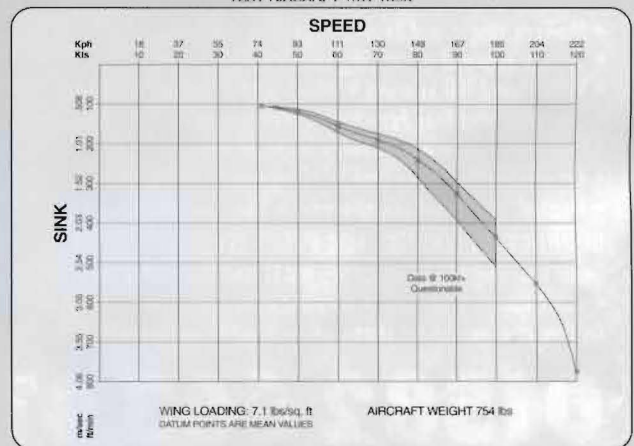


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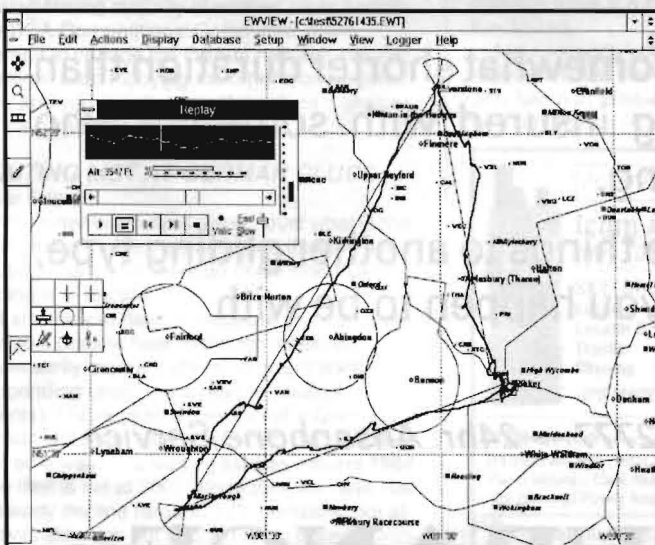
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YOUR LETTERS

WE DON'T NEED WOMEN'S RECORDS

Dear Editor,

Why do we have women's records? Gliding is not a particularly physical sport, although it helps if pilots are fit, but is more dependent on experience, concentration and determination. I may not be able to lift the wingroot of a Janus unaided, and I haven't yet worked out a solution for going to the toilet during very long flights, but I am certain that I am just as capable of navigating, reading the weather ahead, making decisions and actually flying the glider as any man with similar experience.

It seems logical that if I held the UK 300km triangle record I would want to be able to say I had flown it faster than anyone else in the UK, not just faster than about 50% of the population, ie the women. On the other hand I would be proud to hold a women's record for athletics as women aren't as physically strong as men and therefore need separate records.

The women's records already in existence should of course remain as the flights were all notable achievements in their time. However, all future records should be unified. As we approach the new millennium it is time to move forward. There are more women at work than ever before, more in top managerial positions and even more in gliding - hooray! So let's start beating the men at their own game.
SIOBHAN HINDLEY, *Eaton Bray, Beds*

Basil Fairston, FAI badges officer, replies: I suspect many women would suggest that lack of time due to family responsibilities and/or lack of financial resources were the two worst difficulties for women in gliding plus, in a sport where concentration is at a premium, not being able to go to the toilet must be a disadvantage. Several top women pilots agree with you but many don't and it would need support from the overwhelming majority of women pilots before the BGA Competitions' Committee would attempt to change the current national and FAI position. Start lobbying the other women pilots now and you may be able to produce a change by the turn of the century.

WAITING LIST AT GERMAN CLUBS

Dear Editor

In a letter in the April issue, "Just what is the BGA doing?" (p69), it was stated that there are waiting lists to join German clubs whilst UK gliding is in decline.

I am sorry to have to reassure you that there is also a decline here, although it has not necessarily reached alarming proportions (depending upon one's interpretation of events). I have been a member of a German civilian club near Hamburg since 1981 and the last time we had a waiting list was around 1984 (the limit is set at 200). Since then we have had a steady decline (around 170 members, not all active) although not enough to be worrying - yet. It's clear that Schleswig-Holstein in general and our area in particular are not the best for gliding (marshy ground, sea breezes, airspace restrictions etc) and the situation "down south" may well be different.

Being the club's glider representative I attend various meetings within Schleswig-Holstein (the most northerly federal state) and in March

there were general bemoanings of declining membership, particularly amongst clubs in outlying areas who find they have problems retaining their younger members who leave the area to take up a job.

Why the decline? The reasons are probably no different from the UK - the wide variety of alternative leisure pursuits (mostly requiring less time etc) combined with a recession. The public's general interest in aviation is still there. On the bright side we have four new members.
HOWARD E. MILLS, *Pinneberg, Germany*

THINK OF A NUMBER

Dear Editor

I find myself in some sympathy with the thoughts Ron Lynch expressed in the April issue, p69, about medicals for older instructors.

I fail to see the logic behind a directive which states, in effect, that a GP is competent to decide whether an instructor is medically fit to fly when 69 years, 11 months, but can't take the same decision if the pilot is 70 years and one month, particularly as the GP will have a knowledge of his patient's medical history over many years while a CAA examiner has to form a one-off opinion. Has the BGA just thought of a number - 70?

Some months before this matter arose, out of interest I perused nearly 1900 incident and accident reports covering almost 11 years. Discarding those which didn't involve flying such as damage by vehicles etc, and those in which the pilot's age wasn't recorded, I was left with 1783 reports. The break-down in age groups of the P1 worked out as follows:-
Under 20 - 20 20-29 - 207 30-39 - 444
40-49 - 501 50-59 - 382 60-69 - 196
70-79 - 32 Over 80 - 1

Of course there is a distortion as many more people are flying in the middle age groups, but perhaps there is a morsel of food for thought in the figures.

More recently I checked the 70-79 group and found that over the 11 years of the 32 reports only four had related to gliders with an instructor in charge as P1 and not one of these was

ascribed in any way to a medical factor.

Has the BGA any reliable statistical evidence to point to the necessity for the introduction of the PPL medical at the age of 70 years?
RAY CLIFFORD, *Market Harborough, Leics*

AN ADVANCED TRAINING DIPLOMA

Dear Editor,

There are many one day a week pilots who don't have access to a suitable aircraft to attempt Gold and Diamond badges, have no interest in competitions and don't have the commitment or the ability to teach to enable them to become instructors.

I have been impressed by the thoroughness of the training given to AETs and instructors and wonder why it should be restricted to those with the inclination and aptitude to teach. Perhaps the BGA could provide courses leading to an approved advanced training diploma, which would be an instructor level course in aircraft handling and airmanship without the patten and the responsibility of coping with a pupil.

Such a course would provide attainable goals and a measure of achievement for many pilots who at present have neither. Also it would improve their flying and make them safer pilots. Additionally, there might be lower insurance rates for diploma holders and some might be encouraged to become instructors.

Is this a naive daydream or does the idea have some merit?

EDDIE CHALK, *Abbots Langley, Herts*

Chris Pullen, chairman of the BGA

Instructors' Committee, replies: Anyone is welcome to come on an instructors' course with no obligation by either party to become an instructor at the end of it.

LET'S GET CONNECTED

Dear Editor,

I agree with Bill Dean (last issue, p139) regarding the use of l'hotellier connector locking devices. Furthermore, the validity of the LBA directives in the UK can be in no doubt, having been endorsed by the CAA and the BGA.

It is a requirement that locking devices should be fitted to l'hotellier connectors in gliders. The BGA should ensure that pilots are aware that it is also mandatory to use them - and it might save a life.

IAN CARRUTHERS, *Carlisle*

CROSS-COUNTRY FLYING

Dear Editor,

I read Mike O'Neill's article on cross-country flying in the last issue, p162, and the comments by Chris Rollings with interest.

I agree with Chris that "downwind first is best", especially on longer tasks. One point not mentioned by Chris was that of using the changing strength of thermals to advantage as the day progresses and I would welcome his comments.

I feel it is better to start a task downwind when thermals are weaker earlier in the day. The return leg of an O/R or second leg of a triangle can be flown into wind more easily as the lift improves and the cloudbase rises as the day progresses. For a carefully selected triangle, the home leg could be with the wind at

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least partially behind you as the lift strength weakens later on.

Secondly, whilst I agree with Mike's comments on making navigation easier for yourself, he seems to think that a GPS is likely to solve all problems. A power pilot told me that his GPS battery went flat just before he entered a MATZ and some rapid map pinpointing was necessary before he could continue talking to the controller.

It seems that the gliding movement is

becoming hell bent on relying on GPS and losing useful map reading skills.

Let's see all navigation aids exactly as that - aids, not total solutions.

RICHARD STEMBROWICZ, Harrogate, Yorks

Chris Rollings, senior national coach,

replies: My answer to paragraph two is that it's been standard doctrine in the soaring training I've been giving for over 25 years, but only for longer tasks.

Mike O'Neill comments: First, I neither use nor advocate GPS but many others do.

Secondly Chris Rollings is right to say that my suggestions should reduce the likelihood of landing out but at the expense of cross-country kilometres. My piece was prompted by the high number of field landing accidents and its goal (sic) was to entice pilots into cross-country flying whilst minimising risk to them or unnecessarily eroding the goodwill of the general public.

GRAHAM'S NIT-PICKING LETTER

Dear Editor,

I bet you can't wait for the nit-picking letters that must flood in after each issue of *S&G* as sad men in anoraks pore over each typographical error in the hope of gaining your attention. Here is such a letter.

First, p164 Glide to the Shopping Centre - to which club does this item refer?

Secondly, the article by Mike O'Neill, p162. It reads to me, in the area of arranging the task so that half way is near base, that this should be taken as a yardstick to quantify your progress and proceed in safety. The item was written for me, an early pre Silver pilot, the group *most likely* to push on just far enough to make an insurance claim at the arrival point. Then to my horror the footnote by the **senior national coach**, Mr Rollings, says this causes abandonment of achievable tasks.

I have been told, hopefully correctly, that I must go on when I am sure and land when I am uncertain or uneasy.

Is Mr Rollings saying "Push on lad?" I do hope not! There are pilots like me who will always err on the side of caution because of the rising tide of reported low slow arrivals into trees, walls and high crops. As my experience and ability grows so will my range circles, but I reserve the right to land early and safely without being told in an accusative manner that I have given up or abandoned a task.

As to John Blackmore's letter on p137, it would appear that our forebears were gifted with a wisdom which when given a simple rule would either apply in all cases or could be judiciously used to amend to suit the variety of launches and glider types available.

Perhaps during the past 40 years new glider pilots have emerged who are too stupid to work in an outdated system, or is it? I suspect that today's flying machines are so sophisticated that errors which creep in cause mayhem and the safety committees are working flat out in our interest to prevent recurrences of identified weaknesses in self discipline and forethought.

Tell me how often recently have you heard the launch procedure commands spoken clearly and correctly in full and how often at this most crucial point of a launch does familiarity

breed contempt for the rules?

GRAHAM LAWRENCE, Glasgow
(Fortunately we don't have too many anoraks but Graham is quite right. We omitted to say that the shopping centre article featured Deeside GC. Ed.)

Chris Rollings, senior national coach,

replies: If you think that field landings are dangerous don't fly cross-country.

PRICE HONESTY IN GLIDING

Dear Editor,

Congratulations to Frank Jeynes in having the courage to include the price in his review of the ASH-26E in the last issue, p152. How about other reviewers including this rather significant detail? IAN FORSTER-LEWIS, *Thriplow, Cambs*

THE VALUE OF MOTOR GLIDERS

Dear Editor,

I was struck by a thought when reading the article on practising aerotow failures in the last issue, p158. Could the motor glider help in practising for this eventuality? Although there was no mention of it in the piece I would have thought it a useful tool and training could be in conjunction with overall field selection and circuit practice.

My other thought was that the risk of injury associated with practising some of the options suggested in the event of aerotow failure (eg downwind landings, turns at low altitude) might, statistically at least, be greater than the result of not undertaking such training.

CONCERNED, *Oxford*

Chris Rollings replies: Yes you are absolutely right. That is exactly the way motor gliders are used at the best run clubs. I have been using them for 25 years.

REFORMING THE LAW OF GRAVITY

Dear Editor,

I read Mr Gibson's article on high power winches in the last issue, p144, with considerable interest. I hope that winch drivers and pilots alike will find it thought provoking and informative. I was concerned over some of the claims. If a glider takes off in 2sec, it must accelerate a bit over 1g. To take-off in its own length, an acceleration of over 3g is required. This is not safe flying - pilots just can't react that quickly and the high g forces are likely to result in unwanted control inputs as the arms flex or the body moves.

I am disturbed by the derision expressed for the "old" launch limits and procedures. None of my old launches were exactly "leisurely". *The limits still apply.* If you get dumped at placard speed or less, at less than 100ft in a 30° or more climb, it's crunch time. It doesn't matter a damn *what* dumps you! You simply do not have enough combined velocity and height energy to complete a recovery and landing manoeuvre. Attempts to reform the law of gravity have all failed!

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TRAILERS

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on steel frame

another launch. Deliberately flying outside the safety limits will invalidate the insurance, even if your wings don't actually fold up. There are considerable differences in the trim setting required between gliders, mostly due to differing tow hook and C of G positions.

Let's all make a special effort to improve co-operation and communication so that we can enjoy our flying in safety.
CHRIS CHAPMAN, *Petworth, Sussex*

John Gibson replies: I am all for informed communication. My article neither derided old launch techniques, which were valid for their day, nor did it express support for excessively fast launches, which I detest, nor did it suggest going into the full climb at too low an altitude. I am completely familiar with the design case calculations. Chris is right to be concerned about winch launch safety, but is somewhat misinformed about a number of its aspects.

On most winches, the cable tension and wing loads are governed almost solely by the climb angle at the start of the launch. As noted in the **BGA Instructors' Manual**, pulling off when fast and shallow is more dangerous, due to the risk of tangling with the cable, than continuing the early climb, where the risk of overstressing the glider is low, to a much greater height where it can be abandoned safely. I think Chris refers to my footnote to Gordon Peters (p146) about pulling up to slow a torque governed winch launch. He will find in the forthcoming **BGA Winch Manual** an article that shows wing loads vary by only 8% for climb angles between a rapidly accelerating 25° and a decelerating 55°, when the cable tension is fixed by the winch engine for a steady 45° climb. Pulling up to the correct attitude is *exactly* the right thing to do, as is shown by an extract from an instrumented launch record.

I have yet to see a launch steeper than about 45° flight path, say 50° attitude. At low heights, the wing loads correspond to no more than about a 2g turn. Excessive speed permits much steeper climbs, which might well break the weak link, but the wing load at this point is less

than in level flight at the top of the launch, the worst design load case. The tail is protected in launches above the manoeuvre speed limit by not pulling back too hard.

Accelerations of 1.6 to 2g will break the weak link. A K-8 in a 15kt wind needs little more than 10kt groundspeed to fly.

Fierce acceleration is uncomfortable but it is over virtually before leaving the ground. I don't recommend it but it can be coped with by bracing oneself and using hard cushions - or by asking the drivers to cool it!

If any female glider pilots have accounts of exploits, humorous events or other interesting experiences concerned with gliding, then Josie Briggs of Avondale, Norwich Road, Besthorpe, Norfolk NR17 2LB, would like to hear about them as she is researching an article on female glider pilots to promote our sport. Relevant photos (black and white prints or colour transparencies) would also be appreciated.

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



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ME, A SUNBEAM?

Dick! The name rang bells. A voice came from behind me. Then I realised where I had heard it before, the name was mine. I looked round and saw the then CFI. "I want you to be an instructor," he said. The sentence stunned me for a second. "But Jesus wants me for Sunbeam", I replied, resorting to humour at what I presumed to be a facetious remark. "Stupid boy" he said, walking off.

My Silver badge was still incomplete at the time. Incomplete! It was non-existent. I was sent on an AEI course. "Don't worry", I was told, "you'll get your Silver this year".

The AEI course came and went, leaving me with new responsibility and the knowledge that I was going to hand over control of an aircraft in the air to someone who had never flown before. This reminded me of an old saying about the blind being led.

Four years later! One day in July, about 4.15pm, I was sitting in the aircraft having just completed my 5hrs to finish the Silver badge which I was supposed to have done all those years before, when the thought struck me, "I'll have to do the instructors' course now".

The notes for the course duly arrived. Notes, it was more like a crate. I'm sure the postman brought a forklift truck that day. With the enthusiasm of the naive I began to read through it all. Then I realised I had to learn all that patter. Great if you're an actor, but to me a task of epic proportions. Over the next six months not only did I learn the patter but the entire family also learned it. Eventually, bless them, they did rebel and I was told that perhaps I should go elsewhere. My evening constitutional with the dog became longer after that. I'm sure if I strapped her into a glider she could not only turn and stall it, but do all the stall reinforcement exercises as well.

Then came the theory weekend. This is a recent form of torture, thought up by the BGA. Take a group of Silver badge pilots to a gliding site on a flyable weekend and sit them in a classroom to see how long they can last. I made a day and a half. Though I did cheat by wandering across to the launch point at lunch time and helped unpack the hangar. But it was still hell.

As the course itself loomed I logged more P2 time than I had for years, running through every conceivable exercise and getting them wrong most of the time.

Though I never did make the same mistake

twice, I did think of some pretty good new ones.

So it was with confidence down around my bootlaces that I set off on the course itself. This was at RAF Syerston immediately after the Inter-Services Regionals. They had overdone the beer, so at least the evening recreation was assured. The weather was kind and we managed to fly every day.

Two stand out in my befuddled memory. Tuesday was spinning day. It's incredible how short a 4000ft aerotow can be when most of it is spent in a vertical attitude, looking at the ground rotating and getting rapidly closer. After this we were promised a gentler day. Wednesday was winch day. This could only mean one thing - yup Wednesday was cable break day. Now Syerston is an enormous field, but every bit we didn't land on we must have walked over towing back to the launch point. That evening in the bar I saw a poor wretch sitting in the corner mumbling into a glass of beer. He had a far away glaze of the eyes. Yes, he was the winchman.

By some miracle, and the patience of the coaches, I managed to complete the course and returned, sanity almost intact, to the club. After all the back patting it was down to the dreaded site checks before being unleashed on the poor unsuspecting trainees.

Now I am in the exalted position of assistant instructor, with all the powers and responsibilities this bring. Sometimes I wish I really had been a sunbeam. But then again we have some good laughs.



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AIRSPACE UPDATE

Carr, chairman of the BGA Airspace Committee, gives the latest airspace news and warns that more restrictions are likely in the future

There have been monthly meetings with the National Air Traffic Services (NATS) over the last year and you are aware of the change in the airway crossing heights and areas as shown on the map in the April issue, p75. NATS is now looking at our freedom to fly in various Class D airspace areas we currently are allowed to fly through. The traffic in these areas is almost the same as in 1989 but their perception is that these "busy" areas should now exclude gliders. Over the last 19 years, of all the gliders (about 30) reported by ATC or other aircraft in controlled airspace, none was considered by the investigating panel likely to have led to a risk of collision (Risk A, actual risk of collision).

1. All clubs were notified in May that this season the BGA has agreed to a trial with the airfields listed at the end of this article. Pilots are asked to call on the radio when approaching Class D airspace so that the controller will know of their intention to fly through this area.

2. Teesside has been granted an increase in its Class D airspace which comes into effect in July 1996. The new map, Fig 1, shows the old and the now agreed areas, so that one can see the difference quite clearly.

This again shows just how slowly but surely the airspace is encroaching on us. I am very aware that many gliders do not have radios with 720 channels and local agreements will be needed as we must make radio calls in the future. If the trial is a success we may well gain other areas of Class D airspace, eg Bristol, that currently excludes us.

3. The other area of airspace that NATS is looking at, and would like to reduce our freedoms, is Class B, which is all airspace above FL245. Further meetings are planned.

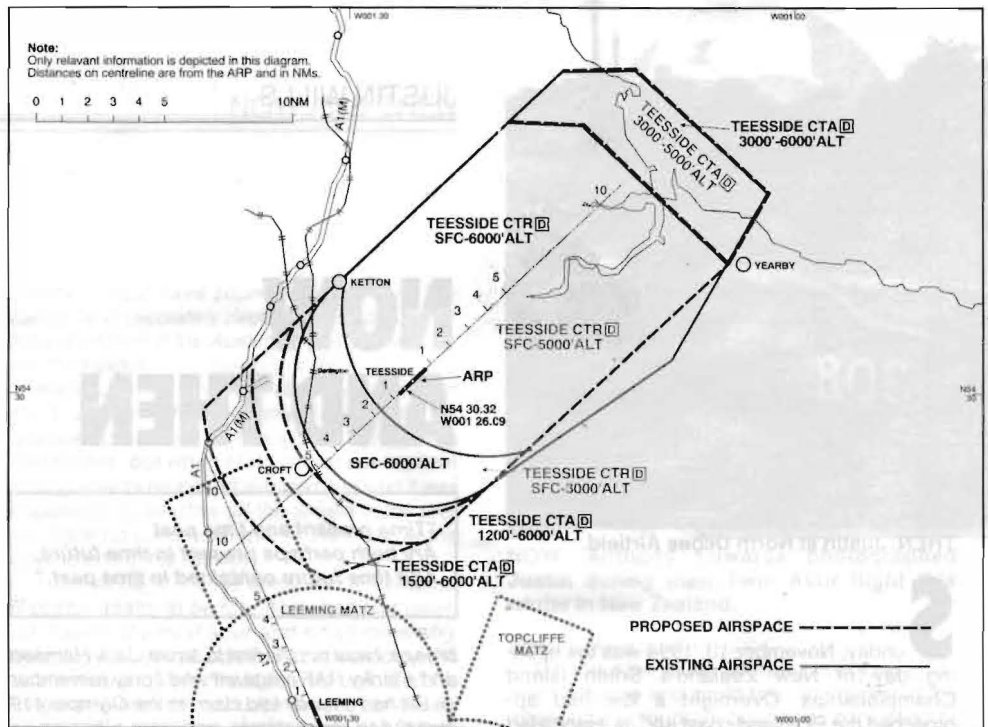


Fig 1. Revision of Teesside CTR/CTA.

Code of Conduct for Glider Flights Through Class D Airspace

1. Glider pilots should only plan to route their flights through Class D airspace when it is clear that there are significant advantages for doing so, such as better soaring weather and shorter track distance.
2. Flights should be arranged so that the minimum amount of time is spent in Class D airspace. Pilots should avoid circling on or close to the runway extended centre lines, since this may interfere with aircraft carrying out instrument approaches or departures.
3. Good lookout is vital at all times, and glider pilots should be prepared to initiate avoiding action notwithstanding their right of way priority. Gliders are not always visible on radar and other aircraft, including commercial jets, may not have been warned of a glider's presence.
4. Pilots of gliders equipped with suitable radio should listen out on the appropriate frequency for information on other traffic in their vicinity.
5. Competition tasks must not be set through Class D airspace. Where a task has to be set close to but not through Class D airspace, the ATC unit should be informed. When possible, photographic control point(s) should be established to help ensure that gliders remain outside the airspace.

TRIAL PROCEDURE FOR CROSS-COUNTRY FLIGHTS IN 1996

Pilots flying cross-countries this year are asked to contact those major airfields that are within Class D airspace.

Will pilots please call on the frequency shown **before** they enter the Class D airspace. This will enable both the glider pilot and controller to establish a known traffic environment and so enhance safety.

We are allowed to fly in this airspace, but airmanship and common sense will ensure that this trial procedure may well prove that this is the way forward to keep this freedom to fly through Class D airspace.

GPS reference positions for each airfield are shown.

Therefore if asked an accurate position in relation to the airfield can be given.

Airfields that have been informed by NATS of this trial procedure are listed below.

You will not be asked if you have an R/T licence.

Airfields within Class D airspace expecting radio calls

Aberdeen: Tel 01224 723714 N 5712.24. W 00212.00. Approach 120.40. **Bournemouth:** Tel 01202 579740. N 5046.85. W 00150.35. Approach/radar 119.625. **East Midlands:** Tel 01332 8525852 ex 2334. N 5249.8688. W 00119.5611. Approach 119.65. Main runway 09/27. **Leeds Bradford:** Tel 0113 2509696 ex2382. N 5351.9. W 00139.5. Approach 123.75. Main runway 14 for landing, 32 for take-off. **Lyneham:** Tel 01249 890381 ex 6522. N 5130.0 W 00159.00. Director 123.4. Main runway 07/25. Continuous circuit traffic on weekdays. **Newcastle:** Tel 0191 214 3244/3250. N 5502.2 W 00141.4. Approach 124.37. Main runway 07/25. **Southampton:** Tel 01703 629600. N 5056.98 W 00121.42. Solent approach 120.225. Runway 02/20. **Teesside:** Tel 01325 332811 ex2155. N 5430.32. W 00125.40. Approach 118.85. Main runway 05/23

SAILPLANE & GLIDING

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THEN. Justin at North Denes Airfield.

Sunday, November 13, 1994 was the opening day of New Zealand's South Island Championships. Overnight a low had approached the Fiordland coast and its associated cold front now lay along the southern Alps preceded by a moderate westerly airflow. From the low level lenticulars it looked a good wave day: I prefer the westerly wave for, although it is neither as strong nor as extensive as its north-westerly counterpart, the winds are lighter, the turbulence less, and it often provides long lines of interconnecting lift in the lee of the mountain spines that run southwards from the Main Divide.

Although I was not competing I was very keen to practise in my LS-6 which had recently arrived from Britain in readiness for the forthcoming World Championships. However, when one's home and workplace is one and the same it is easy to get delayed and it was not until midday that Gillian and I reached Omarama. To our surprise the contestants were still on the ground awaiting the first launch at 1pm. The task was a flat triangle via Bannockburn Bridge to the south-west, and Glentanner to the north. By using Quaiburn as the start point just north-east of Omarama, the distance was exactly 300km.

We managed to rig and fill with water in time to take-off just ahead of the grid, and I was towed at 75kt to the nursery ridge adjacent to the airfield where I released at 1800ft. Aided by the 20kt south-west wind I climbed quickly to 5000ft in the hill lift below a large area of dark cloud stretching forward into the valley to a sharp edge running crosswind. Under this edge I found broken lift and as I reached the fringes of the cloud this increased to 8kt and became smooth. Climbing effortlessly, my thoughts went back to my first 300km flight.

It was Thursday, August 20, 1965. I had just completed my first year as an Oxford undergraduate and reckoned my most significant achievement was becoming a member of the RAFGSA at Bicester through joining the University Air Squadron. With the help of the legendary Andy Gough over six months I had more than doubled my 60hrs gained so laboriously at Lasham over the previous two and a half years, completed my Silver badge and was now cleared to fly the Skylark 4, regarded as one of the best Open Class gliders of the time.

