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Cover: The Nimbus 3DM on its maiden flight photographed by Gerhard Rein. (See p239.)

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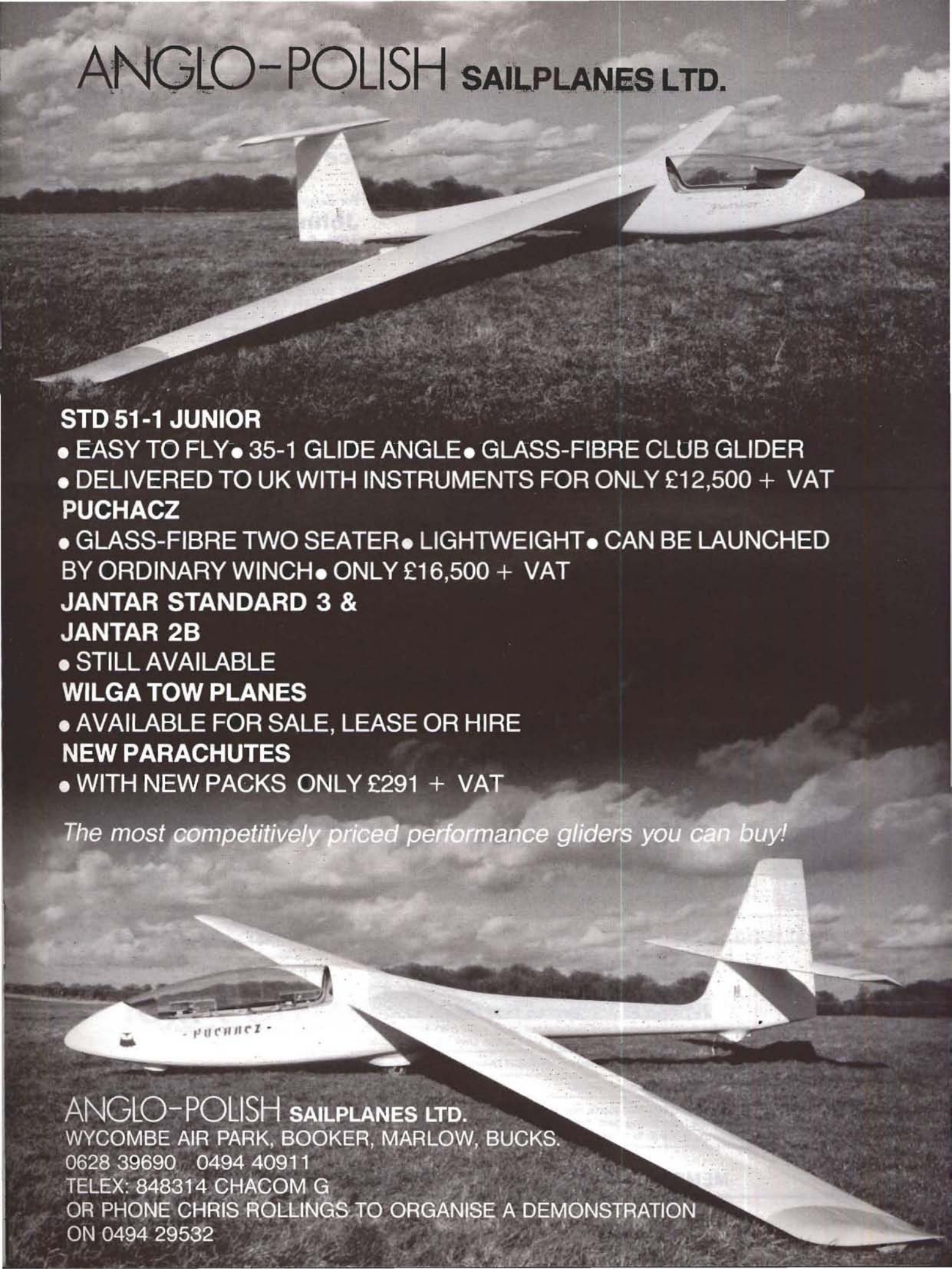

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TAIL FEATHERS

Extract those digits!

At the BGA conference there was an interesting talk about computer/varios in gliders, given by a manufacturer. After the talk, a chap who was once a partner of mine in a K-7 syndicate 27 years ago, and who is now the very distinguished boss of Britain's top electronics engineering firm (that is what he tells me and I'm sure he's right), got up and lambasted all the manufacturers of these very expensive devices for their rotten ergonomics. By ergonomics I suppose he means ease of use by the human brain or body. Having shares in two gliders, each with a different make of computer varying in degree of complexity and unergonomicity, I agree with him.

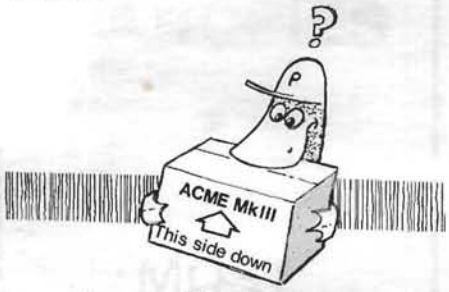
User-hostile

For instance, when you want to tell the computer how far you want to go on a particular leg, you should just have to punch in the number on a little key pad, instead of toggling switches up and down (in one case you do tens of nautical miles on one switch and units on another, for Pete's sake) until you have got to the desired figure – or somewhere near it, in the case of computers that are translating round kilometres into unround

Manual available at all times

nautical miles. Worse still, using the various programmes on the more fancy versions requires one to have the manual available at all times during the flight, though no doubt after a season or two and a few hundred hours in the logbook you would begin to carry all the instructions in one's head, by which time the computer is obsolete and due for replacement by some gadget vying for a place in the **Guinness Book of Records** for user-surliness. Surely a plain-language readout on the LCD display would seem feasible, *eg* **"500ft below glide path"** or **"Time on task: 2hrs 37min".** That is another reason why two-seaters are becoming so popular – the fulltime job of messing about with present-day computers and manuals can be deputed to the P2.

I would add that, out of what seems like perversity, different manufacturers ensure that their gadgets operate in completely different ways. For starters, one of our audios is intermittent when going up and continuous when going down. The other one does the opposite. On one you press a switch UP to make the distance-to-fly numbers increase, and conversely, which makes some sense. But on the other one you push the switch DOWN to make the numbers go up, and UP to make the numbers go down. That is manifest nonsense.



Seems like perversity.

Nevertheless I am getting a lot of fun out of the latest version – but only on the ground after the flight. For one thing I have discovered, when sitting safely in bed, how to calculate the achieved glide angle over the ground for various completed flights. Assume your gizmo tells you, after a 120nm flight (222km):

1. Time spent on the task (say 2.5hrs)
2. % of time spent thermalling (say 40%)
3. Average rate of climb over the whole task in knots (say 2.5kt)

You can now calculate how long you spent thermalling (40%×2.5 = 1hr, to keep it simple). Then you can calculate *how high you climbed* during the whole task (1hr at 2.5kt is 2.5nm). Add to that 2.5nm the height benefit you got from the start (the difference between your start and finish heights, say 0.5 of a nautical mile, or 3040ft) and that gives you your total height used, 3nm. Divide that total height used into the straight line distance covered (120nm) to get the achieved glide angle (120/3=40). QED!

By the way, since this particular make of computer has all those variables in it anyway, it could in principle be programmed to pop that figure out on request. Just a suggestion for the next version. Other figures that could also emerge could be average airspeed between thermals and average ground speed between thermals.

All those variables.

A Champ in the back

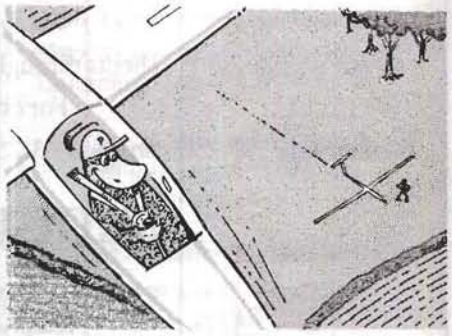
I've discovered that when I flew with Brian Spreckley in the two-seater in France, flying the same task twice in the same day, my average achieved glide angle over the ground went up from 46 (which is normal for me as P1) to 51. That is pretty amazing, since that is just about the max glide for that machine, though we rarely flew as slowly as max glide speed. Obviously a lot of free up going air was being collected.

The rate of climb with the World Champion aboard was naturally higher than in my previous flight, but oddly the *air distance covered,* according to the computer, was quite a bit longer: in other words, with Spreckley gently nagging from the back seat, I was wandering all over the sky along the very unstraight line of the lift (instead of flying doggedly in a direct line to the next TP, which I suspect I do too much) and coming down very slowly. Then with all the extra height we had under our bottoms we could afford to be more choosy about the thermals we used, which consequently were stronger.

Winters more fun for glider pilots than summers

Sometimes Spreckley would say "We're just p*ss*ng about here!" and on we would go. We saved 20 minutes out of the previous flight's 128. I could be depressed or exhilarated at the discovery of how bad my technique is after 30 years of struggle (BS says I've got a stack of bad habits from Skylarks, which I gave up 22 years ago, God help us) but I prefer to be exhilarated. Besides, there are heaps of people who are even worse, heh-heh.

That is the Coarse Pilot in me coming out, like Mr Hyde, all hairy and nasty. Sorry. (I should think so. *Ed*).



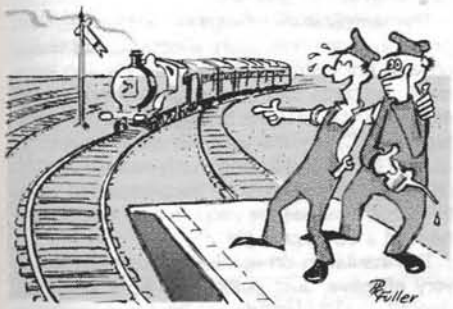
People who are even worse.

The next development, for people who prefer to do their gliding in bed in the winter, is to have electronic barographs that separate circling flight from straight flight (the change to thermal flap alters the nature of the trace in some way – or better still the barograph trace is replaced by a digital printout) so that you can reconstruct whole flights, not just grand averages. "Hm, my fumbling at the bottom of those second leg thermals cost me ten minutes, etc, etc". That and a bowl of hot toddy could make winters more fun for glider pilots than summers, if you can remember what those are . . .

Did They Have John Willy Calculators 100 Years Ago?

In the age of the steam train it was a matter of great professional pride for the driver and fireman of an express locomotive, as it approached the capital, to use up every breath of steam-pressure and coast into the terminus on sheer momentum. I'm not sure how far out these final glides started, but I believe that a full load of passengers and mail would not swallow any more coal after Rugby and still make it to London.

Betting money must surely have changed hands on what the new record might be: gradients, wind components and the general state of rails and rolling-stock would all be crucial considerations. No doubt they had little ready-reckoners showing that with so many tons at so many mph and so many pounds of pressure you could make it to London from Leighton Buzzard or wherever.



Grinding to a humiliating halt.

But the best laid final glides *gang aft aglay* and one hapless crew (not to mention a few hundred hapless travellers) found themselves grinding to a humiliating halt outside King's Cross. Being of the self-launching variety the train was no doubt able to get up steam again and stagger home, very much behind schedule with its crew, if not the boiler, deep in hot water.

One can only guess at the cruel jokes flung by their mates at the two wretched men (each no doubt blaming the other by now) as they shuffled into the canteen. However, if you've ever flown in a Nationals and have rejected a perfectly good thermal because you thought (wrongly) that you had it in the bag already, then you can imagine it pretty well.

Attachez Vos Ceintures! A True Story

Not long ago a chap chose to take delivery of a new glider from a Continental factory by flying it to England on aerotow. It was one of those days when soaring is marvellous but long distance aerotowing is hell.

Shortly after setting off for the Channel, chewing their way through rampant thermals, the two men in the tug were surprised to see a glider spiralling down out of control to crash in a field, then realised it was their glider. Panic ensued when they landed and dashed over to the wreckage to find no pilot. He, however, presently arrived, clutching armfuls of parachute, in the company of the local police.

He had been catapulted through the canopy by one specially powerful bump, and promptly hit the silk. They went straight back to the factory and told the astonished management that their new ship had lasted less than one hour and could they please have another one immediately?

The prize for chutzpah goes to the glider pilot asking the manufacturers for a volume discount on the grounds that he had bought two gliders in one day. I don't know what their answer was, but one can guess.

TWO IN A DAY

Unusual conditions give a boost to club records

Phil, a schoolmaster and a member of Strubby GC, has been gliding for four years and needs a duration to complete his Silver badge. He has shares in an Oly 463 and has recently bought a Club Libelle.

The Skylark reared, lurched and swooped in my usual thermalling turn and, in spite of my abuse of the controls, the vario insisted we were rising at 2kt. The impossible was happening! The air was thermic as it came off the North Sea four miles upwind. Normally sea breeze kills all thermals and the only soarable days are when the wind is off the land. The resulting drift takes one out over the sea and a downwind dash for Silver looks pretty silly unless you are prepared to land on an oil rig. This morning was different. For some reason the wind came off the sea already bearing the magic cumulus. A Silver downwind run was on and all of it over land!

The Skylark airbrakes came out so that I could return to the site and hastily rig the Olympia 463 for the 50km attempt. All routes had been committed to memory over the previous two years with maps, barographs, etc stowed in readiness. Club colleague John, on the same mission, was busy rigging his K-6CR; with only two previous Silver distances in the club's history, the pressure was on.

After last minute advice from the duty instructor the K-6 whistled up the wire whilst I watched anxiously to see if he connected. I gave the all out as I saw it tighten into a climbing turn. The 463 goes up on the wire like the proverbial homesick angel and I pulled off at 1600ft to avoid falling foul of the 1% rule. Two knots up straight off the launch and I was in to my super positive thermalling technique, *ie* if you're going up don't fiddle about trying to centre or you'll lose it. By holding my breath and tiptoeing around the turns, the altimeter wound up to 2700 and I was already some three miles downwind into my distance attempt.

Humming "Land of Hope and Glory", I swung the nose in the direction of Trent Valley GC 50km to the north-east. The vario immediately showed 4kt down and as the speed was pushed to 55kt to clear the sink, the vario responded with 7kt down and remained thus for the next and longest three minutes of my flying life. Not a sniff, not a tickle or a tremor, just inexorable down! At 1000ft I picked the field. Indeed, I had picked this particular field many times in the previous two years as I had driven past it in my car whilst musing that this is where I would come down if I failed to connect with the second thermal on a 50km Trent Valley.

Remembering that the Wolds hills would rob me of 300ft of my indicated height, I set high key at 900ft and started the downwind leg - a bump, a surge, dig the wing in and the vario rose to a glorious 2kt up. Gently, round the turn and careful not to wiggle anything. At this height we must have been at the bottom of the bubble and the ship would self-centre. Slowly the altimeter crept up whilst I kept an eye on the selected field - 1500ft and I began to breathe again.

"I felt like the driver in the desert who crashed into the solitary tree."

Belmont television mast, a needle like structure, 1700ft amsl, loomed large each time I faced westward and two more turns confirmed I was on a collision course. I felt like the driver in the desert who crashed into the solitary tree. By checking the altimeter and vario I reckoned I should clear it nicely and pass to the north; three more turns and the mast passed safely under the left wingtip.

The climb strengthened to 4kt up to cloudbase and an exhilarating run at 60kt (some speed in the Oly) in zero sink in and out of the wispy tendrils. Common sense told me that with a 10kt wind on my tail I was home and dry but self-preservation made me take the next thermal to 3500 when spot on cue I saw the white gliders and trailers against the green of the Trent Valley site.

After the rituals of landing certificates, barograph and telephone calls there was possibly the best moment; in walked John, the K-6 pilot. He had also made it and was smiling hugely. In the evening there were animated tales over a celebratory pint; the number of Strubby Silver distances had doubled in one afternoon, magic, sheer magic.

VARIOMETER SYSTEMS Part 2

Chris gives further advice and information on the systems in use in the second part of his very comprehensive feature

Basic considerations. The performance you can get from a variometer system is limited by the accuracy of the dynamic and static pressure sources. If you put rubbishy signals in, you will get rubbishy information out, however good your vario! However, you can check and improve a system if you know the likely errors and limits and you can also make allowances when you exceed the limits.

Pitots and statics. Open tube pitot probes are insensitive to yaw angles of less than about 20°, but can be affected by rain and ice. Pot-pitots work up to about 30° and are fairly resistant to the weather, but generate turbulence in the airstream over the cockpit – just where you don't want it. The errors in both types are not usually serious in normal flight. Flush nose pitots are much less satisfactory and may show errors with changes in pitch and yaw angles of as little as 5°, depending on the shape of the nose. You can get large errors on aerotow if the nose hook fitting and the pitot head are combined, due to wash from the rope.

A few gliders have good statics but the accuracy generally ranges from poor to quite appalling

It is much more difficult to measure the static pressure accurately. While tube statics are quite accurate, they are sensitive to yaw angles of greater than about 10° and to rain and ice. Fuselage statics, being much more weather resistant, are often used. A separate static may be provided for the ASI to prevent interactions with the vario in gusty conditions. A few gliders have good statics, with the errors of +/−1kt over the whole speed range, but the accuracy generally ranges from poor to quite appalling. A calibration chart showing airspeed indicator (ASI) errors is normally provided with the glider. Since the pitot errors are usually small, the graph effectively represents the errors in the static system.

A fuselage static which is close to the front of a wing, or under it, is likely to be affected by changing *g* loads and flap positions. Aft fuselage statics seem to give good results with some glass gliders. Ideally, the pitot, static and total energy (TE) sources should all be either behind or in front of the C of G. Static orifices on the fuselage must be flush with the surrounding surface. If the edge of the hole has a smooth radius rather than a fairly sharp edge, you can get errors of up to 10% in the static pressure.

Static errors add in a pressure to the static line which is proportional to the airspeed and this alters the amount of TE compensation being applied to a variometer. A gust can then produce pressure changes on the static line. The compensation is adjustable on some vario systems, but to do this satisfactorily the static error versus speed graph needs to be very nearly a straight line, say within +/−½kt at most, on the error axis. The line doesn't have to go through zero. If the graph is curved or wavy, particularly over the lower part of the speed range, it is probably better to install a TE probe.

Under slip conditions, the static on one side of the fuselage will be a bit above the true static pressure and the one on the other side will be a bit below it. The two static ports are connected together to average the pressures. To prevent a gale from blowing through the tube, older gliders use small plates drilled with fine holes to restrict the airflow. These holes should all be kept clear, or the static pressure will be very sensitive to slip. However, small holes can easily be blocked by rain and glass gliders usually use a larger hole connected to a small chamber. If your system is noticeably slip sensitive, check that there are no leaks, that both ports are open and that both statics are connected to the top of a T piece with similar lengths of tube.

If the vario and the ASI use the same static, running a separate vario static line part, or preferably all of the way back to the tube connecting the two ports will greatly reduce interactions between the instruments. If this is difficult, try fitting a manifold of about 100-200ml capacity behind the panel, with separate connections for each instrument. You can check for interactions when doing a leak test on the pitot system. Seal or disconnect the tube to the capsule or TE connection on the vario and increase the pitot pressure to give about 60kt indicated. Then increase the pitot pressure rapidly by 5-10kt, to simulate a severe gust, while watching the vario. It should show little or no movement.

Flasks and that ilk. Variometer flasks must be kept dry inside. If you take off with a hot wet plastic bottle, water vapour will condense out as it cools and give a strong down reading, making the vario unusable. You are most likely to get condensation problems in a flask during hot humid weather. When rigging, check for condensation inside the hose near the bottle. Water droplets can also block capillary tubes and cause a mechanical vario to stick.

If you heat a variometer bottle, the air inside will expand and give an up reading on the vario. Direct sunlight and changes in air temperature affect plastic bottles. I tested the cooling times of a vacuum flask and an "insulated" white plastic bottle by putting them in a fridge. The vacuum flask took a respectable 90min to cool, but the bottle took only 7min. Putting a miniature fan in the fridge to simulate a well ventilated cockpit reduced the cooling time of the bottle to about 5min, but did not affect the flask. If your vario bottle actually followed the outside air temperature, a 5kt climb would only read 4kt.

The temperature changes in British thermals probably won't noticeably affect you, but taking off with hot instruments, high climbs and large rapid descents can give errors lasting several minutes. If the air in the bottle changes temperature by 1°C/min, the vario will show an error of about 1kt. My plastic bottle only needed a 70°C change in the ambient air temperature to show this error, whereas the vacuum flask would have needed a 90°C change!

The insulation on some plastic bottles is not very effective. Just putting on more insulation doesn't do a lot of good – you have to increase the "heat capacity" first and this means adding weight. One solution is to close wind the bottle with 18-20 gauge tinned copper wire and then tape on ½in thick insulating foam. The insulation can be removed on some bottles and the wire wound directly on to the plastic. Fix the ends of the wire with soft solder or tape. An outer wrapping of aluminium freezer foil, which is thicker and more robust than baking foil, will reduce any radiation errors. Put the shiny side of the foil on the outside, but don't cover it with tape or spray it with lacquer. Most plastics appear black to infrared radiation. Alternatively, replace the plastic bottle with a vacuum flask of the same volume – the vario sensitivity is directly proportional to the volume of the capacity.

An outer wrapping of aluminium freezer foil will reduce any radiation errors

Air heats up when you compress it and cools if you expand it. As you start a climb, the air in an empty flask expands and cools at the same time. The amount flowing out of the flask is less than it would be if the temperature stayed constant and the initial vario reading is about ⅔ of the true

climb rate. Heat now flows from the flask walls into the cooler air. As the climb continues, the temperature of the air in the flask continues to fall until the heating and cooling affects balance. The vario then reads the full climb rate. At the top of the climb, the air in the flask continues to warm up until it is at the same temperature as the flask wall, giving a gradually decreasing up signal. The error is proportional to time and to the previous climb/sink rate. This lag is most troublesome when you are trying to re-centre part way up a thermal, when it masks the pattern of lift and sink as you circle.

I did some 10kt test "descents" on the bench, using a fast electric vario and an empty flask. At the bottom, the reading took about 15sec to fall from 8kt to 3kt. Putting three copper pan scrubbers into the flask reduced the response time to about 3.5sec. The air can exchange heat with the mesh of copper filaments much faster than it can with the flask wall. Since this is a property of the flask, it affects **every** vario, from the fastest to the slowest, that uses one. The quoted response speeds for varios are often those of the instrument alone – the flask response time may have to be added in. My latest super-flasks have a thermal response time of about a second.

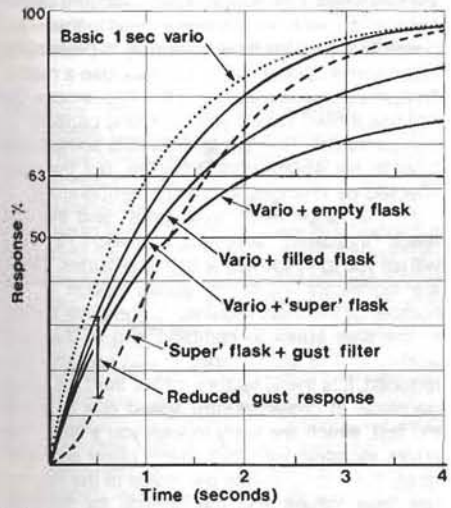


Fig 1. The response of a 1sec vario with different flasks.

I also compared the readings of two similar variometers, with and without modified flasks, in flight. The response of the modified vario was noticeably quicker and changes in the climb rate agreed much better with the sensations of hitting lift and sink.

Total energy and gusts. You all know that TE compensation removes most of the effect of exchanging height for speed, but what accuracy do you need? For systems using the pitot and static sources, the effect of pressure errors in the static system can be very serious. The TE error can be calculated from the graph of the static (ASI) error against speed. As a very rough guide, if the static error at a given speed is Vkt, the TE error in kt is likely to be more than 4×V×SINE (climb angle). With a really good static system you can get errors of 2kt in a 45° climb at 100kt. With a bad system the error can be half the airspeed! This will overload any vario and it may take a minute or so for the system to recover.

A variety of TE suction devices have appeared over the years. These have the advantages that they are not affected by changes in altitude and the pressure change at the vario during a pullup is small, minimising problems with flask and vario response times. Since suction probes can be blocked by rain and ice, it is advisable to fit a vent or a pneumatic switch which can be opened to cockpit static during flight. Your vario system will then still work, although it will not be compensated. Any air flow through the probe may clear it. If icing is a problem in your conditions, paint your probe black. Ice will clear off a black probe much quicker than off a shiny metal one. All TE probes produce a "noisy" or pulsating signal. Some fast varios can respond to the noise and you may need a gust filter to remove it.

The old Irving venturis are quite accurate and are not very sensitive to yaw or rain, but they do have a higher drag than most other probes. If you have one on a moderate performance glider, stick to it! I have not tested the miniature ones, although they are reputed to work well.

Althaus venturis need to be very accurately made to give good results. They are very sensitive to yaw and pitch changes, to bugs and to rain.

Brunswick probes are insensitive to yaw, but are affected by rain and may over-compensate by 10%. Try covering the slot nearest the probe tip with PVC tape. If this gives better TE compensation on test, seal the slot with epoxy. The suction will collapse if the airstream goes more than 5° above the shaft axis in the vertical plane, during a push over. This may be corrected by increasing the angle between the probe tip and the shaft to 100° and has a negligible effect on the suction.

