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SAILPLANE & GLIDING

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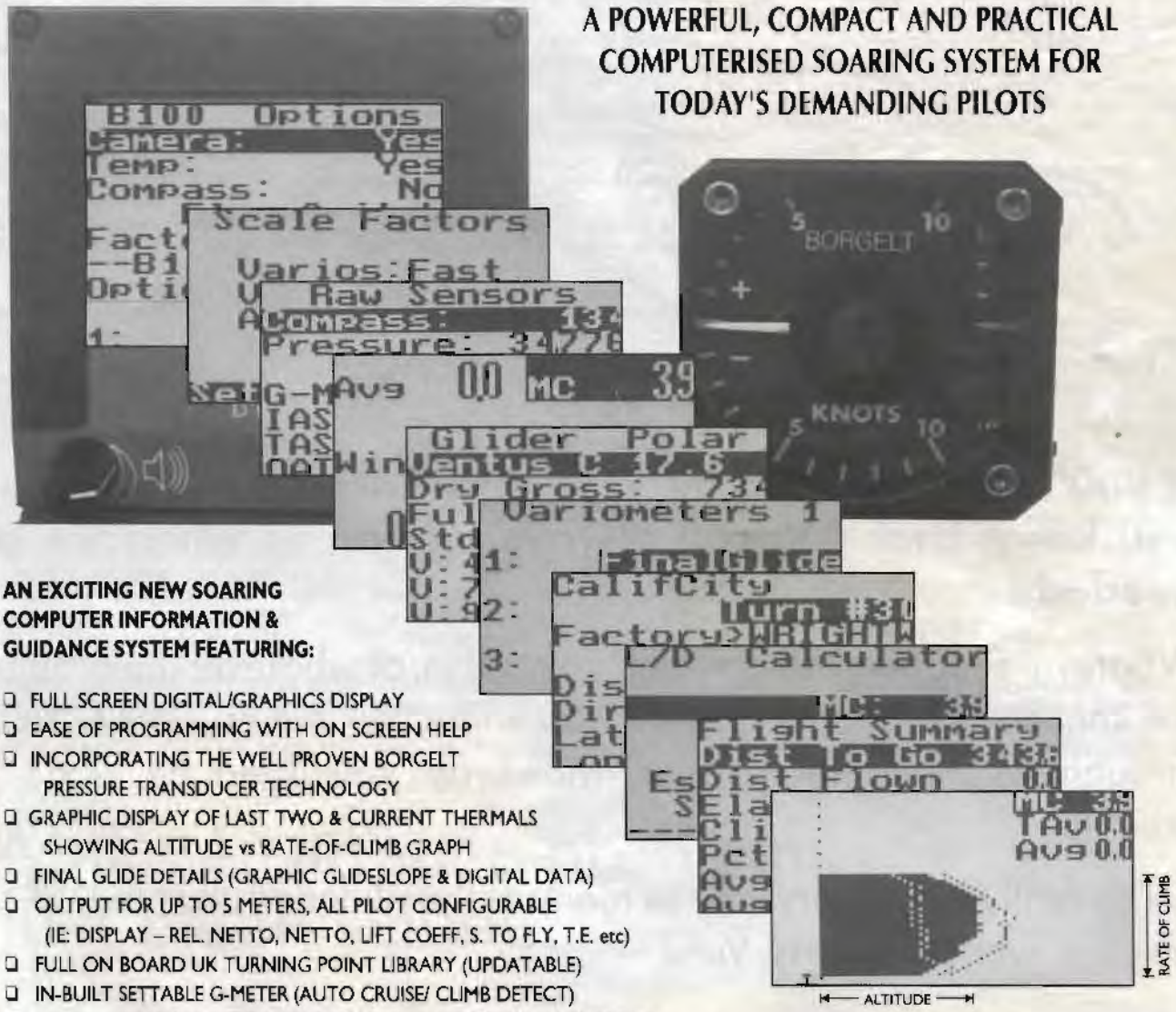

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YOUR LETTERS

A DEARTH OF MET MEN

Dear Editor,

Recently I have been asked if I could give on-site forecast support for a national competition. As the Met Office has now become an agency within the Ministry of Defence a lot of things have changed so I thought it prudent to find out if there has been any changes in policy on forecast support for UK competitions. The following is now official Met Office policy.