It had drizzled most of the previous day due to the passage of a warm sector, clearing late afternoon when the cold front went through. Next morning I drove to Bicester in my Austin A40 under a cloudless blue sky and a light westerly

NOW AND THEN

*"Time present and time past
Are both perhaps present in time future,
And time future contained in time past."*

breeze. I was not the first to arrive, Jack Harrison and a lanky RAF sergeant who I only remember as Bill had already laid claim to the Olympia 419 and K-6C respectively, and were planning an hour's dual tow upwind to a point north-west of Gloucester whence they would fly downwind to North Denes Airfield at Great Yarmouth for their 300km Diamond goals. Andy allocated me Skylark 4 No. 308, with royal blue fuselage and cream wings. Like the rest of the fleet it had no radio, but did boast an electric variometer (without audio) and an artificial horizon. As the remaining tug could not be spared for long I photographed Andy beside a blackboard declaring a 305km dogleg with a remote start over Moreton-in-Marsh, a short upwind leg to Cheltenham railway station, followed by a downwind run to Great Yarmouth. The others took off at 10.30, and I followed at 11.15 behind the Chipmunk at a sedate 55kt, releasing over Moreton-in-Marsh 25min later.

As I climbed in front of the cloud I noted that the high cover associated with the front to the west was both rather thicker and closer than I had expected, and therefore decided to make a start as quickly as possible. Fortunately Quaiburn was in a clear gap and with a start height set at 9500ft I started my run in at 12000ft expecting heavy sink. Even this margin proved insufficient, but the air remained smooth and I crossed the start line at VNE (146kt) at 9000ft, tracking back to the front of the lenticular. Once back in the lift I slowed to 90kt and ran along its leading edge until I reached 13 000ft. At this point a ridge lay below running directly into wind breaking up the wave pattern, as evidenced by a confused mass of cloud straggling back from the next system upwind. Flying along this cloud at 120kt I lost only 2000ft before reaching further lift at the head of the valley leading to the first turn. From here conditions on track in the lee of the Pisa range looked excellent, with a wall of cloud 12 000ft deep stretching up into the overcast above which sloped steeply downwards to the west, merging with the frontal stratus and rain only 25km away.

Flying in front of this wall at 130kt produced strong lift for the next 40km. At 15 000 ft the GPS showed the wind had veered to 270° at only 34kt, giving a headwind component on track of just 12kt. Sitting in a well sealed cockpit, surrounded by the sleek white shape of the LS-6, wearing my comfortable new oxygen canula I felt both remote yet highly aware of the outside world.

At 18 000ft whilst trying to stay clear of the upper cloud a minute change in the hiss of the

airflow around the airframe warned me to reduce indicated airspeed at this altitude. Scrolling to another page on the GPS display I saw that the LS-6 with its 500lb cargo of pilot and water was approaching the turn at a groundspeed of 167kt, over 5km/min.

The 88km to Bannockburn Bridge had taken 25min 50sec, with an altitude gain of 9000ft, the GPS enabling a precision turn above a point more than 5km below.

Above Moreton-in-Marsh the sky had filled with cumulus. Having notched the barograph, my first thermal climb of the day carried the Skylark to cloudbase at 4000ft. From here I could see Cheltenham 20 miles to the west and an inviting cloud street leading towards it. Putting the nose down I set off at 60kt. Fortunately the thermals were easy to locate and continued into the Severn valley so that just over half an hour later I was looking down on the town with its distinctive gasometer and several railway lines converging on the station. I flew a couple of miles further west and then, relying on its immensely powerful trimmer, I left the Skylark to fly itself while I photographed the whole town with my bulky hand held Canon camera.

Looking downwind to the Cotswold edge, and beyond towards Great Yarmouth 270km away, I saw the countryside dappled with the shadows of brown-based cumulus stretching to the horizon under an azure blue sky and I felt like a king.

*"Bliss was it in that dawn to be alive,
But to be young was very heaven!"*

The second leg towards Glentanner was initially a replay of the first in reverse. Once north of the Pisa range I flew further west to stay closer to track. This left me crossing a wide area devoid of lift under the overcast which had now spread across the whole sky. Down to 12 000ft at the northern end of the Lindis pass I saw a very dark lenticular 15km north of Omarama with its base around 8000ft. Wanting to arrive above this level I slowed down to 90kt, although the combination of altitude and tailwind component still provided a groundspeed of 112kts. I probably should have pushed harder, as after a 30km glide the lenticular gave an initial climb rate of 12kt despite my having increased speed to 145kt.

This cloud continued in a curve northwards over Lake Pukaki, 10km in the lee of the Ben Ohau range which regularly generates the strongest lift in the region. Glentanner lay at the eastern foot of its 8300ft highest peak, although all the tops were now shrouded in cloud and rain from the approaching front.

At 13 000ft with only 15km to go I decided to take the direct course despite having to fly forward into the gap between the frontal cloud and the lenticular behind. With 7km to run the LS-6 was sinking at 20kt and down to 10 000ft. Spits of rain cracked against the canopy when, without warning, the sink was replaced by extreme turbulence, forcing me to reduce speed as quickly as possible. At 8500ft the GPS finally confirmed I had reached the northern end of the Glentanner runway which was the TP. The 146km second leg had taken 35min 10sec, with an altitude loss of 10000ft.

With cloudbase rising and a following wind the Skylark was soon passing Moreton-in-Marsh again, alternately gliding down and circling upwards. Silverstone slid below as I crossed Northamptonshire and flew out into the Bedfordshire plain. Over Bedford itself I admired the Cardington airship hangar to the south; over Cambridge, the "other place", I checked my compass against the alignment of its churches.

Further east Thetford forest went by and then Norwich with its unmistakable cathedral hove up ahead. Above that city was a taller cumulus with an uncharacteristically ragged base which I recognised as marking the sea breeze. Using the artificial horizon I climbed to 6000ft in cloud and then allowed the Skylark to conduct me over the Norfolk Broads to the coast at Great Yarmouth.

Just offshore, adjacent to North Denes Airfield, was a sandbar with a row of brown seals sunbathing while I circled down to land. The time from release was 3½hrs and I was the first to arrive.

With a final leg of only 66km the flight computer indicated no further height was needed, but my experience approaching Glentanner had shown the importance of avoiding sink and turbulence.



It looked like a good wave day. Photographed by Justin during his New Zealand flight.

Therefore I turned downwind to the nearest edge of the lenticular which I had used previously. At the lower level it provided even stronger lift, 15kt whilst cruising at VNE, and curved back south-east towards Omarama. At 12 000ft the only remaining problem was to cross the finish line with the wings still attached.

North Denes was a small grass airfield with a row of trees along its eastern boundary towards which I landed in the light on-shore breeze. The owner was away flying sightseers along the coast in his Auster, but his wife let me use the telephone in the office to contact Bicester.

Andy answered, delighted to hear of my success, and I assured him the others would arrive

shortly. I must have sounded convincing, because he immediately decided to despatch two trailers and bring the Auster himself to tow back the third glider.

Back outside I saw Jack Harrison landing in the 419, followed by the airfield owner. We introduced ourselves and he signed our landing certificates, but when I told him of our retrieve arrangements he looked alarmed and said it was impossible to aerotow off the airfield in the prevailing wind conditions due to the trees at the upwind end of the runway.

I rushed back into the office and telephoned Bicester again, to be told Andy had just taken off. I spent the next hour and a half miserably awaiting his arrival, somewhat cheered by the late arrival of Bill in the K-6, who unfolded his long frame from the cockpit in a series of creaks and groans, swearing on the graves of his ancestors that he would never fly a K-6 again.

When Andy taxied in I explained the situation. Cutting short my apologies he gave me one of his unforgettable smiles. "Right", he said, "leave this to me" and, extracting a bottle of whisky from the back of the Auster, disappeared into the office. A short time later the owner emerged holding what looked suspiciously like the same bottle, now wrapped in newspaper,

declaring loudly that he was going home and the airfield was officially closed, whereupon he got into his car and drove off.

"Right", said Andy, "as Bill refuses and you're the lightest, take the K-6 back as far as you can to the northern boundary and we'll go off crosswind to the south. Look snappy, as we're running out of daylight."

Strapped in the K-6, whose tail was buried in the nettles at the edge of the field, I was interested to see Andy line up the Auster beside me. Bill hitched on the cable with a final "rather you than me", Andy ran up the Auster to full throttle and then released the brakes. I watched him thunder away with the cable snaking behind until there was a tremendous twang and the K-6 leapt



NOW. Anthony Edwards photographed Justin during their Twin Astir flight this winter in New Zealand.

forward like a startled rabbit.

On about the fourth bounce I managed to remain airborne and could take an interest in the approaching southern boundary, consisting of an earth embankment beyond which the next field continued at a higher elevation. I also noticed it was occupied by a camping club which had arranged its tents in neat rows facing each other. Suddenly the runway seemed extremely short; in desperation I climbed the K-6 as high as I dared and then dived to put some slack on the cable. At the same time I saw Andy's hand go up to the flap handle on the cabin roof and the Auster staggered into the air, cleared the embankment and flopped back on to the ground. The next moment we were in the campsite. Fortunately we were lined up with the central alley; out of the corner of my eye I could see tents going past the wingtip and men in shirt-sleeves with pipes frozen halfway to their mouths, then the Auster finally achieved flying speed and we climbed away. I was always amazed by the goodwill and tolerance RAF roundels engendered in those days: as we recrossed the campsite some of its occupants actually waved.

The long tow home was into the setting sun, reddened by high cloud from the next warm front. As we passed Bletchley lights began appearing in the towns and villages and we reached Bicester just on dark. From the open hangar doors a window of light was cast on to the tarmac apron and as we pushed the K-6 inside the first drops of rain began to fall. In the bar Andy informed me that a successful badge flight qualified for half price, and thus the total cost for the day was £2 7s 6d. I had not eaten since breakfast and my first drink promptly made me sick. But it didn't matter, nothing mattered: I was deliriously happy.

It was my nineteenth birthday.

With 30km to go I decided against a high speed descent; as soon as I flew below 9000ft I could sense the impending turbulence. Thus I continued at VNE in the smooth air and crossed the finish line exactly at my 9000ft start height. To my amusement the radio announced "Good finish, number one, but a little high". As I spiralled down with the brakes out, circling for the first time since crossing the startline, the computer's statistics screen displayed a total course time of 1 hr 16min 54sec, giving me an average speed of 234km/h.

"But at my back I always hear Time's winged chariot hurrying near."

Oh, to be nineteen again.

TAIL FEATHERS

Jack the Knife, or trailers that went with a swing

Histories of sailplane design and soaring are fairly common, but let me put it to you, has anybody written a history of glider trailers and the art of towing? You may think it an unworthy subject for serious interest. Trailer spotting and the collecting of such memorabilia as vintage Austrian tow hitches sounds like a hobby for pimply nerds in anoraks and geezers in cardigans, I know. But I'm sure there's some genuinely fascinating stuff to be mined here.

After all, when the top German pilots were daily flying 500km and more from the Wasserkuppe in the 1930s, the distances trailed during the big contests would have run into tens of thousands of kilometres. Of course the roads would have had little traffic, but with all night dashes to get back to the Kuppe for the next



Performances of Wagner's Ring.

day's task there must have been some heroic driving. The crews battled continuously against sleep (despite training all winter on non-stop performances of Wagner's Ring) and coped with temperamental road holding, imperfect headlights and the mysteries of trailer stability when hurtling through mountainous hairpins in the dark; no doubt there were some epic crashes. I wonder, is there a plaque, somewhere in the Schwabian Alps or the Teutoburger Wald, commemorating the world's first recorded jack-knife of a car and glider trailer? Somebody must have done it first, but who, and where?

Doubtless we imagine that German glider crews all drove those spectacular open Mercedes staff cars (what's the plural of Mercedes? Mercedeses?) such as Rommel had. I don't think a glider trailer would have dared to fold up alongside one of those glossy vehicles. But the early Volkswagen would have been easier to take unawares.

What about America? No, I doubt it. In the 1930s American cars were steadily getting huger, and the combined weight of a low wing



Tiny, feeble cars.

loading glider and its (usually open) trailer was probably quite small, so I doubt if history's first account of a car's front end trying forcibly to mate with a glider trailer's rear end comes from the western shores of the Atlantic.

Of course the Brits in the 1930s had tiny, feeble cars (exacerbated by stupid taxes that rewarded the most inefficient engines) and glider pilots naturally complemented such inadequate tow vehicles with large, high sided trailers of very low strength-to-weight ratio. Furthermore our roads, though not alpine, were undulating and winding and infested by irresponsible cyclists and motor cyclists (see the opening sequences



National pride.

of Lawrence of Arabia) so maybe we can lay claim to the first glider trailer jack-knife.

It's a matter of national pride to nail this one down for Britain. We in this island have pioneered notable engineering disasters way ahead of the competition, from the Tay Bridge and the Titanic to the R101, though the Russians did beat us to it with Chernobyl, I have to admit. We slipped up there. Another indication that we are falling behind.

Not on the ball

I went on my first retrieve in a Land Rover in the 1950s, towing a Rice trailer with enormous wind-embracing sides - all the better for advertising Ovaltine, I suppose. This typical monstrosity, constructed from soft, heavy fibreboard that got even softer and heavier when it rained, had tongue and groove flooring that offered no useful stiffness whatever. Horrible, horrible in every way - except you could stand up in the damn things, if you are looking for mitigating graces. The retrieve was unendingly noisy as the hitch clinked and clanked, being a simple bracket taking a crude 1/2in steel pin, not a snug-fitting ball. I suppose such pins rattled their way non-stop across continents before World War II.

In the late 1950s the light monocoque plywood trailer was pioneered (I claim this originated at Dunstable, but am not prepared to do battle for the honour) and the first speeding ticket for a Morris Minor and fully-laden glider trailer became a practical possibility without the accompanying near certainty of a catastrophic fold-up on the next bend.

More archives, please

I'd better not go on, but you can see the amount of reminiscence this topic can evoke. Please send in any solid archive data you may have. What about the history of trailer suspensions, lights, stabilisers and override brakes, and brakes that operate if the trailer waves a final goodbye to the car?

"Brakes, indeed!" mutters some grizzled veteran into his whisky and soda, "The damn cars didn't have 'em, let alone the trailers!"



Trailer waves a final goodbye.

The glittering future

And the future of trailers - why can't we have trailers which are also self-rigging devices? In fact why isn't the trailer designed integrally with the glider?

No, of course those wretched motor gliders and their misguided enthusiasts will not make trailers redundant. They'll still need something to cart the bits home in.

Yet another item on the cockpit check list

I am told on good authority that one senior pilot, frustrated by the problems of having a pee once airborne, and in particular by the difficulty of extracting and stowing the necessary equipment, has taken to leaving his flies undone and his person quite exposed before take-off, not caring what the world and his wife¹ might think as they stroll by.


It certainly gives a new meaning to the ancient cry from the wingtip runner of "Take up slack!" and "All out!"

I have not sought the official BGA view, but I guess that they would say that it doesn't matter so long as you can still find the cable release in an emergency. It's a bright yellow - er - item. If you get confused easily you had better see a doctor, though it may be too late.

Oh, and another thing: keep the sun's rays off somehow. You could wear two hats, if you don't mind having to explain to everybody what the other one on your lap is for.

The two hat solution is absolutely necessary in Texas; they're very straightlaced, and the ultra-violet is savage.

Back here in Britain, we need to find a new initial to add to CBSIFTCB. Suggestions, please on (1) the initial, (2) what it stands for, so to speak, and (3) where it comes in the pecking order: before Controls, after Brakes, or should it be squeezed in between Flaps and Trimmer?

¹ There's an old-fashioned politically incorrect remark, if ever there was one - I should apologise for it. Why not "the world and her husband", or "the world and their live-in significant partner"? 

A great day at Lasham

John, an American pilot who gave Mike Bird the opportunity of a lifetime when he invited him to be his guest at the Barron Hilton Ranch in 1994 (see the February 1995 issue, p20), decided to try soaring in Britain last summer. He was so ecstatic (Mike didn't have the heart to say that the 1995 Open Nationals were exceptionally brilliant by British standards) that he was asked to put down his impressions.

Some legends are best held at arm's length: at close examination they tend to disappoint. I'm happy to report that Lasham is not among these, especially when caught during the 1995 Open Class Nationals.

A strange airline fumble turned a four hour stop at Heathrow into a three day holiday. A train journey and five mile walk brought an amazing sight into view: a huge airfield swarming with gliders, tugs, trailers, pilots and crews worthy of a World Championships. A stunning level of organisation somehow manages to launch 90 gliders without fuss. K-13s on wires depart for training flights every minute or so, unimpressed by the contest in their midst.

I introduced myself to John Gorringe (a friend of a friend), and in about the time it takes to say "Open Class hospitality" found myself packed into his ASH-25 and in the air. The task took us west to Bath with views of the Solent and Salisbury Plain - I actually spotted Stonehenge. We turned north towards Gloucester, making rapid progress in thermals up to 6kt. I was beginning to wonder about all the moaning over British weather and the wisdom of 25m wings.

The leg to Northampton provided answers - 5/8 suddenly became 8/8 and we crept along carefully, cheering ourselves with thoughts of how the LS-6 pilots must be doing. Yet British thermals are made of stern stuff; in the gloom enough were found to get us round the TP and headed home. We chased tiny patches of sunlight, but none could be made to give a reliable climb. In these situations the pilot concentrates on the view ahead and his flying, while the passenger wonders how to temporarily shed 890lbs.

But British pilots, too, are made of stern stuff. After half an hour of nothing, John somehow found a bubble that became 1.5kt; in no time the ASH-25 had what it needed and we were home and dry. A pint or two of Guinness, a fine meal of grilled trout (all within 40 yards of the runway), and an end was declared to a memorable day.



Platypus has also enjoyed many memorable days at Lasham.

DEHYDRATION

This should be the hottest time of the year but Howard is convinced it can be the most dangerous

Over the years I have witnessed many accidents and they all had the following factors in common:

Sky almost blue, 2/8 cover, air temperature 85°F plus and it was afternoon.

While I am instructing it is paramount that I remain fully hydrated. We have bathroom scales at the launch point at Aston Down and if I'm doing my job properly in high summer I am losing at least 1/2lb/hr. This is pure fluid loss. If the correct intake of water isn't maintained it can lead to hallucinating. I take the waters between all launches while running courses. It is a form of preventive maintenance. If the temperature gets very high I also take salt tablets.

The following is pure fiction but could well happen.

Site: Aston Down. Time 8am in summer and potentially a 500km day. Most members, like the rest of the population, live below 150ft and as Aston Down is about 600ft, they are on a loser straight away.

Everyone was busy and at 11am the cross-country pilots were launched. We then returned to what the average *ab-initio* considers to be a normal day. There were probably about 30 of us making decisions of one sort or another. The temperature was rising and with it the noise levels, bickering, cable breaks etc.

The towcar driver (hayfever sufferer) who hadn't had a drink for a couple of hours, was launched in the K-8 for a 5hr attempt.

Meanwhile I had kept my pupil aloft for 90min when he complained of being thirsty. Now it was time to carry out some exercises in workload management. His performance had decayed by at least 70%.

Either sex, it doesn't matter. They simply can't cope. Once on the ground the recovery period can take the best part of an hour. Ask them to do a simple sum and they will get it wrong.

I am convinced dehydration is our worst enemy. Cross-country pilots carry liquid but unfortunately the pupils on the ground don't realise they are thirsty and then it's too late.

I have no scientific evidence for my observations and hopefully some medical man can give us a guide of the ideal quantity of water we need to remain hydrated. And what is the safest way to carry sufficient water? Is there any equipment that would suit a pilot flying club aircraft?

Peter Saundby, the BGA medical expert, replies: This is a timely reminder from Howard Johns - with global warning we may enjoy another good summer. Weight loss is a measure of integrated thermal stress. In the RAF, fighter pilots encumbered by *g* suits and immersion clothing commonly lose a kilo, or sweat a litre, on an hour long sortie. In severe desert condi-

tions the requirement for water is huge and dehydration is indicated by small quantities of very concentrated urine. The passage of adequate urine volumes is the plain person's guide to hydration.

In France, gliding clubs require pilots to carry water and wear hats, which is essential for long flights in warm weather. Plain water is easiest to clean if spilt. Cycle shops sell plastic bottles with mouthpieces. The retaining clips can usually be secured using the seatpan screws. After a long hot sweaty day, one will need to replace the salt which has been lost as well as the water. Put extra salt with some peanuts on the club bar.

Howard makes a useful point in mentioning towcar and winch drivers. They too will become dehydrated. A large plastic bottle in an insulated box is a simple solution. It should be emptied and refilled on the daily inspection.

Monitor The Stick

When flying a glider there are only two things a pilot can do - written with current training gliders in mind.

1. Move the stick.
2. Move the rudder.

All our senses, automatic reflexes and conscious thoughts are directed to one end; to make correct movements of the stick and rudder and avoid the wrong ones.

In current instructional practice actual control movements are mentioned when teaching effects of controls on the first flight. Thereafter they are never mentioned again, except as the reaction to stall/spin symptoms when the avoidance/recovery is given in terms of control movements.

Stick position is given as one of the stall warnings, but placed last (in the progress card) and given no particular emphasis.

What needs to be engraved deeply in every pilot's brain is:

If the stick is well back, spinable machines spin. Without the stick being back they don't spin.
(All gliders are spinable, some only by mistake.)

This is true whatever other control movements are made. If the stick is not back, then lots of rudder and lots of aileron won't make it spin. Speed or lack of it is not decisive. It is the stick position which counts.

BILL DEAN



Left: X-Country by Crabb Computing - changing day parameters. Centre: X-Country - map page. Right: Taskmaster by Pro-Glide - planning a task.

SOFTWARE FOR CROSS-COUNTRY GLIDER PILOTS

GUY WESTGATE

Guy has spent hours working through the many programs to assess just what is on offer

Computers are increasingly finding their way into homes and naturally pilots are extending their use to gliding applications. Task planning software and electronic logbooks have been around for some time but the increasing use of GPS (or Global Navigation Satellite Systems, GNSS) data loggers has prompted the release of software to view and analyse data logger files (or more correctly GNSS flight recorder data files).

- Current software satisfies six basic functions;
- Task search and task planning.
 - Competition task validation.
 - Flight recorder data analysis.
 - Maggot racing.
 - Computer logbooks.
 - Flight simulation.

This article will review software covering the first three areas, connected directly with cross-country flying.

Task planning and task search software lets you try out various combinations of TPs and tasks very quickly, calculating tracks and distances instantly. Through the use of maps and graphics it will show what airspace and hazards the new task tracks will cross. Some programs will print out appropriate task sheets and predict times and ladder scores if you feed in forecast winds and your glider handicap.

Once you have flown the task you have a choice. **Task validation programs** have to be approved by the BGA if used in competition. They will look for any irregularities in the flight and will confirm whether the task was completed successfully, checking for airspace infringement



Guy, a BA first officer, started gliding nine years ago. He flies at Southdown GC, is an instructor and won the 1994 Junior Nationals. More recently he has started "unlimited" aerobatics and paragliding.

and cheating. The more generalised **GPS (GNSS) data analysis software** can be used to look at all aspects of the flight (as indeed can the validation software) but will not necessarily give a direct confirmation of a satisfactorily completed competition task, although task verification may be possible. Such programs will typically allow the recorded track to be overlaid on a detailed simulated topographical map.

Analysing GPS (GNSS) data

Whatever logger or flight recorder you are using, the data must be downloaded to the computer and saved as a data file. The format of the file is very important as it must be compatible with the software you intend to use. Following a BGA recommendation a few years ago, the standard file format in this country is the **.DAT** (dot DAT) file.

Most analysis programs can read data in this format. Unfortunately EW's software produces data files to its own proprietary file format, *ie* **.EWT** (dot EWT). This format is unique to EW and at the time of writing their files, like all flight recorder manufacturers' proprietary file formats, need to be converted to the **.DAT** format for use

with the other packages.

To help simplify this file miss-match in the future, the International Gliding Commission (IGC) has recently (1995) defined another format to cater for secure data. This is in line with the new requirements for tamper proof GNSS flight data for badge and record flights (covered in the April issue, p82). It would be reasonable to assume that this **.IGC** (dot IGC) file format will become the new national as well as the international standard. However, the IGC is still refining their software standard and only one flight recorder (Cambridge) has currently been approved, so universal application is still a little way off.

Task planning software

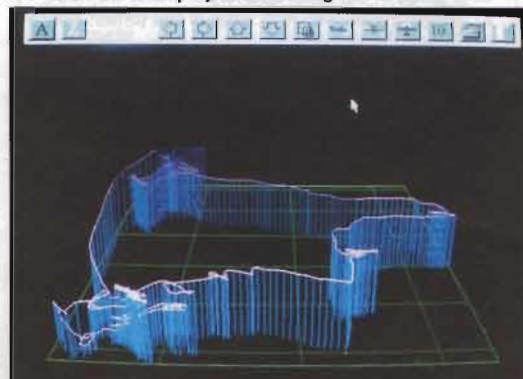
X-Country by Crabb Computing

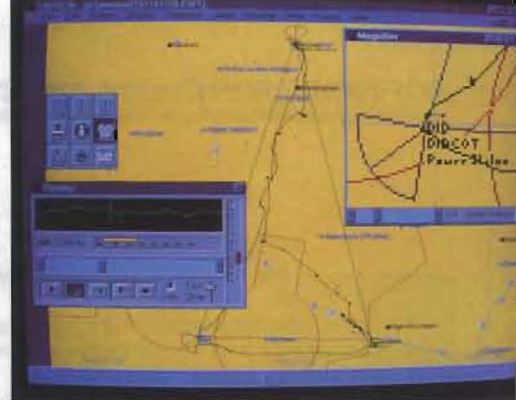
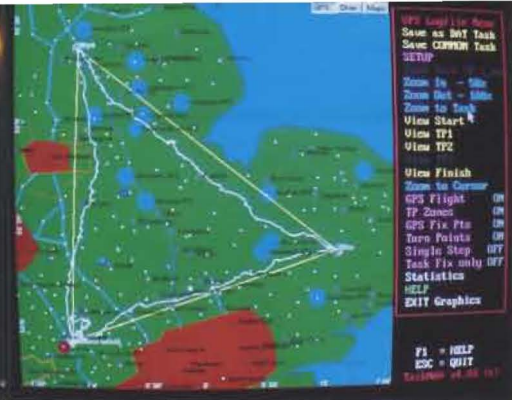
This was one of the first programs to be born in 1991/92 after the BGA TP list was first published. The software is essentially a task planning tool. However, the pilot can not only set tasks but can also assess the likely time to complete a task (or average speed) and can get an indication of its merit (National Ladder points). This requires a prediction of wind and thermal strength entered in the first text page.