The Irving probes are accurate and are insensitive to normal yaw and pitch changes, but are affected by rain. They are the best we have so far. Both probes will cope with yaw angles of up to about 25°. While the accuracy of a suction probe can be checked in a wind tunnel, the static errors on a glider are likely to be larger than the probe errors.

Now, how accurate is your TE probe? 10%? 1%? Let's forget any vario errors for the moment and put in some figures for a 10% error. The error reading=vertical speed×error%/100, so for a 100kt pullup at 45°, error=100×SIN 45×0.1= 7.1kt! for a 30° pullup at 70kt, error=3.5kt. I would be happier with something nearer 1%.

As you don't read the vario during a pullup, does it matter? The "response time" is the time it takes for an indication to reach 63% of it's final value. So, with a 3.5sec response vario, if you flew out of 7.4kt lift into zero sink, the vario would still read 2.7kt after 3.5sec, 1kt after 7sec, etc. This response is about right for fast systems which use a "filled" flask. Unless the whole system is fast, large errors will leave you searching for lift while the vario or the flask are still recovering.

An aerofoil, like the tail fin, affects the air pressure in front of it. To place in "undisturbed" air, the distance from the probe tip to the fin needs to be between five and ten times the maximum thickness of the fin. For fuselage mountings, a position somewhere between the back of the wing and two thirds of the way back to the tail and well away from any large changes in fuselage diameter, is likely to give fairly good results. A position about two feet behind the wing has been quoted. The fuselage drags a layer of disturbed air, called the boundary layer, with it. The layer is thin at the nose and thickens towards the tail. If the distance from the fuselage to the bend of the probe is more than about 5in, the tip should be outside the boundary layer most of the time, although it may still be affected by airflow round the fuselage during a sideslip and by turbulence from the wings. The drag of a long vertical tube can be reduced by fitting the stem with an "aerofoil" aluminium sleeve, obtainable from some aeromodel shops.

You will also get a lift error when you push the stick forward to increase speed

When you fly into a thermal and pull up, the *g* increase gives increased sink from the polar and a transient signal which is partly due to the changes in *g* on the vertical column of air between probe and the vario. A rough calculation for this gave a figure of about 2kt/*g*/sec/m of height. You get a lift error as the tail accelerates downwards, followed by a sink error as the overall *g* load increases. The axial rate of change of *g* is much smaller, but with a tail mounted probe it acts on several metres of tube all the time the climb angle is changing and is a fairly major error. With 6m of tube in the fuselage, pulling up to a 45° climb in 3sec will give about a 3kt sink error. You will also get a lift error when you push the stick forward to increase speed. These effects do not seem to have been reported previously. If you want the ultimate in performance, the fin may **not** be the best place to amount a TE probe!

Mounting a slightly under-compensating probe just within the suction influence of the top of the wing could reduce the effects, but the exact position and compensation would have to be determined by experiment – not an easy task. It might be simpler to use a hinged or retractable probe mounted underneath the fuselage, possibly actuated by the undercarriage mechanism. It is possible to mount a probe in front of the nose on some glass gliders, but it may need to be a metre long, or more, to be reasonably free of the influence of the fuselage. The wash from the probe **must** be kept clear of a nose pitot head under all flight conditions, or you will get large errors on the ASI. The *g* error and increased polar sink signals could be largely removed by compensating the vario readings with an accelerometer.

Electronic total energy. This has been implemented in two ways. The 'two bottle' system uses two sensors and two miniature flasks. One flask is connected to the static system and measures twice the actual rate of climb. The half size flask is connected to the pitot line and measures

the rate of climb plus changes in the airspeed. The two signals are subtracted to give the TE compensated signal. The TE compensation is not affected by changes in altitude although the vario sensitivity may be.

In the second way, the rate of change of height and the airspeed signals are measured separately and then combined to give a TE signal. The change in compensation with altitude depends on the method of measurement.

The TE compensation of both types can be adjusted to cope with quite large **linear** static errors. You are unlikely to get really good compensation if the static error graph is curved or wavy. Delays in the static response, due to the internal volume of the instruments being connected to a long static line, can also cause problems.

Capsule compensators. The idea behind these devices is that the changes in pitot pressure with speed are used to drive a springy diaphragm which pumps just the right amount of air into or out of the flask to compensate for the height changes. The pressure in the flask changes a lot during a pullup and this can give problems with the flask and vario response times. The original Burton TE capsules used a rubber diaphragm which was not very linear and perished after a while.

"Being internal, they are unlikely to be affected by rain or ice"

The PZL capsules use a metal diaphragm and will cope with the full speed range, but have a fixed spring constant - you can't easily adjust them for changes in altitude or for static errors and the compensation is perfect at only one height. If set to be correct at 3000ft, they are satisfactory (+/− 8%) up to 6000ft. They are perfectly adequate for centring in thermals, but your static errors must be small to cope with pullups. Being internal, they are unlikely to be affected by rain or ice. However, they are designed to work with an **empty** 420ml flask and it is assumed that speed changes take place in times which are short compared to 15sec. If you fill the flask with copper mesh, this will reduce the thermal response time of the flask and the system will undercompensate quite badly. With a couple of restrictions added to match the pitot and static response times and to provide gust filtering, they can work very well with a PZL vario and flask for British thermals.

Gusts. A TE system subtracts a signal from the sink rate which is proportional to the increase in airspeed. You get a sudden change in airspeed as you hit a horizontal gust and another sudden change as you leave it, with a period of more slowly changing airspeed in between. The TE system feeds an "error", proportional to the gust speed times your airspeed, into the vario. The fast signals can drive some thermistor varios out of the range where the output is proportional to the input, so there may be an advantage in using pneumatic rather than electronic filters. With higher cruise speeds and faster varios it has become progressively more difficult to differentiate between gusts and genuine lift. As a 1sec system is likely to have about four times the gust problems of a 2sec system, the readings from a slower vario may actually be easier to interpret.

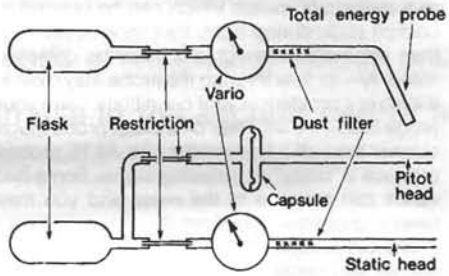


Fig 2. Simple pneumatic gust filters

A gust filter reduces the vario response to fast signals while having only a small effect on the slower lift signals. To get this effect, there have to be **two** steps in the signal processing which have **similar** response times. If one of these is provided by the natural response rate of the sensor in a flow meter vario, the second can be obtained by fitting a restriction to the flask. The "response time" of the flask + restriction should be about half the rated response rate of mechanical varios and about the same as the rated response rate of electrical varios. With a capsule or two bottle TE system, you need to use two restrictions to match the pitot and static response rates. With very fast varios, Netto and speed-to-fly systems, you need more complicated pneumatic filters. Just adding uncalibrated restrictions is likely to make a poor system worse. I will go into this more thoroughly another time.

Most pressure transducer and some thermistor systems have electronic gust filters built in. There is not a lot that can be done at the moment to reduce the effect of the more slowly changing airspeeds while you are in a large gust. It may be possible with more advanced computer varios to recognise and remove gust effects by monitoring changes in the airspeed. One "gust filter" on the market is just a filled plastic flask with tube connections at both ends. This will damp the fluctuations in a noisy line, but it isn't a filter in the sense that I have described.

Variometers. The glide polar is independent of height **only** when both the sink and foreward speeds are measured as "indicated" airspeeds. For the speed-to-fly equation to be true, the airspeed and the climb and sink speeds must all follow the same law. They can be all "true", all "indicated" or all "air density" (as measured by a thermistor flowmeter) speeds.

Three measurement principles are used in variometers.

1) The air pressure may be measured directly with a pressure transducer and the rate of change derived from the electrical signal.

2) Changes of air pressure with height cause air to flow in or out of a capacity and the flow rate may be measured.

3) If a capacity is fitted with a capillary leak, a pressure difference will develop between the capacity and the supply line proportional to the rate of change of height. This pressure difference is measured by the deflection of diaphragm or an aneroid capsule.

When reading instrument specifications, it should be remembered that the perfect instrument does not exist - they all have some errors. When an error is claimed to be "compensated", this usually means that it has been reduced for a range of conditions, but not eliminated.

Mechanical variometers. The SAGE variometers use the deflection of an aneroid capsule connected to a capillary leak tube to measure true rates of lift and sink. They have a response time of about 2sec and may also have a built in average with a 30sec response.

The PZL and the Winter varios measure flow rates with a moving vane and have slowish response times, but read true rates of climb to great heights. 60mm and 80mm diameter versions of both types are available. The PZL has a compensator fitted to give correct operation at low temperatures. The Winter varios have a response rate of 3sec as opposed to about 5sec for the PZL. Two and 3sec gust filters are about right for the two types. PZL supply 420ml vacuum flasks, but they do not have any metal mesh in them. It is possible to take the flask assembly to pieces and insert some copper mesh, but PZL use a rubber flask stopper which is quite difficult to remove. Do not use a filled flask if you are using capsule TE compensation. *Herr* Winter now puts some metal wool in his 450ml plastic bottles, but they are affected by changes in cockpit temperature.

As the varios read "true climb" and the ASI reads "indicated" airspeed, a speed-to-fly ring will tell you to fly too fast at higher altitudes. There are significant increases above 5000ft in the number of thermals required to complete a task, in the time spent in climbing and in the pilot workload. The search area is also considerably reduced. It is these factors, rather than the small decrease in cross-country speed due to flying too fast, which are likely to lose you a race. The errors increase with increasing climb and sink rates. You can calibrate the inside of the ring for sea level values and the outside for 10000ft values. Joining the points with a straight line is sufficiently accurate and allows you to estimate the value at intermediate altitudes. If the angle from the arrow to a point on the inside of the ring is A, the point on the outside is at A × 1.164. Errors in choosing the setting for the MacCready ring are likely to be equally, if not more, important. High altitude flight, an optimistic pilot and an uncorrected speed to fly system is not likely to be a very successful combination!

Thermistor based variometers. In a thermistor vario, the airflow from a capacity is measured by the cooling produced as it flows over hot thermistors. The sensitivity is proportional to the air density and to the temperature difference between the air and the thermistors. At normal temperatures, the sensitivity may increase by over 1% for each Centigrade degree fall in instrument temperature. You probably won't notice this in British thermals, but the decrease can be large if you take off with hot instruments. The vario may be a

lot more sensitive on a very cold day.

Some thermistor varios are compensated for instrument temperature changes over a limited range (10 to 40° for Cambridge CAV50) and may also have altitude compensation. A pulsating air flow will cool both thermistors more than a steady flow and cause the sensitivity to decrease. Fuselage mounted TE probes are particularly likely to give problems of this sort and a restriction, with a time constant similar to the vario response rate, can be fitted to smooth the flow. Some Cambridge varios have a restriction already fitted inside the hose connector.

Since the sensitivity changes with air density and instrument temperature, the readings are likely to be a bit under the indicated airspeed value if you use a vacuum flask capacity. With an unmodified plastic flask, the readings and zero position are likely to be quite sensitive to changes in cockpit temperature. Thermistor based speed-to-fly systems measure the air speed using a second sensor with a small leak tube connected to the pitot. The two sensors should change sensitivity with height and instrument temperature at about the same rate, but the flow through the leak tube will decrease with height. The simpler and older systems are likely to tell you to fly too fast above the nominal height range, but some of the latest computer based systems use a pressure transducer and a thermometer to provide compensation for altitude and temperature effects.

Pressure transducer variometers. These variometers use absolute pressure transducers which give a linear electrical output with changes in air pressure. The rate of change of pressure can be converted to give indicated or true rates of climb up to about 20 000ft. Above this height the sensitivity may fall off. There may be a maximum working height, above which the altitude signal saturates. The accurate altitude conversion was not done on some early variometers of this type. Electronic gust filtering is built in. These variometers are much more likely to be affected by damp or condensation than any other type. If you do get any drift problems, try drying the vario out thoroughly before sending it away for repair.

A differential pressure transducer is used in speed-to-fly systems to measure the indicated airspeed. Measuring the pressure difference between the pitot and the TE probe can eliminate problems with static errors - so long as the probe is reasonably accurate and there are no leaks in the probe line. However, if you also have a variometer flask connected to a tail mounted TE probe, this can give a pneumatic delay between the pitot and TE signals. You can effectively isolate the flask by fitting it with a gust restriction and this should remove most of the problem

The speed-to-fly information had a restricted height range on the early systems, but is compensated for altitude and temperature effects in most current varios. Pressure transducer systems measure the actual air pressure changes that you need to know. They are potentially more accurate than thermistor systems, which measure the temperature change of a thermistor due to the airflow produced by the pressure change.

Reliability of electronic systems. All electronic components show ageing effects to some degree. Studies of the failure rates show that about 95% of the early failures occur during the first 100hrs of use. After this period, the rate is quite low so long as there are no corrosion problems. Complex circuits with many components are much more likely to fail than simple circuits. I check for early failures by connecting new equipment up to a suitable power source and leaving it switched on for a week. If it passes this test, I know that it will probably give me several years of trouble free service. It is always a good idea to check the period on a guarantee - 100hrs is quite a lot of flying.

LUCKY DATE!

Chris, a BBC Radio studio manager, has achieved 2850hrs since he started gliding 26yrs ago with 2100hrs in club solo gliders. During this time he has logged 135 300km flights, 18 500kms and gained all three Diamonds by 1971, being No. 20 on the list.

There are many coincidences in life but who would reckon that on three consecutive occasions when a particular day, date and month are repeated, there would be long distance soaring weather. It would be a monumental task to go through years of weather records to find such calendar coincidences with 500km weather each time - and of course to be in a glider on a task on each day as well!

By 1971 the Surrey & Hants Club had had me in its grip for nigh on eight years and at the start of the 1970s decade two Dart 17Rs and two Phoebus Cs were the top of the fleet.

The whole week of July 11-17, 1971 was good and I tried a 500km on Tuesday, July 13 in Phoebus 266. It was bluish with a moderate NE breeze so a trip from Lasham to Bath and Lake Vyrnwy dam in North Wales and back seemed a good bet. A 0950 launch and a trundle crosswind eventually had me in a bit of confusion west of Welshpool at about 1630hrs but no likely lake in view so back home after 9hrs 14mins in the air!

The soaring ballot on Saturday, July 17 gave me the Phoebus again but it wasn't promising at 0800. I nearly gave the glider away to the next pilot on the list but around 0900 the conditions suddenly improved to nice cu and a light northerly breeze so a declaration was made to try the same task as Tuesday. I took a 1015 launch crosswind to 800ft and into strong sink but an Oly saved me circling at 500ft - zoom to cloudbase, 5800ft asl at 1030 BST!! The flight was basically straightforward with only a close look at no fields and lots of greenhouses near Montgomery for a quick thrill. the conditions were absolutely super, 50-80km visibility and, for instance, a straight glide from the Mynd to Lake Vyrnwy and back to the Mynd. Only 8hrs and 8min flying time!! With a 6000-6500ft asl cloudbase all the way I flew at 67km/h. I had no idea about speed flying then - not much now either.

The good weather of the 1970s continued and the club bought a Kestrel 19. On Saturday, July 17, 1976 I won the Kestrel in the ballot and declared a 600km triangle to Sennybridge (near Brecon) and Spitalgate. Lots of windshear made for a difficult leg into Wales and a shower turned me back at Crickhowell near Abergavenny, but it looked good to the NE so I elected to go to the second TP. It was marvellous, 200km in less than 2hrs and a nice ride back to Lasham - even into a freshening southerly the Kestrel managed 90km/h and 575km.

After this flight I didn't really attach much significance to flying 500km on the repeated day and date except that it caused a laugh at a party that night - Chris Lovell can only do 500km if it's Saturday, July 17 ... mind you in 1976, 500km was on almost every day, and some nights too, I suspect!

At the end of 1981 I left the Surrey & Hants GC as a full flying member after many happy hours (506hrs in Phoebus 266) in all the various gliders we had during my time and became a not very bloated pluto - (I haven't declared that yet as a TP) - crat, acquiring my own Mosquito.

Along comes 1982, a good spring with plenty of practice in Mosquito "Papa Delta", 1000km in April and 3100km by Saturday, July 16. July 17 looked nice so a declaration to Salisbury Cathedral and Lincoln Cathedral, 540km, was made. Not super conditions but reliable 2-3kt to 3500ft most of the route - a very nice way to spend a day. It was my longest completed declared flight at the time and it collected a lot of ladder points even though the task time was 7hr 42min. It was also my tenth 500km flight for an extra bit of statistic - my logbook is full of useless facts!

These three days have seen me do three car launches, 1625km and 24hrs 25 min flying!

The next July 17 on a Saturday is 1993. I'm looking forward to it - something special perhaps?

COMPETITION ENTERPRISE

North Hill, June 25-July 2

Enterprise 1988 started off with hot and sticky weather. Saturday saw John Fielden sending the 39 entrants off on a castle bashing task – to bring back pictures of Okehampton, Launceston, Dorchester and Corfe castles. The task was set to cater for the hoped for sea breezes and, as John pointed out, no airspace restrictions were marked on his (1938) 1:500000 map - There was a small farmer's field which is now Exeter Airport though! If you flew the course right, there was a maximum of 550km available.

John Bally won the day with his Nimbus 3: An eventful flight involving ridge soaring below the Wellington monument and Dartmoor, and having to dash to the shore of Lyme Bay after being rained on over the sea. He eventually landed after completing 391km. Justin Wills (LS-6) climbed to 12000ft in cloud and turned in 282km to come second. The best wood prize was awarded to Chris Nicholas flying a K-6 for coming 3rd overall, and another prize to Tony Moulang (K-13), who landed on a direct course between Corfe and Launceston – on a course which would have crossed Lyme Bay where the sea breeze was expected to develop but didn't.

Standing at North Hill became quite entertaining in the afternoon with some marginal final glides that just made it back, and some even more marginal ones that didn't, landing in the valley below watched by an audience of crew members and organisers.

Sadly the Slingsby Eagle flown by Simon Minson was damaged after landing in a field and rolling backwards into a hedge. It is surprising that if an aircraft does roll backwards, it will tend to roll more or less straight and not slew round. An interesting lesson to be learnt by all glider pilots here: – most people would have expected it to turn round but the tail skid prevents this in practice.

To make up for the heat of Saturday, it rained on Sunday and many people did the castle visits again – but by road.

Monday saw John Fielden and Mike Garrod (Met) trying to make a task to suit the weather. John's enthusiasm treated us to an Octopus task – 8 TPs with North Hill as the head, with the restriction of only visiting each TP once, and snapping North Hill between each leg – M5 junctions 25 and 26, Taunton racecourse, Wimbleball reservoir, Eaglescott airfield, Chard pond, Sutton Bingham reservoir and the Randy Monk at Cerne Abbas.

The idea was to tow to 2000ft – but the highest launch of the day was the Gull-1 which was towed up to all of 1200ft before low cloud stopped play and the tasks were scrubbed.

Briefing on Day 4 began to take on a bleak outlook, with Mike Garrod totally unable to alter the course of nature and make the sun shine. So at briefing Justin Wills livened up the atmosphere with an impromtu talk on flying in New Zealand. A tale of high speed, high altitude 100km triangles, flying a Twin Astir in the recent NZ Nationals which raised a good laugh and left tears in a few peoples' eyes. John Bally rounded off with a few words on flying the monster (TINSFOS) gliders and how the pilot's outlook changes from the nippy 15 and 17m gliders.

We then went off and became customers of the National Trust and eating establishments.

With the wind now westerly and threatening to break into sunshine, Day 5 was set to another Fielden special, the Iron Cross task. As visibility was rather poor four small triangles orientated north (Clatworthy reservoir and junction 25 on the M5), south (Ox and Ax estuaries), east (Chard pond and Axminster station) and west (Tiverton roundabout and Crediton Queen Elizabeth school) was set in order to maintain separation.

Tony Smallwood and the Gull's 50th birthday cake. Photo: Dick Wolff.

At 2pm John Fielden was sent off in the Gull to prove that the task was simple. However, the low cloudbase and poor visibility would not hold 35 gliders safely and the task was abandoned just before the rain fell to terminate the day.

So John had to be Enterprising on Thursday. With a moist airflow over the south-west of England, condensing at low altitude and forming precipitation (or, in layman's terms, low cloud and rain) the idea of flying was a non-starter.

So the task set was to solve eight clues to locate TPs and visit each to obtain an answer. Competing by road this day, points were awarded for each correct answer and for minimum distance travelled. There were also penalties for getting back to North Hill late and for fixing incorrect answers for subsequent teams at the entrance to some of the TPs!

The task was won by Tony Moulang who obtained all but one answer in 79 miles, although he went straight past the last (and nearest) TP on his "final drive". However the devious, if enterprising, behaviour (detailed above) resulted in a second placing to Bil Longstaff, who managed a similar performance in 95 miles. The consolation prize went to Chris Nicholas who managed to score −117pts!

Tony Smallwood's Gull-1 (sporting the appropriate letters AGE) is 50 years-old this year. To commemorate this event, Tony was presented with a birthday cake, complete with replica Gull sitting on the green grass, wingtips supported by matchstick trestles. Alas, the heat of the day softened the fondant icing which made the fuselage and wings, and the Gull first lost its Gull shape and then developed tip dihedral.

The cake was cut and devoured by the assembled competitors and the Gull wished well for the Sutton Bank reunion on August 24 with a Petrel (also 50 years-old), and for the next 50 years.

The next day started a glorious blue. A race to Lasham, with optional TPs for the brave and fast: Charny Down/Bath (as alternatives in case of a TP being obscured by a rain shower), or Didcot chimney/Wallingford bridge Launching commenced just after 10am, but about an hour later rain moved in after only some of the gliders were airborne. However, it cleared up and launching resumed at about 4pm.

The day was won by John Bally who took five thermals to turn Wallingford bridge and reach Lasham averaging 105km/h. The prize, however, was awarded to Charles Owles (Dart 17) who covered the longest distance in the longest time, and the consolation to Lemmy Tanner (Capstan) who after re-launching in the afternoon was just one thermal short of reaching Lasham, having left North Hill after 4pm – the Met man commenting that at that time he wouldn't even have set off!

The last day started showery and windy again – so early departures were in order. The task, Nympsfield *via* one of Wincanton racecourse, Andover station or Lasham, allowed Justin Wills (after a 9000ft cloud climb) to beat John Bally into 2nd place for the day, and the final scores to come out with Justin in the lead, John Bally 20pts behind and Gerry Martin (Cirrus) finishing 3rd.

So perhaps the weather didn't actually win this year. Over 290hrs and 11000km flown. Our thanks to our hosts, North Hill GC, and especially Ann and Dick Wolffe, Sandy Harrop and Alan Davidson for the organisation. Many more people go unmentioned but not unforgotten.

Next year Competition Enterprise is off to France, visiting Le Blanc on June 21-July 1. Come and join us!

A PHILOSOPHICAL FRAMEWORK

The following is the memorandum on competitive gliding Justin was invited to give at the last CIVV meeting having first written it for the British team manager, Ben Watson, after their return from the World Championships at Benalla

As a current competition pilot I naturally have views on topical subjects such as the redefinition of Classes, alternative types of tasks, improved startline methods and so on, but provided there is a clear understanding of the overall objectives, I am fully confident that a satisfactory consensus amongst the international soaring community can be reached on all these matters. It is the establishment of a philosophical framework that I would like to suggest.

I think there is a general acceptance of the view set out in my memorandum that competitive gliding has an enormous influence on the whole gliding movement, and therefore a responsibility towards it. Accordingly, the underlying objectives of competitive gliding should embrace those of gliding generally, or at very least not run counter to them. This begs the most fundamental question of all:

"What are the special qualities of gliding which make it such a distinctive and appealing sport for all its participants?"

There are probably as many answers to this question as there are glider pilots, but I believe they can be condensed into the following three areas:

First, the sense of individual freedom within a discipline imposed by natural laws.

In an increasingly crowded world, gliding offers the individual the freedom of the sky

In an increasingly crowded world, full of correspondingly greater regimentation and conformity, gliding offers the individual the freedom of the sky, to pilot his machine and exploit atmospheric energy as he thinks best within the natural laws of gravity and elemental forces.

This essential quality of gliding gives rise to other important aspects, including:

The sense of self-determination and self responsibility; possibly the obvious responsibility of pilots for the outcome of each flight has contributed to the remarkable tradition of the gliding movement being administered by glider pilots for glider pilots, and is evidenced by the great concern regarding developments at FAI.

The sense of egalitarianism. Gliding appeals to a wide spectrum of people. Natural laws do not discriminate between individuals on the grounds of race, colour, creed, political outlook, sex, age or wealth. You cannot buy a thermal, nor can you seduce one, although many of us often pray for one!

Secondly, the belief in the intrinsic good of the sport; that its beauty and the special fascination of flight enhances the lives and spirits of those who participate in it and encourages the best of their human characteristics, such as initiative, flair, energy, enterprise and intelligence.

I think glider pilots genuinely believe in the expression: "If there were more glider pilots in the world it would be a better place", and this helps explain their wish to communicate the enjoyment of the sport to others.