1. There is no support for Regional competitions (and there never has been any).
2. National competitions. For civil competitions, the competition organisers should request meteorological support, giving at least six weeks notice, from:

Head of C(G) 3, Directorate of Control (General), CAA House, 45-59 Kingsway London WC2B 6TE, quoting CAA CAP 32 UK AIP (Met) para 6.5.5 (ii) as authority.

For national events, this request will normally be acceded to and CAA will, in turn, request support from the Met Office. It is unlikely, however, that CAA would approve the presence of an on-site forecaster, unless the competition organisers are prepared to defray the additional cost (*ie* paying the Met man lots of money, putting in and paying for communications).

What this means is that a forecast would be prepared by a remote forecaster on a standard form for the duration of the competition and the forecast would be passed to the competition site by phone (or perhaps fax). For a national event this is clearly most unsatisfactory.

I know of only two or three practising forecasters in the Met Office who have given their support to various competitions. There are two others who have retired and perhaps have more time (and money?) to take on the task. However, they don't get any younger!

I think you may find it increasingly difficult to recruit volunteer, dedicated on-site forecasters to take on the task. They would have to do it in their own time, with no financial support from the Met Office and they would have to set up their own communications. This may not be as difficult as it first appears in this age of the fax machine.

The BGA should seriously consider the implications of running national competitions in the future without adequate Met support. Perhaps more emphasis should be given to teaching competition directors/task setters how to interprete weather charts that are now, or soon will be, available by fax machine at a not unreasonable price.

I can't imagine a nationals without a met man; there'd be no one to blame!

Yours sincerely,
HUGH BROOKES, *Charney Bassett, Oxon*

Jill Harmer from The Met Office replies: Regionals, task weeks and day to day flying can be supported by the Met Office on a repayment basis. Special gliding forecasts can be provided by a local Weather Centre with consultation with a forecaster by telephone. A selection of charts can be faxed to any club on a regular basis, (dial up fax is also in the pipeline), including surface analysis, and forecast charts, tephigrams and outlook charts. A fax machine can be supplied at a discount price when subscribing to an Aviation Met Service. For more details, please contact: Jill Harmer, Market Sector Manager (Aviation), The Met Office, Sutton House, London Road, Bracknell, Berks. RG12 2SY. Tel: 0344-856870.

(See Tom Bradbury's article on p122.)

PLATYPUS SHOCKS READERS

D*ar G*ll B*yce-Sm*th,

I was shocked to see the w*rd "f*rt" in the T*il Feathers column in the *S&G Yearbook*. My first thought was th*t Platypus, superficially so urbane, learned and sophisticated, not to say erudite and even recondite, had suddenly revealed himself to be nothing l*ss th*n a coarse and f*ul-mouthed peasant. However, discreet inquiries amongst fellow members at his cl*b lead one to an alternative and diametrically opposite conclusion, namely th*t, having lived a totally sheltered l*fe (apart fr*m a sp*ll as a rating in the Royal N*vy and participating in the last Australian Nationals) he is simply too innocent to m*ke the distinction between words which are acceptable in polite society and those which are unacceptable, somewhat in the manner of a small child.

I incline to th*s charitable interpretation of his error, though others might not. For the future, may I suggest th*t to avoid unintentionally offending, you should treat *every* f*ur letter w*rd as potentially r*de and stick an asterisk in it j*st to be on the s*fe s*de. Remember, th*re are m*ny other f*our letter words, s*ch as D*ve W*tt, th*t can g*ve offence to some readers of y*ur journal, as anyone can see fr*m previous correspondence in th*s letters p*ge.