Any subsequent changes to these day parameters are reflected instantly in the predicted task duration and ladder score. This makes for a powerful "What if?" tool.

In version 3.0, the cross-country task can be planned or partly planned in the text section and finished off in the map section or vice versa. There are no prizes for pretty graphics here, but the high resolution, zoomable map does present all the information you need to plan a task avoid-

Left: On-track from RD Aviation - map display. Centre: On-track - 3-D display of a task. Right: TaskNAV from RD Aviation - maps filed showing task detail.





Left: TaskNav - map display. Centre: EWWVIEW by EW Avionics - map page. Right: EWWVIEW for Windows - map window with magnifier and replay.

ing airspace and coasts in a very simple to use package. Movement around the screens is through the arrow keys, function keys and other hot keys. These can be displayed on screen should you forget them. There are plans to release a Windows version in the future.

Taskmaster by Pro-Glide

Taskmaster has been around for DOS since 1991 with up-dates until 1995 to the TP list and map database. Taskmaster is also a task planning tool. There is a single screen to work from, comprising four separate windows; map, task description, help prompt and drop down menus. By using such menus the page is kept uncluttered whilst giving lots of information.

Again no prizes for graphics here. The map gives only the most basic of information with coast outline, waypoint and airspace position, but it is all the graphical information you need to find and plan a task easily.

Control around the screen is achieved through menu choices or with function keys and the arrow keys; you don't need a mouse. A hot key list can be called up on-screen and the help window always prompts the next input so there is no need for the manual after the first read through. The program structure is simple, intuitive and easily mastered.

The standard Taskmaster assumes that you will only be flying from your home site and has a fixed start point. Suitable task TPs are easily found using Taskmaster's search utility and then added by tri-graph name or by position on the map. A running distance total is always shown, highlighted if the triangle selected conforms to the 28% leg record requirement.

A Windows version should be available this year, utilising Windows' flexibility and printer drivers. This release promises full use of the mouse for drag and drop task setting on the map and an interface to communicate with the GPS to upload task and waypoint information.

GNSS flight recorder data analysis software

On-Track available from RD Aviation

Written by David Starer and Edward Downham, On-Track is supplied as the downloading tool for

the RD/Skyforce logger. There is no task planning facility with the program; it is a GPS/barograph data analysis tool only.

The program comes with a comprehensive manual, which includes all the necessary information to get started. A good help function is also available on-screen.

Once a file is loaded either directly from the logger or imported as a .DAT file, one of five screens may be used to view the data. A master map screen shows the whole flight, supplemented by a TP screen if a task is declared. This second screen shows details of each waypoint and the TP status.

The barograph display is unusual as it displays only one hour at a time. This display is actually a moving window that can be scanned along the length of the barograph trace. The fourth screen shows both task and climb statistics. The software will calculate the actual distance flown as well as the distance achieved around the declared task.

Finally, the last screen shows the trace as a 3-dimensional display. The 3-D graphic can then be rotated in any direction. This has little practical value but looks amazing!

The program runs very smoothly and can be used to produce some very good print-outs of the maps and 3-D images.

TaskNAV 4.03 from RD Aviation

Written by David Robertson, TaskNAV has been subject to continuous development since its beginnings in 1989. In its latest release this year, version 4, it includes a comprehensive suite of programs. The package provides all you need to search and plan a task and then, after the flight, check the validity of the task and then finally display and print the GPS trace. The only function TaskNAV doesn't support is the downloading of your barograph to your PC.

The program structure is more involved than most with many functions and operations available. Most of the programs are self explanatory but a careful hour or so with the user guide will guarantee that you get the most from this program suite. Hot key or short cut keys will activate many of the repetitive operations; a mouse can also be used to drive most of the options throughout the screens.

The mapping detail is stored as ASCII files and can be user modified should details such as airspace change after buying the software. Manipulation of the map and task graphics on-screen is either by the mouse or speed keys. Although this manipulation is not as intuitive as some programs, practice makes the process efficient. To help, the manual guides you step by step through a few worked examples of task calculation, task search and GPS data view. The on-screen help function also has a wealth of information.

Some aspects of the program leave the competition standing! The task search facility is very flexible. Once a portfolio of up to 200 tasks has been found by the computer, it can be leafed through very quickly as a slide show, showing each new task graphically. Once a single task has been selected, further task modification can be achieved either directly on the map graphics screen or on a text page. If you want to keep any task, it can be banked in the database for quick retrieval at a later date.

The task validation software is not designed for BGA competition use and therefore does not display all the Class A and D airspace. However, most other task errors and possible cheats are checked for during the task analysis. The verified trace is initially displayed on one page showing separate tiled images of the whole task, the start, the finish and all TPs.

This page provides a useful overview of the route and permits a quick visual check of the task and flight data. A full sized map of the route and a barograph page are also provided. The GPS trace data can then be saved with the task information for instant recall.

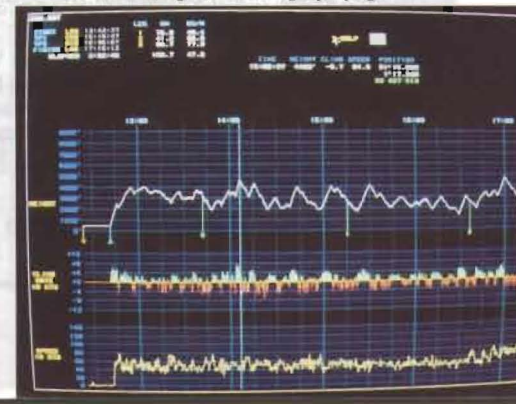
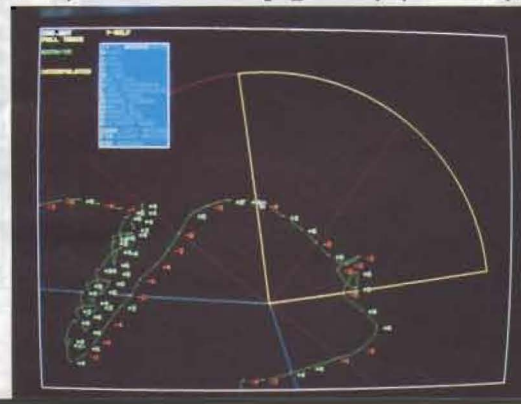
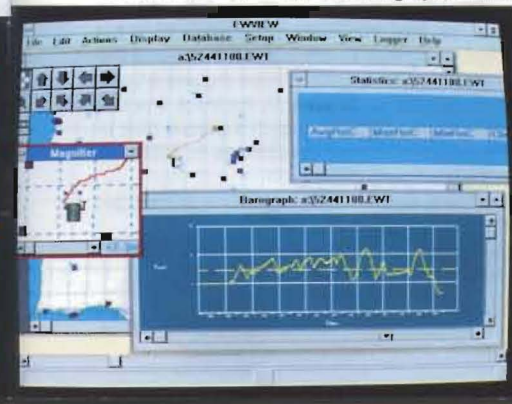
The printed output is excellent but rather inflexible. You can't change the way any of the screens are printed and only black and white printers are supported by the program.

A Windows 95 version is in development for release later this year. Future IGC specification changes will be supported in future releases.

EWWVIEW (for DOS) by EW Avionics

This is the software supplied with all EW barographs up until last year. The program is incredibly easy to use once you have mastered the ALT + hot key menus and as the graphics pages

Left: EWWVIEW for Windows - barograph, statistics and map windows. Centre: Flight_Check by Specialists Systems - TP detail and, right, the barograph page.



are very simple, it will run fast on just about any computer.

In terms of the latest releases, this program is relatively basic but it does the job of viewing data very quickly.

This program will download the EW barograph/logger into the computer and it is still the only way to create a .DAT file from an EW barograph. (An updated version to export .IGC files will be available soon.)

EWVIEW for Windows by EW Avionics

This is the first package available for windows and is compatible with both Windows and Windows 95. The old DOS based EWVIEW has received more than just a face lift here - it has been completely rejuvenated!

Gone are a few useful features of the DOS version. For example, in preparation for full compatibility with the new IGC format .IGC files, the facility to convert EW logger files to .DAT files has been lost.

So what's new? The statistics page has been changed. After comparing the flight against the task definition, a full thermal by thermal account is available. A breakdown of the task is also presented. A histogram shows thermal strengths while pie charts give a graphical representation of the time spent on each leg and time spent thermalling. The barograph and map pages are still there as separate windows but spiced up beyond recognition.

The mapping database is huge containing a very detailed coastline for most of Europe and all major towns, waypoints and Nav aids. The database can be modified very easily, either through the keyboard or straight on the map. In this way everything from a new airport to mountain ranges can be assigned a symbol and displayed on the map. Furthermore, you can set a task using literally any feature within the database including the towns and Nav aids. Tasks can also be created and altered directly on the map by dragging the TPs to new locations with the mouse.

There are many inspirational additions to the program. Tiny thumb-nail images of each GPS trace can be stored with every data file on disc. When you come to scan through the file list at a later date, these little pictures are displayed next to the file name to help you recognise which flight you are about to select. Windows' flexibility and the use of menus and the mouse have been fully

exploited in this program and almost every parameter controlling the displayed output can be changed, from text fonts to line thickness.

The other two aspects of the program that are excellent, again courtesy of the Windows environment, are the help function and the program's print capability. EW's help is as good as any windows' help package. Detailed tutorials, graphics and text descriptions cover every menu option available in the program and as long as you have loaded a windows' printer driver, any of the help screens, the statistics pages, map or barograph page can be printed in full colour.

The main drawback of any complicated program such as this is you have to learn to drive it properly. Although the help function is good, it still takes a few hours to get the most out of the more advanced features in this program.

GPS-NAV PC Software by Cambridge

This PC software allows you to take full advantage of the Cambridge's GPS-NAV flight database and post flight analysis capability. The program is unfortunately only useful to users of the Cambridge system as you cannot load .DAT, .EWT or .IGC files into the analysis and data view program. This is a great shame as the analysis program contains some excellent and unique features. The program will, however, convert data from the GPS-NAV into .DAT and IGC formats for use in other programs.

The software is used both for communication with the Cambridge flight recorders and also to conduct post flight analysis of data. Movement around the program is through simple menus, the cursor keys and a handful of speed keys. It is very easy to use.

Flight data may be viewed conventionally as a flight track on a map, and the trace can be enlarged at will or scaled to fit a regular topographical map. A regular barograph display is also provided as a vertical plot. This can also be enlarged. Overlaid on this plot are displays of information required by the IGC such as engine noise and GPS altitude. A single flight can also be viewed as a 3-D picture. This image can be manipulated much like the map, so that by zooming in on the track line, a surprisingly detailed picture can be viewed in three dimensions.

The software also supports some excellent maggot racing routines where up to ten glider flights can be viewed and raced simultaneously on both a map and a barograph type display.

Finally, the program is used to manage a database of pilots' details, soaring sites, Nav points and tasks.

Task validation software

The BGA GNSS TP validation requirements are somewhat volatile and so most software is likely to be out of date for UK competition purposes the year after purchase. Software designed to meet future IGC badge and record requirements is likely to have similar problems. However, as changes to IGC rules will no doubt have to go through more complex committees, the changes should be less frequent.

FLIGHT_CHECK from Specialist Systems Ltd

FLIGHT_CHECK is designed specifically for BGA Competition GPS data task validation. The 1995 program conformed to all the 1995 competition requirements. The 1996 version also displays airspace and is again being approved by the BGA. The program suite runs very smoothly with a minimum of information required from the operator before validating the task data.

Flight_Check, or FC96 imports both .DAT and .IGC files (but does not download data direct from the flight recorder) and provided a task has been entered (using sister program FS96), the imported data will be analysed to ensure the task has been completed satisfactorily.

After analysis, four separate pages are available to illustrate the task. A master display shows tiled mini-maps of the start, the TPs and the finish. From this screen, one can either select an enlargement of each sector separately or display the entire flight map on one screen.

The third graphics screen shows a standard barograph trace innovatively combined with graphs of glider groundspeed and climb rate. Superimposed on all the graphic screens are symbols depicting the points of take-off, task start time, the time at each TP, the finish and the landing. These points are all detected automatically by the software. The last screen shows a text summary of the flight including leg speeds, time at each TP and photo penalties.

There is a basic map database with this software. The maps show BGA waypoints, a simple coastline and airspace and, as with most other programs, the database can be changed with a text editor. Each of the map details can be switched off for screen clarity. Furthermore every logged position can be superimposed with information of speed, height, position, climb rate and GNSS error. The mouse is used extensively but an on-screen reminder is available for the few short cut keys.

Because the software is designed primarily for competition use, it is relatively inflexible as an analysis tool. However a few alterations for the 1995 and 1996 versions have increased the program's popular appeal. These include a trace interpolation option to smooth the track line between fixes, the ability to attach a unique task to a GPS data file, correction of times to BST and the enhanced map display.

Specialist Systems also produce a maggot racing program titled 3D_FACE.

(See also John Wright's review of Ken Sparkes' TaskFinder, February issue, p23.)

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Cambridge On-track EWVIEW/ EWWIEW/ or Flight X-Country Taskmaster TaskNAV
GPS-NAV Windows Check

Program details	Version and year Distributed by Telephone No.	3.1.1 (1995) Theinternet' RD Aviation 01865 841441	1.02 (1993) RD Aviation 01865 841441	9321A (1994) EW Avionics 01628 485921	1.1a (1996) EW Avionics 01628 485921	96.0 (1996) Specialist Systems Ltd 01276 33706	3 (1994) Crabn Computing 01793 831960	V3.20 (1995) Pro-Glide 01234 766352	4.03 (1996) RD Aviation 01865 841441
Computer requirements	Operating environment Minimum processor Min memory Ram/Free HDD Mouse required ? Min screen resolution	DOS 80386 1 Mb/5Mb NO VGA	DOS 80286 (1) ----/1Mb YES VGA	DOS 8086 500K/1Mb NO CGA mono	WIN/WIN95 80386 (2) 640K/4.5Mb YES VGA	DOS 8086 640K/----- NO (3) VGA	DOS 8086 640K/3Mb NO EGA	DOS 8086 512/----- NO CGA/EGA	DOS 80386 DX (2) 512K/1Mb YES VGA
The software	User guide supplied? Will it download logger? File formats ICG (.IGC) file compatibility	YES Cambridge CAL DAT (5) .IGC (5) YES	YES RD/Skyforce .DAT .GPS (6) NO	YES EW baro/logger .EWT .DAT (7) .IGC (8) NO (8)	NO (4) EW baro/logger .EWT only Planned	YES NO .DAT .IGC YES	YES NO N/A N/A	YES NO N/A N/A	YES (4) NO N/A YES
Task search facility	Search for suitable tasks? Waypoint/map database (10) Task distance calculation On-screen task changes (11)	NO NO NO N/A	NO BGA NO Text only	NO BGA YES NO	NO BGA + E YES Text + map	NO BGA NO N/A	NO BGA + E YES Text + map	YES (9) BGA YES Text + map	YES BGA + E YES Text + map
Flight preparation	Print out task sheet Print out competition task sheet Print task declaration sheet	NO NO NO	NO NO NO	NO NO NO	YES NO YES	NO NO NO	YES YES NO	YES YES NO	YES NO (12) YES
Display of flight data	Display barograph only (13) Display map, GPS trace and task Display 3-D format Flight climb statistics Flight task statistics	NO YES (14) YES NO NO	NO YES YES YES YES	YES YES (14) NO YES YES	YES YES NO YES YES	NO YES (14) NO NO YES	NO N/A N/A N/A N/A	N/A N/A N/A N/A N/A	NO YES NO NO YES
Printer support	Text reports and lists Graphics (15)	B & W B & W	B & W Colour map	B & W B & W	Full colour Full colour	B & W Nil	B & W Nil	B & W Nil	B & W B & W
Price	Single user licence (16)	Free!	£59+VAT	£25+VAT	£45+VAT	£45+VAT	£45+VAT	£25	£38.30+VAT

Notes:

1. Recommended 80386 or faster.
2. Recommended 80486 or faster.
3. Mouse highly recommended.
4. Full on screen help.
5. Will only export .DAT and .IGC files. Input is .CAL files only.
6. Not to be confused with the old IGC file of the same name.
7. Will only export .DAT files. Input is .EWT files only.
8. Release of an IGC version (to export .IGC files) awaiting hardware approval
9. TP search only, not full task search in one selection.
10. BGA=BGA UK TP database; E= selected European waypoints. Note: User may be able to add own waypoints to database.
11. Text task changes with keyboard and tri-graph listings: map task changes performed directly on map showing task using mouse or keyboard.
12. Competition version (printing task sheets) available on request.
13. If data file contains only barograph information (eg from an EW barograph) and no GPS position fix data.
14. Limited map data base.
15. Any graphics screen can be captured with other program utilities and the resulting screen bit map may then be printed in conjunction with other graphics packages.
16. Upgrade price to existing users and group/club licence may be different.

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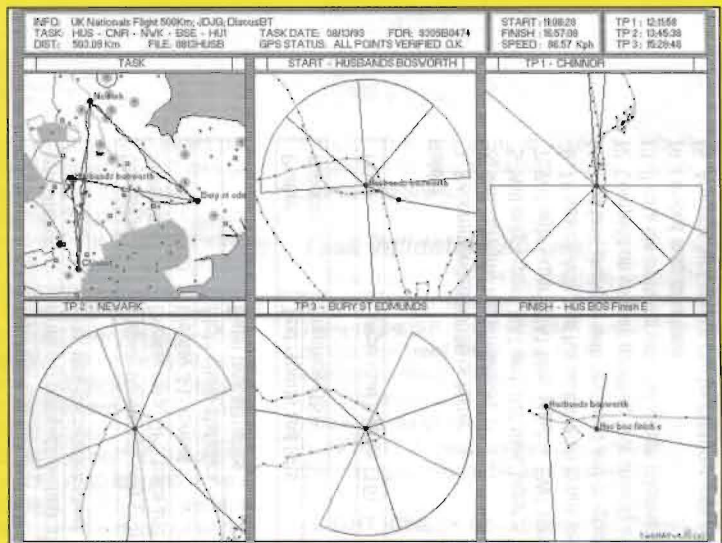
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Left: The Bocian being loaded. Right: Back at The Park. Photos by Richard.

NEW GLIDERS FOR OLD

Richard Yerburgh, of Bath, Wilts and North Dorset GC, describes his second trip to Poland to pick up a refurbished Bocian and gives an idea of the difficulties and the advantages

If you live in Germany you call it *Gorlitz*, if you live in Poland you call it *Zgorzelec*. It's a crumbling, neglected city about the size of Bath and it straddles the German Polish border. There is bad feeling at this border - the Poles can never forgive the wrongs done to them by the Germans, and the Germans call the Poles *Pollacks* and treat them with contempt. The cold war is over in name but continues in fact. In England daffodils were blooming when we left. Here in Gorlitz it was 6am on April 4 and there was a covering of five inches of snow.

What brought us there?

Our club's two Bocians were bought new in the mid 1960s and reaching the end of their lives. There had been much discussion about replacing them but with all the expenses of our new site and our proposed new winch, there was no money to pay for replacement or refurbishment within the EU. However, PZL, the original builders, offered to refurbish to new specification for \$8000 which meant we could have two new gliders for about £8500 each including transport and VAT.

This was the second trip to Poland. Paul Wade and Annie had waited their 20hrs in the lorry queue and eventually delivered the glider to PZL at Jelenia Gora. Now we were to collect it.

The factory opened at 7am and closed at 2pm. We were tight for time. I had faxed PZL four times asking for the glider to be ready loaded when we arrived. Hopefully it would be!

Into Poland

By judicious queue jumping, we had managed to get over the border by 10am. The snow-ploughs were working through to Jelenia Gora and we followed one through. The drive took 3hrs for 50 miles. The factory is a jumble of gimcrack buildings put up by the Germans during one of the periods when Jelenia Gora belonged to them.

No-one spoke English so we had to communicate with Adam who had a little German. The breathtaking white bird was waiting for us. In spite of disappointment that it was not loaded on the trailer, this was a time for showing appreciation and we had a tour of inspection. Eventually, our trailer was brought out of one of the sheds, and the process of loading began.

Because the trailer is open, the glider had to

be wrapped in polythene sheet and odd bits were trotted out. From previous experience I had learned that the Poles are not strong on wrapping and we had brought 24 rolls of parcel tape. I went around the tyres and blew them up, checked the wheel nuts and bearings for play, took off the wheel bearing covers and greased the bearings.

At last we were ready and with much heel clicking and handshaking, we departed into the fog with the cumbersome trailer. Fortunately, the temperature had risen to just above freezing and the remaining snow on the roads was turning to slush. Two and a half hours later we were back at the border at Zgorzelec; this time at the lorry crossing. I had chosen this day for the crossing because I knew that on Good Friday (the next day) no lorries were allowed on the German roads. This meant too that there would be little traffic at the border crossing and I was right.

Customs

Having saved a lot of time I then went to the shipping agent's office recommended by PZL. They would normally be expected to guarantee the duty until we reported to Customs at the point of destination, but they refused, and so did three other shipping agents. Eventually I went back to the first agent and said "What do we do now?"

Of course the answer was, "Pay the duty".

Ah, but that was not all; the German rate of VAT is 15% but they add a further 10% deposit to be repaid when the goods arrive at destination. The tax and deposit was payable on the whole of the \$8000 at the rate of 25%; converted into German marks, this meant we had to find DM 2845.

The next question was how to pay: Travellers cheques? I had enough. No! Credit cards? I had plenty of credit for such a sum. No! Cash? I was DM500 short so I asked if they would accept sterling to make up the balance? No! What would they accept? Only DMs in cash. However, they eventually accepted Eurocheques for the sum total because they are guaranteed for payment.

After the shipping agent, we had to deal with nine different Customs' offices, two Polish to do with the outbound side and seven German to deal with the inbound side. Each one checked the paperwork over and over again. In total the papers were stamped 87 times. My passport and driving licence were inspected and I was told

that my British HGV1 licence did not cover me to drive a car with a trailer and I would have to take the trailer back to Poland. We got over that and just as I thought we were through, they discovered we had a jerry can of petrol in the car. I had to raise a new set of papers to pay the duty which took another hour.

At last the nightmare was over; we returned to our hotel and collapsed on the bed. The awful vision of spending a freezing night in Poland in the car with the glider attached began to recede.

After that the 200 miles of roadworks on the Autobahn, the thirty yards visibility in the fog, the sound of locked tyres behind us all seemed a doddle. We were back in the EU.

What did we gain

The work by PZL is beautiful and both our gliders are now as new - new canopies, cables, pulleys, inside cockpit, straps, wheels and brakes. The entire aircraft are covered with fabric - supported as well as unsupported surfaces. We are delighted with the outcome and can recommend the undertaking from that point of view.

The down side

The journey is around 1500km each way. You will not cope if you do not speak good German. Contact a shipping agent at Gorlitz before setting out and make proper arrangements for the guarantee for your tax/deposit (you will need to speak in German). PZL will arrange exit documents from Poland but not entry documents for Germany. Just in case, make sure you have enough cash to pay the duty and deposit (25% of the value). Beware that although they can see that the repairs cost you say \$8000 they may demand you pay something in regard to the original value of the glider. You won't have much option in this. Ensure that your driving licence is valid for trailers in Germany. Use up petrol in cans before crossing the border back into Germany. Make sure you have tools, jacks, tyre pump and so forth. Remember that they change the rules from day to day at this border. Use the Dunkirk crossing - the route will join the same one as you would use from Ostend at Liege, but you will avoid the traffic around Bruges, Gent and Brussels.

If you want to talk about it, give me a ring on 01985 212017.

Gute Reise!

I resolved in July 1994 and completed my Bronze badge that October. During this time I had been weighing up the possibility of selling my BMW motorcycle to fund a share in a sailplane to give me more cross-country flying. **Gliders and Sailplanes of the World** by Michael Hardy (a book that should be updated) became my bedside companion as I identified club aircraft and I hunted through the advertisements in *S&G* to see what I could buy.

Early on it is important to arrive at a figure you are comfortable with, because other costs will come along later. My maximum limit was set at £4000 and I had to decide what I wanted to buy, how much I wanted to share the aircraft and could I afford the running costs?

I talked to people about aircraft, insurances and the benefits of wood versus older glass. As you might imagine there were pros and cons on each side. But it was clear that monthly insurance, maintenance and trailer parking would mean that even after buying the glider I would be faced with a monthly charge of £20 to £30.

The wood route could let me buy a Skylark 3 outright but I couldn't afford the monthly running costs and I was put off by tales of how much it costs to have bits re-covered. The rule appeared to be to buy the best you can afford.

Glass seemed the way to go and I would need at least three in the syndicate to make it viable from my end. Looking at price, running costs and performance I was heading for a Std Libelle, Std Cirrus or Vega and then a Libelle 201B came up for sale on the noticeboard.

I wasn't in a position to buy at that stage but when I met the owner, Tony Brown, I thought he would make a good syndicate partner. When I saw the machine I knew that I wanted it. It was beautiful and at £12 500ono in my price range. Even better it was at Portmoak, my club.

I needed another syndicate partner and would have to take my chance on the sale. It was then I had the good fortune to be on the same course as Fred Joynes, an engineer, who was thinking along the same lines. I felt sure he would make an ideal third syndicate partner, with more experience than me.

As the club has four Libelles, mainly owned by instructors, I was able to ask all about owning and maintaining one and to familiarise myself with the strengths or weaknesses of the aircraft. A member then let me fly his aircraft and I was impressed with its performance. I was fortunate to have a range of similar aircraft on site and could assess how they fared and what was considered to be the market value. This may not always be the case for a secondhand buyer, but definitely make sure you speak to at least one owner of the type of aircraft you would like to buy.

It is important at this stage not to be shy because it is legitimate to ask and important that you can verify what you hear as afterwards it could lead to potential costs and unwelcome friction. As my hours wouldn't allow a trial flight I had to ask every question I could think of.

Tony gave a full account of the history of the glider - damage, repairs and access to the log-book, receipts and repair and modification details. We checked the aircraft as thoroughly as we could and I certainly didn't feel disadvantaged not having an expert with us.

It had fair wear and tear in the places you

ONE OWNER, NEVER THRASHED!

Buying and syndicating a secondhand glider



Gerry's syndicate Libelle.

would expect. There was minor gel coat damage but only at an early and insignificant stage. The instruments were basic, but functional, and this was reflected in the price. The anticipated cost of updating them seemed reasonable. The glider was rigged and seemed delightfully straightforward. It had a one man tow out gear and Tony offered to put in an EW barograph, oxygen mask and parachute as part of the deal.

The trailer only needed new protection underneath and some work on the wheel bearings, which seemed reasonable.

We settled on £12 000 with a third equal share to each member. I thought I had two excellent partners and hoped they felt the same.