Thirdly and lastly, the extraordinary degree of co-operation, friendliness and goodwill that exists within the gliding community at all levels, club, national and international. This arises partly from the small size of the movement, from sharing the "evangelical" quality and the love of flight described earlier, and also from the considerable degree of co-operation that has to exist to enable a glider to fly at all.

I believe that the objective of competitive gliding should be to preserve and encourage these essential qualities of the sport.

I would now like to apply this approach to some of the current discussions regarding the future development of competitive gliding.

I described earlier the individualistic quality of the sport. I think this is irreconcilable with a team approach, and that therefore team prizes should be avoided. Likewise, situations that give rise to formalised pair flying should be discouraged, and information from external sources to pilots during flight should be as limited as possible consistent with safety. Gaggle flying transgresses the qualities of individuality, self-determination and initiative, so it is hardly surprising that the majority of pilots dislike it so much. All possible steps should be taken to avoid it.

The quality of freedom suggests that pilots should be able to demonstrate their skills over the widest possible spectrum within the natural constraints of the laws of gravity and elemental forces. Contests should be devised accordingly: venues should be chosen to provide a variety of conditions, and different venues should be selected in succeeding years. The tasks themselves should be varied, and alternative types should be introduced.

At the risk of being thought to be deliberately controversial, I would add my belief that those countries which have retained the right for gliders to fly in cloud have preserved an aspect of the sport without which it is greatly impoverished. In the UK we can and do regularly fly in cloud during competitions under conditions which competitors regard as safe and effective. I urge those countries where such flying is still permitted to exercise this freedom so that it may be preserved.

The perceived egalitarian quality of gliding has led to the current discussions regarding the redefinition of competition Classes, and the possible introduction of a new Class, with the objective of reducing the complexity and cost of the aircraft themselves. It was precisely this excellent intention that led to the introduction of the Standard Class in 1958. I would argue that it has been the failure to monitor and direct the development of the Standard Class over the last 30 years that has led to it no longer meeting these objectives, but rather developing into a serious rival for the 15 Meter Class, whose own validity is therefore now in question. The outcome of the design studies for the fourth Class will be interesting, but I also believe the definition of the Standard Class should be urgently reconsidered.

The strong feeling of comradeship that exists among gliding enthusiasts needs a method of mutual recognition. This is admirably fulfilled by the distinctive gliding badge, although nobody today can regard the various badge awards as a meaningful comparison of pilot skills. To do that would require a complex handicapping system to take into account both the type of aircraft used and the country, or even location within a country, where the flight was made, and even then would have obvious imperfections.

A grave error permitting the use of multiple TP tasks for various badges and diplomas

I think the long established badge requirements should stand. However, I am convinced the CIVV made a grave error when it introduced rules permitting the use of multiple TP tasks for various badges and diplomas. This reduced the difficulty of such flights at a time when improved aircraft performance was making them easier, and destroyed the continuity of the badge achievement by creating a distinction between those who obtained it "the old way" versus "the new way". Perhaps most seriously of all, it provided a public perception that the most meritorious award in gliding, namely the 1000km diploma, could be obtained without the pilot ever straying more than 150km from his starting point. I strongly urge the CIVV to withdraw this damaging amendment.

So far I have attempted to show the possible

consequences of applying criteria based on individual qualities of our sport to specific topics. However, when considering a matter as complex as the organisation of a World Championships, one has to apply them collectively.

I believe the most disturbing aspect of modern World Championships has been the enormous growth in the size of the Championship's organisational bureaucracy. It has been reported that up to 130 people have been involved in running a recent World Championships – 1.25 organisers per contestant. Everyone knows the rules of bureaucracy: (1) bureaucracy begets bureaucracy; – at Benalla the British team manager found he needed two additional deputy managers to cope; (2) bureaucracy is not necessarily efficient – at Rieti it was, in Benalla less so; (3) bureaucracy is very expensive – the cost of entry fees for the principal contest shows this.

But there are other major disadvantages of large bureaucracies, however well intentioned, when applied to gliding contests.

Bureaucracy is divisive. A feeling springs up of "them and us" which is completely foreign to gliding, with its history of pilot involvement in every aspect of the sport.

Bureaucracy produces a sense of formality and inflexibility. Pilots lose their sense of self-determination and individuality.

Bureaucracy can appear self-serving, leading the pilots to question for whose benefit the competition is being held.

Bureaucracy has a tendency to promote pomp and ceremony unconnected with the sport itself. At both of the recent World Championships I have marched around an arena preceded by a girl dressed in white – although what quality of gliding she is supposed to represent other than my inability to carry a plaque bearing my country's name I cannot imagine! – and variously listened to demands for workers' rights, good wishes from politicians and observed, whilst melting under the Australian sun, the extraordinary sight of mini-kilted majorettes strutting to the accompaniment of bagpipes!

Presenting gliding as it really is

Seriously, I believe there is a real need for World Gliding Championships to provide a public spectacle for those who are interested enough to come and watch. But this should be aimed at presenting gliding as it really is. I would like to suggest that a special type of new task is devised which would enable a commentator to provide spectators with both interesting reports and sightings of gliders as they performed the task, together with the results as they finished. The organisers should declare in advance that specific days during the contest will be open days to the public, and on at least one of these such a task should be set.

But above all my plea is for simpler, cheaper, less formal contest organisations, to which the pilots themselves may contribute either on a regular or rota basis. This, coupled with smaller entry lists will contribute enormously to cheaper, more friendly contests without necessarily any loss of competition quality.

This brings me finally to the discussion regarding the Olympics. As will be guessed from my remarks about contest organisation, I am totally opposed to soaring becoming an Olympic sport. Apart from the sheer mechanistic difficulties of arranging championships at the same time and location as an Olympic Games, I believe participation would conflict with practically all the essential qualities of cross-country gliding. It would raise a host of distinctions that the gliding community regards as irrelevant, such as those between amateur and professional, male and female, and supposed political convictions, whilst involving misplaced conceptions of national pride, and the whole Olympic bureaucratic juggernaut. To those who advocate joining the Olympic movement on the grounds that it would bring beneficial publicity to our sport, I would suggest they are mistaken.

Public no longer so impressed by Olympics

At best it would provide a public spectacle of soaring totally alien to the true nature of the sport, at the risk of debasing the fundamental qualities on which it depends together with the loss of its control. Furthermore, I believe the public is no longer so impressed by the Olympic spectacle. It is significant that the participant who received the most media coverage at the recent Winter Olympics was "Eddie the Eagle" – the British ski jumper whose obvious inexperience was so great that he aroused the sympathy of the crowd who could identify with his efforts, to the substantial exclusion of the other slicker automatons who gained the medals. If I were on the IOC I would advocate restricting future Olympics to the original Grecian sports of running, jumping and throwing.

I am conscious of having subjected you all to my views based on my innermost beliefs. I feel I should apologise – at least for the un-British nature of this approach, but there are times when an individual or an organisation should nail its philosophical colours to the mast. I will therefore end with two personal observations.

The word freedom for me is a positive concept, implying that everything is permitted unless specifically proscribed. All too often regulatory bodies proceed from the opposite perspective.

The word discipline has two meanings: the discipline imposed by the laws of nature is the discipline of retribution if the laws are transgressed. If a glider is flown near the ground with inadequate airspeed it will crash. At school we called this the discipline of the cane. But discipline exercised by mature intelligent people amongst themselves comes from the word disciple, one who follows his leader because he believes in him and trusts him. It is this leadership by example that the gliding movement needs from the competition community, and ultimately from those of you gathered here charged with governing that community.

PETER MARTIN

BREATHLESS OVER BRECON

"All seemed so calm and tranquil," writes Peter, "but in fact trouble was on its way."

Following various letters and articles in *S&G* over recent years on the use or otherwise of oxygen breathing apparatus, I relate what happened to me while wave flying in the Brecon area.

It was during the New Year holiday. The weather had been so vile I convinced myself there wouldn't be any flying but would drive down to Wales if only for a change of scenery. At the last minute, and with the muddled thinking one can get when faced with a disappointment, I decided to take the glider after all but left the oxygen and radio at home.

Inevitably the weather immediately improved and early the next day I joined the throng of pilots standing in red Welsh mud, feverishly preparing our gliders. In a very short time the Pawnee launched two dozen on to the Langorse ridge in a very strong west wind with low cloudbase, but bright up wind.

As I had been performing my one man rigging act with the Cobra, I was about the last to get airborne. I released at 500ft, sling shot fashion, dashed around the corner of Mynydd Triod into the strong lift and on down Langorse ridge to join in the fun, but there wasn't a glider to be seen anywhere.

I scanned the surrounding countryside for outlanded gliders but there were none. The answer of course was wave. I flew forward to look for a cloud slot and instead found an inverted funnel about three wingspans diameter with wisps of cloud being sucked in at the edges.

"... the sky started to brighten from above and I burst through into dazzling sunshine"

I entered this maintaining a westerly heading with the vario singing like a kettle. After continuing the climb through cloud for some minutes, the sky started to brighten from above and I burst through into dazzling sunshine on the western side of a huge, smooth, silver mountain with the north end of Talybont reservoir 4000ft under my left wingtip.

Above at an angle of approximately 50° were the mass of other gliders looking about the size of houseflies. I moved forward to be slightly ahead of them and the lift increased to 6kt. Soon the view below became cloudscape more familiar to airline passengers with only about one fifth of the land visible, but there was no tendency for the gaps to close. All seemed so calm and tranquil but in fact trouble was on its way.

Peter flies at Coventry GC, went solo in 1957 and has just topped 1000hrs on 33 types.

I was already getting cold, despite plenty of clothes and good boots. I had sweated profusely during rigging and the evaporation was carrying away body heat fast. But more ominously the altimeter started sticking. Only vigorous tapping kept it jumping in large steps but it jammed solid at 8000ft.

What the hell, I thought, surely all those gliders up there haven't got oxygen. Apart from the cold I felt physically OK at this stage, so continued the climb to level with the others where we all sat suspended on top of the huge fountain of air. It was about this time that I became aware that my teeth and lower jaw were chattering and bouncing like a clockwork joke set. Shortly afterwards my legs and arms started shaking uncontrollably. The situation made me laugh violently, which also became difficult to control.

Eventually an Open Class machine formated closely with me, the pilot staring at me intently and occasionally pointing at his boom microphone. He looked more like a jet jockey in the clear bright air. He gave up the attempted conversation and turned along the wave. I recall trying to decide if to follow. I remember nothing more until I awoke low in a valley.

Luck of luck, the old Cobra had descended into a valley instead of over a mountain, but with hardly sufficient height to choose a landing field.

Only the lucky combination of having the Cobra well trimmed, descending into a valley and regaining consciousness before thudding into the ground saved me that day.

So what are the lessons I learned, bearing in mind the maximum height reached was only 16000ft?

Apart from my obvious and early need of oxygen, the prime instrument for wave flying must be the altimeter, whereas previously I had regarded it as only tertiary for flatland thermal soaring. The importance of a radio is also highlighted and last, but not least, I habitually and continuously trim out stick loads. An out of trim glider would have spun or dived into the ground when left to its own devices.

Incidentally, in the event I did not have to land in that valley field as during the circuit I flew into a secondary wave or upside rotor and climbed away.

If this happened to you would you be so lucky? I suspect several haven't.

EUROPEAN CHAMPIONSHIPS

Räyskälä, Finland - June 12-25

A report by the British team manager

The first week was anticyclonic and the second a thundery low. We had ten contest days (11 for the Standard Class) of which the first three were "survival mode" followed by three "racing", two days' rest and then five more "survival". On three of the last five all 71 pilots landed out and on the other two days there were only five finishers on one and six on the other.

So there was plenty of flying.

Robin May (ASH-25) did 4247km and 57hrs in the first 11 days. But it was hard graft and needed stamina. Only one 500km task (Open Class, Day 6, 525km) but 6 or 7hrs in the air was the norm. However the three racing days were magnificent with speeds of 120km/h in the Open and 110km/h in the 15M and Standard.

The Competition

This was tough. Other nations mostly had their World team pilots. Our policy is to encourage those at the top of the Nationals Priority List to go to the pre-Worlds rather than the Europeans. This gives an opportunity to others in the team squad to compete in international Championships. However, it also means that our chances of winning may be less.

Our team, selected on the results of the 1987 Nationals, was Open Class, Ralph Jones (Nimbus 3) and Robin May (ASH-25); 15M Class, Jed Edyvean (Ventus B) and Peter Sheard (Ventus A) and Standard Class, Ted Lysakowski (Discus). Chris Rollings should have been the other Standard Class pilot but at the last minute he couldn't raise the money (see the last issue, p173).

The British

We did best in the Open Class with Robin May and Ralph Jones coming 8th and 11th with 81% and 73% of the winner's score respectively. Robin was our "Man of the Match", flying very consistently in his first international. He held 7th place up to Day 8 and came 2nd on the last day.

In the 15M Jed Edyvean scored reasonably until Day 5 when an early land out dropped him to 27th from which he could not recover in spite of being 10th and 12th on the next two days. Pete Sheard dished himself with land outs on Days 2 and 3 but had his moment of glory by winning Day 9 (cat's cradle) for 12hrs until precise landing certificates corrected him to 2nd. In the Standard Class Ted Lys came 18th, 10th and 17th on the racing days but seven land outs on the other days was too big a handicap.

The Contest

In the Open Class it soon became a battle between Jan Andersen, Denmark (Nimbus 3), Klaus Holighaus, Germany (Nimbus 3) and the French pair, Marc Schroeder and Gabriel Chenevoy, both flying ASW-22s. Andersen did a daring breakaway from the gaggle on Day I and gained 136pts on the others. From this time he kept the lead up to the last day when the lottery of flying round thunderstorms dropped him to 684pts and Klaus' consistency had again made him Champion.

In the 15M there were more contenders, 30 with 13 in the Open. At Day 7 only 370pts separated the top 11 places. Janusz Centka, Poland (Ventus) led after Day 9 but a bad draw in the thunderstorm lottery on the last day dropped him to 3rd with the French winning the first two places, Gerard Lherm in front of Gilles Navas, both flying LS-6s.

In the Standard Class there were five in the race out of the 28 - Janusz Trzeciak, Poland (Discus), Jean Claude Lopitaux, France (Discus), Jacques Aboulin, France (Discus), Reinhard Schramme, W. Germany (Discus) and Sikko Vermeer, Holland (ASW-19). On Day 7 Vermeer came up to 4th and Schramme dropped 200pts to 5th. Day 8 Lopitaux still led with Vermeer 3rd. On Day 9 Schramme did his brilliant flight climbing half in half out of cloud in the front of a thunderstorm. This gave him a day's gain of 250pts on those ahead of him, but a 100pt height penalty lost him much of this. On Day 10 he won again and was equal 1st on Day 11. However, Trzeciak was there too, 250pts clear of Lopitaux who lost in the thunderstorm lottery but still held 2nd place overall with Aboulin 3rd and Schramme 4th.

The Organisation

The organisation was relaxed and friendly with a minimum of fuss, the director, Seppo Hämäläinen, being a man of few words. The computer produced the results in record time and an innovation was a quite excellent commentator who from the control tower loudspeaker gave information on the finishers - their speed, overall placing, how many minutes the next pilot had in hand to beat them and so on. On some days he was able to extend this by information from Tampere Radar about where the leading gaggle was out on track.

Airspace over Finland is widely controlled but special clearance seemed to be readily obtained. On most days the ceiling was FL75, more than enough for VMC, and the aptly named "sandbox" was 10km on either side of track.

A protest came from the Norwegian pilot John Laupsa whose LS-6 was "destroyed" when his crew on Day 2 filled the waterballast direct from the hosepipe and burst the wing. The rules say broken bits can be replaced but not the whole glider. The jury felt the rule was made to discourage dangerous outlandings and let him borrow another LS-6 for the rest of the contest.

The task setter, Jaakko Tuominen, wisely remained out of sight during the contest. We later learnt that he is known as "The pilots' scourge." Tasks were OK in the first week; in fact Day 5 was seriously underset (241km for the Open). However, apart from the cat's cradle for the 15M, no concessions were made in the second week for the heavy thunderstorms which developed regularly in the afternoons. On the final day no one bothered to listen to the finish line briefing since it was clear no one would return.

The Finns

Tapio Savolainen, the outstanding team manager for Finland, had put in an enormous amount of work behind the scenes after returning from Benalla with the first Finnish World Cham-

Robin's Record

Robin, on the right, celebrating with Steve. Photo: Ben Watson.

On June 11, the last practice day, Robin May woke in his lakeside cabin to a day when everything seemed right. Rejecting the 327km task and taking Steve Jones as P2, he was airborne in the ASH-25 by 1015, determined to attack the British two-seater distance record with a 712km O/R to Iisalmi.

He writes: "Conditions were incredible and visibility was only limited by the curvature of the earth in all directions. Landmarks were few and far between; one that we did pick up on the horizon turned out to be only one third of the way on track.

"There was nothing but forests and lakes with very few sensible landing places. We frequently went ten miles without anywhere to land at all. I stayed above 3000ft. Cloudbase went up from 3500ft to 7000ft during the day. Thermals averaged 3-5kt and several went off the clock. After landing back at 1730 (100km/h) I took my crewman John Bailey on a 200km local flight, landing about 2100hrs. 1000km would have been easily possible."

Holger Bach's wing mirrors - "I don't like anyone flying on my tail." Photo: Anne Ince.

pion, Markku Kuittinen. They were famous and the Prime Minister came to open the Championships. It was a bit sad for them therefore that they did not achieve a European Champion.

The French Lesson

Government support for French gliding is well known and it certainly had successful results at Räyskälä. After Day 8 they were leading in all three Classes and they finished 3rd and 4th (Open), 1st and 2nd (15M) and 2nd and 3rd (Standard), an astonishing record.

Much of the credit must go to their professional coach and manager Jacky Clairbaux who has been in charge for several years and now lives at St. Auban, their splendidly equipped centre in the Durance valley where Jacques Aboulin recently succeeded Gabriel Chenevoy as CFI. Their team programme this year has been continuous competition as well as having training camps.

As with other sports, top level success for the amateur may become a thing of the past. No person working outside gliding for a living can complete such a programme. In Räyskälä all the French teams' expenses were met (contrast British pilots who estimated £3000 each, of which the Sports Council met £1300) and their pilots' contract states that they do what Jacky says or else ... Tres dirigiste! Never mind, the British have a World Champion and the French do not.

They became victims of their own success with the media. Having wound up the press about gliding and Finnish prowess they were asked "what went wrong?" "Why didn't you win?" Of course nothing went wrong. The standard was very high and there is nothing in Finnish soaring conditions which gives any great advantage to the locals. Kuittinen in his new LS-7 came 11th, 83% of the winner.

What the Finns did do was to lay on a well run competition - second to none by international standards and better than many. Above all they created the perfect atmosphere in which pilots and crews could get to know each other as well as compete. And that is what Championships should do. Thank you Räyskälä; thank you Finland.

Leading Results: Open Class: 1. K. Holighaus (W. Germany) 8826; 2. J. Andersen (Denmark) 8808; 3. M. Schroeder (France) 8621; 8. R. May 7525; 11. R. Jones 6442pts. 15M Class: 1. G. Lherm (France) 8581; 2. G. Navas (France) 8358; 3. J. Centka (Poland) 8340; 26. J. Edyvean, 5712; 27. P. Sheard 5666pts. Standard Class: 1. J. Trzeciak (Poland) 8725; 2. J. C. Lopitaux (France) 8474; 3. J. Aboulin (France) 8430; 25. E. R. Lysakowski 5661pts.

MERRI'S PROGRESS

In the coming issues Merri shares with us her thoughts and aims as she improves her gliding skills

Lessons

I've been gliding for a year and a bit, and started off terribly enthusiastically - a dozen launches per day in all sorts of weather. The quest was on for the first solo, the Bronze badge ... I was the sort of *ab-initio* that drive duty full Cats mad with the request for "Just one more launch please!"

Now a Silver badge pilot, I make a point of looking as objectively as possible at my gliding faults and trying to correct them. This is not to say that I've given up the badge hunt, rather that it has assumed secondary importance to becoming a good pilot; as professional as I can be in the air and on the ground. This might effect itself by making me as big a pain as ever, but I feel that at least I'll be safer for it, and so will anyone around me.

I handle this ambition by trying to make the most of every flight; getting the K-18 into wind more effectively, planning my circuit more responsibly, and paying attention to the details of efficient gliding in preparation for longer and more demanding cross-country flights (hopefully).

One thing I've noticed about myself that I'm trying to correct is the amount of energy I waste when I thermal. I find when I lock into lift, my breathing starts to quicken and the lengths of my breaths become shorter in the excitement of the moment. I've never measured it, but I'm sure my pulse rate also increases. This rush of adrenalin could be much better put to use in making decisions - for example where to go next.

So, when not in a gaggle, I force myself to relax against the seatback and lighten my grasp on the control column. It's really helping me; I'm not over piloting as much as I used to, my timed rate of climb is faster and I'm not so tired after flying as I once was.

Merri, an American, started gliding last year at Bicester, introduced to the sport by her RAF pilot husband Derek, and now has 86hrs. She says she spent all her housekeeping on gliding, gaining a Silver badge after 1yr and six days. Originally a grain trader, she is now involved in cable and satellite broadcasting.

There is, it seems, at my stage in the game, a lot of emphasis on "getting the 300km" under one's belt. That's why, from my point of view, the new 100km diploma is such a good idea. It gives us time and something, as novice cross-country pilots, to sharpen our skills on. Isn't it better to develop the piloting skills that facilitate the achievement of the goals we all aim for than to push on regardless? I believe that as I persue a gliding ideal, the goals (read badges - I'm not totally immune to the thrill of the hunt) will follow in their own time and in a safe manner.

My own fascination is with the constant learning and improvement intrinsic to the sport. I can't help but feel that there is so much out there to learn, and putting new-found knowledge to use is hallmarked by each achievement, even if the achievement is as insignificant as slowing down one's rate of breathing in a thermal!

LOOKING BACK

JEAN-MARIE LE BRIS

By OCTAVE CHANUTE (with notes by WILLIAM MALPAS)

Most books on the history of aeronautics include a page on the story of Le Bris, because in 1856 he made an extraordinary flight in a glider in circumstances both dramatic and farcical. The story is authentic and sufficiently original to set Le Bris apart from the many tower-jumpers who preceded him. All the books agree on the facts and no one has told it better than Octave Chanute in 1894. It was probably the first account published in English when it appeared in his book ***Progress in Flying Machines.*** *Chanute, the greatest "communicator" in the history of early aeronautics, would, I am sure, jump at the opportunity of telling the story of the flight to readers of S&G, just as he told it 94 years ago.*

Captain Le Bris was a French mariner, who had in his younger days made several voyages around the Cape of Good Hope and Cape Horn, and whose imagination had been fired by the sight of the albatross, sporting in the tempest on rigid wings, and keeping up with the fleetest ships without exertion. He had killed one of these birds, and claimed to have observed a very remarkable phenomenon:

"I took the wing of the albatross and exposed it to the breeze; and lo! in spite of me it drew forward into the wind; notwithstanding my resistance it tended to rise. Thus I had discovered the secret of the bird! I comprehended the whole mystery of flight."

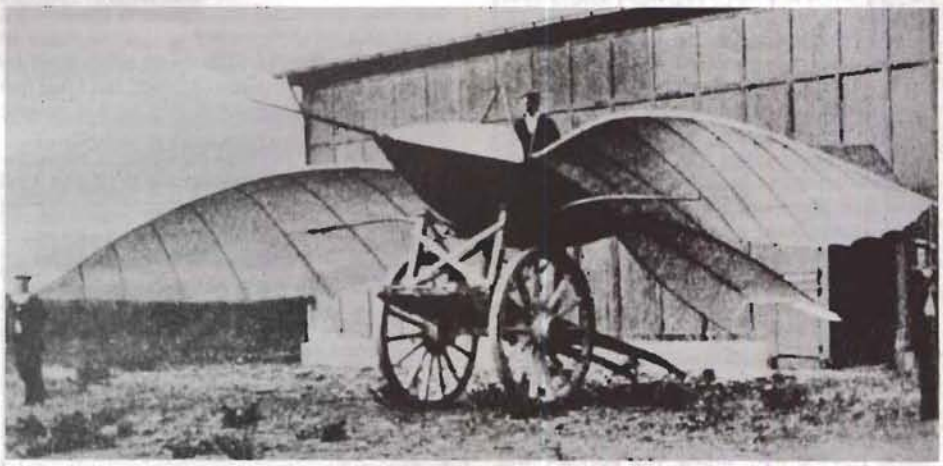
Possessed with an ardent imagination, he early became smitten with the design of building an artificial bird capable of carrying him, whose wings should be controlled by means of levers and by a system of rigging; and when he returned to France, and had become the captain of a coasting vessel, sailing from Douarnenez (Finistère), where he was born, and where he had married, he designed and constructed with his own hands the artificial albatross.