Signed,
Disgusted R*te payer sorry, P*ll-tax-dodger,
Dunstable, B*ds.
M*IKE B*RD

PS: I myself settled the problem of wh*t was suitable reading-matter for my w*fe, children, servants and syndicate partners years ago; I take the *Sunday Spoilsport* which mainly consists of blank spaces where the r*de stories would be if the editor w*re not so careful for the morals of his subscribers. I us*d in addition to recommend the BGA organ, *Sailplane & Gliding*, as being equally tedious and unlikely to g*ve r*se to unseemly behaviour and hooliganism, until th*s l*st sad lapse.

BALING OUT

Dear Editor,

As an experienced power pilot, glider pilot and former sports parachutist, in my view, the advice offered by Terry Pole in the April issue, p61, about baling out, although clearly well ➡


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intended, is both unsound and unsafe.

First, there is a suggestion to include canopy jettison procedures as part of Bronze badge checks; this is much too late. An abandonment briefing together with the use (and care!) of parachutes should be taught as the first lesson before any student even sits in a glider. Subsequently, abandonment procedures, which embrace canopy jettison, should be a vital element of conversion (or transfer in the case of students) to each new glider type.

However, I take greatest issue with the suggestion to "place the right hand on the ripcord handle and keep it there during and after evacuation". While this may be practicable for some types of glider or for passengers, I suggest the only safe procedure should be:

1. Continue to fly/exercise control over the glider if possible.
2. Release the seat straps with the left hand whilst continuing to attempt to maintain control with the right hand.
3. Release the stick, and with both hands release and push the canopy away.
4. Almost simultaneously stand up in the cockpit (it may be necessary to use both hands and *considerable* muscle power to resist the combined effects of slipstream and gravity) and dive over the side.
5. Immediately *look down* to locate the ripcord handle and pull it firmly across the chest with the right hand. It is amazing how many experienced parachutists have attempted to "pull" on a buckle or webbing instead of the handle — some have "been successful" and their remains have been found clutching "the wrong handle".
6. The last bit is easy, and if sufficient height is available provides an enjoyable experience and a relaxing return to terra firma.

TERRY HOLLOWAY, *RAFGSA director of operations*

BEING PREPARED!

Dear Editor,

Thankfully in over 20 years no one has needed an emergency parachute at Peterborough & Spalding GC but a wealth of experience in all aspects of parachuting exists nearby at the Peterborough Parachute Centre where I joined a two-day course.

The training was extensive and thorough and several of our group of eight made a second jump — the exhilaration needs to be experienced to be appreciated. Relating this to gliding, the training for use of the emergency reserve 'chute equates closely to our needs following an emergency exit and the proven landing fall techniques are important to avoid injury.

PETER WOODWARD, *Huntingdon*

(We regret we have closed this correspondence for the time being after a deluge of letters, but will be having articles on all aspects of parachuting in the future.)

WHAT DO YOU DO WHEN THE SPINNING HAS STOPPED?

Dear Editor,

Most that has been written on stalling and spinning over the years, including the otherwise highly commendable article by Mike Cuming in your last issue, p75, has contained very little advice on what to do after the spinning has stopped, when the glider is usually accelerating rapidly downwards. Derek Piggott, in the same issue (p78), while advocating experience in recovery from unusual attitudes, including a steep dive, doesn't say how it should be done. Is it considered too obvious to need mention?

From my own experience when I would have hit the ground very early in my gliding career had the spin not started over a deep hollow, and from numerous observations while instructing, I believe most beginners don't react sufficiently in this phase, and so incur unnecessarily high speeds and height loss. I am inclined to think that, unless the spin starts very low, few hit the ground while still spinning. As one of my instructors told me "The coroner will not care much whether you hit the ground in a spin or a spiral dive".

I am sure many instructors do emphasise the importance of this phase in the total recovery process, but little ever seems to be written on the subject. One sentence on how to recover from an attitude which can range from a gentle spiral to an over the vertical dive is not sufficient for a situation which can literally paralyse with fright. As with all aspects of flying, an understanding of the principles and thorough practical experience is required to recover quickly while avoiding the dangers of re-stalling or overstressing.