While many syndicates run perfectly happily without an agreement, we decided to have a written one which covered the basics of ownership, use and upkeep. This is no substitute for goodwill and friendship but it is a safety net in case of problems and of benefit to each member.

An obvious advantage of having a share in a glider is that you can increase your hours and experience. Even in poor conditions last July and August I managed 64hrs and will be aiming at 100hrs this season. The rota system, giving priority days to each member, works well.

Based on our annual estimate for insurance, trailer charges and maintenance, we put £30 a month into a syndicate account. This has given us a reasonably surplus to part finance a new XK 10 and averager, plus a radio. Fred showed his worth by expertly refurbishing the panel.

In starting out to buy a share in an aircraft, I found a wealth of experience out there only too willing to offer advice and give information. I might have been wiser to have looked at more alternatives but a preferred option was on the

doorstep and the owner would be remaining in the syndicate. And for me the aircraft was right.

I would encourage other pilots thinking of forming a syndicate to do so and enjoy the sport from a different perspective, soaking up some of the thrill from flying their own aircraft.

Know in advance what you are looking for in your price range and decide on who you would like in your syndicate. Monthly syndicate payments prevent the shock of big bills and struggling to find your share. Check with as many people as is reasonable. Look at it. Touch it. If you like it, then become a glider owner.

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WAY OFF TRACK

Usual Drawing

An unexpected bog

I could hardly believe it. My exploratory left leg, thrown over the side of the Nimbus 2c as quickly as I could swing the canopy aside, sank wetly and glutinously to the knee. It was what the late entertainers Flanders and Swann celebrated in their song as *Mud, Glorious Mud*.

This was February 19, high summer in Australia, for goodness sake! The temperature was nearly through the roof. Everything in sight was parched and yellow. Drizabone, in fact.

What the Hell was I doing, sitting wings level, in what would have earned an A-plus as a genuine fully rated bog back home?

But I suppose it takes a resident of the Emerald Isle to find one with embarrassing pinpoint accuracy and then land in it in otherwise sun-dried outback Victoria.

But, please, your Honour, it was a very little one - a tunnel all of three feet wide, and just as deep, was a thin green vein running across the paddock in which I had just touched down. I'd cleared the trees and a power line which lines a dirt road across the approach, swept over livestock corralled behind a single wire fence at the approach end of the field, neatly passed a fallen eucalyptus lying to one side and rough ground to the other, only to end inelegantly in this, the Nimbus slewing slowly to the left as its wheel plumbed the depths.

A minute or so later I was plumbing the depths too - with my foot again, to retrieve the shoe which had come off in the ooze, before trudging off across tinder-dry grass and two paddocks. Ultimately, through their nearest neighbour, I found owners Ken and Val Whan and enjoyed wonderful hospitality at their farm on the far side of Lake Mokoan from Benalla. There could have been no better place to end up after failing to return elegantly from a modest triangle to Burrumbuttock Sidings and Corowa.

It is only because my retrievers, led by John Williamson, were Ian Dandie and Peter Black from Portmoak, and their respective wives, and that Ian escaped back to Britain with the photo-

graphic evidence that I've come clean and confessed.

Always hot it ain't

Not for the first time I'd arrived in Oz ill - with raging bronchitis which developed during a work-stint in Singapore on the way out. And I'd arrived at Benalla on the coldest February day on record, when the mercury sank to 13°C, with driving rain and a biting southerly wind. I've known warmer - and much sunnier - February days in Belfast and the previous day it had been 35°C. So for the whole stay - which I lengthened by three days in the hope of making up lost time - I was very below par, on medication and never threw off the affliction.

That's my excuse, anyway, and the extra three days permitted me to go on a weekend safari with members of the Gliding Club of Victoria and other clubs to Porepunkah, about 80km east of John Willie's bailiwick in a lovely valley behind the impressive bulk of Mt Buffalo. The company was superb; the Saturday evening barbecue in the idyllic riverside camp site where we were staying in comfortable chalets for only \$10 a skull made it quite the most enjoyable weekend of my gliding life.

An elephant's garotte

I'd arrived with a clear mental image that all Australian fields would be vast and clear and that any outlanding would be a piece of cake.

A quick site check in Benalla's ex-ATC Motor Falke is enough to disabuse anyone of that false impression. To give the livestock some shade all the fields around Benalla are liberally studded with single trees. And there's a more insidious potential killer lying in wait for the inattentive outlander - the notorious SWER (single wire earth return) lines which, tightly tensioned, run across the countryside to outlying stations on far spaced hard-to-see posts up to 1km apart, which you can easily miss amid the trees.

John Willie produced a sample stretch at a briefing - three strands of twisted 10g SWG and able to whip your wing off in a trice, or garotte an elephant. The earnest but enthusiastic Japanese university students making up one of John's Novex courses were dutifully impressed. And so was Penguin.

Perhaps I should at least be given credit for merely landing in a bog and not finding one of these.

The PIK series: Jukka Raunio has written a book about the different aircraft designed and built by PIK (the Helsinki University Aero Club). Called *PIK-sarjan lentokoneet*, it is generously illustrated and looks an interesting read if this is one of your langauges. Copies, priced at FIM250 plus postage, are available from Jukka at Sammontie 14 B 11, 04230 Kerava, Finland.

The latest edition of Laws and Rules is now available from the BGA office at £1 plus 20 p&p

Barry (My Friend The Instructor)

Barry is an instructor and a damned good instructor at that. He's flown more 300 and 500kms than I can recall and been to heights many of us have only dreamed about. However, Barry does have a problem. He's unable to talk.

Long ago in my early flying years (well not that long ago) I never noticed Barry, although he was always around. Barry was an unassuming small sort of a fellow, whose face was nearly always black. It wasn't until I gained my Silver badge that I started taking notice of Barry. At first we would meet in the corner of the hangar or inside a trailer to get out of the draught. Barry never said anything but did enjoy a smoke. Thick black smoke, the blacker the better. I never knew how he could stand it, but stand it he did.

I always felt Barry was trying to tell me something and I spent time studying him whenever I had the chance. At times this could be extremely frustrating and sometimes I felt Barry was winding me up, so every so often I did the same thing to him. Pretty soon we were inseparable. He always flew in the back, as instructors do, and after a flight I would help him out (he couldn't get out by himself) and I would just look at him in amazement. He had so much to tell me if only I could understand what was beneath that lazy smile.

Actually his teeth were beneath that lazy smile, uneven teeth at that, some sharp but most rounded or flat on top. He really should have had them seen to but I never said anything. I just looked and looked and knew that one day his secret would be mine.

I suppose it must have been on the last good day of the year that Barry and I set a moderate triangle, 200km or so. We zipped round in well under 3hrs. It was superb. I helped him out and was met by a huge grin. He was happy. But under his grin it was obvious someone had repaired his teeth. He looked so much better but perhaps it had been overdone as some of them were quite sharp, almost like the teeth of a hacksaw blade and for the first time I began to understand what Barry was trying to say. He was getting to me.

With the onset of winter we each went our separate ways. Barry stayed in a lot but he did write and send me a picture of his teeth, which I thought extremely strange.

Many times over the winter I looked at those teeth - it was almost like looking at Barry himself. He was telling me something and I was now listening. I was getting the message. I was beginning to understand. Yes, Barry was a good instructor and I knew he had the power, the ability and the knowledge to turn Silver into Gold.

I can't thank Barry enough and would like you all to meet him, so I have invited him to fly at my club - Dukeries at Gamston. I hope you will make him welcome but don't expect to understand him straight away as he is a rather strange fellow - my friend the instructor, Barry Graph.

Regards - ALBERT ROSS (Perhaps better known as David Prosolek)

Almost all the waves used for soaring are mountain or lee waves which remain over the same area for long periods. There are other types of wave which are not anchored to the topography. These are far from stationary. They travel long distances and there is only one chance to get into lift as the wave goes by. To stay aloft one must be ready to go cross-country with the wave.

Conditions for waves

Any disturbance which jolts the air up or down produces a wave but unless conditions are suitable the wave tends to die out. Waves travel well along a surface of density discontinuity. One can see this if you throw a brick into the water. Most of the wave energy travels outwards along the surface. In the atmosphere a temperature inversion acts as a surface of discontinuity and waves often travel along the inversion.

Fig 1 shows the profile of temperature at an inversion. If the air above the inversion has only slight stability or the windspeed increases with

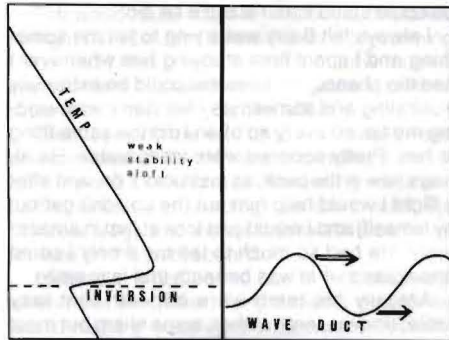


Fig 1. The temperature profile at an inversion forming a duct for waves to travel along.

height a wave duct is formed. Then the wave can travel long distances with very little attenuation. If the wave moves into wind its speed over the ground is reduced and with most lee waves becomes zero.

Setting off waves

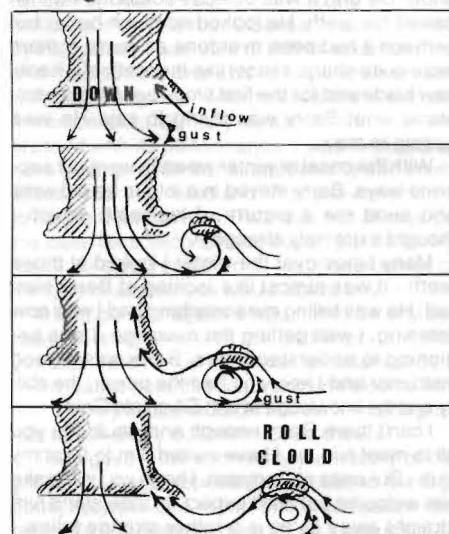


Fig 2. A downburst spreading away from a cu-nim and forming a roll cloud with a squall at the gust front underneath.

ONE CHANCE WAVES

Tom describes a type of wave which puts in a brief appearance but may be rewarding for the lucky pilot



Tom's photograph (B) of an arc of cloud from an equatorial cu-nim outflow.

A mountain ridge is only one of the mechanisms to set off a wave. The very rapid descent of air from a cu-nim which forms a downburst can produce an expanding wave. The effect is like dropping a rock into a pool of water; the wave radiates outwards in an arc. In the atmosphere such a wave is made visible when the air is lifted enough to form a line of cloud. Fig 2 shows how a downburst spreads out from beneath a cu-nim to form a roll cloud.

The panoramic photo by Diana King illustrates such a cloud spreading from a thunderstorm and bringing a squall. Photo B shows an arc of cloud from an equatorial cu-nim.

Undular bores

An advancing cold front sometimes produces a similar effect over a larger area. The thrust of cold dense air (shown shaded in Fig 3) sets off a wave in the warmer air ahead of it. This wave may travel faster than the wedge of cold air and becomes separated from it. Eventually an unexpected wave affects regions far ahead of the originating front. Fig 3 A and B show the wave moving ahead of the cold wedge.

It is quite common for the air ahead of the cold front to contain an inversion. When the inversion acts as a wave duct the wave can travel hundreds of miles with very little attenuation. The

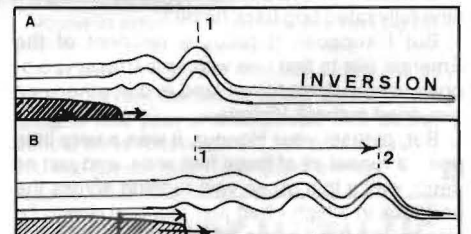


Fig 3 Undercutting cold air (shown shaded in) setting off an undular bore ahead of it. 3B shows how the wave moves out ahead of the cold thrust.

effect seems to be enhanced when the wave is guided along a coastline which has rising ground inland. This channels the energy along a path parallel to the coast.

The effect on the atmosphere is similar to a

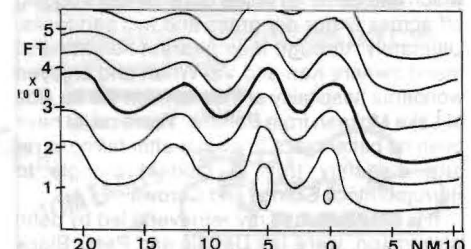


Fig 4. Cross-section of morning glory waves moving to the right.



Diana King took this panoramic photo of a roll cloud.

tidal bore moving up a funnel shaped estuary; such waves are described as "undular bores". On a river the bore develops on the surface; in the atmosphere the bore is most prominent at an inversion and is known as an "internal undular bore".

Pressure jumps

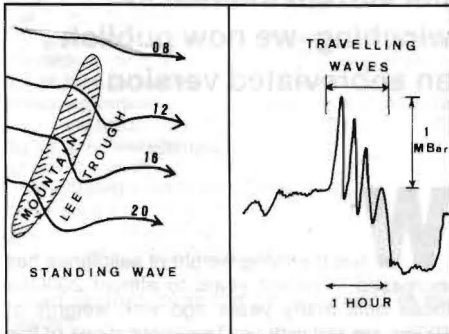


Fig 5 Pressure changes associated with waves. Lee wave trough on the left; microbarograph trace of moving waves on right.

Lee waves often produce irregularities in the surface pressure. The pressure increases on the windward side of a mountain range and falls on the lee side. Sometimes this lee trough is such a marked feature that it is drawn on synoptic charts. (Left side of Fig 5.). Moving waves also have their own pressure fluctuation. This is generally rather small and may only be detected by a microbarograph. The records from a network of these instruments makes it possible to track moving waves as they travel across country. Fig 5 (right side) illustrates the kind of pressure trace produced by a travelling wave. Time increases towards the right and the trace shows the first wave produced the biggest pressure jump. Microbarographs can detect many travelling waves which form in air too dry for clouds.

Varieties of travelling wave

There seem to be two main classes of travelling wave. One is the undular bore which can occur ahead of a cold front and the other is the "solitary wave". Both can give a line of strong lift. Solitary waves are an isolated phenomena which are particularly long lived; they usually have a rotor-like vortex inside. They can maintain themselves for many hours and travel hundreds of miles. Minor waves of very small amplitude are quite common. Occasionally a solitary wave can have an enormous amplitude of several kilometres. In one example observed in the USA the perturbation extended right up into the lower stratosphere. The initial disturbance may be due to an advancing cold front, a cu-nim downburst or the collision of two sea breeze fronts. The wave may be rather chaotic at first but it becomes focused into a solitary wave if a suitable wave guide exists.

The title "solitary wave" can be misleading because one may meet a sequence of solitary waves travelling as a group. Solitary waves trav-

elling in different directions can pass through one another and continue unchanged in the original direction. Where these waves collide the roll cloud grows deeper and cumuliform turrets may sprout from the wave. Some turrets quickly curl over and break. In a water tank such waves can also be reflected off the walls; they then move in the opposite direction with no apparent change of amplitude.

In the central United States very large solitary waves sometimes trigger off a new region of thunderstorms hundreds of miles from the original disturbance. European thunderstorms also produce a gust front with an accompanying roll cloud which can evolve into a solitary wave. (See Diana's panoramic photo above.)

The morning glory

The most regular and best documented set of travelling waves occurs over the Gulf of Carpentaria in Northern Australia. The waves are a common occurrence in the Australian spring (many have been seen in September and October). The morning glory arrives as a very long roll cloud which is often remarkably straight. However, a bend of up to 30° may appear where the bar crosses the coastline. The wave bar has been seen to reach a length of 600 miles.

The cloudbase is generally about 1000ft with a depth of some 3000ft but on occasions the base may come down below 300ft and have a depth of more than 6000ft. The advancing cloud can look very threatening. Wally Wallington told the story of the lorry driver who was so alarmed when he spotted this cloud approaching that he stopped his lorry and took shelter underneath.

Morning glory clouds are generally found early in the day. Their average speed is about 20kt and this tends to increase with time; some may exceed 30kt. Their passage is accompanied by a squall with a sudden change of wind direction. There is usually a broad area of smooth lift over

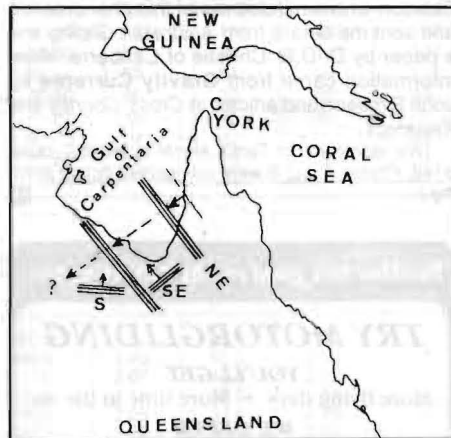


Fig 6. Map of the morning glory wave area.

Morning glory clouds photographed by Alaric Giles and reproduced by kind permission of Skywings.



and ahead of the leading cloud. Rates of climb can be 20kt and the lift has been found to extend above 10 000ft. A band of altocu sometimes forms above the main wave.

Although the leading cloud may be followed by several parallel bars these are not usually recommended for soaring. They are apt to be turbulent with strong sink in between.

Source of the waves

The commonest wave comes from the north-east. It is formed the previous evening from the collision of two tropical sea breeze fronts over the Cape York peninsula. Some waves are cloudless and can only be detected by the accompanying squall and wind shift and the micro-barograph trace. On most days there is enough moisture for a cloud bar to form. Other waves arrive from a southerly direction. Some of these are probably due to thunderstorms far inland the previous day while others seem to be set off by cold fronts. Waves have been observed to come from several directions on the same morning.

Soaring the morning glory

The leading cloud bar is usually smooth at the front but becomes rough at the rear; this shows the lift ahead of it is also smooth but the sink behind it can be rough. Air flows up the cloud front, over the top and back down the rear side in much the same manner as a lee wave cloud. There is usually a rotor inside the cloud and conventional wisdom says keep out of cloud. It was thought that anything as flimsy as a hang glider would

be taken apart in the rotor but one pilot managed to get through intact (but rather shaken). When there is more than one wave bar the followers look more turbulent.

The region round the Gulf of Carpentaria looks rather unfriendly for landing out. A motor glider gives more peace of mind and very fast 300km flights have been done in a Grob 109. Even hang gliders have flown the wave successfully - some were launched by "trikes" (motorised hang gliders with three wheels). Launching three hang gliders with one microlight needs planning. Before the launch the gliders are spaced out at intervals away from the advancing wave, the last to go being furthest away to allow for the movement of the wave. The take-off direction is away from the wave and a dolly is needed for the ground run. The wind direction suddenly shifts as the leading edge of the wave arrives overhead. To get the timing right one party sent a radio equipped 4WD upwind to watch for the wind shift.

Decay of the morning glory

Most soaring flights have been between dawn and about 10am. As the day heats up the cloud moisture decreases and eventually there is nothing to mark the wave. However, it seems to continue as a cloudless circulation for several hundred miles. Presumably the heating overland eventually breaks the inversion and destroys the duct. Pilots find it difficult to stay with the wave after the cloud has dissolved. No one seems to have followed it to its final decay far inland; the return might end up with a landing in the bush and there are very few tracks there.

Acknowledgements: I am indebted to Brian Bateson who reminded me of this phenomenon and sent me details from *Australian Gliding* and a paper by Dr D.R. Christie of Canberra. More information came from *Gravity Currents* by John Simpson and articles in *Cross-Country* and *Skywings*.

(We regret that in Tom's article in the last issue, p149, Photos A and B were transposed during printing.)

THE WINCH LAUNCH

Chris gave this paper on the system of winch launching at a joint meeting of the RAeS and the BGA at Bristol University in 1991. In view of the current interest in winching, we now publish an abbreviated version

While the flying weight of sailplanes has increased in recent years to almost 2000lbs those built many years ago with weights of 600lbs are still with us. The implications of this range of weights is not always appreciated and winch launch accidents have increased.

Winch engines of 450hp are now in use, their power transmitted by heavier cables of 5 and 6mm diameter. The BGA has introduced a series of weak links to meet the different requirements of the fleet, but the idea has only met with partial success because a very powerful winch can easily break a low value weak link if badly handled.

This paper is the first time the implications of a range of flying weights on high powered winches is discussed analytically. The theory of the winch launch stated here describes how winch power may be used efficiently and safely.

The mechanics of the winch launch

This analysis makes the following assumptions:

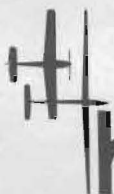
1. The wing drag force is small - less than 5% of the lift force.
2. The cable is straight at all times, so that both ends of the cable subtend the same angle to the horizontal.
3. The sailplane airspeed remains constant at 100ft/sec (about 60kt) throughout the launch.
4. All forces pass through the glider's C of G.

The fourth assumption is important for the optimum condition of the winch launch. The sailplane rises under the action of the three forces in the manner of a kite: cable tension (T), weight (W) and wing lift (L). This vertical movement is explained entirely by reference to mechanics. Aerodynamics don't come into this analysis.

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Initial phase of the launch - ground run

The ground acceleration of the sailplane is found from Newton's formula

Where $P = W/g$
 $M = W/g$
 $P = T = \text{cable tension}$
 $f = \text{acceleration}$
 Hence $f = \frac{P}{M} = \frac{T}{W} \times g$ (1)

Forces acting on a sailplane in the winch launch

The aircraft weight is fixed as a result of the design and pilot weight. The cable tension varies directly with the wing lift. For constant airspeed, the wing lift balances the resultant cable tension and weight. The maximum angle of climb at any moment is due to the relationship between these forces. The pilot's job is to maintain a constant airspeed.

To develop the analysis further:

Let ϕ = glider's climb angle W = of the glider
 β = cable angle to horizontal T = cable tension
 L = lift force generated V = airspeed
 Resolving vertically: $L \cos \phi = (W + T \sin \beta)$ (2)
 Resolving horizontally: $L \sin \phi = T \cos \beta$ (3)
 By squaring and adding: $L^2 (\cos^2 \phi + \sin^2 \phi) = W^2 + T^2 (\sin^2 \beta + \cos^2 \beta) + 2WT \sin \beta$
 But since $\cos^2 \phi + \sin^2 \phi = 1$
 And $\cos^2 \beta + \sin^2 \beta = 1$
 $L^2 = W^2 + T^2 + 2WT \sin \beta$ (4)

Load factors imposed on the glider in the launch

By definition load factor $L = N \times W$ (5)

where N is the load factor

So substituting in (4):

$N^2 W^2 = W^2 + T^2 + 2WT \sin \beta$

Dividing by W^2 and rearranging:

$(N^2 - 1) = \frac{T^2}{W^2} + 2 \frac{T}{W} \sin \beta$ (6)

The values of the load factors at cable angles up the launch are shown in Table 1.

T/W Ratio	0.5		1.0		1.5		2.0	
Cable angle B°	Climb angle	N	0°	N	0°	N	0°	N
0	26.6	1.12	45.0	1.41	56.3	1.8	63.4	2.24
10	24.4	1.19	40.0	1.53	49.5	1.73	55.6	2.39
20	21.9	1.26	35.0	1.64	43.0	2.07	48.0	2.52
30	19.1	1.32	30.0	1.73	36.6	2.18	40.9	2.65
40	16.2	1.38	25.0	1.81	30.3	2.28	33.8	2.75
50	13.1	1.42	20.0	1.87	24.2	2.36	26.9	2.84
60	10.0	1.48	15.0	1.93	18.1	2.42	20.1	2.91
70	6.6	1.48	10.0	1.97	12.0	2.46	13.4	2.96
80	3.3	1.49	5.0	1.99	6.0	2.48	6.7	2.99

Climb angle calculation

From equation 2 we get:

$L \sin \phi = T \cos \beta$

Or $NW \sin \phi = T \cos \beta$

So that $\sin \phi = \frac{T \cos \beta}{N W}$ (7)

Knowing B, N, T, ϕ can be derived.

It is interesting to note that these angles change at an almost constant rate. As the T/W ratio increases, the increase in climb angle increases. This suggests that there is a limiting

angle at take-off of about 80° which will not increase no matter how much power is used or how light the sailplane may be.

In reality, the maximum climb angle that can be achieved is a lesser figure that is controlled by the geometry of the launch. The cable must always be drawn into the drum in still air. To allow higher angles to be used, the cable would have to be paid out!

Power demand in the climb on the winch

Once the climb angles in each sector are calculated, it is possible to devise a geometrical construction to work out how far the sailplane rises within the sector, and how much the cable is reduced in length between the start and finish of the sector. The power required can be deduced. Knowing also the airspeed, the time to cross each sector can be found.

The work done by the winch is:

Power(hp) = $\frac{D \times T}{550 \times t}$ (hp) (11)

Where D is the reduction in length in feet of the cable in the time period t . T is, as before, the cable tension in lbs.

This work must equal the work done to carry the sailplane upwards in space and the work done to overcome the drag of the sailplane. This result may be achieved in either of two ways.

The first is to resolve along the direction of the

T/W Ratio	0.5	1.0	1.5	2.0
Cable Angle B	Brake horse power			
0-10	79	117	144	157
10-20	73	115	132	142
20-30	64	98	117	127
30-40	53	84	99	111
40-50	46	70	82	94
50-60	34	55	65	73
60-70	27	40	47	52
70-80	16	23	28	31

Conclusions

Although this account of the theory of winch launching is short, it shows how convenient the concept of the T/W ratio is. It removes at a stroke the need to adjust each launch for wind and describes the launch precisely for the aircraft weight and cable tension.

Launched at the same T/W ratio the launches characteristically will be the same for any glider. The constant T/W ratio implies that if the weight increases, then the cable tension will also increase to balance it. Thus the training two-seater and the light single-seater will get launches that have the same characteristics. Pupils will not experience unfamiliar high accelerations and high ascent angles that disorientate them.

Table 1 shows the loads on the sailplane structure. It is for the designers and regulators to decide what values of the T/W ratio are permissible. A decision on the maximum T/W ratio allowed will give certainty to designers of winches and greatly improve safety.

The conclusions in this paper question the need for the winch engine to be higher power than 200 to 250hp. Engines of 450hp and more seem destined to run at under half power most of the time, yet the risk of accident if mishandled is very high. The regulators should look again at engine sizes to decide if output should be limited to a maximum figure.

Where Is Gliding Going?

I am a newcomer to gliding and want to continue this intoxicating sport - though perhaps not yet. I am a businessman and time is precious.

How do I juggle time for gliding with a family?

Mine are supportive but rightly claim part of my weekend and most of my holiday. I started by limiting gliding to one day at the weekend - but then I almost always picked the wrong day. I was taking them to the zoo in sunshine and standing about on an airfield in the rain.

I've tried bringing my small children to the club but they soon get bored and my wife hates all the hanging around. It might just be better at a larger club with a decent clubhouse and a few distractions for the children such as a simple sandpit and swings. But I don't think this kind of thing rates very highly in the dedicated glider pilot's mind. He has obviously overcome the problem or divorced. The lucky few seem able to involve their families but they are a rare species.