This consisted of a body in the shape of a "sabot," or wooden shoe, the front portion being decked over, provided with two flexible wings and a tail. The body was built like a canoe, being 13½ft long and 4ft wide at its broadest point, made of light ash ribs well stayed, and covered on the outside with impermeable cloth, so it could float. A small inclined mast in front supported the pulleys and cords intended to work the wings. The latter were each 23ft long, so that the apparatus was 50ft across, and spread about 215sq ft of supporting surface; the total weight, without the operator, being 92lbs. The tail was hinged so as to steer both up and down and sideways, the whole apparatus being, as near as might be, proportioned like the albatross. The front edge of the wings was made of a flexible piece of wood, shaped like the front edge of the wing of the albatross, and to this, cross wands were fastened and covered with canton flannel, the flocculent side down. An ingenious arrangement, which Le Bris called his *rotules* (knee pans), worked by two powerful levers, imparted a rotary motion to the front edge of the wings, and also permitted of their adjustment to various angles of incidence with the wind. Le Bris was to stand upright in the canoe (an excellent position), his hands on the levers and cords, and his feet on a pedal to work the tail. His expectation was that, with a strong wind, he would rise into the air and reproduce all the evolutions of the soaring albatross, without any flapping whatever.

Le Bris's first experiment was conducted on a public road at Trefeuntec, near Douarnenez. Believing that it was necessary that the apparatus should have an initial velocity of its own, in addition to that of the wind, he chose a Sunday morning, when there was a good 10kt breeze from the right direction, and setting his artificial albatross horizontally on a cart, he started down the road against the brisk wind, the cart being driven by a peasant. The bird, with extended wings, 50ft across, was held down by a rope passing under the rails of the cart and terminating in a slip knot fastened to Le Bris's wrist, so that with one jerk he could loosen the attachment and allow the rope to run. He stood upright in the canoe, unincumbered in his movements, his hands being on the levers and depressing the front edge of the wings, so that the wind should press upon the top only and hold them down, their position being, moreover, temporarily maintained by assistants walking along on each side.

When they came to the right turn in the road the assistants were directed to let go, and the driver was told to put his hourse on a trot. Then Le Bris, pressing on his levers slowly raised the front edge of the wings to a very slight angle of incidence; they fluttered a moment, and then took the wind like a sail on the under side, relieving the weight upon the cart so much that the horse began to gallop. With one jerk Le Bris loosened the fastening rope, but lo! it did not run, and the bird did not rise. Instead of this, its ascending power counterbalanced the weight of the cart, and the horse galloped as if at full liberty. It was afterward ascertained that the running rope had been caught on a concealed nail, and that the apparatus had remained firmly fastened to the cart. Finally the rails of the latter gave way, the machine rose into the air, and Le Bris said he found himself perfectly balanced, going up steadily to a height of nearly 300ft, and sailing about twice that distance over the road.

But an accident had taken place. At the last moment the running rope had whipped and wound around the body of the driver, had lifted him from his seat, and carried him up into the air. He involuntarily performed the part of the tail of a kite; his weight, by an extraordinary chance, just balancing the apparatus properly at the assumed angle of incidence, and with the strength of the brisk wind then blowing. Up above, in the machine, Le Bris felt himself well poised in the breeze, and exulted that he was about to pass two hours in the air; but below, the driver was hanging on to the rope and howling with fright and anguish.



The original photograph of Albatross Mk II, reproduced by courtesy of the *Musée de l'Air*, Le Bourget, dates from 1868 and is the oldest known photograph of a flying machine.

As soon as Le Bris became aware of this state of affairs, and this was doubtless in a very short time, he took measures to descend. He changed the angle of incidence of his wings, came down slowly, and manoeuvred so well that the driver gently reached the soil, entirely unharmed, and ran off to catch his horse, who had stopped when he again felt the weight of the cart behind him; but the equilibrium of the artificial albatross was no longer the same, because part of the weight had been relieved, and Le Bris did not succeed in reascending. He managed with his levers to

An impression of the flight by an artist, Georges Beuville.

retard the descent, and came down entirely unhurt, but one wing struck the ground in advance of the other and was somewhat damaged.

Le Bris made a second attempt in a quarry without employing any initial forward motion, resulting in a complete write-off for the machine and a broken leg for himself. Twelve years later he built a second Albatross and wrote that off also, trying to test fly it as a kite. With all his savings and credit exhausted, that was the end of his aeronautical career. Although he was writing six years before anyone had flown successfully, Chanute's assessment of Le Bris is still good.

By imitating the birds

Le Bris had made a very earnest, and upon the whole, a fairly intelligent effort to compass sailing flight by imitating the birds. He finally failed for want of sufficient pecuniary backing, and also, perhaps, for lack of scientific methods and knowledge, for even at that day Captain Béléguic, a French naval officer, had called attention to the importance of securing longitudinal equilibrium, the lack of which caused the failure of poor Le Bris. Had he secured this he might have succeeded far better, especially if he had adhered to his original conception as to the necessity for that initial velocity against the wind, which served him so well upon the first trial and so ill upon the second.

In retrospect, Le Bris should also be credited with the first ever well documented towed launch and, of course, the first ever groundloop!

THE THREAT FROM OUTSIDE

Vic, a former member of the BGA Executive who flies at Sleap, puts forward reasons why gliding isn't expanding as rapidly as it should in these days of economic growth and has some answers

Gliding is a superb sport for established members but for those who join us each year it is far less satisfactory.

Maybe as many as 30% of full members don't renew their subscriptions and a high proportion of these will only have been gliding for one or two years, many leaving because they feel they haven't been fairly treated.

Whilst we have been ignoring the dissatisfied members who leave, we have in recent years been encouraging a massive growth in temporary membership. In 1987, when the total civilian gliding membership, presumably all paying full subscriptions, numbered 8553, we gave 48 231 visitors and course members flying in our club aircraft. In the previous year it was 45 199 and in 1985 44 003. Clearly the figure stands to be even higher in 1988. So in 1987 there were 5.64 temporary members for every subscribing member.

A BGA sub committee recently reported on a five year plan for the gliding movement when a number of problems were identified as affecting our clubs at the operational level. Although the problems weren't analysed, the report listed objectives which have been accepted by the Executive.

My assertion is that these problems have a common parentage and the objectives chosen, whilst well meaning, won't change the situation or make a significant impact because many are related to the massive increase in outsiders while we do less and less for our members.

Here are a few of the issues raised by the sub committee:

1. Gliding is an inherently frustrating sport.
2. More solo flying is required.
3. Not enough launches are available.
4. Unfriendliness towards newcomers.
5. Club instructors who don't have sufficient soaring experience.

Take the frustration factor as the first issue. Of course flying in British weather is unreliable but it doesn't frustrate all of us to an equal extent. The frustration of being a nobody on the launch point is in addition to all the other irritations experienced by the established member.

Every one and his grandma have more priority on the list or at the launch point than the member who joined earlier in the year. And these are the people who leave us and who deserve more of our attention. Yet we have the audacity to bleat annually that a new recruiting drive is essential for our long term survival. It is time to examine in more detail the real truth behind that annual loss of potential long term members who have shown their commitment by paying a subscription and in many cases an entrance fee.

Of course more solo flying is needed. Lemmy Tanner writing in the April issue, p78, raised important issues about the small and static number of club solo aircraft available for up and coming pilots. He also drew attention to the almost constant numbers of Silver and Gold badges awarded over the last ten years when there was a corresponding massive improvement in glider performance and a monumental increase in privately owned machines.

We must tackle the whole range of associated problems and attitudes which stand in the way

So will more club single-seaters make any significant contribution to more solo flying? I think not unless we tackle the whole range of associated problems and attitudes which stand in the way.

The problems lie with the conflicting priorities. At most sites the club single-seater has the lowest priority of any glider. You can be sure that when there is an opportunity to soar the club single-seater will for any number of reasons be denied a launch while the two-seater will be pushed to the front of the queue. This leaves the budding pilot to fly at the end of the day when the thermals have gone.

If, by some strange quirk of fate, the single-seater is launched and soars there will be a time limit in the air in the interest of faimess - a practice which is difficult to credit.

THE THREAT FROM OUTSIDE

With such a priority the single-seaters don't get utilised. Low utilisation means that when the accounts are examined the single-seaters will be shown to earn insufficient cash to justify their running costs. In no time at all they will be on the list for some economic sanctions.

Not enough launches available? This is a very serious problem and of our own making. Launches are like capital, a valuable asset, difficult to create, expensive to buy yet so easy to spend. Spend them we do in the manner of a profligate family. However many more we create, they are used by the Monster Two-Seater Utilisation Brigade (MTSUB). Some club managements go so far as to ban subscription paying members from having a launch during the week whilst course and temporary members pay a flying fee based on a marginal cost. By the time the weekend comes the winches or cars need attention and the tugs are out of hours.

The arrangements for making them serviceable will fall on yet another subscription paying member. The MTSUB will for all that claim with no other argument than cash turnover that it is all in the club's interest. Of one thing you can be sure, the subscription paying member who joined within the last two years will not be the beneficiary.

Unfriendliness is entirely a fatigue reaction to so many people passing through. It is much worse than the ratio of temporary to permanent members suggests because account must be taken of those who leave. The experienced and established create a defence so that they may enjoy their weekend and club spirit and fellowship go out with the bath water.

The problem of club instructors who don't have sufficient soaring experience is more complicated because many choose this path, sometimes unconsciously, in an effort to fly without paying flying fees. After their Silver badge they rarely fly solo and know little about soaring and surviving in the air off the site, yet appear to be knowledgeable to the inexperienced. The result is a danger to the *ab-initio* and for the club.

So what can we do to make the situations more satisfactory?

For a start we should try and find out why members leave, and react to the more intelligent suggestions they make, instead of spending all our time looking for new recruits.

We should turn upside down our priorities at the launch point - club single-seaters first and two-seaters last unless there is a subscription paying member aboard on a useful soaring training flight. If as a result there is a big MTSUB queue, there are clearly too many of them on the site.

In a regime with this reversal of priority we will have to control the number of *ab-initios* in line with launch resources. Then we need only replace those who are promoted or drop out. Those who pay least for their flying and offer no long term benefit to the club should be dropped. Double the price for trial instruction lessons and perhaps allow each member to introduce two visitors a year at a reduced rate.

We should extend present flight time limits. For single-seaters at least 2½hrs is the minimum time if a few thermals are to be put together with an allowance for the odd error and recovery. Two-seater times should be stretched to make the sorties more useful to subscribing members.

There is nothing new about all this but what makes it urgent we change is the rate at which outsiders are increasing their dominance of our clubs.

Very few management committees consider their performance relative to objectives, other than financial results and absolute volumes of activity, usually launches and hours. Some additional targets are suggested which could be useful at both club and national level. The ratios are based on the 1987 statistics taken from *S&G* and refer only to civilian clubs.

1. Increase the number of badges awarded annually. The figures broken down club by club are available from the BGA, but are not published. Badge legs might be considered as an alternative. 1987 - Bronze 347, Silver 169, Gold 133.
2. Achieve more hours per subscribing member. 1987 - 15hrs 15.6min.
3. Achieve increased duration per flight. 1987 −21.6min.
4. Increase subscription paying membership, reduce temporary membership. 1987 8553 and 48 231.
5. Increase the average years of membership .per member. This isn't difficult to measure but raw information isn't available at the moment.

An improvement in any of these will make your club a better place to be, not only for the new member but for all subscribers.

Finally, to have a virtually static national membership whilst affluence and prosperity grows all around us is to decline in real terms. The pursuit of temporary members as a survival mechanism for our financial viability can't be worth following. We must surely serve the needs of those who joined yesterday or last year and not take them for granted as we do at present.

MICK WELLS

PARAFIL THE WONDER WIRE

Mick, CFI of RAE GC at Farnborough, writes about the excellent results they have had with this wire

Many seasons ago we were launching by autotow using piano wire. We would purchase the wire stress-relieved to lay flat, however after a couple of launches it would look like an extended spring which would lead to rapid abrasion wear on the high spots and frequent breaks from kinks forming in the cable.

In the middle of summer a cable would only last four to six weeks on a predominantly weekend operation. We used to repair it by using wrap around knots which would then wear through to leave razor sharp semicircular bits of wire lying on the runways.

The final condemnation of piano wire came when the airfield management issued an ultimatum - find a more suitable launch method or stop flying.

After experimenting with various nylon ropes we settled on one ton Parafil. This has a black plastic sheath covering a parallel filament nylon rope. This stuff is marvellous and we now have cables that last for over a year without a cable break except for the occasional weak link. The cable is usually scrapped after it has had several knots inserted due to accidental or mishandling damage (usually due to K-13 and K-8 gliders landing across the cable and cutting it with their nose skids).

At first repairs were effected by using the recommended taper fitting joints but we found that repairs took too long and the metal fittings could create a debris hazard on the runways. We now tie knots in the cable.

We tried using half ton cable for a couple of seasons, but it would often break at the joints, not the weak link, and subsequent repairs would slow down the launch rate.

We tried a length of stranded steel cable in a plastic sheath last year, the same used at Lasham, but this wore out in only four weekends. Also as it would not lay flat it suffered from high spot wear.

Points in favour of Parafil:

- Very long life.
- Lays flat.
- Seldom falls into a knot even when the cable chute doesn't deploy.
- Doesn't seem to suffer from fairly fast cable retrieves.
- Doesn't create hazardous debris which is very relevant to operational airfields.
- One ton cable has such residual strength that joints will last for ages providing they are protected from abrasion (use rubber hose sleeves and bodge tape).

Points against:

- We have yet to find a quick (less than 5min) repair method.
- To ensure long life the cable needs frequent checking that no nylon strands are exposed to friction wear through cuts in the outer sheath.
- One ton cable has a noticeable bow when launching.
- Half ton cable fails at its joints.
- The initial part of the cable retrieve must be slow until the cable is laying out flat.
- Rapid acceleration when the cable is lying in a heap will result in scorching through the outer sheath.

We are still looking for a quick repair weak link system that will not leave debris on the airfield. We are currently using Tost weak links but repairs take too long due to having to cover the weak link assembly with a hose to protect it from wear.

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MIKE CUMING

15 METRE CLASS NATIONALS

Booker from July 9-17

This was the sort of Comp that is best remembered by the escapades and retrieves rather than by the flying.

The weather was, in fact, particularly forgettable, although the contest director (also the host club's treasurer) managed to launch us on five days (one no-contest day, three pilots past Y on the first and just one - by 200 yards - on the last contest day).

Interviewed in the bar at the end of Day 3, Nigel Gibson - who had at the time just finished changing back from contest director into a (near-normal) human being - was enthusiastic about the keenness of the competing pilots and the consequent bulk of relights. Launches were, at least, cheaper than those at Nympsfield during the Standard Class Nationals - probably because Booker has enough tugs "in-house" to cope.

Day 1 was noteworthy principally for the 8/8 overcast, by the arrival of 13 competing gliders at the first TP, Haddenham, just down the road from Booker - rather swamping the Upward Bound Trust - and by the doggedness of those pilots who drifted off into the gloom to land out just past Y, making a 90 odd points day.

The other TPs didn't seem to matter since no one saw them. Four pilots found out that if you land at Woburn after it closes you *don't* get tea with the Duchess but you *do* meet the security staff... the moral must be "land at tea-time," I suppose.

Back in the start sector an hour later

Day 2 was the only day with finishers, having been a struggle into a very fresh wind. This task was more or less an O/R to Devizes but for most pilots it was just an out. Several had the dubious honour of taking a good start photo and running down a cloud street only to find themselves drifted back into the start sector an hour later!

Several pilots didn't get away from Booker (bear in mind that at zero feet, three hours later over Didcot, one was still within gliding range of here). There were very few good landing fields either and, owing to my own extremely late start, I was able to observe that every good field I passed had a glider already in it.

The grid on the only "good" morning. The 450hp "tug" (or Lysander for the purists) is in the foreground and also visible is Vega 261, the only British glider competing. Photo: Mike Cuming.

By the end of Day 2 the retrieve stories ought to have begun to trickle in: in fact they were flooding in! Bernie Morris (ASW-20) nearly made a costly mistake when he summoned an aerotow retrieve to the hospital playing field near Henley where he had landed, only to find it was a mental hospital and a wingtip runner could not be found. All was well in the end as the launch was assisted by a Booker instructor who "just happened to be there!!"

Day 3 started extremely well with strong climbs and a high cloudbase. Unfortunately, a warm front rushed in behind the departing pack as they headed north for Sywell and the whole lot were downed on the way home. The second turn (at Goring) once again turned out to be pretty immaterial.

This was the day when light relief was provided on the grid by one of the competitors who foolishly provoked Mary Meagher - Ralph was lucky to escape with his eardrums intact!

This episode - although clearly audible on the other side of the airfield - was, however, probably missed by the crowd who were busy lifting Tony Moulang's ASW-20 off its belly. From the intensity of the ensuing conversation, I gather that his crew now fully understands the difference between the little handles for the airbrakes and for the wheel.

Then followed several very raining days (absolutely hissing down) during which the task setter repeatedly tried to send us back to Devizes, and one day when he even set a goal race to Dunstable *via* some northern spot. Mercifully, that day was scrubbed!

Ground run just long enough to pass Y

There was a fourth day, which was won (for 30pts) by Justin Wills (LS-6) on the basis that his outlanding ground run was just long enough to have got past Y. The 30pts didn't matter since Justin won the competition anyway.

This day did, however, prove that the organisation really did have a sense of humour since they sent us on a triangle to Calvert junction (near Bicester) and then, I think, Marlborough. Naturally the exact location of the third TP didn't matter much. Numerous pilots enjoyed an hour on Booker's ridge (at Chinnor) before giving up, however.

The only remaining really noteworthy feature of this damp week was the arrival of Vega 261 on the grid one morning wearing its new 17 metre tips. This naturally provoked a good deal of comment from an admiring crowd. More of this in a later issue when we've had time to give it a thorough test.

(The final results are on p241)

The Ventus CM. Photo: Peter Selinger.

SAILPLANE NEWS

The trend towards self-launching gliders continues with the Ventus CM and Nimbus 3DM having maiden flights this year, the Ventus using a new power system. The two-cylinder, two-stroke SOLO engine is backed up by a novel two-bladed folding propeller. This was developed by two of the three Technoflug founders, Rolf Schmid and Bertold Karrais, to avoid noise and vibration as well as making a smaller hole in the fuselage to hide the engine.

The Ventus CM also has wingtip extensions which increase the span to 17.6m.

The Nimbus 3DM is a two-seater with a claimed performance comparable to the Open Class single-seater but re-designed to take the heavier load with the 44kW Rotax engine which was well tried in the Janus CM. Using a composite propeller a low noise level is achieved.

Both sailplanes have engine retraction mechanisms which are easy to operate and designed to give a streamlined profile when in motorless flight, as can be appreciated from the technical data. *(Information supplied by Peter Selinger.)*

Ventus CM technical data

Wing span (m)		*17.60*
Wing area (m²)		*10.15*
Aspect ratio		*30.2*
Wing loading (kg/m²)	*37-42.3*	*34-49.3*
Empty weight (kg)	*300*	*270*
AUW (kg)	*430*	*500*
Ground run (m) (approx)	*280*	
Take-off distance over 15m obstacle at AUW, 15°C	*420*	
Min speed at AUW (km/h)	*75*	
Min sink at AUW (power plant retracted) (m/sec)		*0.68*
Max climb at AUW (MSL, 15°C), (m/sec) (approx)	*2*	
Best L/D at 105km/h		*48-49*
Fuel capacity (litres)	*22*	
Range (km)	*320*	
Cruising speed (km/h)	*140*	
Max speed (km/h)	*180*	*270*

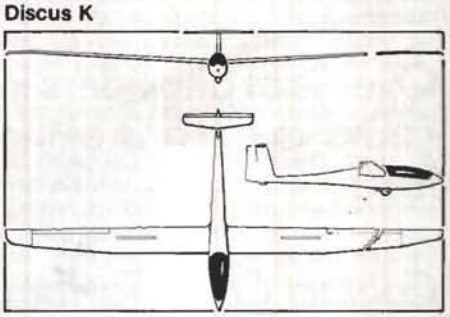
Figures in the first column denote the motorised performances.

Nimbus 3DM technical data

Wing span (m)		*24.60*
Wing area (m²)		*16.85*
Aspect ratio		*36*
Wing loading (kg/m²)	*39.2-47.5*	
Empty weight (kg)	*585*	
AUW (kg)	*800*	
Ground run (m) (approx)	*270*	
Take-off distance over 15m obstacle at AUW, 15°C	*400*	
Min speed at AUW (km/h)	*43*	
Min sink at AUW (power plant retracted) (m/sec)		*0.52*
Max climb at AUW (MSL, 15°C), (m/sec) (approx)	*2.20*	
Best L/D at 110km/h		*57*
Fuel capacity (litres)	*48*	
Range (km)	*350*	
Cruising speed (km/h)	*165*	
Max speed (km/h)	*185*	*275*

Figures in the first column denote the motorised performances

Discus K



A new version of Schempp-Hirth's popular 15m Discus has been developed with removable, shorter tips with anhedral giving a 13.7m span for aerobatics.

For normal flying the standard swept-back outer panels are still available. The shorter wingtip extensions, with hardly any taper, are fitted for aerobatics and have a different airfoil which benefits inverted flight.

Despite the shorter span, the Discus K still has a best L/D of nearly 38:1 and a min sink rate of less than 0.7m/s. The maximum speed for the present is limited to 270km/h - load factors of +7g/−5g.

Autumn leaves . . .

Can be very attractive on the trees in the sunshine.

They become much less attractive when they are on the ground — and wet!

Of course if you are insured with Mowbray Vale then you will almost certainly be covered for any little slip-ups you might encounter.

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A, B AND C (IN 1936)

'Twas brillig and the sliding coves did gyre and gimble on the ground. Reversed were all the rudderfeet and loud the landing sound.

Anon

In these days one gets one's A for a first solo "if followed by a normal landing." In 1936 a first solo was rather different, being a flight of about two seconds one foot above the ground. Before reaching that glorious achievement one had done ground slides. These were produced by four fellow trainees pulling on the two arms of the bungy while a fifth member held back the tail of the Dagling until enough energy had been stored in the bungy to cause it to slide along the ground 20 or 30 yards while one endeavoured to keep the wings level and not to treat the rudder bar as if it was the handlebars of a bicycle. The Dagling was a curious machine looking like one of the Wright Brothers' earlier efforts. One sat on a tin seat reminiscent of a chamber pot with one's feet on the rudder bar, sticking out into space at the front.

Some degree of control having been achieved an extra two men were added to the bungy team and these gave enough extra energy to turn a "slide" into a "hop". Ludicrous perhaps to call that a first solo but 52 years later I still remember the sense of achievement actually being airborne!

Now more hops until, having made three not too loud landings, one graduated to the "mantelpiece" – a little flat spot about a quarter way up the hill at Dunstable. Bungyed from there one could expect five or six seconds in the air. Duly recorded in my logbook my total flying time gradually built up to over a minute!

Then came the great day. I was to take the Dagling up the hill for my first launch off the top. I was both elated and scared. What would it feel like to look down 250ft between my legs when about 25ft off the ground had been my best so far. Above all could I make the 30 second duration needed for my A or would I do something silly? Three weeks before I had seen another hopeful take too literally the instruction not to pull the stick back on launch. He had gone tearing down the hill at about 60kt, had just managed to get the stick back before hitting the ground and had gone away down the gully in a series of enormous kangaroo leaps, unbelievably without doing very much damage. The Dagling might be crude but it was pretty tough. Right! Get on the seat. Strap up. Can you breathe? Yes. Then you're not tight enough! Another notch. Right. Walk! Run! Let go!!

A surge of acceleration and I was airborne. Out over the edge. Ground a mile away between my feet. Keep her straight. Left foot. The other foot! Fool!! OK. Nose just below the horizon, now ease back. Too late. Don't yank back. Yes, we're down. Have we made 30 seconds? A cheer from the top. We have. I've done it! I sat waiting to be retrieved. The sun was dipping into pink clouds in the south-west. A three-quarter moon was pale over my left shoulder. I should have been cold on a mid-January evening but the adrenalin was still flowing. I had never been so happy.

For our Imperial College GC captain I had a huge admiration. When I joined he already had a B; he had made a flight containing two turns of 90° and had stayed in the air a whole minute! Now I had to do the same and after more hops and rides down from the top the wind was suitable and I achieved my B with a flight of 62 seconds. Now I must wait for my C attempt; five minutes of actual soaring. I graduated to the Nacelle, a Dagling on which a fabric pod had been built round the pilot's seat to give at least some streamlining.

We hit the hill sideways

The London GC, to whom we were affiliated, only had one Nacelled Dagling and the CFI expected it to be well treated. Winds over 20mph were considered to be too strong for C aspirants and, as the machine needed all of 16mph to make it soar, right C days were rare. At last the great day came – but I was last on the flying list. Three others had made their five minutes and each time the Nacelle had been laboriously brought back to the top. Now it was mine. Bungyed over the edge I turned along the hill but I wasn't going up; surely this could not be! I must be flying too fast. Ease the stick back a fraction. Yes, we're OK and now if I wasn't going up at least I wasn't going down. There should be better lift in the bowl at the far end. Yes, now nose down and start the turn – and here came my undoing. Nose down and *wait* before starting the turn. Down went the wing and the whole aircraft. Somehow we hit the hill sideways rather than nose on. I heard the A-frame crunch above me and then I was sliding down the hill, head down and on my side under the torn-off wing; incredibly more or less undamaged.

Hervey was very angry. "What the Blue-blazing Hades do you think you were doing, you knock-kneed gazelle? It's clear you've not mastered the art for you've plastered this wretched machine o'er the ground, you fat – idiot!" Maybe those weren't his exact words but that was the general tenor. He finished his dressing down with "this machine's a write-off, a new one's going to cost the club £45!"

Six months later I had my C but I never forgot that salutary lesson.