I hope we can look forward soon to something in your pages on teaching this aspect.

MICHAEL RANDLE, *Cassington, Oxford*

Chris Rollings, senior national coach, replies: Mike has a good point and we do address it in some detail in the instructors' courses. At least two of the stall reinforcement exercises are taught specifically relating to the problem of the secondary stall on stall and spin recovery. Perhaps these should have wider publicity than we have been attempting to give but reference to Mike Cuming's article in the last issue, p75, covers the subject fully.

IN PRAISE OF ROCKY

Dear Editor,

What a joy to read about Howard Johns and his parrot in the last issue, p74. Tongue in cheek or not it made a welcome change from the usual never-ending supply of essays about ➡

"How I did 300km, 400km, 500km" etc, etc, and, good heavens, there's even an heroic 2000km this month for our delight.

My wife won't let me have a parrot so I wonder if our cat can detect some nice wave right above the clubhouse. I fear, however, that the provision of an on board pussy toilet would prove to be a daunting task. Nice one Howard.
DAVID TOWNEND, *Henbury, Bristol*

A SHAGGY BIRD STORY

Dear Editor,

Having just read the April issue I feel I must put pen to paper to avoid disaster. Publishing the story of the parrot was a great mistake and could result in the decimation of the African grey parrot population should ill informed readers rush out to buy one.

The article is obviously a spoof, my friend Vernon and I spotted it immediately. Vernon has inisisted that I point out that the African grey parrot is not equipped for soaring because of its low aspect ratio and high wing loading and would therefore be unsuitable for the task inferred.

I hope you will publish this letter to avoid a catastrophe on the scale of the dodo tragedy! A copy of this letter is on its way to the RSPB.
ALAN CLARK, *Portsmouth Naval GC*

P.S. My friend Vernon the vulture is my constant soaring companion.

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

THE WORLD'S OLDEST AIRWORTHY GLIDER

Michael Beach photographed with the Scud 2, BGA 231, Reg AAA, he has been restoring for the last 15 months (so far about 1500hrs work). He hopes to have it ready for the Historic Sailplane Group meeting at Dunstable during the first two weeks of September. Michael says that the Scud was originally thought to have been built by Slingsby's in 1935, but restoration has shown its original colour to be green which links it positively to the glider built by Abbott-Baynes in 1932 and flown at the first National Championships at Sutton Bank in 1934. It has passed through many famous hands and although its history is rather unclear during the years around 1935, Michael adds that it is exceptionally important in the history of British gliding and is generally considered the world's oldest airworthy glider. Photo: Michael Oakey.

TOM BRADBURY

THERMAL PREDICTION FROM THE TEPHIGRAM

The number of cross-country flights is increasing but the supply of meteorologists is dwindling. Task setters may be interested in some of the DIY techniques useful for making gliding forecasts. This is a description of how to use upper air soundings to predict thermal activity

The first essential is to find out the temperatures aloft. There are a number of radiosonde stations which send up balloons carrying a radiosonde twice a day. The pressure, temperature and humidity readings broadcast by the sonde are picked up by a ground receiver linked to a computer. The winds aloft are calculated from the drift of the sonde, either by radar tracking or from a navigation receiver in the sonde. Messages containing this upper air data are broadcast on Met channels by land-line or RTTY. For a small fee the Met office will send the data over the telephone lines to your personal fax machine.