One solution might be a professional club where I could book an instructor and be assured of so many gliding hours. On the negative side I would lose the feeling of involvement and the pitching in on the airfield which is so much part of the enjoyment of the sport.

The more I worry about it the more certain I am that I will have to put gliding on hold for some years until the children have their own lives. By that time I hope my wife will have found an equally fascinating hobby and won't mind my disappearances to the airfield. I think this is the less painful route in the end.

I am sure there are many potential pilots like me and the only reason gliding is a minority sport is that only a minority can fit it into their life styles. And this is why it is obviously a sport for older people. The young are simply too busy and committed. - **A would-be glider pilot**

DEREK FLIES THE DUO DISCUS AND DG-800s

Derek, who has flown 170 glider types, tries out these high performance gliders and is impressed

We have come a very long way since the Grunau and Kite days when each new type required special briefing about the unusual handling characteristics. Looking back on my own experiences, I vividly remember my first flights in "high performance" gliders. John Furlong's Sky was the first I ever flew and this was followed by an Olympia owned by Bill Nadin.

Now these are both considered vintage types and treasured by their new owners.

Almost all the modern designs are wonderful and it is difficult to find fault except in terms of the stalling characteristics. In general the two-seaters are too docile and almost impossible to stall or spin, whereas there have been one or two of the single-seaters with very little stall warning and a sharp wing drop at the stall.

The Duo Discus is a truly memorable machine which I think has a great future ahead of it as a basic and cross-country trainer. I flew this recently at Mathew's Field, a super site in the Sequatchie river valley near Chattanooga, Tennessee. The valley is very wide with soarable ridges on either side, extending for about 60 miles. Being more or less a continuation of the well known Appalachians, it offers the opportunity for very long distance ridge and wave flights.

This was the first Duo Discus to be delivered to the United States and was to be on show at the SSA Soaring Convention at Huntsville, Alabama. I was lucky to fly with Tom Knauff, the US agent for Schempp-Hirth and well known as an instructor, for his books and for several world distance record flights.

No wonder that everyone who has flown it is raving about the handling. In spite of its 20m span, the rate of roll is much the same as you would expect from a Standard Class machine. It has a very docile stall in straight flight, yet can be made to spin at least a turn or two at most C of G positions; a necessary feature for a trainer.

The airbrakes are powerful, yet easy to use as they don't snatch badly at high approach speeds. The cockpit is large and comfortable and the whole aircraft is beautifully laid out and finished. Although it is not fitted with flaps, it still seems to run well against the Open Class gliders, perhaps because the climbing performance is so good. What a beauty!

I have also just flown another outstanding machine, the DG-800. This can be a self launcher or a pure glider and the one I flew was the demonstrator DG-800s 18/15m glider.

The 800 has a completely new aerofoil with very different characteristics to the one on the

DG-600. Designed as an 18m glider, it offers a low wing loading when flown without ballast, giving it an exceptional climbing ability. It can also be flown as a 15m but, I would guess, not often in this country except for 15m competitions.

The original machine was loaned to Roland Termaat of Holland for the World Championships and he was placed 5th in his first World Championships although he hadn't flown the glider until the week before the competition. It is certainly a glider most pilots would feel at home with immediately and not one which takes a hundred hours to learn to fly well.

I took a tow to 1500ft and was immediately impressed by both the performance and handling. So much so that I was happy to set off cross-country after the first climb to about 3000ft in early April conditions. It seemed too good an opportunity to miss although there were no electrics and only a Winter 5m vario. This was an unusual treat for me as usually, when trying a new glider, I am expected to get down as soon as possible. In fact I cannot remember going cross-country on a first flight on a borrowed glider ever before. Flying the DG-800 you begin to realise why the German designers all wanted an 18 Metre Class.

The most outstanding and almost unique feature of this design is the excellent lateral control at low speeds. This is so good that it is not recommended to set negative flap for take-off in any conditions. It has full span flaperons rather like the early LS-3 and they are set to +13 for take-off whether on aerotow or winch.

The significance of this is apparent if you have watched pilots making their first flights in a flapped machine. First, concentrating on keeping the wings level with their left hand on the release knob in case the wing goes down and they have to release. Then, a few seconds later when the tail is up, they have to reach for the flap lever with the interesting possibility of getting the wrong lever and operating the airbrakes or undercarriage in many machines. With negative flap, most gliders will not leave the ground before the tug is off the ground and into its climb. If the flap movement is too sudden and a little late, the glider zooms up when the flaps are lowered, surprising the pilot. This often sets up a PIO with the glider pitching violently close to the ground and causing concern to the tug pilot, the CFI and everyone watching.

My first take-off was by aerotow in a light 80° crosswind, almost the worst condition for dropping a wing on a take-off. I expected a problem



Derek with the DG-800s photographed by Jochen Ewald.

and that perhaps the manufacturers were exaggerating their claim, but there was ample room and this setting was used for the whole tow.

This excellent aileron control with the normal take-off flap setting makes converting to flaps a non event and makes this an ideal club machine for the top of your club fleet when they get money from the National Lottery.

The cockpit is the usual DG arrangement with an exceptional view because of the low sides. The canopy is hinged to open forwards with a sensible positive locking and a separate lever to jettison the canopy, just ahead of the normal canopy locking lever on the right hand side of the cockpit wall. This single lever releases the canopy and the front is forced up, pivoting at the rear to ensure it leaves the aircraft cleanly. DG

Terry Joint's photo of the Duo Discus being flown by David McCarthy and Geoff Seaman.





have been one of the foremost to improve cockpit safety and to reduce the seriousness of injuries with nose down crashes and collisions with solid objects.

The flap lever, airbrake and undercarriage levers are all on the left, but as the undercarriage lever is well below the others I do not think there is a risk of confusion. Perhaps my only criticism of this particular aircraft was the difficulty on the first flight in seeing that the undercarriage lever was fully home with the wheel down. Probably some extra white paint would illuminate the area and make this easier. On becoming more familiar with the lever on my second flight, it was obvious when it was locked because the handle lies flush with the cockpit wall when properly home.

The handling with the +13 flap down setting is very good and this is the preferred setting for circling in narrow thermals. I found that I could circle happily down to about 40kt and the stalling speed in straight flight was only about 35kt.

There is plenty of warning buffet during circling flight if it gets too slow, and only persistent pulling back causes a wing to drop and the need to ease forward to recover. Like all the DG range, the 800 is easy to fly accurately and very little attention is needed to keep the yaw string straight.

The best L/D claimed is better than 50:1 and it is quite obvious that the performance at even 100kt is superb. Above that speed, with the flaps set fully up, the ailerons become very heavy, probably due to the wing flexing. This is not a bad feature as it makes it difficult, if not impossible, to over-stress the wing by using large aileron deflections at high speeds. (With most modern designs the control movements have to be limited to one third at V_{NE} to avoid over-stressing the wing.)

The airbrakes, when combined with the landing flap setting, proved very effective and unlike some other flapped machines the lateral control does not deteriorate seriously using the landing flap setting. It is obviously safe to use the full landing flap for any landing.

I always like to explore the sideslipping on a new type so I deliberately put myself ridiculously high and close for the approach to check the sideslipping with full airbrake. As expected the descent was so steep that I ended up having to stop the sideslip and reduce the airbrake setting for the last part of the approach and to get down on my spot. (I always make a point of a precision landing on the first flight of the day, just to satisfy myself that I haven't lost my touch during the winter - I hadn't!)

Still not really able to believe that the ailerons could be so effective at low speeds, after touchdown I returned the flap to the +13 position and

experimented with them during the ground run. They worked beautifully right down to walking pace before I was finally unable to keep the wings level. The control seemed to be about the same as a K-13!

The next day I flew again, but this time taking a winch launch with the 15m wingtips which have winglets. Again I just set the flaps to +13 and left them there until after the launch.

I seemed to have picked a bad time to launch and couldn't find anything worthwhile around the airfield. Down to about 650ft indicated, I finally ran into a small thermal which developed as I climbed and I was soon up to nearly 3000ft and free to experiment.

The shorter wingspan plus the effects of the winglets give it an outstanding rate of roll, certainly as fast or faster than any other 15m glider I have flown. I timed it as somewhere between 2.5 to 3sec to reverse a 45° turn at 50kt. Again the stall was extremely docile and at my weight it didn't want to spin without spiralling out after less than a turn.

All good things have to come to an end and I had promised only to make a short flight so that another pilot could have a go. So once more a high, full airbrake sideslip approach and a landing rolling up to my wingtip helper.

You know, I could really enjoy a competition flying this one. Although it is a long time since I kept a record of all my glider flying, one thing I have always recorded is the types of aircraft I have flown. Even this presents problems. For example, do you count a Cessna 150, 172, 180 182 as individual types. I only count them individually if they have some totally different or feature. I have no hesitation in counting all the nose wheel types of Rallye as one type, but the tail dragger 235 version is quite definitely a new type even if its towing performance is much the same as a 180!

A similar problem occurs with the gliders, where even small changes, such as fitting a normal tailplane and elevator in place of an all-moving stabiliser, can completely change the flying characteristics.

Checking my logs, I find that I have now flown 170 different types of glider bringing my total of all kinds of aircraft to just 300.

To my mind nothing is so interesting as trying out something new and adapting to the slightly different handling required. It's great fun and obviously very good for your flying skills and perhaps means more than flying hours.

Never put off an opportunity to fly something new or different. I missed flying many interesting machines over the years because I was busy at the time, or would fly them after the other club members had flown. Usually my turn never came!

Jochen Ewald tells us that the Glaser-Dirks factory was taken over by DG Flugzeugbau GmbH & Co KG, led by Karl-Friedrich Weber and Gerhard Wolff on May 10. They have kept the staff and production is continuing at Bruchsal, Germany, and Elan, Slovenia. They are manufacturing the full range and are able to deliver aircraft and spare parts as before.

A few days later Wilhelm Dirks, the chief designer, successfully flew the DG-800b with the new Solo engine which replaces the Mid-West. ✈



VIDEO AND BOOK REVIEWS

VIDEOS

Champions of the Wave and **Wind Born** on VHS PAL video and available from RD Aviation at £29.50, including p&p. (See advertisement on this page.)

The major difficulty facing a producer of a full length film on gliding is to provide a central theme strong enough to hold viewers' attention and interest throughout. The original idea behind these two films was to compare the soaring ability of birds, developed over thousands of years, with that of mankind, so recently acquired. This led to the involvement of Wild South, a division of TV New Zealand, with a number of outstanding natural history documentaries to its credit. Wild South already had extensive footage of soaring birds, particularly the albatross, and therefore concentrated on filming sailplanes, including those at the 1995 WGC at Omarama. However, once shooting was completed and the result reviewed it was decided to revise the original concept. The outcome is two very different films.

Champions of the Wave is about the 1995 WGC and the influence of wave on the final results. It starts with an explanation of lee waves and why the South Island of New Zealand is so suitable for their generation. Dick Georgeson, NZ gliding pioneer, recalls his early exploration of the area and his subsequent world altitude record with some interesting historical footage. Competition flying is described and members of the British team feature prominently.

The film then focuses on the final day's task in the Open Class, and the contest between the two German pilots and local favourite Ray Lynskey. Whilst this concentration results in the exclusion of other interesting events during the Championships and is somewhat partisan, it achieves the objective of holding the attention of glider pilots and general audiences alike, which is a remarkable feat by the production team who had not set out to make a film record of the Championships.

The second film, **Wind Born**, is designed to show gliding through the eyes of a girl learning to fly. The theme avoids the tag of "Bimbo goes gliding" by featuring Lucy Wills as the pupil with her father Gavin as the instructor. The unconventional training sequences are well filmed and the dialogue refreshingly spontaneous, with some flashes of insight into the father/daughter relationship.

Using the family's ancestry, some historical footage of Philip Wills' early flying in the UK and subsequent wave flight in New Zealand is included. Once Lucy has gone solo Gavin takes her on an ambitious cross-country in a Janus from Mount Cook to Te Anau via Milford Sound. I accompany them in my LS-6 on a flight which is technically difficult due to the variation of weather and topography *en route*. The closing sequence shows the Janus having to land on a remote beach in the depths of Fiordland.

The success of this film lies in the production decision to "keep it in the air". Much of the resulting aerial footage is spectacular, aided by

the latest miniature camera technology, some ingenious camera mounts on both the gliders and accompanying helicopter and carefully chosen locations.

My criticism of both films, but particularly the second, is that they tend to concentrate on the superficial and dramatic at the expense of the contemplative and subtle. Whilst the **Champions** film does contain some suggestion that there is more to competition flying than just winning, the second implies that glider pilots are adrenalin junkies throwing loops, scraping wing tips along mountainsides, clearing passes with inches to spare and extricating themselves from tight corners over totally unlandable terrain. The constant objective seems to be to provoke an audience reaction of "oh wow", rather than "how interesting".

I would have liked to see a more balanced approach, to include the constant assessment of conditions and terrain combined with the attempt to develop an affinity with one's surroundings and an intuitive understanding of the medium within which one is flying.

That said, both films are highly successful in their portrayal of modern gliding and, assuming commercial success, will result in much increased public awareness and understanding of the sport. In addition they demonstrate that gliders can now be used very effectively to illustrate the wonders of the natural world. This could lead to a series in which gliders feature as the medium

for exploration of remoter parts of our planet in the same way that Cousteau used divers under the sea. In the meantime, anyone buying these videos will not be disappointed.

JUSTIN WILLS

Grenzschich (Boundary Layer) and **Francis Rogallo** directed and produced by Charlie Jost. For more details contact Charlie at Herstellung von Fernseh, Industrie, Werbe und Lehrfilmen, Ladenburger Strasse 10, D-69198 Schriesheim, Germany. Tel 0049 6203 62940 fax 0049 6203 660428.

This is a fascinating 30min video about testing gliders in Germany. Every year the Idaflieg students from the various Universities Academic Flying Groups (known as Akaflieds) camp at Aalen Elchingen to undertake the performance evaluation of the latest gliders. This is done by comparison flights using a carefully calibrated DG-300 as the "sacred cow" and measuring the difference of height between it and the test aircraft after several minutes run at each speed.

The film shows exactly how this was done for the Duo-Discus.

It then goes on to show and explain the stability and control tests on another new two-seater, the Darmstadt D-41, including the all important stalling and spinning tests. It is beautifully filmed with a good English commentary making it a most interesting programme for any flying en-



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They will not be screened on TV before mid 1997 and have been produced by New Zealand's natural history division of the State owned television channel.

'Champions of the Wave' is the background story to the discovery of the wave in New Zealand (Omarama) and involves the exciting competition for the open class title between the two Germans, Schwenk and Schroeder and New Zealander, Ray Lynskey at the '95 World Gliding Championships. The filming is spectacular – to get the air to air shots involved the use of a filming helicopter which was available with unlimited hours.

The second video is the story of Lucy Wills, (a third generation Wills and a descendant of Englishman Philip Wills), learning to fly (soar) in the snow covered Southern Alps of New Zealand against unbelievable scenery. Called 'Wind Born' or 'Lucy learns to fly', it is a human interest story that prospective new soaring pilots can well relate to. Exceptionally well produced.

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thusiasm and for clubs to show their course students and members on wet days.

Perhaps the most memorable shots are of rear fuselage and rudder flutter and there is also a short clip from the other well known German film showing aileron flutter on the SB-9, a horrifying spectacle demonstrated on an extremely strong glider with a very brave test pilot. These pieces of film are, I believe, unique.

Charlie Jost, has also made an interesting video on Francis Rogallo. Rogallo was the aeronautical engineer who designed completely flexible wings, starting with kites and then developing the idea for man-carrying. Although not strictly a film about gliding as we know it, it is of interest to every flying enthusiast from modellers to power pilots.

At the time of the first American space flights, NASA became very interested in his ideas as a better way to bring down booster rockets and space craft. The Rogallo wing offered a promising alternative to a normal parachute as it could have a better glide angle.

This intriguing film shows many of the early developments and experiments made by NASA and leads on to the evolution of the modern hang glider and flex-wing microlight.

Again this would be a useful addition to club libraries.

DEREK PIGGOTT

BOOKS

WEATHER: The Ultimate Guide to the Elements, edited by John W. Zillman, published by Harper Collins and priced at £14.99.

John W. Zillman is director of the Australian Bureau of Meteorology. The contributors are William J. Burroughs, Bob Crowder, Ted Robertson, Eleanor Vallier-Talbot and Richard Whitaker representing the UK and the USA as well as Australia.

This is a most attractive and magnificently illustrated book (288 pages and more than 500 colour photographs) which covers an astonishingly wide range of weather related subjects. It is a book to browse through or dip into to look up a particular feature of the weather. Selective

reading is made easier by the user-friendly nature of the text; when new and possibly unfamiliar terms are introduced there are usually references to other pages where the word is explained or the concept described in more detail.

The enormous number of pictures are almost all of a high standard and in some of the early chapters the pictures are better than the text. There are a few dubious statements such as "High pressure systems normally result from air sinking." This mixes cause with effect; air sinking down the lee side of a mountain range can produce a trough of low pressure. However, this is a trivial quibble; the book is full of fascinating items related to the weather.

Most of the first seven chapters are fairly short but packed with information. Weather systems, depressions and fronts are described but there are also many other topical subjects. Climate Change, Ozone Depletion, The Greenhouse Effect, Air Pollution and Global Warming are each given a couple of pages. The last chapter (Weather in Action) gives a more detailed description of weather phenomena starting with dew, fog and frost and continuing to clouds, precipitation, storms and optical effects. The collection of cloud pictures is one of the best I have ever seen. Each cloud type has a page to itself, sometimes two pages when diagrams and extra pictures are added.

Throughout the book the illustrations are outstanding. They range from recent photos of violent phenomena such as hurricanes, cumulonimbus, thunderstorms and tornadoes down to old paintings of the Little Ice Age and an Ice Fair on the frozen river Thames. Some show the effect of climate on landscape, others show wild life which has adapted to different climates with pictures of penguins on an icefield and camels in the desert. There is something to attract everyone in this book.

At the back there is list of books and magazines for further reading and some addresses for Internet users.

TOM BRADBURY

After Solo by Tom Knauff and available from Knauff and Grove Soaring Supplies, 3523 South Eagle Valley Road, Julian PA 16844, USA at \$31.70 including p&p.

Tom is a well known and respected American instructor and author of six other gliding texts.

Some have become standard training manuals in the US.

The target readers are early solo pilots trying to complete their FAA glider pilot's licence. While biased towards the American syllabus it can easily be used by British pilots facing the transition from first solo to Bronze and on to first cross-countries. The FAA syllabus is described in detail and resembles the BGA Bronze and the new cross-country endorsement.

The book is full of good advice on topics such as how a glider flies, landings, slow speed flight and stalls. One point that contradicts standard BGA instruction is recovering from a wing drop at low speed or near the stall. Tom recommends using rudder to pick up the wing, whereas the BGA recommends unstalling the glider by pitching the nose down, and using ailerons only when the speed has increased.

Spins, spiral dives and negative *g* are also discussed, before moving on to aerotows, thermalling, ridge and wave soaring. As beginners have problems flying accurately while say, listening to the instructor explain the theories of centring in thermals, these basic chapters provide useful revision.

Speed-to-fly theory is explained in an easy to follow manner. This section should be read by any budding cross-country pilot, especially given Tom's success in Comps and world record breaking.

The advice on practising field landings in motor gliders, field selection and dealing with irate farmers is worth reading several times. The chapter on emergency procedures may give early soloists some useful ideas for when it all goes wrong, but winch launch failures are not mentioned (very few US clubs winch). These sections deservedly form the largest chapters in the book.

Some differences between American and British procedures must be borne in mind however. The text is easy to understand, and not full of heady maths (although I'd have liked just a little bit more maths for the theory side) and can be recommended for early solo pilots, even with the above procedural differences.

JOHN WRIGHT

Please send all editorial contributions to the Cambridge address at the front of the magazine and not to the BGA office.

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Adventures of a Wooden Spoon

CHAPTER 22: Wooden Spoon Goes to the Seaside

Keith writes about the glorious July 22, 1995, Day 1 of the Midland Regionals, hosted by The Soaring Centre, when the trusty Tutor, coyly displaying its new trigraph DQD on the fin, was rigged and ready to go by 10am

I nearly bust a gusset trying to drag the Tutor to the front of the grid for a launch before the start of the Comp. In the end I could see I was only getting in the way, so resigned myself to launch after midday, with Southwold lighthouse on the Suffolk coast declared as the goal. As it happened an anonymous helper claimed to know Southwold well and was able to resolve a number of uncertainties before I set off.

"A lovely town", he said, "the home of Adnams brewery. Every pub is a showpiece for them. Land on the common, but mind the golfers." He seemed to have more confidence about my arriving there than I did. Ah well, "Be positive", that's my motto.

I climbed straight off tow to find cloudbase already at 4500ft above the site and set straight off. The brisk NW wind helped me rapidly along, while the cloud streets that were forming allowed me to progress without much circling. I was able to keep high, above 4500ft for much of the time, dolphining in the Tutor - indeed a rare experience. By the time Ely appeared, cloudbase had risen to 5500ft and I had already experienced the low point of the flight (until joining the circuit at Southwold - of more anon) of 2800ft.

Superb soaring days are good for the soul, but the uneventful flying tends to leave you little to relate. And so it was this time. The countryside unfolded in its summer glory, as each landmark gave way to the next. Passing Mildenhall at 4000ft cheered me up no end, for here I had fallen down on a previous attempt. Not that I had really been downhearted, but there is always that previous failure to niggle you.

On days such as this the open cockpit gives a feeling of great intimacy with the air that is always missing from under a perspex canopy, and I passed happily on my way without a care in the world. Sailing past the mother and father of a crop fire near Diss, I watched from almost 6000ft as the fire brigade battled with flames that must have been more than 50ft high on a mile long front. This was one thermal I had no need of and I sailed serenely past a towering column of billowing smoke more than a mile high in a sky that, to use a well worn phrase, looked like dynamite*.

The little white dot which proved to be Southwold lighthouse, hove into view shortly after the big white dot which turned out to be the dome of Sizewell B nuclear power station several miles further south. Navigation was a cinch with vis more than 30 miles and the coast of Suffolk and Norfolk gradually unfolded from the distant haze. I always find flying into the bulge of East Anglia exciting. As the coast arrives you really do know you've reached the end of the line unless you want to get wet feet.

Jumping northwards a couple of cloud streets we started the final descent to the goal from about 20 miles. The expected sea breeze front had not materialised and I was surprised that I hadn't seen any sign of it so far. In retrospect, close examination of the pictures I took approaching the coast shows a small cloud step just inland, but at the time I was not expecting the surprise that was awaiting me at the goal.

Just 3hrs and 5min after leaving Husbands Bosworth, Wooden Spoon and I passed the lighthouse at around 2000ft and did a circuit out to sea just for the hell of it. The ripples on the surface definitely indicated a north-easterly sea breeze which should have been undercutting the gradient wind, but I could see no sign of any frontal activities. The town was laid out exactly as described and after a few more circuits admiring the view I planned my approach on to the common.

* This was the 1000km day.



Wooden Spoon after her trip to the seaside. Photo by Keith.

Now, I had half noticed that we hadn't been coming down at the usual brick-like rate, and had some minutes flying sideways in the circuit with full rudder and opposite aileron to very little effect. Clearly we were in a thermal, so I straightened up and watched the green ball indicate 5ft/sec up (3kt). Without doing anything else for the next 10min but flying straight into the north-westerly wind Wooden Spoon and I climbed from 1300ft right back to 3500ft.

While sitting entranced, I was at last able to see the line of the sea breeze into which I had stumbled and which was well established about half a mile inland. Every now and again a tiny ragged puff of cloud would form in it at about 3000ft and then dissolve again within seconds. The front clearly extended up and down the coast as far as the eye could see and I spent a happy hour exploring to the north and south. I am not sure to this day why I missed the opportunity to follow it up the coast. I think the call of the famed brewery must have been too much even for this dyed in the wool aviator.

After a determined approach through the very active front to land on the common just past the seventh green, I set off on foot in search of the magic brew. Sitting outside a delightful ale house in the cool of the evening sea air, waiting for my long-suffering crew, I was able to watch the front move slowly inland until dark. By nine o'clock it had moved perhaps another mile to the west, the tiny rags of cloud marking its position long after all thermal activity had ceased.

Aah, the joys of vintage gliding. If only you knew what you are missing. ☑

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Think twice before grabbing the nearest thing to demist your canopy. Scratched canopies are opaque when the sun is low or when the light is fading and you are low.



When you clean your canopy use copious quantities of water and scrupulously clean cloths. Don't polish your canopy on windy, dusty days. It only takes a speck of grit to cause damage.



Always replace the canopy cover when the aircraft is not in use. You may not deliberately cover your canopy in grit but somebody else will surely do it for you. Slow down when you drive past aircraft and power pilots should avoid starting up and taxiing near other aircraft.

CANOPY CARE

Advice from Peter Gray with drawings by Matt Dawson

Adequate lookout in flight is highly dependant on clean, optically good perspex. Smudges and scratches are often opaque in their own right, especially when seen tangentially, but tend to remain minimally apparent until other influences enhance them, principally fading light and high humidity with lowering temperature.

When the ground becomes ill lit, the better light falling on the canopy from above is scattered by dirt, smudges and scratches. Outside features being poorly lit don't reflect enough light to shine brighter than this scatter so all you see is the dirt on the canopy. You cannot look out.

When the dew falls, it forms first on dirt and blemishes which means your canopy becomes (patchily) opaque prematurely and light scatter doesn't come into it. Canopies therefore should be clean with no smudges or scratches.

Smudges are easily avoided - never, under any circumstances, touch the perspex.

Greasy hair is also a problem but if your head is so close to the canopy as to "grease" it, then you are risking damage and an accident and should think twice about flying without readjusting your seating.

Dirt and grit are very difficult to cope with. If you clean perspex with the least trace of contaminant grit you will put a myriad of fine scratches on and ruin it. You won't see them in a bright light and won't know you've done it.

Spray cleaners, as used in the home, are deceptive - initially they help, being anti-static and will fill the very fine scratches with a material of similar optical density to perspex, but the effect isn't complete nor permanent. Every time they are used they almost certainly add more scratches. What's more these products contain iso-propyl alcohol which denatures perspex and ultimately causes crazing. They aren't recommended.

There is no point in doing anything to a canopy unless you wash off the grit first with huge amounts of water. The inside also gets very dirty and so does the canopy frame, rail, etc, so unless you scrupulously clean all parts then you will contaminate your cleaning rag and have achieved nothing. Similarly, your cleaning materials must be scrupulously clean and of known source. The clean chamouis you keep for washing the wings won't do.