FINAL RESULTS
15 Metre Class

Pos	Pilot	Glider	Day 1.9.7 206.2km ■ Thame, St Neots, Goring			Day 2.11.7 189.7km ▲ Blake Hill Farm Devizes			Day 3.12.7 185.8km ▲ Sywell, Goring			Day 4.17.7 178km ▲ Calvert Junction, Marlborough			Total Points
			Dist	Pos	Pts	Speed (Dist)	Pos	Pts	Dist	Pos	Pts	Dist	Pos	Pts	
1	Wills, T. J.	LS-6	40.5	17	13	57.0	1	603	151.8	2	593	90.1	1	33	1242
2	Lysakowski, E. R.	Ventus B	116.6	1	63	51.6	4	576	145.1	3	563	41.1	5	10	1212
3	Garton, C.	Ventus B	17.1	21	0	54.4	2	590	143.2	5	554	46.4	4	12	1156
4	Cooper, B. L.	Pegasus	18.0	21	0	40.1	8	518	155.1	1	608	0.0	18	0	1126
5	Edyvean, J.	Ventus	92.8	6	48	39.1	11	513	142.7	6	552	41.1	5	10	1123
6	Morris, G. D.	ASW-20L	18.0	21	0	53.7	3	586	138.1	8	531	25.9	11	3	1120
7	Stafford-Allen, P. R.	PIK-20D	0.0	21	0	48.7	6	562	138.1	8	531	0.0	18	0	1093
8	White, S. A.	Pegasus	18.0	21	0	38.7	12	511	145.1	3	563	10.9	18	0	1074
9	King, P. A.	Mini Nimbus	56.0	9	24	39.2	10	514	138.1	8	531	25.9	11	3	1072
10	Wells, M. D.	LS-6A	25.1	19	3	40.0	8	518	141.5	7	547	17.5	18	0	1068
11	Elliot, B.	Ventus B	90.2	7	46	38.1	13	509	129.1	13	491	25.9	11	3	1049
12	Davis, A. J.	Discus	46.3	13	17	41.4	7	525	114.5	20	425	71.7	3	24	991
13	Campbell, D. R.	Discus	0.0	21	0	(186.6)	14	452	143.2	11	524	34.7	10	5	981
14	Rollings, C. C.	Pegasus	18.0	21	0	50.2	5	569	106.0	24	396	25.9	11	3	968
15	Moulang, A. P.	ASW-20	17.1	21	0	(121.2)	16	274	116.4	19	434	10.9	18	0	708
16	Smith, M. J.	LS-4	9.6	21	0	(104.9)	18	230	120.0	14	450	74.6	2	26	706
17	Eagles, T. W.	Discus	17.1	21	0	(178.3)	15	429	78.7	40	264	17.5	18	0	693
18	Richards, E. W.	Ventus	99.1	4	52	(42.7)	35	62	138.1	12	501	33.1	9	6	621
19	Szulc, R. J.	Discus	3.2	21	0	(80.0)	21	163	120.0	14	450	0.0	18	0	613
20	Murdoch, M. L.	ASW-20	22.9	20	2	(108.7)	17	240	98.4	33	353	0.0	18	0	595
21	Cook, I. R.	Ventus	90.6	7	46	(77.5)	23	156	106.8	25	391	0.0	18	0	593
22	Zealley, T. S.	ASW-20	0.0	21	0	(80.8)	20	165	111.7	22	413	24.1	17	2	580
23	Kay, W. M.	ASW-24	18.0	21	0	(76.0)	24	152	120.0	21	420	25.9	11	3	575
24=	Evans, C. J.	LS-4	51.1	10	20	(99.6)	19	216	89.9	38	315	0.0	18	0	551
24=	Hartley, K. J.	ASW-20BL	107.0	2	57	(80.0)	21	163	93.5	36	331	17.5	18	0	551
26	Jones, R.	Ventus	17.1	21	0	(71.3)	25	139	110.2	23	406	25.9	11	3	548
27	Bromwich, R. C.	LS-4A	51.1	10	20	(43.3)	32	63	120.0	14	450	0.0	18	0	533
28	Murphy, T. J.	ASW-20	42.5	15	15	(42.7)	35	62	120.0	14	450	DNF	18	0	527
29	Lyttelton, C.	ASW-20BL	51.1	10	20	(49.5)	28	80	106.6	27	390	0.0	18	0	490
30	Nash, S. R.	PIK 20D	34.6	18	10	(56.1)	26	98	102.3	32	370	0.0	18	0	478
31	Cuming, M. F.	Vega	18.0	21	0	(54.6)	27	94	104.6	28	381	17.5	18	0	475
32	Morris, B. C.	ASW-20L	51.1	13	17	(8.7)	39	0	120.0	14	450	0.0	18	0	467
33	Jones, S. G.	Discus B	0.0	21	0	(44.7)	30	67	106.8	25	391	0.0	18	0	458
34	Jeffery, P.	Pegasus	96.4	5	50	(44.7)	30	67	95.3	34	339	0.0	18	0	456
35	Spencer, J. D.	DG-400	0.0	21	0	(43.3)	32	63	104.6	28	381	0.0	18	0	444
36	Redman, S. J.	ASW-20	18.0	21	0	(41.1)	37	57	104.6	28	381	0.0	18	0	438
37	Corbett, G.	ASW-20L	47.0	15	15	(45.8)	29	70	89.9	38	315	34.7	8	7	407
38	MacPherson, D. J.	ASW-20	18.0	21	0	(43.1)	32	63	104.6	37	321	41.1	5	10	394
39	Stuart, T.	DG-300	101.4	3	53	(9.8)	39	0	95.3	34	339	0.0	18	0	392
40	Glossop, J. D. J.	ASW-20	18.0	21	0	(11.5)	39	0	104.6	28	381	9.5	18	0	381
41	Baker, P. E.	ASW-20	0.0	21	0	(39.2)	38	52	52.4	41	146	20.7	18	0	198
42	Aldous, R. F.	Discus	0.0	21	0	(0.0)	39	0	0.0	42	0	0.0	18	0	0

DNF=did not fly

We are grateful to Specialist Systems Ltd for the results.

JOHN McCORMIC

NOW I'M A PUNDIT

John chairman of North Wales GC, says that now he is a "pundit" he feels it his duty to show others how to reach this status

In our newsletter the editor, who is also our secretary, had the temerity to suggest that I was becoming unbearable merely because my average flight time this year is so infinitely better than any other members.

I of course deny any such charge

It would appear to me to be a just reward for a special finesse and delicacy of touch on the controls, combined with a finely tuned ability to become as one with the elements, a dashing debonair grace, flair and élan and a natural penchant to be in the right place at the right time The CFI's efforts to reduce this average by imposing on me his annual check flight, plus the subsequent three short flights at Aston Down (during which I was merely testing the local atmospheric conditions and the surrounding topography for its ability to trigger the necessary thermals) were soon eclipsed by a 2¾hr flight to a pre-declared destination, thus restoring once again my average flight time to a respectable level.

Of course there are those scurrilous knaves who suggest that I never fly unless conditions are such as to sustain an unpiloted barn door in soaring flight. To these people I can only reply that it is no fault of mine that I am occasionally called upon to man the winch or to deal with those other matters required of a chairman, *ie* shopping with the wife or visiting the grandchildren on those duff days which have in the recent past afflicted North Wales.

Now that I've become a pundit, perhaps I ought to run through a typical flight in order that you may see how it is organised and so that you may do your best to emulate it.

First things first, the Oly needs its DI. Well, not so much a DI as a major inspection with the mainplane and tailplane holding pins being checked at least four times. This is necessary because if nothing else I'm a confirmed coward. If one of my syndicate partners has DI'd the aircraft I do a surreptitious double check on the pins whilst ostensibly polishing the aircraft or pretending to check that the barograph is in and ticking.

"Right then" you say, "It's strap in and all out". Not quite. "Who's pinched me green cushion? I can't fly without me green cushion". Eventually it's discovered round the back of the trailer in six inches of mud and I spend the next twenty minutes cleaning it.

It is now essential that you gaze earnestly at the sky and mutter suitable comments to anyone just happening to be within earshot. "There appears to be a 2° difference between surface temperature and ambient today, and with a lapse rate of 3°/1000ft that should give cloudbase to 2000ft". Then holding a wet finger up, "The wind looks to be about 13½kt SW by S, that means I had better lay off approximately 5¼° to the left when going up the wire, I reckon I should get about 1576ft today".

It is also quite useful to get out a chart, opened to its full of course, and complain about the MATZ at RAF Valley and the necessity of avoiding Manchester Airport. None of these comments are designed to impress the onlooker you understand, but are merely an intrinsic part of the necessary incantations to the gods before take off. All the pundits do it.

Right, **now** it's strap in and all out and up the wire we go. I must have a word with that blasted winch driver when I get down; too slow at the bottom, too fast at the top and I swear he never backed off before release. Nearly pulled the so and so hook out. I reckon he's done me out of 6ft. What's 6ft in 1576ft as a proportion of £2.50? I wouldn't mind betting it's nearly a pennyworth that I've lost.

The ridge should be working today so it's set course and head for the Rhuallt gap. Lovely views of the Welsh coast and Snowdonia in the distance, I could get quite poetic. I shouldn't laugh I suppose but the holiday traffic below is jammed nose to tail for miles whilst I am up here cruising happily over the top of them. **Hells teeth!!, six down on the vario.** I wonder how long that's been there, I'd better increase speed. Too late, it's gone back to two down. Well at least I don't have to decrease speed because I didn't get round to increasing it. Shows consistency in flying that does.

". . . I have been complimented on my ability to sideslip into the core . . ."

Round the corner on to the ridge, it's bound to be working but here I am down to 800ft and no sign of it yet. Ah! here we go, two up and I pull the speed off, three seconds later two down and I push the speed back on again. Jeepers, that was a narrow band of lift. I whip round in a panic to get back to it before I lose any more height but can't find it. "It must have been a thermal" I tell myself and make up my mind that next time I'm going to circle regardless. There it goes again and sure enough the hill is throwing off the occasional thermal, not only that but I'm circling left, that's my good side, so I'm soon up to 1700ft. I wouldn't say my circling right is bad but I have been complimented on my ability to sideslip into the core.

I'm feeling a bit braver now with a little height underneath me and decide that I've got just about enough height to leap the Bodfari gap on to the main ridge. This ridge will definitely be working under these conditions. I set off with some trepidation only to find when I get there that Welsh hills do not obey the laws of physics and nothing appears to be happening at all. Feelings of unease and disquiet pervade the Oly cockpit manifesting themselves in the pilot's nervous twitching and a willingness to clutch at any straw as the electric vario occasionally gives out one of its milli-second cheeps.

Steadily I press on round the knoll waiting for the lift that never comes. It's no good, I tell myself, I'd better head back to the home ridge. I wheel 80° and, ye gods and little fishes, somebody has moved the gap, it's now miles wide and the home ridge is a microscopic dot in the distance – 900ft, that's about 1200ft above the valley floor. One last chance I reckon before I'm committed to a landing in the valley.

I head back across the gap towards the gentler slopes at the end which are basking directly into sun. Surely they must be giving off thermals. I trust you noticed that that was a conscious decision. There's technical for you. Suddenly the right wing (or starboard if you have a naval mind) twitches upwards and Sod's Law I have to circle right. When I finally get it centred I notice that the wing is pointing straight at the Salisbury Arms and bless the fact that it's lunchtime and that one of our lady pilots is the chef there. She must have noticed my predicament, and set fire to her steaks again.

I have enough height now to go north, back along the home ridge and to cross the Rhuallt gap. You see how persistent I am. I'm a simple soul and reason that if the wind is blowing and there's a ridge in the way of it then sometime it's got to go upwards. The fact that twice today already I've proved that it doesn't cuts no ice with me.

There's a little bowl near Cwm that always but always works well in this wind direction. This I know for positive sure. So sure am I, in fact, that I don't even bother to check it as I overfly it and head for Dyserth where there is another nice face that I am going to put my trust in. Well, I'm sure you've guessed it, my trust is misplaced and soon I'm down to 600ft. A low wailing and the sound of a gnashing of teeth transcends all other noises in the cockpit "You bloody fool, McCormic, low at the south end, now low at the north end, won't you ever learn?"

Nothing for it then but to head for the bowl. In I go and sure enough upwards I sweep, well, more of a stagger really as I thermal the hill lift and it

peters out at 800ft. So there I am reduced to going round and round in this little bowl, hardly clear of the top of the hill seeking in vain to gain more height.

I had casually noticed a white car parked in the forest immediately below, as I entered the bowl and began to circle. This is a sure indication that you have become a pundit, the fact that you now have time to look out of the window no matter how desperate the situation. I don't know what on earth they were up to down there but he obviously thinks that I'm some sort of aerial 'Peeping Tom' and, after a few minutes, they get out of the car and he shakes his fist at me before driving off. "It's not my fault", I call out after him, "I don't want to hang around here. Do something useful, rub some sticks together and set fire to the woods".

800ft, 800ft, it's obviously not going to get any better. The sky is now overcast and all thermal activity has long since ceased. 737 at the launch point comes through in the radio. "737 to 711, is the ridge working"? "It's working in patches" I reply. Well I don't see why I should be the only one in a bind. Anyway he's a half Cat in a hot ship, he should be able to hack it. Have to find his own bowl though, I'm in this one and there's only room for me. (In the event he didn't even make the ridge, chortle, chortle.)

800ft, 800ft, now what the hell do I do? Two and a half miles back to the field and I can't risk flying over the top at this height. I just knew that I shouldn't have got up this morning.

A decision has got to be made and I'm just the laddie to make it. That's reasonable I suppose, seeing as I'm the only one up here.

The nearest corner of the gap sometimes works in light south-westerlies so I decide that if I can get there and maintain 650ft, I can reach our field. Lower than that and it's a valley landing.

I've already picked a field. Well to tell the truth its nearly always the same one, right next door to the White House. They serve Thwaites on draught.

One final turn and "GO". Now this is the time to think of polar curves, penetration and min sink rates etc. **You** think of them - I just go. I must speak to Helen tonight. She didn't put my boiled sweets in my pocket this morning. She knows I get a dry mouth when I'm under stress. I reach the corner and I am rewarded with a cheep cheep, long pause, cheep cheep. Too little to circle in but pulling the speed off for each little cheep must have given me an extra 70 or 80ft.

Round the corner and check the altimeter, 670ft and the airfield is in sight. Press on and then relax, I've got it made, there's enough height now to move out and make a nice square circuit. That should impress the CFI. The trouble is that you and I know full well that you shouldn't tempt fate like that. Suddenly it's 4 down on the vario, hells teeth, close in on the field fast, closely followed by two up, move out, move out, too high. Landing checks done, final reminder to try to miss the tractor and I'm down.

Just got time to compose myself before the retrieve crew come along and lift the canopy off. "Nice flight John" they say, "Two and a half hours. The most anybody else got was ten minutes". "Can't think why" I reply casually, "it was perfectly flyable". That's how you become a pundit.

RACHEL DUNCAN

SOMETHING SPECIAL

Rachel photographed at Waikerie. She went to Australia in November 1986 with 50hrs and now has 200, a Gold badge and two Diamonds. She flies at Booker.

Nearing the end of my time at Waikerie GC, where I had been working and flying for seven months, I had done my 500km but due to the hot wearing weather of Australia, long flights had not suited me. I chose to concentrate on my cross-country speeds and had been enjoying practising the Toptime task (described in the October 1987 issue of *S&G*, p237) but one good Sunday decided to tackle a 100km triangle under FAI conditions with a friend timing me over the course. It was an equilateral triangle, Kingston, Maggea.

It was the last and best day of the typical week long cycles we had been having that spring. After the passage of the front the south-westerly wind would back round, dry out and each day would become hotter, stronger and higher. By the time it reached a north-westerly the next trough or front came through. Forecast temperature was 32°C, there were light north-westerlies and cumulus was based at 12 000ft. Most people had set off on 750kms plus. I had the LS-3 full of water and decided not to take off until about 2pm as conditions tend to be strongest between 3 and 4pm.

I climbed to about 3800ft ready to dive through the line at VNE at ideally 1000m. I misjudged the first time and ended up having to slow down to avoid being too low, never having practised a racing start. Same procedure, but this time I climbed a little higher and in fact crossed the line at about 3300ft and headed out on track for the large black bottomed cloud I had had my eye on before the start.

It was much further away than I had thought and I dropped to 1800ft before I reached it, even with a slight tailwind. In my anxiety to get right into the core I actually made a complete hash of it and was very slow centring, but eventually the digital averager was on 9kt.

Perhaps I should really have gone back then for another start but as I would not necessarily have made a better job of it I didn't bother. Having a Borgelt vario and final glide computer I could see exactly the height needed to complete the task with a 9kt MacCready setting, so at 8000ft I screamed off again following the audio speed director. I rounded Kingston at 6000ft as sharply as possible with what felt like vertical bank and took a very critical photograph.

Being such a high, strong day the thermals were very far apart and as the legs were so short diversion was not feasible. The second leg was clear and I began to fall below the glide path. I could see a street, however, leading up the last leg so I pressed on, relying on these clouds to get me back up.

Within no time I went round Maggea at only 1800ft. This is the lowest I have ever been around a TP and it felt very odd still doing over 100kt. My observations about the cloud street were correct and I was able to maintain height while flying straight on the last leg. In fact the lift was so good that I abandoned the speed director, blasted in at VNE and still crossed the airfield boundary at 200ft.

Even with all those mistakes I had taken under 46min which was 130.75km/h. Given the same conditions, that speed could have been considerably improved upon - the world record after all is 195km/h. Over 100km/h on a good day at Waikerie it was nothing great but I found it thrilling and it is a flight I shall not forget.

S & G CLASSIC

CHOSEN BY THE ARM-CHAIR PILOT

HOWIDIDNTDOIT OR FOILED AGAIN

Our last *S&G Classic* (August issue, p190) was Nick Goodhart's description of his flight form Lasham to Portmoak, but not all such accounts of cross-countries have met with universal approval. In 1961 a newcomer to the columns of *S&G* wrote a piece with the title *On Being a Wills*, which would have been taking an unpardonable liberty with Philip Wills' title On Being a Bird had it not been for the fact that the newcomer's name was - Bird. With the opening sentence "Good flights are easier done than said" Mike Bird sailed into a cirticism of the conventional "Howidunit" account of a flight.

Seven years on the first Platypus article appeared, and Mr Bird, hiding his literary talents under a pseudonym, tried to practice what he had preached with this account of a flight. Thus began twenty years of contributing to *S&G* and, as you will see, the style has hardly changed form that day to this.

(The writer has longed for years to write a Willsian "howidunit" describing a brilliantly organised 300km Diamond O/R; we see ourselves painting a dazzling word-picture of heroic struggle crowned with success as ... from the last exhausted thermal of the day we slip across the club boundary going downwind at nought feet to the cheers of amazed fellow-members ...

The literary plain has been easier to come by than the brilliantly organised 300kms, however. So we have written articles instructing other pundits how to write howidunits, and even a presumptuous article on planning the great feat called Howwegonnadoit. Now we complete the trilogy by writing of a heroic struggle crowned with absolutely nothing, except for a few salutary lessons, that ...)

The first task of the day is the battle of wits with the weatherman. This goes best if he has been on duty all night. "Today's forecast?" he says blearily. "Well, same as yesterday, really," Rapier-keen we shoot back, "Same as yesterday's forecast or same as yesterday's weather?" A pregnant pause at the other end of the line while he ponders whether saying, "Carry oxygen and a map of Scotland" or "Rain all day" would settle our hash more effectively. Finally he comes up with a real teaser designed to maximise panic. A belt of rain would move from east to west at about 10kt reaching Dunstable at 3 o'clock and it would probably be 11.30 before we could get to the club and organise ourself in the air.

We decide on Dunstable to Ludlow and back. A swift dash ...

A swift dash downwind to the TP and a battle upwind in the strongest part of the day might bring us to the edge of the murk, say 15 miles from home, around tea time - then a bold glide-out. The Dart 17R was capable of it even if we were not. *(Downwind* first is a good rule when flying self-imposed tasks, particularly if the weather is expected to deteriorate. Your burn your boats quickly instead of hanging about with one foot in the club and you can enjoy several hours' good soaring before being washed out of the sky.)

Now all we have to do is simply:
Rig three other chaps' gliders.
Rig own glider - Hey, come back, you three!
Smoke barograph.
Wind barograph.
Inscribe barograph baseline.
Seal barograph.
Get barograph signed by official observer.
Start barograph ticking.
Find map.
Put barograph in the glider, idiot!

Inscribe line on map - blast! No chinagraph pencil for glossy fablon-covered map. Have to do without a line.

Camera loaded? Well, photograph the official observer by the tail. First catch your observer by the tail; have they gone into hiding or what?

Declaration form! Heavens, any well organised (Lasham) pundit has DFs strapped to his knee and an OO on a chain. Use scruffy bit of paper with Ludlow town scrawled in blood or charcoal or something.

Ruthless deduction establishes that it must be strapped to the behind of a lady member

Right, now, out to that far distant knoll at the end of a bit of string. (Hate the north-east run.) Sorry, no. Help another pilot out there first. Come back, all set. Heck, where's me telephone money. Run and get the money, then Ye Gods! The parachute! Rush to the parachute rack - not there. Not in glider or trailer. A process of ruthless deduction establishes that it must be strapped to the behind of a lady member who is - aaargh! as they say in the strip cartoons - circling manfully so to speak, under fat cumulus. To add insult to injury Mike Till cruises past in the Tiger bellowing and circling his finger over his head, meaning "come on, you idlers, the air's lovely!"

Exactly the same thing happened the last time we got the Dart out. That time we brought another lady down to earth with a bit of black magic, now we repeat it - a sort of rain dance with eyeballs rolling skywards and added curses. It works again and the dear girl winds round and down only slightly later than the tug. As she rolls to a halt the owner of the parachute flings himself upon her and a fierce tussle ensues. "You might let me get out of the glider first," she shrieks. She has a point there; it makes it a lot easier to tear the parachute off her back. An ugly episode, even if we were asserting our rights.

Three more gliders have now arrived in front of us at the aerotow point. Oh well, now it's past 12 o'clock and the whole thing looks daft, but eventually we rumble away and up and forget it all as the thermals bump us around on the tow.

"We turn the radio off, better to hear the vario sing sweetly top C to our C flat"

After the earthbound drama the flying is fairly prosaic. As the day builds up we discard modest thermals; strong ones are gleefully circled in to the accompaniment, as usual, of raucous bathroom-style singing. A very noisy Regional competition is in progress. We turn the radio off, better to hear the vario sweetly sing top C to our C flat. Ludlow is lost, found again, photographed and left behind.

Galloping back upwind we see high in the eastern sky a grey line spreading. The forecaster was right; calling Dunstable we learn that it had clouded over at 3 'oclock and now at 4 o'clock it was raining there. About 5 o'clock we meet the murk near Bicester, 25 miles out; a smooth tobaggan-ride in dead air brings us to a large field with 600ft to burn, just outside Aylesbury. Little do we know that around the car radio a debate has been raging - should they let us know that stretching the glide could give us Gold distance? Sensibly the temptation is not put in our way; we are blissfully unaware since with no line or distance marks on the map we have no clue how far we have gone.

Drama once more, back on the ground. There is just a chance we had done it! The beautiful barograph trace is carefully removed. Carefully signed by an official observer, carefully lowered into a dish of clear dope - and gently floats off in a little sooty puddle, leaving the foil clean as a whistle. Our boggling eyes discern the message

"Ilchester cheese with beer' mocking at us through the fixing fluid. A partner who shall be nameless has used cheese-foil as an ersatz and we are the first to discover that the coating must have been soluble in dope. We could cry; we decry. Some wag suggest that the trace should have been fixed in beer; we decided to fix ourselves in beer instead.

Then we are told that Ludlow town is not a proper declaration anyway. Too vague. Should be a railway station, a public lavatory or some other unique landmark.

Then we learn that being off the line loses you distance in a failed O/R attempt. If you declare Hartlepool in a straight line and land at Plymouth that's all right for your Gold, but not on tasks with legs. Sorry, but there it is. Oh yes, and we were one witness missing on the landing certificate. Knowing us they should be grateful for a landing certificate at all, with or without signatures. We stumble off and get fixed some more ...

After all the fuss it was an immense relief to be told, days later, that we had done just 299.5km, so the whole gruesome business of the misdeclared turning point, the vanishing barograph trace (the OO's energetic signature in biro is embossed on a shining roll of Ilchester cheese foil, which we suppose we could frame or put in our logbook), the distance off the line that we hadn't drawn on the map and the missing witness did not have to be explained in triplicate to the BGA, the FAI, the CIA and the House of Lords. The Flying Committee gave us a conditional discharge with costs and we were bound over to be of good behaviour for the rest of the season.

All we face now is a charge of attempted rape. We should worry. Nobody can produce a declaration form and it wasn't witnessed by an official observer.

(Postscript: Shortly after, while tiling the weed-plagued Islington mulch at 11 o'clock on a Sunday, we are called by our partners. Bloated with hours, they insist we fly. Everything will be taken care of. After wrestling with our conscience she agrees to let us go and our Beetle roars up the M1 to arrive at the launch point at 12.15 for an instant tow. We trickle up to Lincoln and back and sure enough ... "from the last exhausted thermal of the day, etc, etc." The moral here for the incurably incompetent is - if a job's worth doing someone else had better do it - though you may have to wait ten years before they take sufficient pity on you.)