Location of radiosonde stations

Unless it is flat calm you need to pick soundings from upwind of your area. Fig 1 shows the location of radiosonde stations in the UK. The

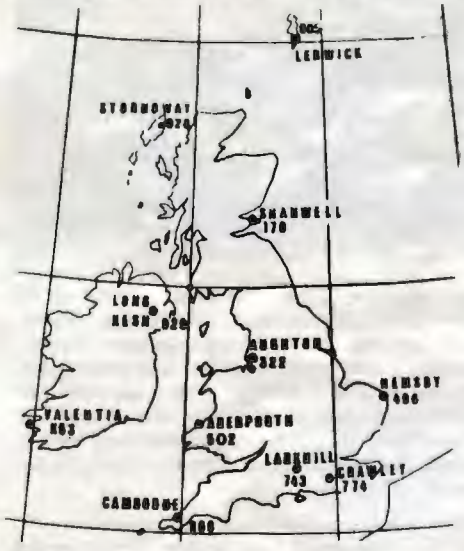


Fig 1

international numbers are shown beside the names. Most of these stations make temperature soundings twice a day at about 1100 and 2300 GMT. In between they make wind only measurements at 0500 and 1700 GMT. Two stations do not follow this routine: they are Larkhill and Aberporth where soundings are made to suit the needs of artillery ranges. These may be obtained by telephone fax but the data does not normally appear on RTTY broadcasts.

Aerological diagrams

To be of any use the data must be plotted on some sort of graph. These graphs are usually called "aerological diagrams"— there are several varieties in use by different nations but the one commonly used in the UK is called the tephigram. Pilots who have sat through lectures on the tephigram may prefer to skip the next part and go on to the para headed "How solar heating changes the air temp . . ."

Introducing the tephigram:

The name Tephigram comes from "T" or temperature and "PHI" which is the Greek letter used by Met people to stand for "ENTROPY". There are several definitions of entropy but in this case all one needs to remember is that on the tephigram lines of equal entropy represent the "dry adiabatic lapse rate".

The Dry Adiabatic Lapse Rate (DALR) is the rate at which dry air cools when the pressure is reduced, or warms when the pressure rises.

It is constant at 3°C/1000ft

This is the rate at which the temperature falls as you climb in a blue thermal.

Adiabatic means that no external heat enters the system. Air is a very poor conductor of heat; if one is dealing with a fairly large mass of air, such as a big thermal, the temperature inside is not noticeably affected by the air outside. As the thermal rises the pressure in the surrounding atmosphere becomes less. This allows the air in the thermal to expand. It takes energy to expand and this energy is drawn from the heat inside the thermal. Hence expansion makes it cooler. As long as the thermal is dry (*ie* no condensation occurs) it always cools at the DALR.

Lapse Rate is just another way of saying how the temperature varies with height.

Basic lines on the Tephi

Fig 2 illustrates the basic lines on a tephigram; only a small section is shown. The vertical lines are Isotherms, the lines of equal temperature. Here they are drawn for every 5°C and are marked from 5 to 25 along the top.

The horizontal lines are the dry adiabats, they also represent lines of equal entropy. From now on we can forget about the term "entropy", it will not be mentioned again, I promise!

Isobars

Once the dry adiabats and isotherms have been fixed we can add the isobars, the lines of equal pressure. They are the diagonal lines sloping from lower left to upper right and have been drawn for every 50mb starting at 1050mb at the bottom and going up to 800mb at the top. The isobars are slightly curved but the curve is hardly noticeable except on a full sized tephigram.

Isobars and the altimeter

In the standard atmosphere the altimeter reads zero at 1013.2mb. At 1000mb it reads 364ft, at 900mb 3243ft, at 800mb 6394ft. You may find these heights marked near the left hand end of the pressure lines of a full size tephigram.

Adding moisture

The dry adiabats show how a thermal cools as it rises, but only when the air is unsaturated. The air can hold a certain amount of invisible moisture; the warmer the air the more moisture it can conceal. If the temperature is steadily reduced a point is reached when the air can no longer hold all the moisture; it is then termed "saturated". Any further fall of temperature results in the excess moisture condensing out as tiny droplets of water. This produces dew on a cold surface and cloud or fog in the atmosphere.

The dew point is the temperature at which this condensation begins. The more moisture the air holds the higher is the dew point. For example at 25°C the air near the ground can hold 20gm of water vapour/kg of air. If the temperature was reduced to 4°C the air could only hold 5gm of water vapour/kg. The excess 15gm would be condensed out first as cloud droplets and later as drizzle or rain. In the process much energy in the form of latent heat would be released.