Polishing to remove scratches is very difficult and time consuming, eg removing fine scratches

only from a 7ft canopy, inside and out, took 16hrs of genuine rubbing time.

Ensuring a grit-free environment needs a virtually sealed workshop with no draughts and no other activity. The lighting needs to be dim and at worktop level or you can't see what you're achieving, and as you work through the grades of grit the care needed to avoid contaminating the finer polishes is tedious and demanding.

At the end of it all, the result is never as good as new for the surface is distorted and optical clarity irretrievably lost.

Ideally canopies should never be washed (or polished). Treat them with sufficient care so this isn't necessary.

Unfortunately even canopies undamaged by the human hand will get grimy and dusty. When they do, washing them is a job that needs special tools, special conditions and some skill. Polishing them is a very specialist task.

The following four ground rules should go a long way toward preserving the integrity of your canopy and your safety in the air.

1. Never touch the perspex.

To check the canopy is locked, visually inspect the catches and lift on the frame and handles etc, not the perspex. Don't keep the nose down when retrieving by walking along with a hand on the canopy! Nor should you ever go through the DV panel on the move. If you believe you may need to because the tractor drivers may be inattentive or ignorant then brief them. How else will they learn?

2. Do not demist a canopy by wiping it.

If the canopy won't demist by being held open, then the question is one of airmanship. Do you fly or not? The conditions and materials at the launch point are never appropriate for canopy maintenance, only destruction.

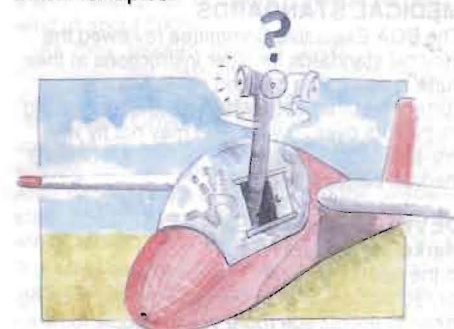
If the canopy steams up in flight and must be wiped, use a scrupulously clean wiper that lives in a polythene bag in the cockpit. Failing that use your bare hand. Do not use your sleeve, glove, hat, etc.

3. Replace the canopy cover when the aircraft is parked.

Use the canopy cover when retrieving etc. Blown grit is almost unavoidable. Do all you can to avoid raising it - like driving slowly past air-



Never reach through the DV panel when on the move. Most canopy fractures start at the DV panel. Bulky sleeves and hasty pilots break canopies.



Never touch the perspex. Sticky, sweaty hands pick up the grit and leave gritty oily prints on canopies. The grit scratches. The sticky bits mist up faster than a clean polished surface.

craft, especially if you're upwind. Do all you can to stop it settling on the aircraft

Wash the canopy covers regularly and have a spare. Dusty peritracks and dry eroded ground are major contributors - it is far better to have grass on the airfield.

4. Never clean or polish a canopy without washing it first with a lot of warm soapy water, using a scrupulously clean bucket and cloth.

Washing includes degritting everything inside and out. It takes a long time and must be thorough. You can't do it on a windy, dusty day when dirt devils scurry past the hangar or passing vehicles raise clouds of dust.

The drawings are extracted from posters by Matt and may be bought at £2 each from Peter. Contact him on 01246 206856. Each is headed "How good is your lookout? How well can you lookout?" with explanatory text beneath. ✉

NATIONAL LADDER

My collection of S&Gs does not go back far enough to record the last time there was such a high score in the Open Ladder as early as the end of May. Well done to Steve Crabb on a truly impressive performance although I am sure that one or two others will try to make sure that his stay at the top is only temporary.

Open Ladder

Pilot	Club	Pts	Flys
1. S. Crabb	The Soaring Centre	11 566	4
2. J. Bridge	Cambridge	8908	4
3. T. Macfadyen	Bristol & Glos	8429	4
4. P. Jeffrey	Cambridge	8099	4

Weekend Ladder

Pilot	Club	Pts	Flys
1. S. Crabb	The Soaring Centre	7727	4
2. J. Bridge	Cambridge	7649	4
3. S. Mynott	Cambridge	7013	4
4. P. Crabb	The Soaring Centre	6467	4

John Bridge, National Ladder steward

BGA 1000 CLUB LOTTERY

The May draw results are: First prize - J. Gorrington (£56.50) with the runners up - N. Maclean, Mrs G. Hodds, G.H.N. Chamberlain, N.C. Morland and R.M. Lambert - each winning £11.30. June: First prize - P. Hardie (£56.50) with the runners up - M. Bainbridge, P. Gresham, G.H.N. Chamberlain, M.C. Costin and P. Butcher - each winning £11.30.

MEDICAL STANDARDS

The BGA Executive Committee reviewed the medical standards for older instructors at their June meeting and decided not to change the current requirements, which means that gliding instructors over 70 years-old may not fly with pre-solo pilots unless they hold a CAA Class 3 medical certificate.

DEVELOPMENT NEWS

Marketing Support

In the last issue, p166, I reported on the need for recruitment of members and the steps being taken to encourage more young people to take up gliding. But what about the recruitment in general? Numbers of flying members have fallen by about 8% since 1990 and the need to increase club membership and participation is a vital factor in most clubs' development plans.

Consultation with clubs indicates that there is a need for advice and assistance to the individual officers concerned on how best to market

themselves and the sport in general, rather than to spend large sums on a publicity and promotional campaign, on a national basis.

I suspect that some clubs are desperate for help with marketing to recruit members but have little or no understanding of how public relations could help. The BGA is therefore developing a marketing support pack for the use of individual gliding clubs.

The pack contains an explanation of how public relations work and can help to publicise a club or club event. It gives advice on such items as:-

- What makes a good PR story.
- How to write effective press releases or arrange photo calls.
- Organising an open day.
- Using your local press.
- Marketing trial lessons.
- How to use direct mail.

Specialist advice to individual clubs, including the provision of artwork and individually tailored stationery, can also be made available.

The basic marketing support pack is available, free of charge, from the BGA office.

Roger Coote, BGA development officer

FINANCE

There is more good news on the VAT front following negotiations between the BGA and HM Customs & Excise on fees for hangarage and trailer parking. An information sheet will be available to all clubs as soon as possible.

Clubs are also reminded that the special bank accounts available at the TSB to sports clubs pay a higher rate of interest than normal bank accounts. Contact the BGA office for more information.

LAWS & RULES

The 12th edition of **Laws & Rules** is now available from the BGA office at the unchanged price of £1 plus 20p p&p. It is some while since the previous edition and as there are a lot of changes pilots are advised to have a new copy. It is hoped that clubs will order a stock for resale to members. The section on trailer law has been omitted and will be the subject of a separate publication.

DRIVING LICENCES

There are no changes for those with licences but from January 1997 new drivers with a normal licence will be allowed to drive vehicles of up to 3.5 tonne with a trailer weighing up to

750kg or even a trailer which exceeds 750kg, provided its weight is no greater than the unladen weight of the towing car. New drivers wanting to exceed these limits will have to take an extra test. This information is in fact sheet INF 30 available from the DVLA.

AERONAUTICAL CHART UPDATE

The next edition of the 1:500 000 map of the Southern England and Wales aeronautical chart - sheet 2171CD, edition 22 - was available from the end of May. Owing to production difficulties at Ordnance Survey, the low-level version of this chart won't be produced. Edition 2 of the Southern England low-level chart and edition 21 of the standard ICAO version is now obsolete and should not be used.

The Midlands and East Anglia 1:250 000 sheets will be available by early July.

Aeronautical charts are available from the BGA shop and the CAA chart room at CAA House, 45-59 Kingsway, London WC2B 6TE, tel 0171 832 5569.

BARRON HILTON CUP

The BGA has the rules for the 1996/97 Barron Hilton cup. This is a competition where individual flights are scored according to the handicap of the glider and the distance flown. Overall winners are invited to a gliding camp at Barron Hilton's Flying-M-Rance. Write to me at the BGA office for a copy of the rules.

Basil Fairston, FAI badges officer

WORLD RECORDS

At the March IGC meeting there was a suggestion of discontent with the current categories and classes of world records. A proposal to add 15 Metre and Standard Class records to the current groupings was left to mature while a sub-committee had a look at the whole question of world records.

The committee asks for the help of the movement to find out what people want from the world records. First an answer to the question: Why do we have world records?

Are the present records sufficient or suitable to achieve this aim? If the answer to the second question is "No", then are there any suggestions on what they should be?

There have been several suggestions so far, many quite controversial. For instance there have been suggestions to do away with some of the current record categories such as wom-



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en's; two-seater; motor glider, both single and two-seater and altitude.

Then there are suggestions such as - change two seater to multi-seater; allow multi-seater to be international, ie mixed nationality crews; allow the additional records for 15 metre gliders (to include the Standard Class); reduce the speed records and increase the "free" (ie no declaration) records.

If you have any comments, mail or fax the editor, who will pass them on to the sub-committee for consideration. Alternatively Email me on 106025.2661@compuserve.com

This may be the last opportunity for many years to do this, as there is a strong move towards freezing the **Sporting Code** to stop increasing the massive number of recent changes. It has got so bad, that some countries are no longer translating the **Code** into their native language because by the time they do, there is an amendment out!

All suggestions will be seriously considered, so now is the opportunity to put forward your pet idea.

Ross Macintyre, chairman of IGC Records Committee

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1996
492	Hook, Kevin	SGU	13.5

DIAMOND DISTANCE

No.	Name	Club	1996
17722	Hook, Kevin	SGU	13.5

DIAMOND GOAL

No.	Name	Club	1996
2/2429	Swallow, Philip	The Soaring Centre	5.2
2/2430	Raistrick, Philip	Bannerdown	17.2
2/2431	Jones, Robert	SGU	13.5
2/2432	Thirkell, Robert	Lasham	4.5
2/2433	Parry, Jonathan	Midland	6.5
2/2434	Hughes, Nicholas	Lasham	4.5
2/2435	Smith, Frank	SGU	13.5
2/2436	Hood, Richard	Four Counties	4.5
2/2437	Kirbitson, Robert	Wolds	5.5
2/2438	Thompson, Michael	Wolds	5.5
2/2439	Nicholson, Peter	Aquila	5.5

GOLD BADGE

No.	Name	Club	1996
1885	Swallow, Philip	The Soaring Centre	5.2
1886	Kynsey, Peter	Surrey & Hants	10.10.95
1887	Weatherhead, Anthony	Cambridge	4.4
1888	Jones, Robert	SGU	13.5
1889	Thirkell, Robert	Lasham	4.5
1890	Parry, Jonathan	Midland	6.5
1891	Smith, Frank	SGU	13.5

GOLD HEIGHT

Name	Club	1996
Swallow, Philip	The Soaring Centre (in New Zealand)	5.2
Kynsey, Peter	Surrey & Hants	10.10.95
Weatherhead, Anthony	Cambridge	4.4
de Tourtoulon, Alan	Essex & Suffolk (in Spain)	21.4
Turner, Graham	Vale of White Horse (in USA)	12.4
Winterton, William	Bristol & Glos (in Spain)	21.4

GOLD DISTANCE

Name	Club	1996
Swallow, Philip	The Soaring Centre (in New Zealand)	5.2

Raistrick, Philip	Bannerdown (in Australia)	17.2
Jones, Robert	SGU	13.5
Thirkell, Robert	Lasham	4.5
Parry, Jonathan	Midland	6.5
Hughes, Nicholas	Lasham	4.5
Smith, Frank	SGU	13.5
Paverley, Neil	Yorkshire (in South Africa)	31.1
Hood, Richard	Four Counties	4.5
Kirbitson, Robert	Wolds	5.5
Thompson, Michael	Wolds	5.5
Nicholson, Peter	Aquila	5.5

SILVER BADGE

No.	Name	Club	1996
9986	Franz, Paul	Dartmoor	30.3
9987	Jenkins, David	Wyvern	27.3
9988	Hale, Kevin	Vale of White Horse	25.4
9989	Wells, Anna	Sherington	27.4
9990	Mills, Stuart	Mendip	18.4
9991	Nevill, John	Deeside	2.5
9992	Jude, Andrew	Cambridge	5.5
9993	Gair, Gerald	East Sussex	24.4
9994	Hatton, Ian	Fenland	5.5
9995	Shaw, Bryan	The Soaring Centre	3.5
9996	Rishton, Simon	Bowland Forest	5.5
9997	Lucas, Andrew	Wolds	8.5
9998	Key, Christopher	Vale of White Horse	27.4
9999	Bowen, Richard	Fenland	5.5
10000	Green, James	SGU	4.5
10001	Gorton, Neil	Heron	4.5
10002	Hobson, Craig	Dukeries	4.5
10003	Harris, Stuart	Highland	14.5
10004	Etherington, Mark	Dukeries	5.5
10005	Kamp, Adrian	Bowland Forest	12.5
10006	Schuricht, Hans	London	6.5
10007	Lintutt, Stafford	Kent	13.5
10008	Kennedy, David	The Soaring Centre	5.5
10009	Kerwin-Nye, Anthony	East Sussex	24.4
10010	Bryning, Christopher	Culdrose	11.5
10011	Fleetwood, Jennifer	Ouse	6.5
10012	Delanez, Graham	631 VGS	14.5

UK CROSS-COUNTRY DIPLOMA

Part 1

Name	Club	1996
Lees, Edgar	Glyndwr	5.5
Turner, Graham	Vale of White Horse	27.4
Orrey, Mornington	Norfolk	5.5

Chris Pullen assures us this is true. A 49 year-old Austrian glider pilot fell out of his glider at about 3000ft whilst doing a loop because he hadn't fastened his straps properly! He parachuted safely to the ground but was badly injured when part of the glider landed on him.

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Let's Learn From This

Another in the series of true accounts written by members of the recently formed team of accident investigators

Bloggs 1. Instructors 0.

Yes, Bloggs does it again! Bloggs in this case was a Silver badge pilot being checked by an assistant instructor with more than 700hrs' experience over 25 years.

Earlier this spring conditions were rather gusty with the wind blowing across the single strip airfield. Even the tug pilot had mentioned the strength of the gusts and the strong sink to the pilots waiting on the launch point and decided to stop aerotowing. Nevertheless the winching was still continuing safely.

The instructor, who had flown earlier, briefed the P2 about the conditions and to watch his speeds. During the winch launch the instructor commented on the airspeed which had slowed to 40kt! Releasing the cable at the top there was a short search for lift before they started downwind at about 500ft.

As they passed through 300ft, still going downwind, the instructor felt like commenting about turning in early, but didn't. The glider carried on and turned the base leg, increasing its speed to 55kt. Again the instructor felt uneasy, wishing for more speed, but again said nothing. After turning finals at about 200ft the airspeed started to decay rapidly as they fell through the wind gradient. The instructor waited for his P2 to do something. But nothing happened. At last the instructor grabbed for the controls but missed!

They hit the ground short of the airfield, bounced off a bank, travelled across a road, finally coming to rest back on the airfield - facing the wrong way. Both pilots suffered some back damage. Fortunately nothing major, unlike the glider. That was written off.

In debrief the P2 said he thought he had turned in the right place and would do the same again, wishing to get back to the launch point. The P1 now realises that he could have easily prevented this accident by taking over earlier.

Why didn't he? After all by his own honest admission he had felt uneasy at least twice during the downwind leg.

Bloggs was relatively experienced and suckered him into believing he would manage. In fact it turned out that Bloggs had only had ten launches within the last six months.

But this was three more launches than his instructor!

Safety comment

- Instructors must be current.
- Remember, as Bloggs becomes more experienced he becomes more devious.
- If in doubt there is no doubt. Take over.

In the spirit of Euro '96 it was definitely Bloggs 1, Instructor 0.

OPEN CLASS CHAMPION



Robin May after winning the day and being the only one to finish the 332km four sector task on the first Sunday. Photo by Steve Lynn, a syndicate member of the ASH-25, who flew with Robin that day.

Robin May, flying an ASH-25, has become the Open Class Champion for the fourth time, winning with 5492pts. The Nationals were held at Enstone Eagles GC from June 8 with six contest days and 31 competitors

The Jones family took 2nd and 3rd places with Ralph (Nimbus 4) 151pts ahead of Philip (Nimbus 301).

A full report will be in the next issue.

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SAFETY ADVICE

APPROACH CONTROL

- Wind gradient causes speed loss. **Monitor the airspeed.** Allow extra speed in moderate to strong winds and known gradient conditions.
- Avoid making the final turn with the airbrakes open or opening them during the turn. It is difficult to monitor the potential under or over-shoot during the turn.
- In general it is better to start the approach with the airbrakes closed and open them progressively, rather than having to close them progressively. The airbrake control is not a **going in to land lever.**
- If it is necessary to close the airbrakes completely during the final stage of the approach beware of increasing speed. It is generally better to avoid opening them near the ground.
- **Beware** of the different effectiveness of the airbrakes when changing type and the changes in control forces at different speeds.
- Undershoot accidents occur because pilots have not been taught to recognise the situation. **Ask for a demonstration.**

BILL SCULL

CHAMPION'S WORLD CLASS GLIDER

Bruno Gantenbrink, the leading German pilot, has ordered a PW-5 World Class glider to compete next year in the first World Class Championships being held at the World Air Games in Turkey. As not enough PW-5s will be made in time for the test competition this September it will be run for Club Class gliders.



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SOARING THE HIGH ANDES

Pete writes of an RAFGSA expedition to Chile where he had the flight of his life

As we raced along a cloud street at 16 000ft on our way from Alto Los Leones, a range of dramatic peaks and glaciers and the stepping stone to the high Andes, to Mt Aconcagua (22 310ft), there was little time to think about the circumstances that led to a small team of RAFGSA pilots visiting the Chilean Air Force GC in Santiago earlier this year.

During the fairly appalling June of 1995 I had the pleasure of flying at Bicester with Gp Capt Mario Avila, the Chilean Air Attache. During a beer and a chat, Mario explained how gliding in Chile has developed over the years and suggested we should share some of their experiences first hand. It didn't take long to put together a small team of enthusiastic RAFGSA pilots and on January 16 we arrived at Santiago International Airport.

The club is based at Las Condes (2200ft asl), an Aboyne sized light aircraft and glider airfield, situated fairly well in the middle of a residential area alongside a river, with a 2000ft hill immediately to the north and the lower Andes (10 000ft asl) a few miles to the east. The military club operates an enviable fleet of Schempp-Hirth's finest, including the factory equipped Nimbus 3D and four Janus Cs that we flew for the two weeks. A civilian club at the other end of the airfield has a club fleet of Janus Bs and Mini Nimbus as well as numerous Blaniks.



Pete's second photograph of the Chilean Air Force Nimbus 3D he was flying with Jorge Calderon at 11 000ft asl over the Andes.

All cross-country soaring from Las is mountain flying - the plain to the west of the Andes is unsoarable in the prevailing westerly flow. With the exception of two days' sightseeing and half a day lost to storms, the entire two weeks seemed to be totally predictable - deep blue skies, 30°C with 40% humidity at the airfield and heaving lift topped with cumulus over the mountains. Oh yes, and occasionally wave on top although rarely above 25 000ft.

The flying in these mountains is very challenging, particularly for Brits used to European conditions. Our first orientation flight was an eye opening milk run 300km triangle in a couple of powered aircraft to note major navigation features, all natural other than a couple of wrecked gliders left where their unfortunate pilots died. Subsequent training flights with our very experienced and patient Chilean instructors in the Nimbus and Janus steadily built up our confidence and ability, with the main aim of learning how to safely master each stepping stone through the spectacular and awesome mountains. Their plan was that by the end of our visit we should be able to fly them to Mt Aconcagua on the Chile/Argentina border.

On the second Sunday, after the usual relaxing morning swim and sunbathe around the club pool, our instructors were getting even more excited than we were about the conditions building over the mountains. Over lunch, as the gliders were towed out to the launch point, Alex Chanes, the Chilean National Champion who I was pro-

grammed to fly with, revealed that we should be able to get up to Mt Aconcagua, as the conditions were shaping up well enough for an Andes crossing to Mendoza in Argentina. Bearing in mind our military status and who owned the Nimbus, we'd give the crossing a miss this time!

The first 6kt climb on the hill behind the airfield gave us the height needed to run the first ridge line (Los Espanoles), rapidly climbing to 9000ft, and allowing us to push further into the high Andes. During the most memorable flight I have experienced in 2500hrs of gliding, we slid past gentle slopes, raced along razor backed ridges with storming lift on both sides, thermalled over glaciers and bounced our way past circling condors along cloud streets that stepped rapidly upwards. We eventually found ourselves running along the western face of Aconcagua at 19 000ft, waving at the climbers who had spent a couple of weeks getting there, and picked up a bit more energy before turning on to the southern peak clear of the föhn cap cloud.

Pictures duly taken, the next 3hrs were spent racing south through the high Andes, borders forgotten, as Alex pointed out numerous beautiful areas and dependable sources of lift he had discovered over the last 25 years. A pair of semi dormant volcanoes oozing green smoke marked the point at which our oxygen level was getting critical, so we ran north along the Maipo valley, well known for its wine exports, past Laguna Negra, up over the 8000ft rolling slopes west of Sargento Quempo and across to the national ski resort, where we spent a bit of time watching the off season resort staff playing football - 300ft above the match, of course, gave us 5000ft with which to glide home to a cold beer!

The Chileans are rightly proud of their beautiful country and will always welcome visitors with open arms. However, because of the challenging environment and incredibly high insurance premiums for gliders, it is unlikely that any visiting pilots will be able to hire the civilian club's single-seaters, although it is possible to organise fairly expensive dual training in a Janus B.

The RAFGSA team all safely experienced extremes of Andean mountain flying that would have taken hundreds of hours of solo flying to achieve on our own, thanks to the experience and skill of our outstandingly generous and friendly Chilean hosts. ☑



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EUROPE AIRSPORTS

The activities of Europe Airsports (EA) are confined to international and particularly European regulations concerning licensing, airworthiness, airspace etc, not sporting rules. EA was conceived six years ago by Fred Marsh, now chairman of the Royal Aero Club. But it was more than nine months before it cried out and was noticed.

One of the troubles was I advised him that a new organisation wouldn't get many members if there was money to be paid. So in the beginning we met during FAI Council occasions and general conferences when the European delegates were present, which saved extra travelling expenses.

But attendances were sporadic because FAI committee meetings frequently clashed. Some FAI members weren't very happy at first about Europe Airsports and thought it was a rival organisation. It was some years before people became aware that the Joint Aviation Authorities

(JAA - a body made up of European National CAAs) were preparing regulations which were going to affect our sporting activities.

But Fred persevered and to cut a long story short, we now have a very respectable organisation. Two years ago EA secured a first class secretary (ex KLM) and 18 months ago EA became an affiliated member of FAI like OSTIV. EA relations with FAI is good and they even collect our subscriptions with their own.

EA is recognised by the JAA and other European regulating bodies like CEN (European Standards Organisation) and we are represented on some of their committees. EA, apart from its bureau, has committees on all aviation sports with a separate co-ordinator for each. The European Gliding Union is an independent organisation but is affiliated to EA and serves as the gliding section.

Different airsports have different problems with regulations. For instance, the microlights have different regulations in different European countries, so they can't cross borders very easily. JAA has decided that gliding and ballooning regulations need not be harmonised and recommends mutual recognition. That is good but there may be a problem: all countries in Europe have laws pertaining to gliding except the UK so will countries recognise BGA rules when pilots go abroad? So far there is not much of a problem.

But there is a problem on the horizon. The European Commission (EC) in Brussels are getting worried about JAA. It is an unofficial body




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with no formal authority to make European nations comply with rules if they don't want to. EC wants to have all harmonised rules for aviation, not mutual recognition, and they have power to enforce this on sporting aviation. EA and EGU will have a job to do to prevent unsatisfactory regulations forced on aviation sport.

Fred has now retired from the presidency of EA and Wolfgang Weinreich, (a retired Lufthansa pilot) has taken over. His wife won the Women's European Championships at Husbands Bosworth a few years ago and Wolfgang was her crew, so he is on our side. 



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CAMBRIDGE INSTRUMENTS - The choice of Champions - Leaders in innovative technology

With A Knapsack On My Back

Rod, who flies at the Lleweni Parc wave site, argues for the inclusion of motor/turbo self retrieving gliders in competitions

German pilots call it a knapsack but I call it freedom. Freedom to fly far from home in search of good soaring conditions. Freedom from the undoubted hazards and frustrations of out-landings. Freedom to be home in time for that social occasion in the evening. These blessed freedoms are of course, given by the knapsack on your back - the glider fitted with a self-retrieve engine.

The insurers are delighted with the decreased underwriting risk of such machines and offer reduced premiums accordingly. What a nonsense it seems therefore when you arrive at a competition and are obliged to disable the engine and carry out any outlanding retrieves by road.

Whilst this is a conscious decision that an individual competitor takes, one can imagine that the insurers are scarcely happy with the situation. Nor perhaps are the RAFGSA totally at ease with the principle of buying very expensive turbo gliders and then disabling the turbo just when it is most needed, *ie* in marginal, competitive, low situations when the glider is at most risk from a field landing. Scarcely a competition goes by without some unfortunate pilot damaging his glider in an outlanding.

It has been argued that allowing such self-retrieving in a competition is "unfair", and of course from the domestic side such a competitor does enjoy the advantage of making do with little or no crew.

Flyingwise, however, it can be argued that the turbo/glider actually suffers a disadvantage.

First there is the inability to jettison his "ballast" for a low wing loading on a weak day. More significant, however, is the need for the motorised pilot to start his engine (with a suitable field selected below him in case of failure to start) at a much greater height than his traditional opponent would finally commit himself to a field.

The height advantage given away by a prudent turbo pilot in this way is probably 800ft or so - perhaps as much as 10km which is a significant scoring distance when final gliding on a dead evening.

It was precisely this self imposed disadvantage for the motor gliders which persuaded the Australians to permit such gliders in their Championships on an equal footing and score them to "engine on" position.

Similarly in Germany it is understood that motor gliders compete on this basis - the principle having been adopted mainly for reasons of insurance and outlanding safety.

This year the BGA has adopted the GPS logger system for scoring. It is of course, a simple matter to note from the logger the exact position

where the engine was deployed.

The integration of such motor gliders into competitions may be too radical for immediate adoption by the BGA Competitions' Committee. However, with the increasing numbers of such machines in the UK, might not a one year experiment be tried in 1997 whereby pilots may compete with their motors enabled?

If some genuine "unfairness" (whatever that may mean) is perceived, then let the BGA Competitions' Committee terminate the experiment at the end of 1997.

GPS JOTTINGS

Map Datums

Edited by Dickie Feakes

Many people ring me up to say that they are exactly at a published BGA TP and their GPS is showing the wrong position. Invariably my first question is "What datum have you set on your GPS?" This usually produces a pause and I know I will then have to explain the importance of setting the correct datum if you want accurate positions from your GPS.