CROSS-COUNTRY WITH THE BGA

Mike gives his impressions of this first course in Scotland which showed how far aircraft and adrenalin supplies would go when stretched

An article in the August 1985 issue, p165, recommended the pleasures of BGA cross-country courses. The SGU hosted one in June, and as one of the participants I can confirm the advice in that article - if you get the chance, go on one.

Ours was led by Ken Stewart, the national coach, who was determined that this first dedicated course in Scotland would show that we were not climatically disadvantaged, and that we should turn our backs more often than we do on our hills. The ever enthusiastic and optimistic Ken began by asking who needed Silver and Gold distances. At the end, he said it was different from any other cross-country course he had run!

The weather was not entirely co-operative, but after two days of gloom, when we began to wonder whether Ken's collection of lectures and educational anecdotes really was inexhaustible, we had seven flying days. The "fleet" was the BGA's ASW-19 and a PIK 20B, SHK, Libelle, Mosquito, Sport Vega, Pilatus B-4 and Olympia 460.

Ken showed considerable initiative in getting the most out of non-cross-country days by setting mini-tasks of 15-25km with 3-5 TPs. We all improved our photography and many increased their speed round the courses threefold, having learned how far their aircraft, and adrenalin supplies, would go when stretched.

Members on the ground had an amusing time watching final glides across Loch Leven to get back to the hill, and some of us found that, providing we had our reading glasses with us, final glide calculators were to be believed. Opportunities for lead-and-follow were limited, but most of us had a go. The workload of trying to keep up, trying to do what Ken did, when he did it, work out why he did it, and learn how to use the radio efficiently all at the same time resulted in some canopy steaming-up on occasions. Some examples of classic radio transmissions:

Ken (inquiringly): "Where are you?"

Follower (tremulously): "I'm not quite sure".

Ken (to a lady pilot): "You were right last night - it was rape" - Crop identification, of course.

Ken (frequently): "Are you climbing?"

Follower (in my case, nearly every time): "No."

Ken: "Hang on, I'm coming down to get you", then the frustrating sight of the ASW spiral-diving down the thermal with airbrakes out and the command "follow me!"

One of the three Silver distances needed was achieved on the last day of the course at the third attempt during the week. On his first attempt the pilot became slightly lost, shared his approach to a field on a converging course with a double-decker bus, was then circled by a low flying Hercules and met by a police car and ambulance. On hearing that aircraft and pilot were safe the call for the fire brigade was cancelled. Result: 48km.

The second attempt was cut short by thunderstorms and arrangements were made by radio and telephone to land at Glenrothes Airport. Result: 15km, no landing fee. We had close encounters with many fields - barley, pea, grass with and without sheep and cattle. A very local farmer expressed surprise at four aircraft landing in two of his fields on one day. It turned out that he had only moved to the farm six months before; obviously the previous owner had kept quiet about the advantages of farming near a gliding club.

On another day Ken decided that we could benefit from learning how to fly in cloud, so he valiantly sat in the front seat of an SGU K-13 with the view from the back seat completely blanked out by white paper and cardboard - a peculiar sight, but not so strange as some of the attitudes the back seat pilots got the aircraft into. We decided it was a most useful exercise, and worthwhile repeating, provided there is a competent front seat pilot available and others are briefed to stay well clear of the unpredictably cavorting aircraft!

The end of the course coincided with an SGU task weekend, so Ken entered his pupils to show how useful the course had been. On the Saturday I don't think many of us started, and it took the only finisher, one of our few pilots who enters competitons, nearly five hours to complete the 107km triangle. The course was vindicated on the Sunday, when Ken took the Olympia and the Libelle to lead-and-follow on the 157km task. The Oly fell by the wayside at 35km, but Ken and the Libelle finished the task; the only other finisher used a Nimbus.

Not the high mileage and list of badge achievements that have been reported from other courses, but good fun, good value and plenty of flying. Thanks, Ken, but why did you let us do all the field landings?

BGA & GENERAL NEWS

OPEN CLASS NATIONALS

Robin May (ASH-25) is the new Open Class Champion with 3407pts, just 1pt ahead of David Innes with 3274pts putting John Bally in 3rd place. David and John both flew Nimbus 3s.

The 30 competitors in the Open Class Nationals, held at Lasham from August 6-14, had five contest days. There will be a full report in the next issue.

KEN STEWART

Ken has moved on to pastures new. He is now qualified as a commercial pilot and left at the end of July having worked for the BGA as national coach since May 1983. I know that the many people around the movement who have had the benefit of Ken's experience will wish him well in his new career and join with me in thanking him for his significant contribution to coaching. Thank you Ken!

New National Coach

Chris Rollings was appointed as the new national coach on July 1. Chris scarcely needs any introduction, he has been the CFI at Booker and is currently a senior regional examiner. Fortunately, because he has previously been involved in all aspects of coaching, he can take over the coaching programme immediately. Welcome Chris!

Bill Scull, *BGA director of operations*

NATIONAL LADDERS

Open Ladder

Leading pilot	*Club*	*Flts*	*Pts*
1. A. J. Davis	Bristol & Glos	3	7092
2. N. G. Hackett	Coventry	4	5959
3. J. Langrick	Coventry	4	5927
4. T. Stuart	London	4	5582
5. T. E. Macfadyen	Cotswold	4	4618
6. R. Pentecost	Surrey & Hants	3	4313

Club Ladder

Leading pilot	*Club*	*Flts*	*Pts*
1. C. S. Starkey	Surrey & Hants	2	2438
2. G. Wills	Coventry	3	2021
3. M. Gribble	Cotswold	4	1869
4. A. Kangurs	Coventry	2	1408
5. L. Royds	Midland	2	970
6. M. Wells	RAE	1	812

50TH ANNIVERSARY

Surrey & Hants GC celebrate their 50th anniversary with a dinner on November 12 at the Guildford civic hall. Former members are welcome and should contact Mike Wilson of "Pila", 66A The Butts, Alton, Hants GU34 1RD Tel 0420 84507 or the Lasham Gliding Centre office, Tel 0526 83 270/322.

CHILTERN EXPANDING

Chiltern Sailplanes and its companion company Chiltern Motor Gliders are expanding their long established servicing, repairs and parts operations by building an 8000sq ft workshop at Tollerton Airport just outside Nottingham. It will be twice as big as their Booker Airfield operation.

Dave Paton, managing director, says it will make Chiltern the largest independent glider and motor glider servicing, repair and parts supply business in the UK, if not northern Europe, with expansion in the light aircraft market. The two sites are an hour apart by air and two hours by road and will operate in tandem - Tollerton for the convenience of northern and midland customers and Booker for the south-east.

Chiltern expects to cut the turn around time of maintenance and repairs as soon as Tollerton opens at the end of September.

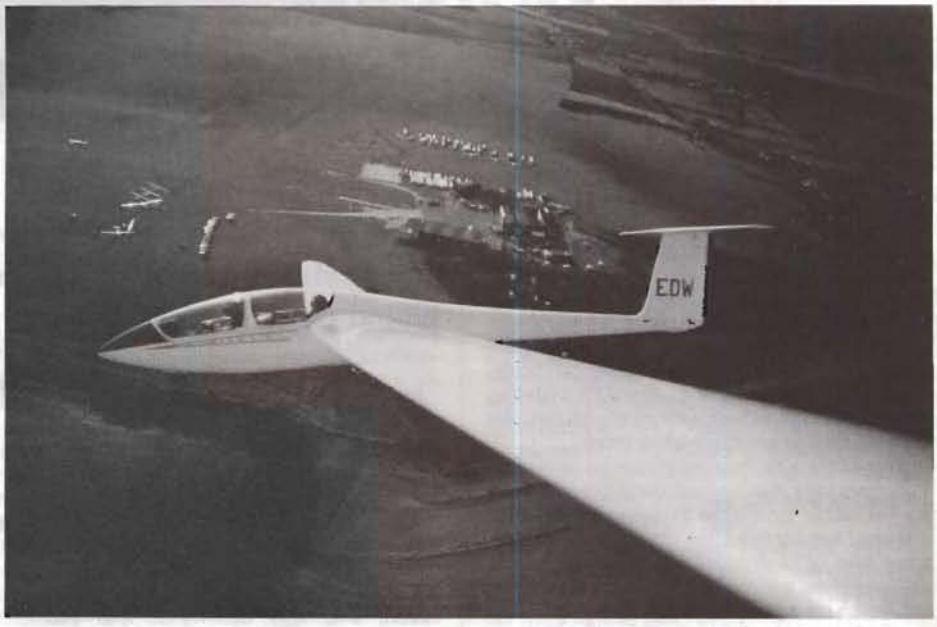
"We always want to keep close to our customers" Dave says. "It's not our ambition to get big and impersonal - just to keep improving our service and our competitiveness."

L'HOTELIER CONNECTORS

1. The ball/socket can become worn.
2. The springs can lose their tension.
3. They can become contaminated with dirt, and lack lubrication.
4. The sockets can become distorted if they are overloaded. They may then fail to hold onto the ball under load. Check after a ground-loop or other incidents.
5. *A safety pin hole* is provided as a means of ensuring that they have been correctly mated and checked. *Safety pins are* available from the motor trade, and are used for brake-pad retention. *Make sure safety pins* do not foul on anything
6. *There have now been two cases of* aileron disconnects on Astirs. The rods can drop into the rootend structure, locking on full aileron deflection. In one case there was a fatality, in Germany.

Dick Stratton *chief technical officer*

LONDON GC POSTERS



We have had a lot of interest in the February cover by Tony Hutchings and Malcolm Bonner of a K-21 doing a loop, so it is welcome news that this and the K-21 picture above by John Reid, with Chris Collingham as the pilot, have been reproduced by London GC as colour posters. They are 59.5cm × 42cm, printed on high quality art paper by Essex Colour Services and available to visitors to LGC at £4.60 or by post at £5.00 which includes p&p.

COMPETITION ENTERPRISE 1989

Competition Enterprise next year will be at Le Blanc, France from June 17-24.

OBITUARIES

D. H. O. HISCOX

The gliding fraternity will be saddened to learn that the London GC president, Dudley Hiscox, passed away peacefully on June 28 three weeks short of his 94th birthday.

Probably the last of the pioneers who founded our sport in the UK, it is likely that those not privileged to know Dudley may not be aware of his tireless and invaluable services to British giding.

It is not widely known that it was his sponsorship of the prototypes of the Kirby Kite, Kirby Gull and Elliott Olympia that led to the wide availability of these most popular gliders. A competent and cautious pilot, he flew his Skylark 3 at Dunstable into his 80th year before deciding to ground himself.

A motorcycle dispatch rider in what he called "the Kaiser's War", Dudley started gliding at Dunstable in1931 and by the end of 1932 had acquired several hours of hill soaring in a Hols der Teufel that made him one of the most experienced pilots at that time. This experience upon such types as the Westpreussen, Cassel, Dunstable Devil, Falcon 3 etc, was extended over the next five years to justify his inclusion in the British team that competed in the first World Gliding Contest held at the Wasserkuppe in 1937 when he flew the King Kite. A successful business manager he became chairman not only of the LGC but also of the BGA in the difficult years following the last war.

Dudley photographed at Dunstable

In the days when nothing got done unless members did it themselves, Dudley was outstanding as the leader who had the happy knack of firing enthusiasm in others so that laborious tasks were completed by exhausted but happy bands.

To Joane his wife and children Marilyn and Charles we extend our sincere condolences at their sad loss.

CHARLES ELLIS

KEN MACHIN

It is hopeless in a short space to try to write the obituary of a distinguished polymath, even for one of his closest friends. So I confine myself to his contribution to gliding.

Ken and I started at Cambridge in 1947, in the days of solo training and throw-away ATC surplus Kirby Cadets at £30 each. By 1952 he was CFI, a post he held for 13 years. His first major contribution was to introduce dual training, helping to lay down (with other pioneers in other clubs) the code of practice which is still the basis of modern training. He was deeply involved in building two-drum winches of advanced design to cope with the heavier gliders then coming into service.

His scientific skills were displayed in the performance tests of the Slingsby Sky (1953) in which Philip Wills became World Champion. Until then, performance testing had involved a stop-watch and guesswork together with hand-read instruments. The Sky had an automatic camera recording the instruments. There were considerable mathematics (before computers were invented) to allow for air movements and sundry errors. Tows to 9000ft by Tiger Moth in a January dawn enabled long partial glides to be made in calm conditions. Ken designed the whole programme and built the measuring equipment. The report, later published in the Journal of the Royal Aeronautical Society, set standards of precision previously thought unattainable. The cost was a lesson to the modern researcher who feels naked without megapounds worth of electronics at his command. Not that Ken scorned electronics, for their use was his speciality. But he knew instinctively when to uses expensive equipment and when a piece of string would do as well.

Ken served on the BGA Council from 1953 to 1963. "Wit and wisdom" are usually a cliché, but not in his case, for his witty approach made the right solution easier to achieve, and debates were made better-tempered by his contributions.

He was no mean pilot, either. He took part in many expeditions which at the time were the trade mark of the Cambridge club. in 1959, at the Nationals at Lasham, he managed the club's first 100km triangle (in an Olympia), even if it did take him 5½hrs.

His flying career came abruptly to an end when he had a heart attack. His interest in the sport, however, did not. He kept up to date and was always ready with advice on all aspects of gliding.

Ken's work-rate, in gliding and as a don, was such as to daunt a healthy person who did not have a weak heart. In coping as he did, his wife Elisabeth was a constant, devoted and determined support, although she never managed to get him to slow down.

I miss him very much. The gliding movement should miss him too. It takes a few exceptional people in each generation to resist the bullies, vested interests and ignoramuses who plague any minority sport. My gliding generation was, and the present generation is, fortunate that Ken was one of these exceptional people.

LIONEL ALEXANDER

GLIDING CERTIFICATES

Congratulations to Richard Toon of Wrekin GC for a unique achievement in completing all three Silver Badge legs and a Part 1 UK Cross-Country Diploma on a single flight from Cosford on May 21 in a K-18.

Peter Harmer of the RAE Farnborough GC interestingly flew two successive 100km triangles without landing, achieving a Part I Diploma the first time round and exceeding 60km/h on the second circuit to gain Part 2.

A midsummer dream came true for Dave Stewart of Deeside who reached 27 000ft for Diamond height from Aboyne on June 22, an achievement which surely debunks the traditional doctrine that wave soaring belongs to the spring and autumn (although admittedly this year's summer was rather autumnal!).

Over 1000 OOs have renewed under the recent re-registration scheme. Please note that original appointments with the suffix 81 will have expired by September 30, and the fee for future appointments or re-appointments is now £4.

Gordon Camp, *FAI certificates officer*

ALL THREE DIAMONDS

No.	Name	Club	1988
246	Foreman, M. C.	Two Rivers	21.5
247	Macpherson, D. J.	London	21.5

DIAMOND DISTANCE

No.	Name	Club	1988
1/367	Foreman, M. C.	Two Rivers	21.5
1/368	Macpherson, D. J.	London	21.5

DIAMOND GOAL

No.	Name	Club	1988
2/1571	Foreman, M. C.	Two Rivers	21.5
2/1572	Macpherson, D. J.	London	21.5
2/1573	Hodge, B. J.	Cranwell	21.5
2/1574	Stammell, P.	London	20.5
2/1575	Robinson, P.	Essex & Suffolk	21.5
2/1576	Smith, A. D.	Burn	21.5
2/1577	Mills, W. R.	South Wales	21.5
2/1578	Atkinson, Jill	RAE	6.5
2/1579	Taylor, D. P.	Yorkshire	20.5
2/1580	Chappell, A. J.	Shropshire	20.5
2/1581	Evans, R. M.	Fenland	21.5
2/1582	Thompson, M.	Eagle (in Austria)	23.5
2/1583	Hayes, M. A.	Bicester	27.5
2/1584	Hawtree, R.	Essex	28.5
2/1585	Herbert, E. D.	Shropshire	5.6
2/1586	Gentil, P.	Cotswold	19.6
2/1587	McKnight, G.	Fenland	21.5
2/1588	Cheetham, R. A.	Buckminster	21.5
2/1589	Critchlow, M.	Pegasus	22.5
2/1590	Mason, P.	Cleveland	27.5
2/1591	Thomas, J. W.	Cambridge Univ (in Australia)	8.3

DIAMOND HEIGHT

No.	Name	Club	1988
3/841	Foreman, M. C.	Two Rivers (in France)	13.4
3/842	Jones, D. M.	Phoenix (in France)	13.4
3/843	Stewart, D. A.	Deeside	22.6

GOLD BADGE

No.	Name	Club	1988
1258	Foreman, M. C.	Two Rivers	21.5
1259	Hodge, B. J.	Cranwell	21.5
1260	Mills, W. R.	South Wales	21.5
1261	Atkinson, Jill	RAE	6.5
1262	Stammell, P.	London	26.9.87

SERIOUS FUN

It's supposed to be bad form to listen in to other peoples conversations but at times you just can't help it, especially when you're inconveniently trapped in a place of convenience such as I was. It's also considered to be bad form to announce your presence in such circumstances, and besides, by keeping quiet you could learn something to your advantage. I certainly did. I soon found myself identifying with the still wildly enthusiastic but slightly over-the-hill character whose enthusiasm and persistence was not quite matched by his ability and who seemed to be the target for an ear bending. Anyway verbatim the conversation, if you can call it that, went like this.

"Did you do anything yesterday Pete?"

*"Yes. Landed out for the thirteenth time this season. Either **I'm** getting worse or the weather is getting worse. I always seem to come to a grinding halt in some indifferent bit which I never seen to quite get across."*

"Where was it yesterday then?"

"Severn Valley. I take some comfort from the fact that nobody else seems to have done a lot better."

"You know 'QT' did a 500k triangle with Chrissy in the **ASH 25** don't you?"

*"Oh yea. But I don't count that. I'm not in that league unfortunately. I think I'll stick to something sensible in my kind of price bracket. In fact I'm seriously thinking of upgrading. I'm just trying to decide which really is the best new Standard Class machine."***

"You know yesterday's was the sixth 500k the **'25's** done this season? In fact it hasn't done a single flight under 300k this year."

"For goodness sake Dick. You don't have to rub it in. You sound like a foot-in-the-door salesman and it doesn't become you. Next I suppose you'll be telling me you're going to buy one yourself?"

"Well. Funny you should mention it – but – I am seriously thinking of forming a syndicate. Fancy a share by any chance?"

*"You've got to be joking. Look Old Boy, the **25's** max glide is **only** about 40% better than a good Standard Class ship and its min. sink is **only** about 30% less. So what's the point of shelling out about 75% more money for an outfit when I can still do the occasional cross-country with what I've got?"*

"And occasionally get back? Do you realise Q.T.'s **25** has flown cross-country literally every time it's flown this year and it hasn't landed out once? So that's about four times as many cross-countries as we've done put together and it's clocked up about twenty five times the mileage in the process."

Dick was getting really wound up now. If I hadn't known it was all true I might have suspected him of statistical embelishment in the heat of the moment. As the discourse continued I could tell it was beginning to have some impact on Pete who rapidly became uncharacteristically quiet. You could almost hear his brainbox whirring. Unfortunately, following the ritual washing of hands, the discussion moved to more salubrious surroundings, out of earshot. But it left me wondering whether perhaps the economics of operating a 25 wasn't in fact a damn sight better than operating my 15 Metre Class ship. I went home and did some sums.

Well all that was eighteen months ago and needless to say I didn't have the 'bread' to buy a 25. But life is stranger than fiction and, would you believe, I am just coming to the end of my first season of ASH 25 ownership with Pete and Dick as partners. We sold our small span ships of course and actually finished up with a large amount of small change as well.

The extraordinary thing is that although none of us are what you would call real pundits, we have all more than quadrupled our flying time, have increased our cross-country mileage over tenfold (sometimes with the helping hand and advice of a genuine pundit in the back, I have to admit) and gone places and done flights which would have been pure fantasy a year or two ago. Needless to say our costs per hour/cross-country kilometer have gone down substantially too. Even on non-soarable days – and it has to be pretty grotty for that – we jolly our friends and family around and generally go through the motions of justifying the ownership of a glider.

And another funny thing. All this stuff that we got from the gloom and doom merchants about "... big machine, needs an army to rig it ..." is a load of codswallop. We can manage it easily with two, and as we are always two, where's the problem? As for flying it, if you've been flying a flapped 15 Metre Class machine like me – no problem. And if you haven't, still no problem; you just take an instructor with you until you feel up to it, and that won't take long. Ask Pete.

I think Pete summed it all up succinctly after his flight yesterday (a 400k triangle incidentally) when he remarked that "... Flying the ASH 25 was the best serious fun you can have in gliding ..." I concur.

If **you** want serious fun too write or ring for details of the **ASH 25** two-seater to:

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ALEXANDER SCHLEICHERS ASW 24.
You can write or ring for details of that too.

1263	Taylor, D. P.	Yorkshire	20.5
1264	Chappell, A. J.	Shropshire	20.5
1265	Evans, R. M.	Fenland	21.5
1266	Hawtree, R.	Essex	28.5
1267	Herbert, E. D.	Shropshire	5.6
1268	Critchlow, M.	Pegasus	22.5

GOLD HEIGHT

Name	*Club*	*1988*
Stammell, P.	London	26.9.87
Dalrymple-White, H.	in Australia	22.3
Evans, T. J.	Pegasus (in France)	13.4
McCormick, J. J.	North Wales	10.7

GOLD DISTANCE

Name	*Club*	*1988*
Foreman, M. C.	Two Rivers	21.5
Hodge, B. J.	Cranwell	21.5
Stammell, P.	London	20.5
Robinson, P.	Essex & Suffolk	21.5
Smith, A.D.	Burn	21.5
Mills, W. R.	South Wales	21.5
Atkinson, Jill	RAE	6.5
Taylor, D. P.	Yorkshire	20.5
Chappell, A. J.	Shropshire	20.5
Evans, R. M.	Fenland	21.5
Thompson, M.	Eagle (in Australia)	23.5
McKnight, G.	Fenland	21.5
Mason, P.	Cleveland	27.5
Hayes, M. A.	Bicester	27.5
Hawtree, R.	Essex	28.5
Herbert, E. D.	Shropshire	5.6
Gentil, P.	Cotswold	19.6
Critchlow, M.	Pegasus	22.5

SILVER BADGE

No.	*Name*	*Club*	*1988*
7670	Bircham, L. V. C.	Fenland	21.5
7671	Tallett, G.	Anglia	22.5
7672	Marshall, V. E.	Lasham	28.5
7673	Gough, N. J.	Four Counties	28.5
7674	Jackson, C.	Booker	28.5
7675	Richardson, C.	Ouse	22.5
7676	Lawes, S. D.	Phoenix	28.5
7677	Walsh, P.	Buckminster	28.5
7678	Austin, G.	Kestrel	28.5
7679	Aldridge, M. J.	Rattlesden	21.5
7680	Morrisroe, R. S.	Nene Valley	22.5
7681	Williams, T. D. N.	East Sussex	14.5
7682	Wheeler, Alison	Derby & Lancs	21.5
7683	Wilson, K. M.	Booker	21.4
7684	Hart, R. J.	Norfolk	21.5
7685	Malcolm, Catherine	Wolds	21.5
7686	James, Margaret	Heron	21.5
7687	Shaw, C. A.	Phoenix	14.5
7688	Soderstrom, H.	Southdown	21.5
7689	Malam, R. N.	Wyvern	22.5
7690	Johnson, A. W.	Bannerdown	21.5
7691	Hardwick, Marjorie	Booker	7.6
7692	Shepherd, C. A.	Upward Bound	28.5
7693	Preston, R. H.	Wyvern	7.6
7694	Andrews, D. B.	Devon & Somerset	12.6
7695	Biggs, I. P.	Cranfield	21.5
7696	Harris, J. S.	Bannerdown	5.6
7697	Hatton, D.	SGU	5.6
7698	Eyles, S. J.	Northumbria	20.4
7699	Knight, T. W.	Bath & Wilts	21.5
7700	Fairbank, D. J.	Essex	28.5
7701	Tribe, R. P.	Kent	27.5
7702	Sim, I.	Borders	16.4
7703	Morris, P. G.	Burn	21.5
7704	Hagley, J. W.	Booker	7.6
7705	Nicholson, J. B.	Lasham	6.5
7706	Hindmarsh, G. J.	Lasham	27.5
7707	Sampson, R.	Coventry	28.5
7708	Tuppen, P. C.	Vectis	5.6
7709	Dalrymple-White, H.	(in Australia)	22.3
7710	Brightman, P. P.	London	19.6
7711	Stanton, A. G.	Brackley	19.6
7712	Lawrence, L.	Trent	5.6
7713	Franks, H. S.	Cambridge Univ	22.5
7714	Maclean, N. A.	Lasham	23.6
7715	Armstrong, G.	Bristol & Glos	19.6
7716	Winstanley, W.	North Wales	20.5
7717	Palmer, G. W. R.	Avon	22.6
7718	Laurie, N. R.	London	22.6
7719	Shaw, P. A.	Heron	23.6
7720	Lynch-Jennings, N.	Avro	1.7
7721	Tarrant, C. A.	Air Cadets	6.7
7722	Self, A.	Midland	5.6
7723	Carter, P. R.	Norfolk	19.6
7724	Nicholls, P.	Essex & Suffolk	9.7

UK CROSS-COUNTRY DIPLOMA

Complete

Name	*Club*	*1988*
Lee, M. E.	Cranwell	22.5
Harmer, P. M.	RAE	28.5

Part 1

Name	*Club*	*1988*
McGough, R. G.	North Wales	20.5
Ball, R. G.	North Wales	21.5
Sheard, M. J.	Cranwell	28.5
Wilton, J.	Four Counties	28.5

CAPTION IDEAS

In response to the invitation for captions to the photograph in the last issue, p201, we have had the following offerings, all putting words into Ron Davidson's mouth.