Latent heat

At sea level a kettle usually starts to boil when the water temperature reaches 100°C. Much extra heat is needed to change the liquid into an invisible vapour at 100°C. The extra heat is called "latent heat". The process is reversed when water vapour condenses into droplets of liquid water. Then heat is released.

When this happens in the atmosphere the release of latent heat raises the air temperature. A rising thermal no longer cools at the dry rate. Instead cloud forms and the thermal now cools at a lesser rate called the "Saturated Adiabatic Lapse Rate" (SALR). The extra energy released enables the cloudy thermal to rise much higher than a dry thermal.

Saturated adiabats are marked on the tephigram as a series of curves which slope up from lower right to upper left. The heat released depends on the amount of water vapour which condenses into droplets. Hot air can hold a lot of water vapour; when this is condensed out much

latent heat is released so the lapse rate of the SALR has a steep angle.

As the air rises higher and becomes colder more and more water vapour is condensed out. At low temperatures there is so little water vapour left that further condensation releases very little latent heat. The result is that the slope of the SALR becomes flatter and finally becomes almost the same as the DALR.

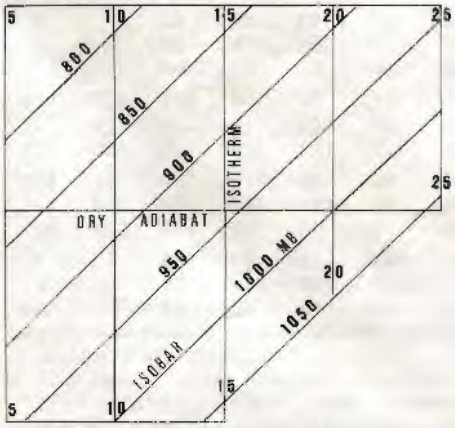


Fig 2

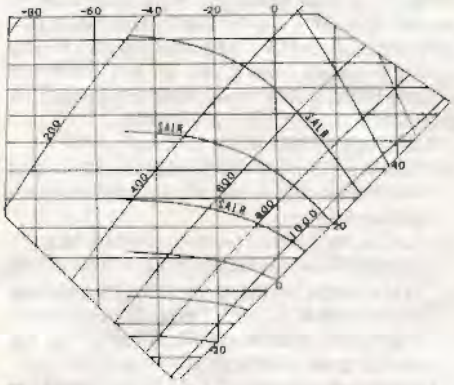


Fig 3

One can see this in Fig 3 which covers a much wider temperature range than Fig 2. The saturated adiabats are marked by a series of curved lines which stop at a temperature of −50°C. Beyond this the SALR is almost identical to the DALR. Notice that the lines on the right hand side (where the temperature is +40°C) have a very steep slope. On the left, where temperatures are far lower, the slope is much shallower.

Dew point lines

The final set of lines represents the vapour content, usually given in units of grammes of water vapour/kg of air. These lines also show how the dew point changes with height. On a tephigram these "dew point lines" are marked by pecked lines.

How dry bulb, wet bulb and dew point are related

Most people are aware that one can work out the dew point by taking readings with a pair of "wet and dry" thermometers. The wet bulb is covered with muslin and kept moist by a wick

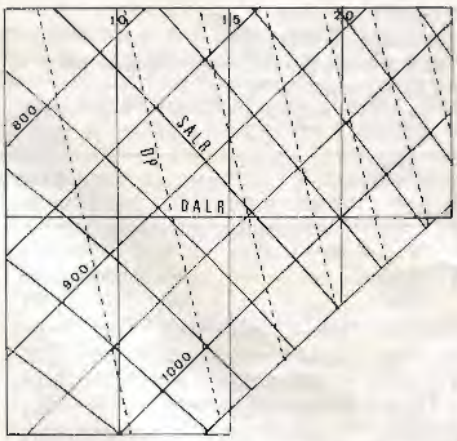


Fig 4

from a small reservoir of distilled water. As air passes over the wet bulb some of the water is evaporated, this lowers the air temperature and the wet bulb thermometer records it. The drier the air the more water it can evaporate and the greater the difference between wet bulb and dry bulb. If the air is saturated no further evaporation can occur; then both wet and dry bulbs read the same.