Since man produced the first map, he has had difficulty translating the oblate spheroid shape of our planet to be correctly represented on a flat piece of paper. In the 18th and 19th centuries many map makers calculated what they thought was the correct shape of the Earth and used this to correlate positions on the Earth's surface with positions on the maps they produced.

The assumptions they used for their subsequent surveying became known as "map datums" and anyone who has scanned the list of datums in a GPS may be amused by some of the descriptions such as Easter Island 1967 and Bogata Observatory.

The effect of all this is that if you want to use a GPS to navigate to a position on a map, then the GPS must be configured to the same datum as the original map maker used when preparing the map. In the UK at present all our maps are based on the datum **Ordnance Survey of Great Britain 1936** and this is the datum you should have selected on your GPS when flying in the UK.

The datum that most accurately translates the correct shape of the Earth is currently WGS84 (which is an acronym for World Geodetic System 1984) and if you do not know what datum was used by the original map maker, then this represents a good default setting.

Using WGS84 in the UK to navigate to a published position will usually produce only a small error not exceeding a 1/4 mile. Nevertheless, this can be significant when using GPS to correctly round a TP.

During the next few years the Ordnance Survey are planning to redraw all the UK maps based on WGS84 and this will serve to eliminate the present confusion. Meanwhile, however, in the UK you would be wise to set OSGB36.



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CLUB NEWS



John Tanner of Deeside GC being presented with the Scottish Gliding Association's Bank of Scotland trophy for the best junior pilot in Scotland by Glen Douglas, SGA chairman.



Steve Naylor in Burn's new control vehicle.

Copy and photographs for the October-November issue of S&G should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 01223 247725, fax 01223 413793, to arrive not later than August 13 and for the December-January issue to arrive not later than October 15.

GILLIAN BRYCE-SMITH June 19

AQUILA (Hinton in the Hedges)

After a relatively slow start to the soaring season we are again rapidly establishing ourselves as a leading cross-country centre. Last year we flew over 36 000km and during the May Bank Holiday Inter-Club Comp all distance records were smashed when over 7500km were flown. There was a Diamond distance, two Diamond goals and numerous 300kms.

Since then another 500km Diamond has been achieved. Des Holdcroft, Pete Nicholson and John Cooper were the Aquila pilots involved. C.A.

BATH, WILTS AND NORTH DORSET (The Park)

We had a very successful task week aimed at persuading more to fly cross-country. There were seven 300kms, Dave Morgan, Bob Hitchin and Mike Lynch achieving Diamonds and nine 240km triangles. Simon Northway, Geoff Smith and Bill Niblett flew Silver distances, Bill gaining his 5hrs on the way. Jean Whyte flew a 100km triangle with 5hrs for Kath Jeffery and Martin Broadway. Diana Wright and Mike Archer have gone solo and Mike Beale and Mike Jenks have resoled.

In July we are running our usual course for schoolchildren. Our new Skylaunch winch is giving superb launches with Graham Callaway training more drivers each weekend. J.L.

BICESTER (RAFGSA Centre)

This year's trial joint operation with the BGA coaching operation is proving to be mutually beneficial - tentative plans are being discussed for 1997.

Pete Atkinson and the motley crew are steadily pulling ahead in the Inter-Club League,

while Ken Hartley is enjoying an early lead on our club ladder.

We are hosting the Inter-Services Regionals from August 6 with Hugh Brookes' forecasting skills backing up Ken Sparkes' well proven task setting. The Royal Navy are organising the social scene - don't miss the party on the last night! P.S.

BIDFORD (Bidford Airfield)

Our full field is back in use after half of it was re-seeded and rolled. We have a Pawnee and a Super Cub with another Super Cub coming later in the season. The workshop now has full M3 approval.

Our K-8/K-6 Comp on May 24-25, won by Jim Hill (K-6E), attracted pilots with a wide range of experience. Many want to return for the second Comp on August 17-18 which is open to gliders with a handicap of less than 90. For more details contact Pete Freeman on 0860 413330 or 0181 7731370 (evenings). Our thanks to Steve Hill of Hill Aviation for sponsoring the May Comp.

We probably have the best thermals in the country and welcome any other clubs on free reciprocal membership. P.F.

BLACK MOUNTAINS (Talgarth)

We have hosted many successful expeditions from all over the country and even as far afield as Germany, the one from East Sussex being particularly successful. They soared on most days of their two week visit and Tony Cutting, Gerry Gair and Tony Kerwin-Nye achieved their 5hrs on the same day.

You can find us on the Internet at <http://www.isl.net/blackmountains/default.htm>

Mike Tomlinson has gone solo. D.U.

BOOKER (Wycombe Air Park)

We have had two consecutive days with flights of 600km or better. Paul Brice (ASW-24) and Dennis Campbell (Discus) both landed at Bicester after about 720km of their 750km attempts on June 13. At least three first 300kms were flown, including those by Barry Amos, Tony Hughes and Bob Smith.

Below left: A Sports Council National Lottery award for Dukeries GC. L to r, Richard Case (Sports Council), Keith Gregory (club chairman), Colin Pellatt (club secretary) and Julie Roberts (regional manager of Camelot). Right: Penny and Paul Foulger of Essex & Suffolk GC being presented with wings by instructors Peter Codd (left) and Paul Robinson after they soloed on the same weekend.



The club Discus is off to South Africa again this winter for about three months.
R.N.

BORDERS (Galewood)

Two Land Rovers have replaced our tractors, thanks to hard work by Malcolm Parkes, Rob Collins, Leon Adamson and other members.

Keith Arkly went solo in May and Keith Latty completed his Bronze badge. Following major repairs, our Super Cub 180 is back in action and Ken Fairness has taken over as tug master.
B.C.

BOWLAND FOREST (Chipping Airfield)

We start the season with our first cadets, recruited from a local school. Both Rachel and Emma have integrated very well into club life and are progressing.

Many members have gone solo and Simon Rishton has a Silver badge. Twenty completed an RT licence course, helped by Darren Evan's coaching.

We have expeditions to Aboyne, The Soaring Centre and Shenington.

A warm welcome and a good launch awaits all visitors.
S.R.

BRISTOL & GLOUCESTERSHIRE (Nympsfield)

Several good badge flights were flown during May. Paul Little did another 750km followed by Nimbus 30T partner Derek Thomas a few days later. On the same day, 500kms were flown by Rob Hanks, Eve Dent and Malcolm Day.

The club gained a new SF-34 from Aston Down, but almost immediately "lost" a K-13 in the trees. Luckily no-one was hurt.

Several caravans have been broken into and items of value stolen. A new cathedral dedicated to St Andrew is being build near our nuclear bunker.
B.F.F.S.

BUCKMINSTER (Saltby Airfield)

During the June Inter-Club weekend we had a barn (hangar) dance and pig roast.

We have new AEI and assistant instructors and have put our second Puchacz on line to cope with the increasing number of AEI flights. Pilots from many other clubs have flown with us under reciprocal membership, and we are extending this "no daily fee" arrangement to members of any BGA club.

Our sincere thanks to British Gas for the donation of a new computer to replace Clive's gas-powered one!
N.R.

BURN (Burn Airfield)

Mel Morris, CFI since 1981 when we were still at Doncaster, has resigned for health reasons. We are all grateful to him for his long stint. DCFI Bill Jepson has taken over.

After having to brave the elements in all weathers, our log keepers now have the comfort of a purpose built control vehicle constructed by Steve Naylor.

At long last, we have a manned ground station with mobile phone, signalling equipment, desk, etc.
P.N.



L to r: Tony Cutting, Gerry Gair and Tony Kerwin-Nye of East Sussex GC who all flew their 5hrs on the same day during their club's expedition to Black Mountains GC.



Above: Rosemary Cook celebrated her 90th birthday by flying with instructor Gordon Craig at Oxford GC. Below: Stratford on Avon GC's five new instructors. L to r, top, Derek Bennett, Sharon Edlin (the club's first female instructor) and Phil Pickett; front row, Mark Parsons and Roy Wood.



CAMBRIDGE (Gransden Lodge)

Three of our two-seaters were wiped out and our new Pawnee damaged in one evening by a storm involving 60kt winds and hail stones the size of golf balls. Thanks to the hard work of Robert Verdier and helpers all gliders were back in action within the week. The recently acquired K-21 will need further work during the winter to remove pock marks.

Peter Baker (Discus) flew the club's first 750km, followed the next day by Ian Baker (Vega). Peter also came 2nd in the Eastern Regionals.

Pat Harris is our new chairman, Eddie Baker treasurer and Geoff Brown secretary. Many thanks to our retiring chairman Richard Baker, treasurer John Birch and secretary Penny Minnitt for their fine efforts.
K.M.B-S.

CHILTERN (RAF Halton)

Paul Wilford went solo, converted to the K-8 and gained a Bronze leg on his 16th birthday. Peter Smith, Peter Taylor and Colin Barton have Bronze badges.

We have a number of soaring weeks planned, an instructors' "fun day" on August 31 and have had a very good start to the season. Our association with London University GC is working out well and membership is building.
D.W.S.

CLEVELANDS (RAF Dishforth)

Summer has come at last and our visitors' evenings are going well. Dave Rowland has gone solo and Kevin Curtis has his Bronze.
J.P.

CORNISH (Perranporth Airfield)

Our task week, May 11-18, had a blistering start with Diamond goal for Dave Uren (Mini Nimbus) and Silver distances for Alan Kingsbury, Nigel Climpson (who later flew Silver height for his badge), John Stewart-Smith and Chris Bryning (Culdrose).

We flew on five of the seven days and quite a few farmers had some unexpected visitors! It has whetted our appetite for more cross-country flying! Even the TP photography was better this year. Dave Uren won the task week which ended with a celebration evening and barbecue (chefs in the rain and everyone else in the clubhouse!).
Thanks to John Shaw and helpers, our sec-

ond K-7/13 has been rebuilt, complete with nose and tail wheel, and is a burnished yellow! S.S.

CRANWELL (RAF Cranwell)

The Inter-Club League was enjoyable despite poor weather. Brian Hutchinson has an assistant Cat rating and Ian Mountain is now a tug pilot. Kev Burrows, Trevor Beeny, Dave Fiddler, and Roger Wells have gone solo, the last three on the same day, and Vaughan Whitely has resoled after an eight year break.

Steven Langford flew Silver distance in 20min for his badge. Commiserations to Martin Appleby who flew his 5hrs with a failed barograph.

Richard Browne was 3rd in the Eastern Regionals. A Libelle joins the privately owned fleet. The Red Arrows are into their busy summer programme, so visiting gliders are advised to call Cranwell GC on 129.975 for joining instructions.
L.F.

DARTMOOR (Brentor)

Roger Matthews has taken over from Peter Williams as CFI. Peter made an invaluable contribution over many years during our development. Chris Rollings was impressed by our winter wave. He checked Jenny Roberts for an AEI rating and watched Paul Frasz and Joe Nobbs fly 5hrs - they now have Silver badges.

Jenny, with Richard Roberts, is now an assistant instructor - both 20 years-old, they must be among the youngest. Steve Lewis, Eric Rodmell, Keith Jarvis and Mac McAllister have gone solo.

The AGM saw the return of Ray Boundy as chairman. We have added a K-8 and K-13 to the club fleet.

Jenny Davis organised a very successful open weekend, attracting many visitors and new members.
J.N.

DEESIDE (Aboyne Airfield)

The chairman of the Scottish Sports Council, Graeme Simmers, officially opened our new hangar and both he and local Sports Council member Lesley Grant had flights.

John Tanner was awarded the Scottish Gliding Association's Bank of Scotland trophy for the best junior pilot in Scotland.

Grant Williams and John Nevell have Silver badges and Alain White, Cameron Robinson

and John Tanner their AEI ratings. We were at 17 000ft in April and 13 000ft in May.
G.D.

DERBY & LANCS (Camphill)

John Hogarth has an instructor rating; John Velnoweth has gone solo and Dave Salmon (CFI) has clocked up just over 3000hrs.

We enjoyed a memorable evening in the company of AVM J.E. "Jonny" Johnson who shared with us his wartime experiences.

The club is now on the Web:- <http://our-world.compuserve.com/homepages/MH1>.
W.T.

DEVON & SOMERSET (North Hill)

Dave Reilly and CFI Simon Minson flew O/Rs to Lasham. Summer courses have started and air experience evenings are filling up fast.

Oscar MacMillan and Peter Stapleton have gone solo. Paul Carpenter arranged well attended lectures on cross-country flying techniques given by Simon Minson, Dave Reilly and Ian Mitchell.

Work has started on the new hangar apron and alarm systems to cover the clubhouse, hangars and workshops as activity builds up as we approach Competition Enterprise.

Our thanks to treasurer Mike Davies who has worked tremendously hard during this year.
S.C.L.

DUKERIES (Gamston Airfield)

We had the official handing over of the cheque from the Sports Council (National Lottery) for our Vega in April when we flew our visitors.

Our AGM and annual dinner were in May with trophies presented at the dinner to Lance Swannack, Glenn Barratt, Peter Storey, Mike Burrows and Tim Bowles.

The K-8 fuselage has been re-covered. Brian Hall has a Bronze and Mark Etherington a Silver badge.
J.C.P.

EAST SUSSEX (Ringmer)

Dave Watson and Peter Pollard-Wilkins have gone solo and we have a good crop of *ab-initios*. As well as introducing gliding to the public, evening flying is useful in boosting club funds.

A T-31, found in a sorry state in a farmer's barn, has been re-covered and repaired. With the site and launching facilities greatly improved we are now turning our attention to the club fleet.
J.W.

FOUR COUNTIES (RAF Syerston)

Carl Leadbeater, Matt Austin, Richard Hill, Guy Roberts (University), Ollo Rühle, Andy Kaukel and Jürgen Rüb have gone solo; Guy Hitchins, Pete Dixon, Ollo and Jürgen have Silver heights and Nigel Gough achieved 130km in the Swallow.

Jeremy Hood completed his Silver badge in the K-18 in one flight, whilst Richard Hood flew 300km for Gold distance/Diamond goal and Jon Davies, Pete Thelwall and Jeremy flew 100kms. Jon has an AEI rating and Dave Sharp an SLMG instructor rating.

Our task week/fun Comp from August 25 is open to all. If interested phone 01636 5253900.
D.M.R.

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FULMAR (RAF Kinloss)

We have had our second expedition to Connel. Tim Baxter has a Bronze badge and, with Duncan Sutherland, a cross-country endorsement. Unfortunately, Julie Hull and Karen Seward had a little accident on the way home with Julie's car being written off. More important though, the girls escaped with cuts and bruises.

We have settled in well at Highland GC (see Highland's report). Eddie Pratt has a PPL. We had a successful farewell "beach party" in June for several members who are leaving.

J.P.

GLYNDWR (Lleweni Parc)

Our courses are very popular. Jim Lynchehaun flew a 300km triangle in his new turbo Discus for his Gold badge and Rod Witter flew the same task in his newly acquired turbo Ventus 2.

Eddy Lees and Ian Skinner flew part 1 of the 100km diploma. Chris Fox has an assistant Cat rating. We did well in the first Inter-Club League. M.P.O.

HEREFORDSHIRE (Shobdon Airfield)

A rare occasion for our club. We had only three pre-solo members until Ian Baldwin, one of our two cadets, went solo. As do a lot of other clubs we find it difficult to recruit young members, even with incentive discounts. Perhaps we should be aiming for middle-aged retirees. We can offer prompt launches with little queueing, a facility much appreciated by visitors from larger clubs.

R.P.

HIGHLAND (Easterton Airfield)

In May Robert Tait and Teresa Bruce-Jones were married by Robert's glider pilot mother Ruth. This was her first marriage ceremony since being ordained. With most of the club present, it was a dry, non-soarable day - perfect for a wedding with glider pilot guests! (*We only report weddings if there is a strong gliding connection and you can't get much stronger than this!* Ed.)

We have had some good wave climbs with one up to 18 500ft. Angie Veitch has added SMLG to her PPL. Eddie Muirhead and Randall Jones have gone solo and Dave Webster has resoloed after a long lay-off.

Fulmar GC have moved in with us until the end of the year while Kinloss has all its runways and other tarmac areas upgraded. We look forward to more activity and flexibility while they are with us.

A.G.V.

KENT (Challock)

At our 40th anniversary dinner, Hugh Gardner, a founder member, was presented with a cut glass momento and was made a life president.

We have a seven day operation with a resident instructor. Our Pawnee has had a new engine, struts and general refurbishment.

A.R.V.

LAKES (Walney Airfield)

With our tug laid up for a fortnight it has been the perfect excuse to re-introduce occasional winch launching to Walney, with some members experiencing their first winch launches. This should mean more members will be able to launch from our summer field near Kendal.

John Martindale and Graham Welch have completed Silver badges; David Bull, our "resident" tug pilot, his 5hrs and Rip Pearson has a Bronze badge. Lyn Martindale and Keith Whitworth have gone solo, Lyn in only ten weeks.

A.D.

LASHAM (Lasham Airfield)

Joan Norrie named the Tony Norrie M/T workshop in memory of her son. This was built with funds generously donated by Tony, tragically killed returning from Chad in a terrorist airliner disaster in 1989, aged 36 years. Lasham misses a friend, pilot and instructor.

Gee Dale, Roy Pentecost and Colin Short flew 750kms on May 13. On the same day, course instructor Clive Thomas flew a 75km triangle with student P. Baldwin in a K-13 in 1hr 30min.

Afandi Darlington and Colin Hales have joined the BGA Technical Committee.

Tim Hilton went solo on his 16th birthday.

Surrey & Hants GC policy is to offer top class gliders to pilots who cannot afford to or do not wish to fly a privately owned glider. We are buying a DG-300 from Germany which Terry Joint is arranging. There are 136 members of the club. Dick Happs has supervised a thorough C of A of the entire glider fleet. All varios are being standardised on the Filser LX 100.

Phil Phillips is retiring on November 1 after 16 years as manager. He is leaving on a high - leading a Lasham expedition to Aboyne.

Sadly, John Murray and John Noonan have died. Together with their friend Don James they constituted the "A Team". Every Thursday for 16 years they flew passengers and then air experience pupils. John Murray retired from the Royal Navy, then joined the RAF in WW2 flying Blenheims in Coastal Command. He loved sailing his cruiser in the Solent.

John Noonan was a radar expert in a reserved occupation but insisted on joining the RAF in WW2. He flew testing early radar installations in Mosquito aircraft. He was a keen tug pilot for many years at Lasham. We express our sympathy to his widow Hilda at her loss. They will be remembered with great affection.

A.M.S.

LINCOLNSHIRE (Strubby Airfield)

Harry Fleet has a cross-country endorsement; Paul and Kath James have Bronze badges and Steve Sykes, Ray Hearney and Henry Williams

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have Bronze legs. Dave Fenn has a Bronze badge, Silver height, both cross-country endorsements and claimed the first hour of the year trophy. Dianne Skerry completed her cross-country endorsement in the Motor Falke and soared for 2½hrs with the engine off. The next day she flew Silver distance in the club K-8 earning a coveted LGC flying tiger badge.

Our flying week is in early July with a barbecue on the Friday.

R.G.S.

MARCHINGTON (Tatenhill)

With the gliders happily ensconced in the new hangar, the engineers have devised a wind generator to keep the batteries charged.

Bob Thaker and Andy Walsh have AEI ratings; Andy Chapman is an assistant instructor and Kevin Tarrent has a full Cat rating.

Our finances have improved with a 100% discretionary rate relief and we are no longer making a reciprocal charge for visitors from BGA clubs wanting to fly with us on Wednesdays and at weekends.

I.N.R.

MENDIP (Halesland Airfield)

An unfortunate clash of dates with the Festival of the Sea affected attendance at our open day. However, we have recruited six *ab-initio*s but have lost a couple of instructors. Too many Indians and not enough Chiefs!

Our star improver Stuart Mills flew 5hrs to complete his Silver badge. Mike Ponting gained Silver height during his 5hrs thermal flight which topped out at 6500ft while the rest only managed circuits. Mike Bridges has gone solo.

K.S.S.

MIDLAND (Long Mynd)

After a slow start the soaring year got going at the beginning of May with a number of cross-countries on the Bank Holiday weekend. John Parry gained Diamond goal on the most difficult of these days; Dan Smith has soloed and Rowan Griffin and Paul Stanley are full Cats.

The efforts by Howard Bradley and his team to improve the airfield are bearing fruit with many parts looking greener than for a long time.

P.A.S.

NENE VALLEY (RAF Upwood)

We bid fond farewell with a social evening to Ted and Connie Dickerson (USAF members) who are going home. They generously sponsor our annual Kittyhawk scholarship - this year awarded to 15 year-old Sarah Nason.

Mark Slater and Graham Woodward have gone solo and Lou Perrett re-soloed after a ten year break. As well as cross-country endorsements, Andy Hatfield has both Bronze legs; Les Walsh 5hrs and Richard Howard and Ron Sibley Bronze badges.

Both K-7s have been refurbished by our maintenance team. Our task week starts on August 3 and we are preparing for the move to our new site in September.

A.F.

NORFOLK (Tibenham Airfield)

At our well attended annual dinner, trophies went to Eric Arthur, Ray Hart, Brendan



Three new solo pilots. Left: Ralph Major from Yorkshire GC. Centre: Paul Whilford of Chilterns GC with his father/instructor after soloing on his 16th birthday, converting to the K-8 and flying for 1hr for a Bronze leg. Photo: Dave Sale. Right: Martin Hoskins from Shalbourne.

Sergeant, Norman Clowes, Phil Jones, Roy Woodhouse, Neville Harrison, Matthew Cook, Peter Ryland, Julie Savory, Neale Banks, Barry Petty and Bonnie Wade.

Fifteen competed in our spring task week when there were several 300kms. Ray Hart scored the most points, but Jeremy Clark's Silver distance - 63km in a Pirat in 30min - was probably the most notable flight.

There was more good flying the following weekend when we hosted the Anglian Inter-Club League. We again hosted the Eastern Regionals. It was most successful with six days, three of 1000pts. Andy Davis and Ken Barker (Duo Discus) won, narrowly beating Peter Baker (Discus).
B.W.

NORTHUMBRIA (Currock Hill)

Our trip to northern Spain proved very useful. Although the weather could have been better it gave many the chance to do some real mountain flying. Paul Stafford and Ian Tate just about out climbed everybody, even the hawks.

We have six for our cadet scheme; Paul Basey, Ian Inglis and Peter Wilson have Bronze badges and Ian Silver height in good June wave. P.S.

NORTH WALES (Bryn Gwyn Bach)

Despite this spring's persistent easterlies which tend to give us only extended circuits, we had our usual excellent open days' weather on May 4-5 and a good turnout of potential new members encouraged by our local radio advertising.

Our club away week this year was to Staffordshire GC. June brought a return to westerlies and ridge soaring.

We were delighted to be visited by a Florida based gliding instructor for his first taste of winch launching, and we extend a welcome to individuals or clubs, reciprocal or otherwise, after our summer courses end.

Below left: Lasham's Tim Hilton, photographed with his instructor John Herring, after going solo on his 16th birthday. Right: East Sussex GC's T-31 on its first outing after being rebuilt.



Some weekday winching can usually be arranged, given reasonable notice (tel: 01745 582286).
N.D.J.C.

OXFORD (Weston on the Green)

Martin Cooper and Simon Hogg are assistant instructors and Pat Wallace has re-soloed. Cris Emson flew 500km on May 6 in a Std Cirrus.

The clubhouse was refurbished over the winter with a new office and computerised payment system. Another great party was held in June when we hosted the Inter-Club League.
N.F.



Teresa Bruce-Jones and Robert Tait of Highland GC cutting their glider topped wedding cake. Photo: Angela Veitch.

PETERBOROUGH & SPALDING (Crowland)

Our club Pirat is being refurbished. Linda Hiron and Eamonn Murphy have re-soloed and Sheena Fear, Alan Flintoft, Frank Panter and

Jean Smith have their Silver legs.

We were pleased to be invited by our neighbouring Fenland Aero Club to join them in an enjoyable spot landing competition. Colin Jaques, Trevor Nash, Nick White and Harry Worth are restoring a K-6C8 to add to our increasing private fleet. The task fortnight, including the Inter-Club League, is from July 27 with a barbecue on August 10. Visitors are always most welcome.
F.R.P.

RATTLESDEN (Rattlesden Airfield)

The cross-country season has finally got going with Kevin King, Andy Howells and Peter Harrison completing their Silver badges. Mark Wright has Diamond goal and both Mark and Dave King have their full Cat ratings.

A lot of hard work has been put into clubhouse refurbishments and the completion of a T-hangar to house the syndicate Falke has provided much needed space in the main hangar in time for the new club K-13 which has now arrived.

We are hosting the Inter-Club League during the first weekend in August with a barn dance on the Saturday evening; tickets are available in advance and visitors are very welcome.
H.J.S.

SACKVILLE (Riseley)

We are still trying to encourage pilots (particularly students) to arrive earlier, unpack the hangar and fly earlier in the day. One Sunday in June there were five instructors and seven tug pilots available and not a student to be seen before midday! Fly early - stay late.

There will be barbecues all through the summer - not to be missed. The mini task week starts on August 3 - all welcome.
D.C.

SCOTTISH GLIDING UNION (Portmoak)

Our annual visit to Hus-Bos produced excellent cross-country flights, notably Bob Jones and

Frank Smith completing Diamond goals for Gold badges and Kevin Hook's 500km for all three Diamonds - not bad for someone who went solo four years ago. Jim Green, Dominic Houghton and Gordon Watson completed Silver badges and Gordon MacPherson went solo.

Our cadet scheme has six students under the watchful eye of Bob Jones who, with Bob Petrie, has a full Cat rating. The scheme has recently been featured on Scottish Television's children's programme "Skoosh" and their lunchtime news.

The ATC detachment from RAF Syerston have spent another enjoyable summer based at the airfield with many cadets gaining 5hrs.

We follow most other clubs by giving our Web pages : <http://ourworld.compuserve.com/homepages/JCFerguson> with more information on <http://www.ed.ac.uk/~gliding/home.html>.
N.F.G.

SHALBOURNE (Rivar Hill)

Our oldest member, Vern Adams, celebrated his 82nd birthday on June 12 by flying a club K-8 in formation with Geoff Nicholls in his Chevron and a cameraman from Meridian TV. This was followed by a party. Vern learned to fly on a Primary during a week's course at Sutton Bank in 1938 where one of his instructors was Amy Johnson.

John Hewett, our PR officer, has been doing sterling work for us on the community Radio Station KICK FM in Newbury. We have found that donating trial lesson vouchers as prizes for charities etc is a cheap and effective form of advertising. One voucher raised £110 when auctioned at a charity ball.

Our April open day attracted some new members and we have a nice bunch of keen *ab-initios*. We have bought another twin-drum winch.