Robert Matthews: "They don't take gliding seriously now - fancy turning up in a hat like that."

Miriam Longstaff: "All clear below and behind."

Mick Kingston: "No! It's OK. There's no American destroyer."

LOFTY'S RECORD

Francis "Lofty" Russell from London GC reached his 2000th hour of gliding during the International Vintage Rally at Bourges, France in July.

Make sure of getting your copy of *S&G* by taking out a subscription.
Details on p253.

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日本

(or Japan for the language illiterate)

Larry reports on gliding in Japan

Mr. Satoh had agreed to give me a lift to the site: a 35km drive from the centre of Tokyo, past the tower blocks, freeways, baseball grounds and Sumo halls, and out into the Kanto plain beyond.

Land is precious in Japan and gliding clubs come lower down the list of priorities than housing, factories and paddy fields. However, on the land beside the river, in between the flood dykes, space can be found for children's playgrounds, gliding fields and the like: activities where the occasional covering of a few metres of water can be tolerated.

Such a site is the home of the Sekiyado Soaring Center, the main gliding centre within reach of Tokyo. The field is laid out beside the river, while the hangars hide defensively behind the dyke. This is fine, but leaves a 10m high obstacle between the hangar and the field, impervious to gliders as well as water. Getting the gliders on to and off the field requires much manoeuvring and tugging on ropes attached to wingtips.

This is a big operation with three or four hundred members

The hangars hold around 50 gliders, derigged with the fuselages hoisted up into the roof in the intense use of space common in Japan. Yes, 50. For this is a big operation, with three or four hundred members and 600 launches on a busy day. They do 12000 winch launches a year and 6000 aerotows: 60% of all aerotows in Japan.

From a vantage point on top of the dyke, the operation is spread out below. Five parallel grass strips in operation and on a good day they'll have 60 gliders in the air at once. A control post co-ordinates things; gliders and tugs on downwind radio their intended landing strip and the control confirms it is clear. Retrieve is by Honda four-wheel bikes.

Beyond the five strips, the river itself and then the far dyke. Away to the right, we can see winching from the next club upstream, only 3km away. Of the twenty-odd clubs in Japan, five are in the Kanto region, and all five are located up and down this river.

Below at the foot of the dyke the gliders are parked alongside the closest strip. Some can be left tied down there unless there are floods coming. Floods are mainly in the typhoon season; the dam control authorities give six hours warning and the club is out of action for a day or so. The ground conditions change daily and the other thing to watch out for is turbulence from the dykes in a crosswind.

So, down to where the action is. Today there are two university clubs operating winches and some aerotow activity. Ten cadets swarm continuously around a K-13, not letting it out of their clutches from its rigging to its derigging. Another group seem to own some gliders with "Hexen" written on the side. Yes, it means "witches" in German. Why German, is a mystery. Hexen have a Blanik, a Schweizer 1-26 and a Grob 109M.

Around 20% of university members stay with gliding after student days

All these clubs and groupings operate semi-independently. The social (ordinary) clubs organise the aerotowing, and operate only at weekends and on national holidays. University clubs operate mainly by winch, but have many more free days at their disposal. Around 20% of the university club members stay with gliding after student days (and subsidies) come to an end. Social clubs overtook university clubs in numbers about five years ago.

Satoh-san shows me his runway markers made out of upturned woks, painted white and semi-buried. Aircraft can roll over them, they show up nicely and they don't snag tow ropes. Another Satoh invention is a plastic cone pointing forwards near the glider end of the aerotow rope. It's made from a funnel maybe 20cm across and stops the end of the rope whipping about. It also means you can find the rope lying in the grass.

The years have seen the adoption of various other Satoh ideas here and there. Satoh-san has been the chairman of the club for 10yrs; he did his 5hrs 25yrs ago. Over lunch (noodles in a local shopping mall) he has tales of the beginnings of gliding in Japan in the early fifties: primaries flying from the lawn in front of the Imperial Palace.

Back in his office there are tales of running the club and of bureaucracy. There's a signed message on the office wall from George Lee. He was only allowed a student licence by the government although World Champion at the time; flying as a pupil and giving lessons on cross-country techniques ("much strange phenomenon").

Cross-country flying has in fact only just got going in Japan. All aircraft must have VHF radio, except for very local flying below 2000ft with special dispensation. But battery-operated VHF was not approved. So that, until recently, was that. With the formation of the Japan Gliding Association a few years ago, however, soaring is now developing rapidly.

Solo flying by foreign visitors is still problematic. Even converting a PPL to a Japanese PPL takes about two months and you still can't fly solo without a radio licence (foreign ones not accepted). Sekiyado does get foreign visitors from Europe (Germany, France, the UK), although very few from the USA. Negotiating with the Japanese government over arrangements for foreign visitors is one of the important tasks facing the JGA.

Also on the office wall is a poster with a nice picture of a glider above the local countryside. There's a campaign in the local district Chiba to make it beautiful: the poster proclaims "Chiba is beautiful now". From the air it is certainly pretty; the river and its dykes are striking and elsewhere the huge plain is crammed full of villages, small factories and rice and cabbage fields. (Not great for landing out.) There are also a few golf courses allocated some of the precious space since there is more money in golf than in gliding (a round of golf will cost well over £100). Costs for gliding, by the way, are about the same as the UK for an aerotow and about twice the UK cost for a winch launch. Given the cost of many other things in Japan, this isn't bad at all. Airspace is 2000ft everywhere in Kanto, but you can get exemptions if not doing training flights.

Packing up time brings a procession up and over the dyke and everything bar tugs is derigged. One of the tugs ("not so good a rate of climb as the Cub"(!)) has to be mounted on an unstable looking trolley so that the wingtip clears the dyke.

Goodness knows what else was hanging up in the gloom of the roof

A final quick look around the hangars and workshop. There's a Dart as well as lots of K-8s, K-13s, Pilatus B-4s and Blaniks. An ancient glider (No. 19) awaits removal to a museum and at the other extreme a brand new K-23 is only five flying hours old. A K-21, Twin Astir, LS-3, and DG-400 were among others I spotted. Goodness knows what else was hanging up in the gloom of the roof. So there's plenty to fly.

I am grateful to Mr Satoh for the hospitality shown to me, and to the tow plane operations master, Mr Kohoichi Suzuki, for much additional information. If you are passing through, they would be pleased to see you. Judging from my reception ("enjoy please") you'd be made most welcome.

Contact: Mr Ichiro Satoh, Airport Master, Sekiyado Soaring Center, Japan Aeronautical Association, 1-18-2 Shinbashi, Minato-ku, Tokyo 105, Japan. Tel. 03-502-1203, 1207.

Prices (spring 1988): IS-28, Twin Astir, K-21: 2000-3000 Yen/flight (supplement if over 30min). Aerotow: 3500 Yen to 2000ft. Grob G109B: 18000 Yen/hr.

YOUR LETTERS

COULD MARGARET BE ONE US?

Dear Editor,

Can someone explain how it happened that the front cover of *Punch* for March 25 showed Margaret Thatcher wearing a gliding tie?

I know this was probably a photo montage, but perhaps some deep political significance was intended? Might it be something to do with keeping left and right wings level or unstalling the economy?

But since the gliders on the tie seemed to be rather old-fashioned, might there be an implied comment about government policy?

I'm sorry if my inquiry is long out of date and no longer of interest, but I only see the magazine when visiting my dentist for an occasional chat about his LS-3.

MARTIN SIMONS, STEPNEY, AUSTRALIA

IN DEFENCE OF THE IS-29D

Dear Editor,

Having just bought an IS-29D I couldn't believe my eyes when I read Derek Piggott's negative comments about it in the June issue, p136.

I only have about 42hrs solo - 18 of those in the IS - and with my two syndicate partners (both about Bronze badge level) we have a total of about 50hrs in this glider and no problems with it dropping a wing. Anyway it responds so fast I think it unlikely an average pilot would get into difficulties with it.

As for the unintentional tail slide off the top of a loop, I would have thought with all Derek's experience of men and machines he would know by now that people always blame the machine first. It seems obvious to me that if you tail slide instead of completing the loop you must have mishandled the aircraft - even if you are one of Derek's instructors.

The IS-29D, as Derek says, is an excellent glider with very crisp control right down to the stall, but it is not true to say that the stall warning is almost non-existent. If there were any problems with it it would never have been given a C of A.

C. JONES, *Nuneaton, Warwicks*

Derek Piggott replies: It is not uncommon to find that a glider, or a powered aircraft for that matter, is already in production and a number sold before further testing reveals a serious defect. For example the original Mini Nimbus which although sporting a full German C or A, proved to have negative stick forces in turns and dive recoveries. Definitely unairworthy by any standard but many were flying by the time the problem was noted and corrected in the later models.

Gliders imported to this country may pass through one of several BGA test groups and, not unnaturally, opinions differ as to the handling and flying qualities that are acceptable. I certainly would not have accepted the original IS-29D except for a permit to fly. As an instructor, I am always considering the safety aspects and not the performance or the problems of getting the manufacturer to do something about modifications. The later model has more stall warning but still has a very rapid wing drop and has not been given a C of A over here.

BCAR, OSTIV and the Joint Airworthiness Requirements, to which most gliders are designed and certified, all state what is required of gliders. Unfortunately not all manufacturers or authorities insist that their products conform. A glaring example of this is the airbrake and release control loads which may be far above the specification and cause very real hazards. The test pilot must think of the lightweight girl pilot who will not be able to close the airbrakes on a fast approach, or release the rope if it is under abnormal tension. Too many forget these things which are important in this country where anyone can learn to glide.

In assessing each type it is usual to consider the experience of the pilot who is likely to fly it. Clearly a glider with so little stall warning and such a pronounced wing drop at the stall is not a sensible buy for many Bronze badge pilots. CFIs should be aware of this and I would advise very strongly against it as a first glider and would not sanction an inexperienced pilot flying one at my site.

The only point in mentioning the amusing looping incident was that it is a further clear indication of the sharp stalling characteristics. Very few, if any, other machines would behave like this with so little provocation.

We have a syndicate with an IS-29D who love their glider like your correspondent but that does not change my views on it.

WARNING FOR BI-FOCAL WEARERS

Dear Editor,

Flying users of bi-focals may, as I have been, find themselves tempted by advertisements for a new type of lens which, it is claimed, is graduated to enable gentle and progressive changes when switching from near to distant objects or *vice versa*. Like normal eyesight, in effect.

Having succumbed I found the finished product totally unsatisfactory at all ranges. As is often the case, after the event I found a number of others who had also succumbed and their reactions are interesting.

Out of four pilots (glider and group A) two, including me, found them dangerously unsuitable; one found them barely tolerable - and should he be using them in those circumstances? One (by hearsay) reported total satisfaction.

Of three non fliers two, including a CAA examining doctor, found them unsatisfactory and one, an optician, tolerable in limited use.

Although my experiences may be unusual, I feel that potential users should make very careful inquiries before taking the plunge. Check that if after a reasonably long trial the lenses prove unsatisfactory alternatives will be provided at no cost. My own optician readily agreed to exchange mine for normal bi-focal lenses.

PHAETON

MORE ON MOUNTAIN FLYING

Dear Editor,

I write to express my concern regarding F. Humblet's letter in the last issue, p198 in response to my article in the June magazine, p122. Unfortunately, he doesn't indicate where he flies in this country, but I've a shrewd suspicion that there is a hint of the finely-tuned Lasham sense of humour at work there; I haven't laughed so much since getting away unexpectedly from a landout in the Sollieres-Sardieres valley.

I have to confess that during June I enjoyed yet another fun-packed fortnight of frolics in the mountains, pushing back those barriers, extending those horizons. Had a nice flight with Yves too, and the only attitude problem he pointed out was on finals.

So I'll just offer this, albeit unprofessional, piece of advice: Mr Humblet should calm down, take a large glass of muscle-relaxant and read the article again. And don't forget that old adage - if you can't take a joke, you shouldn't have taken up gliding ...

JOHN BRIDGE, *Barley, Herts.*

ACCIDENT PINPOINTED

Dear Editor,

To set Mike Valentine's mind at rest (see the April issue, p91) the accident he refers to was (I think) reported in Instructor No. 23 for summer/autumn 1973.

Lou Frank of the Coventry GC had the tail knocked off his K-6 by a descending tug at Schanis in Switzerland. He managed to bale out though only 900ft agl and joined the exclusive band of pilots who have one more take-off than landing.

This accident was caused by the tug, a Morane, carrying out a descending turn to the right. It was the usual practice of the club to turn left but on this occasion there was an Alp in the way. I am therefore still of the opinion that a side-by-side two-seater tug descending steeply in a right turn is a collision looking for the other aircraft.

One final point. I am the part owner of a M-100-5 which is sensibly fitted with two hooks. The rear one, about 6in SW of the pilot's coccyx, gives excellent winch launches. However, on three occasions people have tried to put the cable on the rear hook. As this is a potential disaster, at least to the tug, we have modified the drill to specify which hook is required, *ie* "Brakes are closed and locked. Cable on please. Front/rear hook."

MIKE USHERWOOD, *Huntington, York*

Lou Frank adds: The point that seems to be missing is more to do with airmanship than left or right break (although it makes sense to turn left in a side-by-side tug). The K-6 I was flying was hidden from the view of the Morane pilot by its starboard wing during a rapidly descending but moderately banked right turn. Had the pilot applied more bank he would have been better able to see where he was going. . .!

BOOK REVIEWS

Wings Like Eagles, The Story of Soaring in the United States by Paul A. Schweizer. Published by the Smithsonian Institution Press at £28.95.

This book, full of interesting facts though it is, was not the enjoyable read I had expected. Indeed, I found it impossible to read it through. It is organised as a yearly diary of gliding and soaring events, jumbled together without continuity of subject. Open any page and you will see four or five sections, often consisting of just one or two paragraphs, and each on completely different subjects. For example, pages 148/149 have paragraphs headed *Directors' Summer Meeting 1955* (*ie* the directors of the SSA or Soaring Society of America), *22nd National 1955, Records* and *World's First One-Design Regatta.* Much of this diary of events follows the history of the SSA and its administrative affairs.

Other major themes are sailplane developments, soaring developments, competitions and records – on each of these themes fascinating snippets may be found scattered through the book. Thus it is a good book to dip into – for half an hour at bedtime – but an impossible continuous read. If each theme had been treated separately, its historical development could have been analysed and explained, but here each fact is stated in isolation. The chapter on the World War II period is undoubtedly the best, for there is only one topic and an analysis of the value and use of gliders in war is attempted.

The problem of following any particular theme is compounded by the appalling index which refers only to the individuals mentioned in the book, not to themes and subjects. Given the structure of this book, a detailed synthetic index is essential with full cross referencing. Without it, it is impossible to follow any particular subject.

To add to the reader's difficulties, the layout of the book is staggeringly perverse. The text is laid out in two columns to a page with a wide margin. The columns are extremely narrow with an average of only six words per line. Extraordinarily, the right-hand margin of each column is not justified, and the unjustified ragged edge of the left column is pressed close against the straight left-hand margin of the right-hand column. The appearance of the book is therefore messy. Because the columns are so narrow, many words are hyphenated and broken between lines. I found that an average of about one in four lines end in a hyphen! Some of the word breaks are grotesque: in one place I found "issue" hyphenated as "is-sue". This makes the simple act of reading unpleasant in itself and occasionally hilarious.

If you are interested in the history of gliding in the United States, then the facts all seem to be here, but you'll have to mentally re-write the book and create your own index to follow it.
PETER O'DONALD

Magyar Vitorlázó Repülögépek (Hungarian Historic Sailplanes) by Jereb Gábor and published by Müszaki Könyvkiadó, Budapest 1988. (It should be available by special order from good bookshops. Price not known.)

Little has been published hitherto about sailplanes and gliders designed in Hungary. This new, well produced book fills the gap.

We had heard previously that the father of Professor Rubik (of the Rubik Cube) had designed many successful sailplanes. Information about all but a few of these was hard to come by. We now have a fuller record of Rubik senior's work but the book contains much more than this and many more than his designs. On almost every page of the 200 page central chapter, there are drawings, diagrams and tabulated details which make a fascinating study.

Despite the language problem, a vast amount of accurate information is now available about Hungarian gliders from 1922 to 1983. Some extremely beautiful sailplanes are portrayed in detail, as well as some that could not be called good looking but which were very effective and retain a good deal of charm.

Perhaps it is too much to hope for a full translation into English, but anyone with more than a passing interest in old time sailplanes will find this book a rich source of information.
MARTIN SIMONS

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

CLUB NEWS

Copy and photographs for the December-January issue of *S&G* should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, to arrive not later than October 11 and for the February-March issue to arrive not later than December 6.

GILLIAN BRYCE-SMITH
August 10

ANGUS (Arbroath)
Jim Laing, founder member, on the committee since 1970 and an octogenarian, was presented with a Caithness cut glass engraved paperweight to mark his outstanding service. An expert engineer, he devotes many hours of meticulous and paintstaking work to the maintenance of the club fleet and we are most grateful to him.

Congratulations to Martyn Davies and Boyd McLaren on their 5hrs and to Carole Horribine on her Bronze badge soon after rejoining us.

Our annual dinner-dance was at the end of a successful April flying week when the Aboyne tug gave us 62 launches to swell the week's total.

We are encouraging school pupils to choose gliding as their outside activity in their national certificate exams.

Visitors are always welcome.
H.P.McK.

AVON SOARING CENTRE (Bidford)
Our free airspace was put to good use early in the season. Well done to Roger on his 5hr attempt – he took off without his watch and remained airborne for 7hrs just to make sure. A special well done to 68 year-old Alec Foffe who went solo in France.

The Inter-Club League team are well ahead in their group, although the last two meetings have been scrubbed, and we are doing well all-round with Regionals and Nationals entries and 100km Cross-Country Diplomas in the pipeline.

Visitors are welcome to join our Friday evening barbecue and singsong with the 618VGS veterans choir.
D.T.W.

AVRO (Woodford Airfield)
Congratulations to N. Jennings on completing his Silver badge; to P. Cooper and D. Robertson on their Bronze badges; to M. Allen, I. Taylor, T. Etchells, I. Allan, R. Colman on going solo and to P. Bibby and D. Hall on becoming instructors.
A.G.C.

BICESTER (RAFGSA Centre)
A few badge claims were managed before the weather clamped. Congratulations to Rich Basak on his Bronze badge and Silver height. Mike Hughes and Ian Smith managed 470 on a 500km attempt in Discusses, both landing in the same field. "Mitch" Mitchell has let us into the secret of his Gold height claim from Aboyne last October; well done Mitch.
M.H.

Keith Dudley of Burn GC landing the syndicate Grasshopper.

BLACK MOUNTAINS (Talgarth)
Record July rainfall has limited cross-country flying but at Talgarth we are compensated with wave every time the wind blows.

Ivor Shattock contacted evening wave on July 18, turning at Newport and exploring the upwind Pen-y-Fan system on the way home.
W.D.M.

BLACKPOOL & FYLDE (Chipping)
Congratulations to Marion Wooller, Chris Wright, Tom Goodall and Andrew Benson on going solo; to John Mitchell, John Woods and Alan Bibby on gaining Silver legs and to Dave Andrews for completing his Silver badge. Commiserations to Bill Jones who missed Silver distance by 2km on a difficult day.

There have been many expeditions this season including one to the International Vintage Glider Rally in France.
V.H.

BOOKER (Wycombe Air Park)
Yet another helicopter has piled into the trees: at this rate the noise nuisance will soon disappear!

The club Super Falke has been converted to a folding-wing version by one of the members – although this did impose some insurance paperwork, it now fits into a much smaller space.

Congratulations to Sally King on winning the Standard Class Nationals and to Mary Meagher for doing well enough in a Regionals to get into next year's Nationals.
M.F.C.

BORDERS (Galewood)
Congratulations to Neil Watson and Graham Blair on going solo, Neil on his 16th birthday.

The season has been poor for cross-countries but members are becoming more adventurous. Colin Sword (SHK) achieved the club's first 100km Diploma and Derek Robson (Jantar) has again entered the Northern Regionals.

Work continues on our site with improvements to the fuel store, trailer compound and the provision of a visitors' car-park. Finance permitting, we hope to give our hangar a concrete floor and drains.
A.J.B.

Neil Watson of Borders GC being congratulated on soloing on his 16th birthday by CFI Alan Urwin.

BURN (Burn Airfield)
Many cross-countries were achieved on expeditions to Avrille Angers, Issoden and Gap in the French Alps but the weather was disappointing for the visit to Portmoak.

At the AGM in July Hedley Forshaw was appointed to handle public relations. Our midweek flying courses have been a huge success with many new solo pilots, some of whom have their 5hrs.

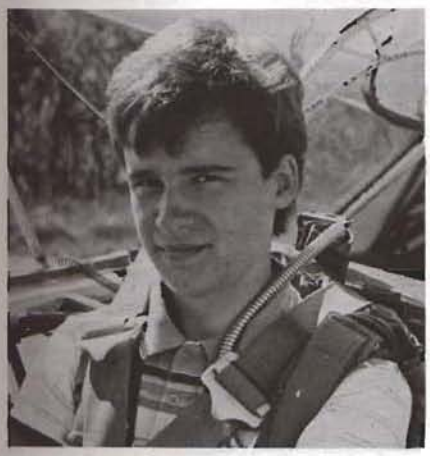
A syndicate of ten has a T-39 Primary (Grasshopper) which has become an added attraction to visitors.

Congratulations to Sarah Jenkinson, Matthew Ellis, Colin Stoves, Sean Keenan and Richard Nall on going solo and to John Mackenzie for resoloing. We have an official sweater which is selling well, thanks to Mrs Toone, a member's wife.

A new Motor Falke is replacing the one we have had for many years and one of our two winches is having a new engine. Visitors are most welcome.
M.T.

CAIRNGORM (Feshiebridge)
We have hosted expeditions from Blackpool & Fylde, Fulmar and Highland GCs, the latter claiming a 5hrs despite July's monsoon.

Roger Greig has masterminded the installation of running water at the site, vastly improving the standard of living.



Brian Gillies photographed after going solo in the K-7 on his 16th birthday by J. A. McCook.

Congratulations to Alastair Morrison on becoming an instructor. Our motor glider has been in continuous use for club flying and trial instruction flights.
S.M.

CHANNEL (Waldershare Park, Nr Dover)
Despite the frustrating weather we have had some successes. Congratulations to Ron Wood on going solo in his syndicate T-21 and achieving the longest flight of the year and to Gerry Davies who has soloed.

Some changes in the organisation of the club means we are now able to welcome all visitors and new members. Thanks to hard work by a few people the future looks promising for all our flying activities.
N.J.S.

CLEVELANDS (RAF Dishforth)
We have been having a quiet time with pilots, gliders and tugs away at competitions and those left behind contending with the July rains. On one occasion the hangar was flooded to several inches, the gliders masquerading as boats and the poor hangar cat marooned on the Swallow.

Congratulations to Dave Stewart on 4th place in the Ventus at the Inter-Services Regionals and to Mike Bond (Jantar) on winning the Northerns Open Class. Ben Mohebbi has soloed and Mark Mercer has his 5hrs.
J.P.

CONNEL (Connel Airfield)
We had almost the best June's flying ever and although July was one of the wettest we are able to congratulate Bill Miller and Iain "Figs" Ferguson on going solo.

Our reverse autotowing technique has launched even the heaviest glass two-seaters to 1200ft or more, especially as we have replaced both towcars.

David Whitelaw is our new secretary and, in the absence of John MacGilvray who sadly is in hospital following an industrial accident, Alex Fleming is acting CFI. Our best wishes to John for a quick recovery.
R.W.

CORNISH (Perranporth)
Congratulations to Simon King on his 5hrs on the cliffs and to Pete Burridge, Tom Cullen, Neil Edwards, John James, Tim Brown and Eric Jervis on going solo, the last three on the same day.

Dave Uren and Mike Alken had a soaring week at Lasham and Bill Lewis enjoyed his first Competition Enterprise.

On our "longest day", June 19, the first launch was at 5am and the last at 9.30pm. We did not break the launch record but flying over the coast so early in the morning was an unforgettable experience.

The Blanik is back after undercarriage repairs - thanks to John Smith at RNAS Culdrose. Sadly our syndicate Rallye has been sold but hopefully the club will have a tug again.
G.A.H.

COTSWOLD (Aston Down)
Congratulations to Paul Gentil (300km Diamond goal); Frazer Wilson and Dave Williams (Silver badges); Derek Locke, Mike Pearce and Steve Manktelow (Bronze badges) and Les Prezleski, Chris Horseman and Ben Bowerman (going solo). Our thanks to Steve Manktelow for giving the club the use of his "new" K-6E.