Fig 4 shows a section of a tephigram with saturated adiabats (marked SALR) and dew point lines (marked DP) added. When a thermal rises the air temperature cools along the DALR, the wet bulb temperature cools along an SALR and the dew point cools along a DP line. They all meet at a point which is the saturation level; then cloud forms.

Fig 5 shows a method of finding dew point and condensation level from wet and dry thermometers. In this example:

DB is the dry bulb temperature	21.3°C
WB is the wet bulb temperature	16.7°C
DP is the calculated dew point	14.0°C

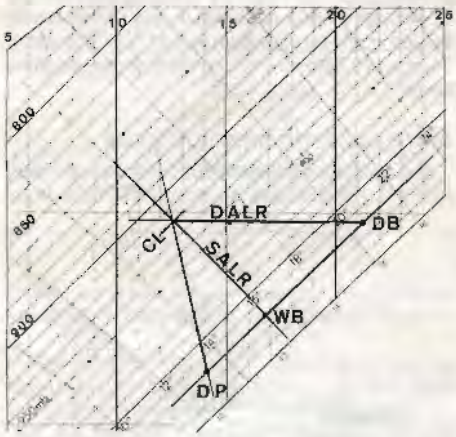


Fig 5

If we follow the DALR up from DB and the SALR up from WB the point they meet is the condensation level (CL). (In this case 919mb.) By following a line down from this point parallel to the dotted dew point lines we can find the surface dew point of 14.0°C.

Working out the cloudbase

A rough and ready way of finding the height is by: Subtracting the dew point from the dry bulb you get 7.3°C. Multiplying the difference between dry bulb and dew point by 400 gives 2920ft

Finding height along the DALR

One can use the dry adiabatic lapse rate of 3°C/1000ft to work out heights along it. Fig 6 shows the method. Suppose the surface pressure was 1011mb and temperature 21°C. The shaded bit labelled QFE represents the ground. Follow the DALR up from this point marking a line across every 3°C, *ie* at 18, 15, 12 etc. Each one of these represents a 1000ft gain of height. Then draw lines parallel to the isobars and enter the equivalent heights. In this figure the pressure heights have been shown with pecked lines.

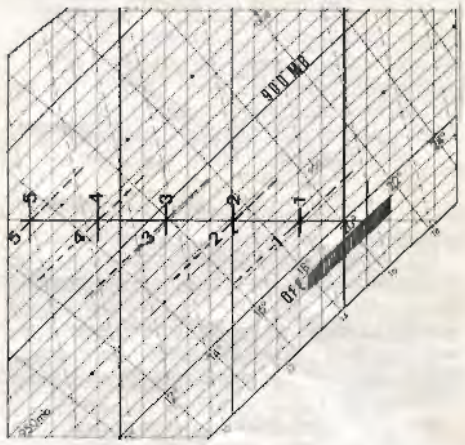


Fig 6

How solar heating changes the air temperature

Sunshine provides very little heat to the air through which it passes. Almost all the energy goes into warming the ground and evaporating any surface moisture there. As the ground warms up it heats the air in contact with it. Convective currents then start to distribute this heat, carrying it upwards. While it remains dry this ➡

rising air cools off at the DALR. Ascent continues as long as it is warmer than the surroundings.