Phil Morgan and Siegfried Vallei have gone solo and, with Mike Truelove, have a Bronze leg. Alan Wilkinson has a Bronze badge. Jeff Goodenough, Rob Sharpe and Alan Wilkinson have bought an Astir 77.
J.R.

SHENINGTON (Shenington Airfield)

Henry Whitrow, Mike Nelson and Richard Adams have soloed; Janet Mare and Paul Mullis have Bronze legs; Silver distances were flown by Anna Wells (to complete her Silver); Bob Playle, Graeme Hudson and Leigh Wells

have their 5hrs and Jon Smart Silver height.

The task week went well in spite of mixed weather and Simon Adlard visited with his Janus C to give a number of very enjoyable cross-country training flights.

We have a T-21 in addition to the turbo 21, also a launch point caravan with lights and an extra retrieve vehicle. Barbecue profits have helped us upgrade our kitchen equipment.

We have a host of new private gliders, including a second LS-8.

Our student sponsorship scheme is progressing and we are now interviewing, so should soon be up and running. The Inter-Club meets have gone well with some memorable tasks (and retrieves!). Club barbecues are on the first weekend each month and visitors are welcome.
T.G.W.

SHROPSHIRE (Sleep)

After a miserable spring we have had two 500kms in one day, Peter Gill in our oldest glider, his Open Cirrus, and Dave Triplett in our newest, his ASH-26.

We have had some wave flying and Tony Adams has again deployed his toothbrush and teddy (see last issue, p157) visiting Nympsfield and Gransden.
T.A.

SOUTHDOWN (Parham Airfield)

We have updated our fuel supply system with an Avgas underground tank. Julian Hitchcock has part two of the 100km diploma and Chris Hancock, Mike Allen, Bob Adam and Stuart Ross have gained Diamond goals.

Paul Souter and Tim Brewer (Olympia) joined up with Kenley to visit Le Blanc with the Vintage GC. Stuart Ross, Les Blows and chairman Steve Way have their full Cats.

Bob Adam and Andy Taylor brought back the Solent trophy from Vectis GC after an epic flight in the K-13. Wednesday, June 12, was our best cross-country day so far with over 3000km flown by the ten pilots, Dick Dixon flying 620km.
P.J.H.

SOUTH WALES (Usk)

In June, we welcomed 31 people from France and Germany in 20 Fournier aircraft of different types for the Club Fournier British tour. They gathered in Calais and visited Old Warden, as well as Usk. This enjoyable event was organ-

ised by Eric Fitzgerald and John Phillips.

We had an unscheduled visit from four aircraft from the Royal Jordanian aerobatics team travelling from Cosford to Biggin Hill (somewhat off track). In bad weather, low on fuel, they spotted our windsock and attempted to land. Three were successful, but the fourth landed in the wrong direction, touching down at 98kts on wet grass with very little field left.

He went through the hedge, across the road, into a farm gate and ended up neatly parked in front of a cottage garage. The pilot commented "these things happen!"

Courses and evening flying are well underway and again our package deal is attracting many new members.

Brian Compton has both Bronze legs and Rob Weaver an assistant rating.
M.P.W.

STAFFORDSHIRE (Seighford)

John McLaughlin (DG-400) has flown the club's first 500km. We hosted the North West Inter-Club League with two successful days.

We have special *ab-initio* training for National Students GC members in June and our own in July. After planning problems the clubhouse should be finished in September and we have seeded another 50 yard strip of the airfield.
A.K.

STRATFORD ON AVON (Snitterfield Airfield)

Derek Bennett, Sharon Edlin (our first female instructor), Mark Parsons, Phil Pickett and Roy Wood have become assistant instructors and join our hard pressed team. Adrian Overing and Andy Pullen have gone solo and Lee Ingram completed his Silver with a distance flight.

Geoff Butler, Bob Hill, Bob Horsnell, Nigel Spedding, Brian Tebbitt and Sandra Wood have AEI ratings. Our May expedition to Sutton Bank was very successful with some interesting ridge, thermal and wave flying.
H.G.W.

TWO RIVERS (RAF Laarbruch)

Paul Carrier went solo in April and Adam Segal and Sarah Smith achieved Silver height. Tim Rommen flew 300km, Fritz Strassbourg 220km with good flights by Vince Mallon and Alistair West. We welcome Sarina Brunning, our new female instructor.
S.A.C.S.

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ULSTER (Bellarena)

Louden Blair's home-built Monerai, seen fleetingly in 1986, is back.

The May safari to St Angelo gave us some reasonable soaring over Fermanagh's lovely lakeland and was well supported.

Peter Holmes and Herbie McCullough are our latest soloists. We are combatting both gliding's rising age profile and gender imbalance by having five school pupils currently flying, David Parkhill as a soloist and three girls and a boy seriously involved in pre-solo training.

At press time the SCNI was about to decide whether to grant aid a new engine for our Super Cub.
R.R.R.

Obituary - Kathleen (Kay) Isabella Mackie

One of the earliest women pilots in the British gliding movement died at her home at Ringdufferin, near Belfast, on May 8 at the age of 96.

Together with her husband Jack and brother Norman Metcalfe, Kay Mackie was a founder member of the Ulster GC and played a key role in its activities throughout the 1930s and the early post-war years.

They were among the small band of pilots who pioneered car-launched gliding operations from Magilligan Strand in Co Derry in the 1930s to soar along the incomparable Binevenagh ridge, which is still the focus and the impressive backcloth for the UGC's operations from Bellarena.

Now transferred to video tape, Jack Mackie's ciné filming of such operations, including air-to-air footage of Kay soaring the ridge and some pioneering pre-war colour stock, comprises some of the best visual archival material of early British gliding in existence.

Kay was last airborne without power in 1986 when, together with her husband Jack, who died in 1988 at the age of 90, she visited Bellarena and flew in a Twin Astir with nephew Gordon Mackie. He maintains the family connection with the club as a past chairman and an active fully rated instructor and tug pilot.

In addition to her soaring skill, Kay was one of Northern Ireland's best known painters in both watercolours and oils. Only a few days before she died a three-month exhibition of her long lifetime's work had closed at the Ulster Museum in Belfast.

Bob Rodwell

VALE OF WHITE HORSE (Sandhill Farm)

Steve Bennett and Timmy Clark have soloed, Timmy on his 16th birthday. Jonathan Huband is an AEI. John Ashcroft flew a 300km in just over 5hrs in the club K-18 on June 13.
J.K.

VECTIS (Isle of Wight, Bembridge)

Our two-seater is almost redundant as nearly every member has graduated to single-seaters and we have more instructors than pupils.

John Kenny flew across the Solent to retrieve the Solent challenge trophy from Parham who have now claimed it back. Ray Ginsburg has Silver height and four various stages of the cross-country endorsement. Mike Squibb was the first to complete the training given by Andy Aveling who brought a Motor Falke from

Lasham. Without his help it would have been impossible for Vectis members to obtain the endorsement on the Island.
R.G.

VINTAGE

Obituary - John Ansell Pressland

"Johnnie" died on April 10 aged 75 after a period of indifferent cardiac health. He joined the RAF in 1935 and flew Typhoons with 193 squadron during the war, surviving a bale out over the Channel after engine failure. Later came Spitfire test flying and service in Germany where he became the first serving officer to gain a Silver badge, No.64, the third issued post-war.

He shared an Olympia with Bill Crease in the 1948 Nationals, and won the longest crosswind goal flight (76 miles) prize. That year he was also a British team reserve for the World Championships in Samaden. I had the good fortune to be his pupil for my national service pilot training. He was an instructor with the Airways Aeo Club and in later years joined the VGC, co-owning the Musger 19 with Chris Wills.

John was a kindly and peaceful man and an excellent flying instructor with a mischievous sense of humour. We send our deep sympathy to his wife Joy, son Mark and family.

Michael Russell

WELLAND (Lyveden)

Our open day was blown out by high winds and has been re-arranged for a later date. Steve Algeo, Mark Prickett and Len White have AEI ratings and Chris Hatton, Bob Jackson and Bob Rowland assistant instructor ratings. Adam Aston has Silver height.

Our Web site address is <http://www.sky-net.co.uk/~mickn/welland.html>.
R.S.

WOLDS (Pocklington)

The first task weekend yielded eight 300kms and three Diamonds.

The clubhouse is being reclad with timber for a pleasing appearance and we have a new Avgas fuel tank.

Bob Rust, a Yorkshire weather presenter, gave us an amusing talk on his TV work.

Look out for us on the Web:- <http://www.pocklington.gov.uk/wgc>
M.F.

YORK (Rufforth)

The cross-country season started well with Jenny Fleetwood's Silver distance to complete her badge; Leonard Newnham's 300km triangle and Tom Stoker (Libelle) achieving the first 500km from Rufforth for his third Diamond. On one day in May three pilots flew over 300km.

A number have Bronze badges and the cross-country endorsement. We give training and testing for the cross-country endorsement for visitors using gliders and motor gliders.

Mel Mason, Chris Strudy, Chris Brayne, Bob Sansoni and Gilly Richardson-Trier have AEI ratings. With our own AEI coach we can also arrange AEI training courses, including the tests, for visitors. We have three winches giving us maximum efficiency.
M.D.C.

YORKSHIRE (Sutton Bank)

Ralph Major, Rob Perris and Mark Askenhazy have gone solo; Marion Stanley has Silver height and Derek Holland and Peter Clay Diamond goals.

June 13 brought good soaring conditions with Phil Lazenby completing a 580km for Diamond distance. The Vintage Rally enjoyed several good ridge days and we celebrated Mike Maufe's 80th birthday.

Guy Westgate's aerobatic course was unfortunately hampered by bad weather.
C.L.

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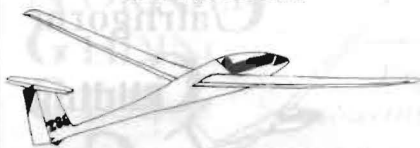
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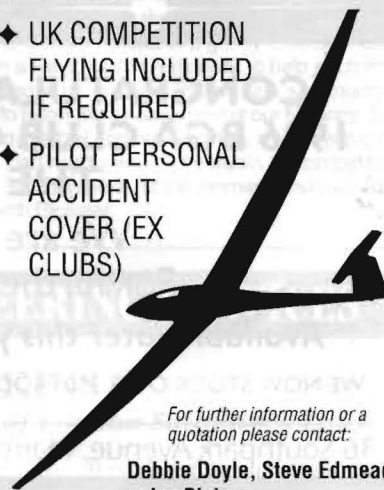
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MARY GOES ON A RETRIEVE

Every cross-country pilot who takes part in competition at any level soon comes to realise the importance of a good crew. The ideal one is patient, long-suffering, loyal, unselfish and ever ready to help - or, sometimes more importantly, to refrain from helping. She (or he) must be willing to wait on the sidelines, while the pilot gets all the glory, and to set forth in darkest night with dodgy equipment to extract the intrepid birdman from some corner of the hinterland while he (or she) awaits his arrival in quiet confidence. Usually at a pub.

This spring, for the first time, I was invited to take part in an Inter-Club League. The reason nobody asked me to do so before is because unfortunately I am only eligible to fly as a Pundit, having in the dim past flown a Nationals and a 500km (heh, heh!). There are usually a lot more choice pundits than this old granny, but Shenington GC was desperate, I was current and agreed to take part, but only if I could fly on all three days. That way one would have, given usual British weather, a decent stab at accomplishing at least one cross-country during the weekend.

Teams from Shenington, Bidford, Bicester RAFGSA and Oxford GCs gathered at Hinton in the Hedges. Henry Whitrow, my crew, and I were the very first to arrive and soon had Pegasus 987 rigged and taped.

Red Staley, our captain, was flying Intermediate for Shenington. We started at the same time on the first day, he in his LS-4 loaded to the gunnels and me in my somewhat battered Pegasus, without ballast. After the initial climb I had the discouraging view of why top pilots always fill up with water. That confounded LS-4 just creamed along, losing nothing at all, while poor old 987 at 70kt made an inexorable descent to-

wards Enstone. I eventually flew back through a blizzard (vis about 50ft!) to come in 3rd.

The next day our team consisted of me, John Whiting (Std Cirrus) as Intermediate and dashing Dave Weitzel in his K-6E. The Novices had the best of the day before it went to impenetrable mush again. I was much too slow and made a pilot-preserving decision to land back.

On the third day, Bank Holiday Monday, a 500km was set, but only for the Intermediates. Red turned quite white at the news and hastily organised a crew. So great is his usual confidence in getting round or to an airfield, he doesn't often feel in need of a crew. I always feel in need of a crew!

Our task was a 256km which I got round with no difficulty and we were just contemplating a few beers to celebrate when the call came at 6.30pm that Red had landed at Retford/Gamston Airfield. As far away as he could possibly have been without falling off the map.

Red's crew, recruited in haste and repenting at leisure, declined to go and fetch him. His vehicle wasn't up to the task. Henry and I declared that we would do it. After all I can always switch over to American time. And Red could drive back, we imagined.

Henry took the first stint up the M1 and I had a good look round the trailer as dusk was falling to be sure the lights were working. After all, it was an RAF trailer and bound to be proper. And so it was, lit up like a Christmas tree.

We found our pilot awaiting our arrival at the gate. No, he hadn't been there since 6pm - the in-

tervening time had been spent sociably in the Village Arms and Red was in no condition for helping out on the drive home. He properly offered to put us up at a motel but, with a rush of adrenalin, we said we were fit to get back, no problem.

Going out of the drive, which incorporated a set of severe humps, we passed a well fenced enclosure containing military hardware of every description. Apparently it is privately owned. If you need to start a small war you could set yourself up nicely.

We had never seen the M1 so free of traffic. At Daventry I walked round the back to check that all was well before taking the wheel. And discovered that we had been tooling down the highway with no lights on the trailer "at all at all!". The plug-in connection had been bitten off at the root by those fierce road humps on the Retford driveway.

Every vehicle (not a lot at 3am) between Daventry and Banbury flashed its lights at us. Safely home, we slept in next morning and I was shattered for days - just as well it was too windy to fly.

The moral of the story is: Cosset thy crew and recruit him well in advance. And I discovered how delightful it is to fly the Inter-Club League, to be part of a team instead of a grimly isolated individual in a Regionals or Nationals; to help each other out and to be involved in the trials and triumphs and to foster the development of our Novices. Both David Weitzel and Ian Atherton, who flew the last day, can hardly wait to fly again in competition. And Shenington is (at the moment anyhow) equal 1st with Bicester.

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THE REAL THING

Keith, regional examiner for Thames Valley, started gliding in 1982 and flies his Kestrel 19 at The Soaring Centre where he is also a tug pilot. He has a Gold badge, two Diamonds and 1100hrs.



When I'm in current flying practice, my take-off and landings are really pretty good. On take-off I take pride in transiting imperceptibly from rolling on the wheel to becoming airborne. And I try to make every single landing fully held-off followed by the wingtip dipping gently to earth exactly level with a pre-determined reference point (ie a spot landing).

Fortunately, each and every flight I take includes a take-off and a landing - which helps me keep in practice.

If gliders were fitted with auto-pilots, and I were to leave the launching and landing to the electronics for the season, it's not difficult to imagine that my awareness, judgment and skill would become severely reduced.

Following exactly the same logic, I ensure that I practise slow flying, stalling and spinning exercises very, very regularly. Come the day when, for whatever reason, the world suddenly becomes very busy and I inadvertently stall the glider near the ground with yaw present, I want to know that I will recognise it and be able to recover from it with the minimum possible time lag.

This is because I know that when I stall or spin my glider near to the ground - or to other gliders circling below - the most useless thing in the world is the amount of air above me. The most valuable thing in the world is my ability to recognise and respond positively, confidently and with the minimum height loss.

For example, all glider pilots will have heard of the "failed winch launch reduced *g* stall and spin exercise". Most pilots will have had the exercise demonstrated to them. Many pilots will have practised this once or twice with an instructor. Some pilots (actually quite a lot) have had it happen to them for real and just got away with it. A few pilots haven't been so lucky. And then there's those pilots whose turn hasn't arrived yet.

While demonstrating this exercise, instructors do it at height - because it's dangerous near the ground. The trouble is such exercises at height are far less stressful, both because there's oodles of air beneath and because there's no additional workload associated with being horribly positioned in the circuit.

No wonder then that despite having been shown the consequences of poor handling once or twice at height, it still so often comes as an unrecoverable surprise to people when it happens for real.

Rarely is it a problem not knowing how to recover from a spin; this is because all you have to do is move the stick forward. The problem is that the transition from controlled flight into the spin can be creamily smooth and subtle.

In almost all cases, therefore, it is the lack of recognition (caused by lack of practice) which results in the ground arriving before the brain has caught up.

Then there's the spin off an apparently per-

fectly co-ordinated, well banked, final turn - even with absolutely no abuse of the rudder whatsoever. All because the pilot's attention was distracted by being near the ground and/or poorly positioned and the airspeed has been allowed gradually to decay below that required for the additional, turn induced, wing loading. In this case the transition from controlled flight into a serious height - loss spin in modern gliders can be, how you say, snappy.

Frankly, the only insurance you can buy against the real thing is to practise and to keep practising.

Twice yearly flights with an instructor should be your absolute minima. More is better. Learn to recognise instantly when the glider is about to depart, or is departing - and learn to respond swiftly and smoothly with that flowing style and consummate skill that you apply to the rest of your gliding. ✕

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IT'S SOMETHING SPECIAL

Tony returned to gliding after a lay-off of many years due to ill health and completed his Silver badge last summer. He flies with Stratford on Avon GC where he has gained admiration for his determination and the way he turns out in all weathers.



The next time you are drifting along and catch a glint of sunshine on a glider circling high overhead, remember John Gillespie Magee. He was the young Canadian pilot who wrote

*Oh! I have slipped the surly bonds of earth
And danced the skies on
laughter silvered wings."*

Fifty years ago his contemporaries were training on many of our airfields. The sheer delight and beauty of flight was stronger than the grim realities of war for all those young men. I hero worshipped men like Bader and the new generation of jet pilots like Neville Duke and John Derry,

So in 1957 I found myself alone over the Hampshire Downs, peering over the side of an open cockpit trainer at the airfield, terrified and elated in turns. No matter what happens, once you have flown alone you just want to go back again. You may have had a five minute battle against the buffeting turbulence of a winter day or an hour drifting on the smooth upcurrents of a summer afternoon. Skipping from cloud to cloud, guessing where the next upcurrent might push up, you see birds circling.

But flying is not all of the reward, although it makes up for the long struggle during miserable weather. A gliding club operates like an aircraft carrier. Teams of disciplined and skilled members working together. It is all a totally absorbing and a fascinating day out. Finally, there comes a time each summer afternoon when the airfield is empty and the gliders are drifting silently away to their goals. You feel satisfied your friends are airborne but watch them with a tinge of envy until your turn comes again.

I have had a disability from the age of ten, but I have ridden horses, sailed and canoed. None can compare with flight. It costs not much more than hiring a boat and a lot less than golf. It takes me away from the streets of Birmingham and the separate world of teaching. Over the last abandoned airfields, I've joined the company of those young men and shared their delight again, high in the sunlit silence.

BGA ACCIDENT SUMMARY

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Age	Pilot/Crew Injury	Hrs
140	K-13	-	Minor	-9.95	Incident Report	0	-	-
This glider was hit by a landing K-8. See report No. 139.								
141	K-13	2406	Minor	30.9.95	Parham	57 P2 61	None None	2330 1036
During an annual instructor check P1 asked P2 to demonstrate a medium height cable brake. At 350ft he released and chose to land ahead. P1 considered there was not quite enough space ahead and monitored P2 but at 50ft decided he would make it. At 20ft P2 decided to turn with the brakes still out. The glider stalled and landed sideways.								
142	Motor Falke	M/G G-BPIR	Minor	23.8.95 1800	Husbands Bosworth	70 P2 0	None None	1820 ?
The instructor took over from the student at about 15ft before landing after a PIO developed. Landing into bright sun, he misjudged the flare and the motor glider made a heavy, bounced landing. During this the propeller, which had been left turning under power, hit the ground. The blades were broken and the engine shock loaded.								
143	DG-300 Elan	3494	Subst	21.9.95 1430	Nymphsfield	62	None	541
The pilot decided to return to the airfield as soaring conditions were poor. In a straight glide, which he had accomplished easily from that position before, he hit sink but carried on. Rather than set up an approach into a good undershoot field he carried on until, too late, he turned to avoid a wall and groundlooped.								
144	Kestrel 19	1716	W/O	13.8.95 1430	Portmoak	45	Serious	222
While local soaring the pilot hit strong sink and selected a field. During the approach, to a downwind landing in crop, he appears to have failed to monitor his speed and the glider was seen to enter a spin and crashed, seriously injuring the pilot.								
145	LS-7	3590	Minor	29.7.95 1430	Towcester	39	None	1500
The pilot was landing in a cut stubble field that sloped slightly left to right and uphill. After touchdown the glider ran through a slight bowl which reduced further the wingtip clearance on the uphill wing until it touched. The glider groundlooped causing minor damage.								
146	Pilatus B-4	2352	Minor	2.12.95 1630	Denbigh	42	None	33
The locally trained pilot returned to the club for a competition and attempted to soar the local ridge. After the winch launch he reached the hill rather low and moved round into a bowl where the curlover from the upwind spur was probably working. As he turned away from the ridge he sunk until the wingtip hit a power line and crashed.								
147	ASW-19B	-	None	-9.95	Incident Report	61	None	158
The glider had been flown for over 2hrs during two flights earlier that day. This pilot had a flight of 1hr then made a normal landing. About 30 yards into the landing run the tailplane fell off. It was found the rigging pin had not been inserted and a proper "DI following rigging" had not been carried out.								
148	DG-300	3154	Minor	20.9.95 1200	Aboyne	50	None	230
The visiting pilot was distracted by the turbulent conditions in the circuit and missed out his downwind checks. As a result he landed with the wheel up which damaged the fuselage.								
149	ASW-22	3713	Minor	28.9.95 1240	Aboyne	65	None	609
After a wave soaring flight the pilot flew a normal approach to the narrow runway but drifted to the left in turbulence during the last part of the approach. As a result the glider landed normally but on the grass alongside the runway. At low speed the wheel hit a small rock which damaged the undercarriage chassis.								
1	Foka 5	1690	Minor	8.10.95 1600	Long Mynd	60	None	1000
The visiting, experienced pilot obtained permission to land alongside the clubhouse. The approach and landing were flown too fast and the touchdown was not fully held off. As a result of the extra speed and the rough surface in this area the glider became airborne again. The pilot induced a PIO causing damage as the skid hit the ground four times.								
2	Astir CS	2185	Subst	4.10.95 1310	Lleweni Parc	71	Minor	388
The pilot eagerly winch launched into the hill and wave lift but just as the glider rotated into a normal climb attitude, winch power was cut in response to a miss-heard radio message. He lowered the nose then, feeling a surge of lift, thought power had been restored and raised the nose. However, it was a gust and the glider stalled into the ground.								

BGA ACCIDENT SUMMARY

3	K-6CR	1098	Minor	8.10.95 1345	The Park	28	None	26
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The circuit was busy and other gliders had landed close to the launchpoint so the pilot decided to land long. As the brakes were opened the pilot noticed two gliders had landed at the intended touchdown point so decided to land between them rather than to the left. One moved right to clear the landing area thus closing the gap and the wingtips hit.

4	Pegasus	-	Minor	-10.95	Incident Report	35	None	208
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(See report No. 3) On final approach the pilot noticed another glider turning in behind him so decided to land long and to the right hand side of the strip, allowing plenty of room behind and to the left. The K-6 pilot tried to land to the right of the Pegasus, could not get through the small gap and hit the glider's wingtip.

5	Blanik	2094	Subst	21.10.95 1326	Bidford on Avon	52	None	3
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The inexperienced pilot made a normal final turn but selected flap instead of airbrake and failed to recognise his error. Flying at high speed the glider landed well into the field. Some 30 yards from the ditch and road at the end of the runway the pilot forced a groundloop, substantially damaging the glider.

6	Club Libelle	2059	Minor	21.10.95 1630	The Park	54	None	157
---	--------------	------	-------	------------------	----------	----	------	-----

The pilot decided to land near the trailer park after local soaring. In the crosswind conditions the pilot failed to allow for the sink on final approach and had no height in hand to prevent an undershoot into rough ground.

7	K-21	3705	Minor	30.10.95 1545	Dunstable	42	None	300
---	------	------	-------	------------------	-----------	----	------	-----

The instructor pulled a simulated winch launch cable break. P2 recovered and turned through 180° to make a downwind landing in the light wind. P1 took control after P2 failed to open the airbrakes quickly. The glider landed in a rough area, deeper into the field than intended. A deep rut caused damage to the wheel, skid and fuselage.

8	K-13	2191	Minor	31.10.95	Lasham	69 P2 0	None None	3000 64
---	------	------	-------	----------	--------	------------	--------------	------------

During a check flight P1 set up a sideslip approach but was not positive enough in handing control back to P2. As a result P2 did not recover in time to prevent a sideways landing which broke the skid.

9	K-13	1446	None	5.11.95 1300	Kirton in Lindsey	38 P2 56	None None	274 130
---	------	------	------	-----------------	-------------------	-------------	--------------	------------

During out of position on the aerotow training P2 was placed in a position from which he could not recover and the weak link broke. The rope wrapped itself around the wing so P1 took control, levelled the ailerons, then sideslipped the rope off the end of the wing.

10	K-7	936	W/O	15.11.95 1600	Brentor	66	Serious	33
----	-----	-----	-----	------------------	---------	----	---------	----

While landing into sun the pilot started a slightly high approach then selected airbrake. He was seen to approach rather to the right of the normal track and heading for a large oak tree. Apparently dazzled, the pilot was seen to open the brakes fully and the glider crashed into the tree. The pilot was seriously injured, breaking both legs.

11	Blanik	1280	Minor	5.11.95	Strathaven	56	Minor	5.3
----	--------	------	-------	---------	------------	----	-------	-----

The low experience pilot winch launched in a 15kt crosswind. After turning back towards the launch point he found he was rather high so made a 360° turn and drifted away from the airfield which he lost sight of. He made a landing in a field that turned out to be too short and hit the far hedge.

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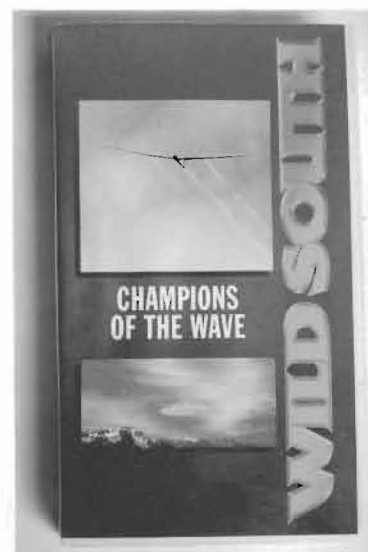
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