The new hangar is complete, thanks to the efforts of dedicated members, and will soon be officially opened. Our thanks to Ken Lloyd for his work over the years as chairman and to Robin Atkinson as our secretary. Chris Clarke is now chairman and Ed Johnston our secretary. Courses have run almost continuously during the summer and we are indebted to instructors and helpers who gave up their holidays.
G.M.

COVENTRY (Husbands Bosworth)

Husband and wife Julie and John Leefe who went solo on the same day during a course at Portmoak.

Our task week, moved from May to July, did not bring any better weather with only two contest days. We were joined by visitors from Rattlesden and the Isle of Wight.

Not to be deterred by the weather, 16 members and two club gliders descended on the Long Mynd over the first weekend. Harry Middleton, Heydon McEvaddy and the Pink Panther flew a club Bocian to Saltby, only to find it a non-scoring

Below: Connel's beautiful setting with the T-21 on finals. Photo: Helen MacLucas.

day. The longest task was a 240km cat's cradle completed by Jonathan Walker (ASW-19). Winners were: Open Class, Jonathan Walker/Derek Westwood (ASW-19) and Club Class, Ron Davidson and team (Bocian). Because of the weather we celebrated with a wake in the clubhouse.

Congratulations to Peter Davies on his Silver distance to Saltby. The club has replaced the K-6E with a Junior.
D.L.S.

CRANWELL (RAFGSA)
Congratulations to Agnes Lawson, Jackie Hocking and Mark Eacope (going solo); to Bruce Hodge (Gold badge); to John Lawson (Silver badge) and to Gary Moxham (full Cat rating). Several members have completed UK Cross-country Diploma flights.

The club motor glider will soon be back after a few months out of service but the club Astir met its fate in a field - the pilot was uninjured. Soon another vintage Weihe will be flying.
B.S.

DARTMOOR (Brentor)
Our "longest day" in June was a great success with 98 launches. The main aim was to introduce new members and the old T-21 was very busy, the day ending with a barbecue.

Trevor Taylor ran a successful soaring course in July with three wonderful days.

We have continued our policy of sending gliders to public displays as static exhibits but even the brightest of us couldn't link gliding to the Armada despite our chairman, Roger Matthews, being in charge of Plymouth's celebrations.
F.J.M.

DERBY & LANCASHIRE (Camphill)
After another gruelling winter the site is in good condition: a new perimeter hard core track has been laid and we have a field telephone between the winch and launch point. Ian Carmichael gave a concrete performance on the new drive and the tea van should be a useful addition.

The new ground control frequency is 129.975 - Tim Robson can recrystal TM61s for our members.

We have three two-seaters in use; visitors are welcome and we still have some places on courses. We had a reciprocal visit from Continental friends in early August. Congratulations to Alison Wheeler who achieved her Silver badge whilst in the throes of expectant motherhood.
A.H.

DEVON & SOMERSET (North Hill)
Brackney GC visited us with our club Bergfalke of three years ago.

Congratulations to Peter Rowe and John Cobley on going solo; to Guy Adams on Silver distance and height and instructor Simon Minson on completing his Gold badge at Talgarth. Our trial instruction evenings continue to bring us potential members.
E.C.W.

Obituary - Terry Jenvey
It is with great regret that we report the death of Terry after a short illness.

Terry, a full Cat instructor for many years, earned the respect of everyone. His enthusiasm and dedication in everything he did was an example to all of us. His presence will be sadly missed.

We extend our condolences to his mother and family.
Edward C. Wilcox

DORSET (Old Sarum)
Ray Witheridge was re-elected as chairman at our AGM. The new winch gives the two-seaters consistent 1200ft launches in nil wind.

Rain delayed the start of our "longest day", June 26, until midday but we managed 111 launches and plan to give a sizable cheque to our local hospital lifepack appeal.

We are north of Salisbury and welcome visitors, but only at weekends and Bank Holidays please.
D.N.

ESSEX & SUFFOLK (Hadleigh)
Congratulations to Dick Brooker, Jeffrey Langberg and Paul Mansbridge (going solo); to Sue Alchin, Pauline Allin, Chris Nunn and Peter Hart (Bronze badges) and to Peter Nicholls (Silver badge).

Due to the poor weather the only cross-country completed in the last two months was the club 200km triangle by Paul Rice (Libelle).

Mike Farr won both days in the Inter-Club League at Tibenham.
V.H.

LAKES (Walney Airfield, Barrow-in-Furness)
Members had a memorable visit to the Wolds GC at Pocklington at Whitsun and were grateful for their friendly hospitality.

Bob Wilson has soloed, Peter Craven has gone to the USA for more splendid flights, David Hannah flew Silver distance in France and we thank Nicky Rowan for tugging over the summer.
M.S.

HEREFORDSHIRE (Shobdon)
We have a new club single-seater, a K-8, for which we thank Les Kayz a great deal. Its first day produced a Silver height and with new solo pilots such as Tony Booth it should be fun.

We have returned the Twin Astir to general use after a rather long period of rest.
M.J.D.

HIGHLAND (Dallachy)
Willie Macdonald, Ian Hipkin and Eric Claydon have their Bronze badges; David Johnson and Mervyn Ross have gone solo; Glenda Anderson has Silver height and Neil Anderson flew to near Inverness to complete his Silver badge while Robert Tait went to 12000ft in wave.

During a wet, windy but surprisingly successful July expedition to Feshiebridge Tony Kane completed his Silver badge with a 5hrs.

We are 60km due north of Aboyne and visitors are always assured of a friendly welcome (weekends).
A.G.V.

HUMBER (RAF Scampton)
Steve Skidmore has gone solo and has a Bronze leg and Chris Gilbert, Dave Jones and Sarah completed their Bronze badges.

We are losing our CFI, Kev Atkinson, and Chris Gilbert (engineering, bar officer, treasurer etc!) and thank them for their many talents and hard work. We welcome Al Rummings back after his accident.

We have our K-13 back and Tony Smith has completed the C of A and mods.
D.M.R.

KENT (Challock)
A syndicate formed by Waldo Connolly and his partners gives us four PIK 20s.

The unstable weather has given us many good thermic and ridge days, August 3 being the best when we had 5hrs, Silver distances and one Diamond goal. Several have entered their first Regionals. Congratulations to them all.

The Inter-Club League meeting at Lasham and Booker were DNF weekends and we now have to use the reserve days to decide our League's winner.

A big band evening in the hangar was a huge success.
A.R.V.

MIDLAND (Long Mynd)
Congratulations to Philip King (Mini Nimbus) on his 9th place in the 15M Class Nationals.

With a steady influx of visitors and weekly course members we are having a busy summer and will continue our seven days a week operation until Christmas for as many as possible to enjoy our autumn ridge and wave flying.

In June we ran two advanced courses in Sisteron and were very grateful for the club's hospitality; have made what promises to be the first of many expeditions to Caernarfon to explore Snowdonia and will visit Aboyne in late October.

The addition of two ASK-23s to the club fleet has been an unqualified success and there are plans to improve our hangar and workshop.
J.H.

NEWARK & NOTTS (Winthorpe)
Congratulations to John Fewster (going solo); Keith Dukes, Dave Redfern and Dave Parker (Silver distance) and to Gary Rivers and John Cawrey (PPLs).

Our faithful green winch has broken down and is to be fitted with a Gardner engine. The T-21 (Spruce Goose) is proving quite popular after being fitted with an engine for self-launching.

Two new syndicates have been formed with an Oly and a Skylark.
N.A.C.

NORFOLK (Tibenham)
A group of members led by Graham Ashworth and Gerald Nunn with a Maule tug and an IS-30, retrieve car and trailer made a Cook's type tour of Husbands Bosworth, Bidford, Dunstable and Crowland GCs, soaring between sites and staying in the clubs' accommodation. During this imaginative enterprise they bought a Bergfalke. Their fulsome praise for the generous hospitality at all the clubs contrasted sharply with the surly officialdom at RAF North Luffenham where they were charged £30 for one landing and take-off.

The spring Inter-Club League was judged a success, despite indifferent weather. Brendon Sargeant, 100km into his triangle, landed in a

sugar-beet field only to have his ASW-20 canopy damaged by a drunken hobo attracted by the cockpit contents. Further assault to glider and pilot was prevented by a passing motorist to whom Brendon is grateful.

John Barker has completed a three year restoration to immaculate flying condition of a Tiger Moth which now graces the club. Built exactly 50yrs ago, it saw action against the Germans in France in 1940.

The new lecture room of Royal Albert Hall proportions has been moved from Coleman's of Norwich and rebuilt at Tibenham by Malcolm Springall and his team. This has freed the refurbished and rewired clubhouse for its proper use. Mains electricity has finally arrived and our faithful diesel generator honourably retired after 25yrs.

G.H.H.

OUSE & HAMBLETONS (Rufforth Airfield)

We have had several good cross-countries including a Gold badge 300km, a crop of Silver height and duration legs and two Silver badges completed with distance flights in one weekend. The five club single-seaters are kept in the air by the steady stream of new solo pilots and the new Falke is popular.

A ground accident damaged the Blanik (now repaired) and the K-13 (repairs almost complete).

The K-7 waiting for a winch launch with Geoff Harris, instructor, and Payman Nayer, pupil. Photo: B. Taylor.

We filled our hangars with 150 members and families for our June barbecue/disco with demands to repeat the process in August.

At the AGM in July we presented retiring chairman, Richard Boddy, with crystal glasses and a decanter as a small token of our gratitude for his 27yrs of service. Our new chairman is Alan Park. It was agreed to change our trading name from January to enhance our marketing effort next year.

C.R.

OXFORD (Weston-on-the-Green)

Virtually all our Inter-Club League weekends have been washed out but we hope to salvage the last at Enstone.

We had a very successful clubroom warming party in July with a barbecue and disco - our thanks to Carole Parsons-Broad for the excellent catering. The clubroom addition has enhanced the social side of our Friday flying evenings and will be a great benefit in the winter.

Recent solos include Jim Daniels, Caroline Hensher and "Soo the Noo". Chris Reynolds and Gerry O'Sullivan have their 5hrs; Graham Daniels and Norman Machin Silver heights and Arthur Rogerson Silver distance.

C.S.O.

Andrew Thorburn, president, planting the SGU jubilee tree with Stan Milne, chairman, right, and Bill Lawson.

PETERBOROUGH & SPALDING (Crowland Airfield)

Notable achievements include a long overdue solo for Tim Gent; a Silver distance for Mick Wright and several Bronze legs.

Negotiations with our landlord resulted in a further 17 acres which when grassed should give us an 1100m main runway in readiness for our venture into winch launching.

M.J.

PHOENIX (RAF Brüggen)

We have had good, adventurous flying and plenty of first solos and K-18 conversions. A new syndicate has an ASW-20, taking pressure off the Mini Nimbus, and we have a replacement Astir.

Chris Heames and Stu Mullholland took the ASW-20 and the Mini Nimbus to the Inter-Services Regionals and an expedition is planned to Innsbruck in October.

P.J.H.

RAE (Farnborough)

Peter and Jill Harmer enjoyed a fantastic gliding holiday in the USA. Despite our climate, we are having a good season - Chris White, Rob Clarkson and Ben Robinson went solo; Dave Pearson, Duncan Pride and Frank Shackleford have Bronze badges and Tim Graves and Mark Davenport have become instructors.

CFI Mick Wells flew a 300km triangle, Compton Abbas, Bicester in June and Pete Harmer claimed our first UK 100Km Cross-Country Diploma in one flight.

We expect well over 10000 visitors in September and while they watch the Air Show we will divert to Lasham with additional expeditions to North Hill and the Long Mynd.

M.T.D.

RATTLESDEN (Rattlesden Airfield)

The new winch.

Our new winch, although needing a few minor mods, is in service and proving to be well worth waiting for. Our thanks to the many members who worked on it for so long (especially for the heated cab).

Our monthly weekend courses are popular as are the trial instruction lessons.

The 447th Bomb Group veterans enjoyed a weekend with us flying from their old base, despite the bad weather. A modest sum was raised by their sponsorship for the renovation and improvement of our runway and clubhouse (their old control tower) and in return they received a rather well presented certificate with a picture of "A bit 'o' lace" in flight - one of their original B17s.

Congratulations to Tony Howlett (going solo); Steve Wright (Silver distance) and Dave Dowling (AEI rating).
R.W.

SCOTTISH GLIDING UNION (Portmoak)
SGU Ltd marked the 50th anniversary of its foundation on July 16 with the planting of a commemorative tree by Andrew Thorburn, a founder member responsible for much of the early development of gliding in Scotland and still our president. He was helped by Bill Lawson, who was also heavily involved in the early days.

Our task weekends continue to be as successful as the weather allows. Brian Scougall (K-6E) won the June 4 task as the only finisher after an epic 4+hr struggle around the 107km triangle. The next day was better with John Galloway (Nimbus) winning the 157km task followed by Fiona Scougall (Libelle) and Ken Stewart (ASW-19) as the successful cross-country course entrants. On the same day Tom Docherty went to Chatteris, near Cambridge.

We have had Air Cadets with us for a month – they seemed to enjoy their flying and we were very envious of their equipment.

Congratulations to Mark Hannan, Graham Niven and Fred Kelly on going solo and to Ian Giles on completing his Bronze badge.
M.J.R.

SHALBOURNE (Rivar Hill)
We hosted the only weekend when tasks were flown for our part of the Inter-Club League, launching from a nearby farm and landing back at the club to avoid aerotow restrictions on our site. But sadly we weren't as blessed for our task week. There was a good turn out despite the weather and the mini tasks were popular. Our thanks to Jonathan Mills, the organiser and task director.

Our very successful open day was on the best flying day this year – our thanks to hard working members who missed out on chasing their next goal.

Nigel Kent and Dave Maleham are new instructors. Congratulations also to Angie Porter on completing her Silver badge with a flight to Aston Down; to Mike Whittingham (Gold height); Andy Brind, John Parsons, Adam Cumberlege and Stephen Ottner (Bronze badges); Gillian Shepherd and Richard Dann (Bronze legs) and to Sarah Hinchliffe (going solo).
S.C.O.

SOUTH WALES (Usk)
Our open day was restricted to indoor pursuits by the rain which also limited our task week to three flying days. Colin Beer, our annual migrant from Kent, won the Club Class in his Libelle.

Earlier in the season Bill Mills flew 300km; Lyn Bennett and Dave Jeffries completed Silver badges with 50kms to Bidford on the same afternoon and there have been a number of Bronze legs and 5hrs. Simon France and Greg Scott have their AEI ratings.
J.M.B.

STAFFORDSHIRE (Morridge)
We finally had to have professional help to drain the sodden bits of our field and a good deal of money will be invested in JCB time to make a really worthwhile difference. Mike Tidmarsh and Ian Davies have soloed while Bill Coulin completed his Bronze and is looking forward to flying the Olympia 419 with its newly refurbished wings.

There was some excellent soaring during the second week of the Sleap expedition with magnificent sea breeze fronts on two days. Richard Bills completed his Silver, taking the K-13 to Shobdon. Our grateful thanks to Vic Carr and his colleagues for making us so welcome.
M.J.P.

STRATFORD ON AVON (Snitterfield)
August celebrates our first year at Snitterfield with sustained progress. We have a new hangar, reserve winch, water, telephone and toilets with plans for a workshop and clubhouse next year.

At the well attended AGM Martin Greenwood, Jeff Gale and Derek Phillips join the committee with Rob Hatton taking over as treasurer from Martyn Allen who worked very hard to mastermind our move.

Martyn Davies, CFI, succeeds Jim Tyler who was presented with a barometer as a token of our appreciation for eight years' service. Membership is very healthy, both courses fully booked and trial instruction evenings well supported in spite of the poor weather.

Congratulations on going solo to Richard Bright, Bob Horsnell, Martin Greenwood, Bill Riley and Paul Timms and to Sharon Edlin and Ian Lang on Bronze legs. Martin and Paul were airborne at the same time on the circuit – a first for SGC.

The Inter-Club League has so far been a washout. We have a superb K-7 imported from Germany and a Skylark 3F as well as Dart 15 and Skylark syndicates. The Pirat is now fully restored to pristine condition by Derek Phillips. We welcome Steve Brown as an assistant Cat instructor.
H.G.W.

SURREY & HANTS (Lasham Airfield)
Splasham came to Lasham for most of June and July and it is rumoured that Alan Purnell didn't even bother rigging in July!

Our new Discus is proving popular and a very good match for the Mosquito and Ventus, but less exacting to fly. A fifth K-8 is being sought to make life more bearable for the burgeoning post solo pilots.

Terry Joint becomes CFI in November when we have a dinner to celebrate our 50th anniversary and to say cheerio to Derek Piggott and thank him for his outstanding work at Lasham.

Following the donation of a Pegasus to Booker for keen young pilots' free use, keen young pilots at Britain's National Gliding Centre would like one as well. Please!
J.B.N.

SWINDON (Sandhill Farm, Shrivenham)
Congratulations on going solo to Phil Atley, Gilbert Burge, Chris Clark, Les Colclough and Graham Huggins, who are now busy collecting Bronze legs; to Gary Binnie on completing his Silver badge with a flight to Lasham and to Paul Mansfield on gaining his Bronze badge. An unlucky Dave Freeman recently joined our 4hr 50min club.

The first of our midweek courses was a great success, thanks to Gerry Brown, Nicky Rowan and Dave Schofield.

We are planning an expedition to Portmoak.
J.P.A.

THRUXTON (Thruxton Airfield)
Despite minor tribulations due to the weather, Mark Baldwin and Neil Robertson have both Bronze legs; Barry Lovett his 5hrs and a number of pilots are preparing for the AEI rating. Our good wishes to Bill Murray in the Lasham Regionals.
J.B.L.

TWO RIVERS (Laarbruch)
Welcome back to a promoted Lynne Turner and also Andy Gardiner from the Aviation Society of Egypt and Colin James from Bicester.

Mike Forman gained Diamond distance and goal to complete all three Diamonds; Graham Letties and Andy Weston have gone solo; Derek Taylor flew 50km to complete his Silver badge and Phil Sturley and Gurt Moers have their Bronze badges.

Mike Forman came 8th at his first attempt in the Inter-Services Regionals' Open Class and "Porki" Conyers (CFI) improved an last year.

We beat the queue - our Grob G103 Acro already has its new main spar spiggots.
I.P.

VECTIS (Sandown Airport, Isle of Wight)
Ken Taylor was elected chairman at a special general meeting, taking over from John Galt (see obituary).

Eight members went on an expedition to France. Pete T. flew 65km to complete his Silver badge; Jenny P. gained Silver height: Andy N. his second Bronze leg; Andy and Les T. flew single-seaters for the first time and Neil W. and John K., covered lots of countryside, John even dropping in on a chateaux.

A weekend operating from a field site gave Andy Taylor his B badge. The open day was a great success with 45 visitors flown despite the poor weather.
J.E.P.

Obituary - John Galt
It is with great sadness we report the death of our chairman who lost a long and brave battle against asbestosis in June.

"Let's start a gliding club in the Isle of Wight", a travel weary group of glider pilots said in 1976. From that time John's charisma and leadership were to take us through good times and bad to the established club we are today.

An accomplished power pilot with twin and seaplane ratings, John's real passion was gliding, an enthusiasm he was able to communicate so well.

His kindness and generosity were overpowering - a word carefully chosen and understood by all who new him.

Our love and sympathy go to Jane, Alex, Stefanie and Fi.

Goodbye, Pal - "Never a word of complaint."
N. K. Watts

WELLAND (Middleton)
We have sold our old faithful Bergfalke and plan to sell the L-Spatz and buy a second K-8. Alan Bushnell and Peter Strong have replaced their L-Spatz with a K-6E and Keith Tinker has bought a Cobra.
R.H.S.

WYVERN (RAF Upavon)
The club expedition to Roanne in early July was disappointing due to unsatisfactory weather. The K-23 pilots had the best value - lots of field landing practice! Our thanks to the organisers, Ken Moules and Adrian Matyear.

Congratulations to Roy Gaunt, 7th in the Inter-Services Regionals' Open class at Roanne the following fortnight, and to Eric Smith, 13th in the Standard Class Nationals.
D.B.

YORKSHIRE (Sutton Bank)
Our thanks to those who organised and helped with the Northern Regional. Congatulations to Mike Bond on winning the Open Class and Rob Knight (YGC) who came 2nd; also to Mike Strathern who won the Sports Class and Mike Brook (YGC) who came 2nd.

One of the club K-21s gave several Bronze C pilots their first taste of cross-country flying around some of the tasks.

Congratulations to John Petty on his Bronze badge; Martin Newberry for his 5hrs and to Mike Dennet for completing his Silver badge during the competition week.

Expeditions this summer have included Le Blanc, Angers and Fuentemilanos.
C.L.

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OVERSEAS NEWS

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SOARING SYMPOSIUM

Derek Piggott is one of an illustrious panel of gliding personalities invited to lecture at the Gliding Federation of Australia's first International Soaring Symposium. It is held in conjunction with the Australian Bicentennial Air Show from October 11-14 at Hawkesbury Agricultural College west of Sydney.

The subjects covered include meteorology, cross-country soaring, stresses and strains on the modern sailplane and instrumentation.

SWEDEN'S FINE START

Spring and early summer in Sweden has been very good with eight competition days for their Nationals. The new Champions are 15 Metre, Gunnar Karlsson (Ventus); Standard, Rainer Lainio (Discus) and Club Class, Börje Gustavsson (Jantar Std).

Swedish gliding is being reorganised into an independent federation with the training system revised.

CLASSIFIED SECTION

APOLOGY

If you receive your copy of *Sailplane and Gliding* later than usual, we do apologise - this was due to the postal strike.

Advertisements, with remittance, should be sent to Cherlon Press Ltd, 241 Desborough Road, High Wycombe, Bucks. Tel 0494 442423. Rate 40p a word. Minimum £8.00. We can accept black and white photographs at £3.00 extra. Box Numbers should be sent to the same address, the closing date for classified advertisements for the December/January issue is November 4th 1988.

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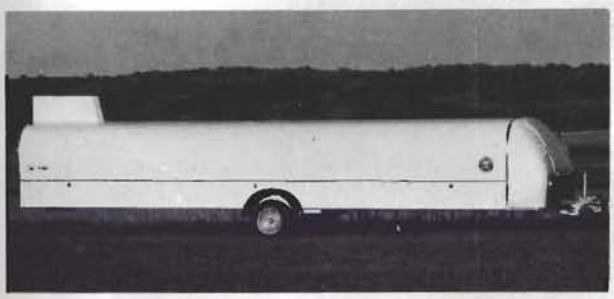
SHROEDER for PROVEN QUALITY - 500 now in use worldwide



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- ★ Fittings included
- ★ Various options available (e.g.: double axle)
- ★ Advanced specification
- ★ Very competitive price

Plus - free glider towing out kit (tip wheel and tail arm) with next 5 trailers ordered!

New Lift Top model option for 1989

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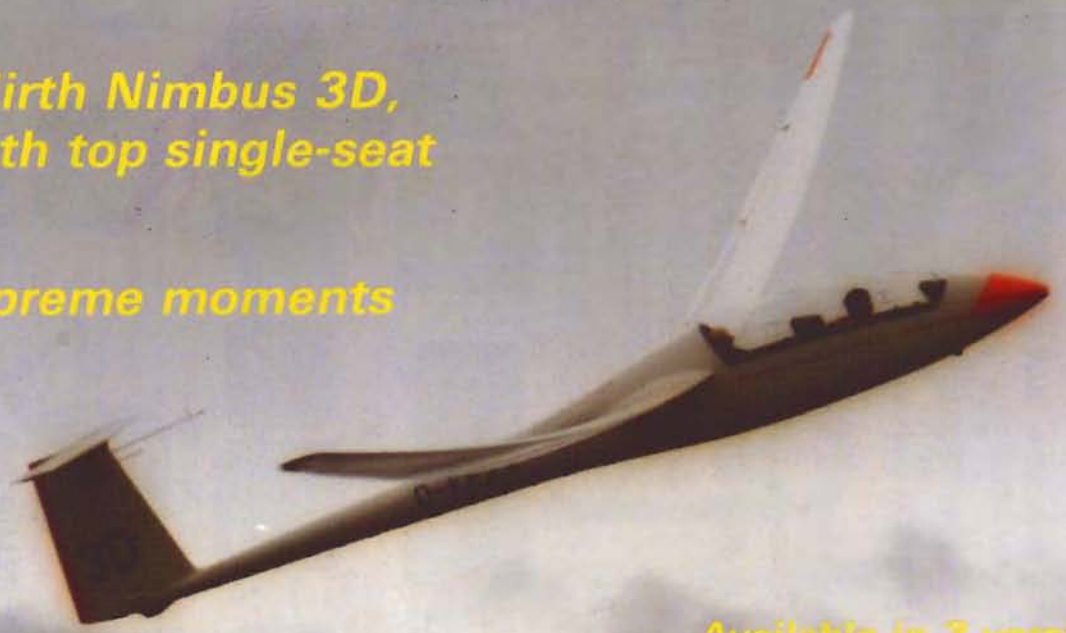
Here it is –
the Schempp-Hirth Nimbus 3D,
a two-seater with top single-seat performance.

Share those supreme moments with a friend



Available in 3 versions:

- Pure sailplane
- "Turbo" for self-retrieve, with folding 5-blade propeller and retracting engine
- "Self-launching" with 2-blade propeller with reduction drive and retracting engine propeller assembly

Schempp-Hirth
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