Representing energy on the tephigram

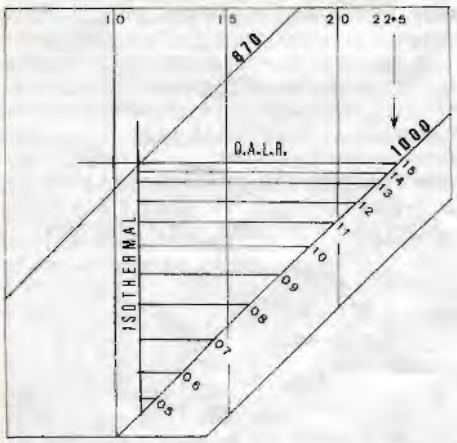


Fig 7

Fig 7 shows how solar heating can change the temperatures aloft. For simplicity in this example let us take an atmosphere which was initially isothermal. Suppose the air had a constant temperature of 11°C from the surface up to nearly 5000ft. This is shown by the vertical line marked "ISOTHERMAL".

It is a cloudless midsummer morning and at 52°N the sun rises at about 0339 GMT. The ground has been cooled by radiating heat into space all night and at first the sun is too low to supply much heat.

By 0500 GMT we find the temperature has risen a tiny bit (the new value is shown on the 1000mb line). The warm air is stirred up just enough to rise, it cools along a DALR until it reaches the 11°C line and then stops. We can now draw a tiny triangle. The top is just 8mb above the surface.

As the morning goes on the temperature continues to rise, the values are marked by times 06, 07, 08 etc. For each time the horizontal line marking a DALR grows longer. This shows that the heat is being carried up higher and higher.

Finally at about 1500 GMT the temperature reaches its maximum (22.5°C in this case). The DALR from 22.5°C extends up to meet the original temperature of 11°C at a pressure of 870mb. (Just above 3800ft.)

After the time of maximum temperature the incoming solar energy is balanced by heat lost into the ground, heat lost evaporating moisture and increased radiation into space. For a time the temperature stays close to the maximum. Then as the sun sinks the outgoing radiation exceeds the incoming, ground temperatures start to fall and the lowest level of air begins to cool down too.

The triangles of energy

Fig 7 contains a series of triangles whose area represents heat energy given to the air. Each one is bounded on the left by the isothermal of 11°C, on the top by one of a series of DALR lines and at the side by the surface pressure line. The area of these triangles depends on the height to which blue thermals rise; it may be defined by giving the pressure at the top of the thermal. Thus at 1500 GMT in mid-June the thermals can go up 130mb (from 1000 to 870mb) provided the atmosphere is isothermal.

TABLE 1
Temperature Rise
Table showing the thickness of a layer which is changed from an isothermal to an adiabatic state by insolation at Lat 52°N.

Month	Time (GMT at longitude 0)											
	05	06	07	08	09	10	11	12	13	14	15	Max
Jan	—	—	—	—	03	18	35	48	58	61		61
Feb	—	—	—	01	15	33	50	65	75	80		81
Mar	—	—	02	17	35	53	68	81	90	95		97
Apr	—	04	19	37	54	71	86	98	107	112	115	115
May	04	19	36	54	70	86	100	110	119	124	127	127
Jun	08	23	40	58	74	89	102	113	122	127	130	131
Jul	04	19	36	53	69	84	98	109	118	123	126	126
Aug	—	08	24	41	59	75	89	101	110	116	119	119
Sep	—	—	10	27	44	60	76	88	96	102	104	104
Oct	—	—	01	13	29	45	60	72	80	85		86
Nov	—	—	—	—	11	25	38	49	57	61		61
Dec	—	—	—	—	02	15	30	42	50	53		53

Heating tables

Table 1 shows the pressure level at the tops of blue thermals for each month of the year. It assumes the lapse rate is changed from isothermal to dry adiabatic. Looking at June we see the figures start at 05 GMT with 08, then 23, 40, 58 etc for successive hours till at 15 GMT the value is 130mb. For simplicity we took our surface pressure as 1000mb. Subtracting 130 we get 870mb for the top of blue thermals. Then hourly values would be 992mb at 05 GMT, 977mb at 06, 960mb at 07 etc. Each hour the triangle becomes larger.

More realistic temperatures

Fig 7 with its isothermal atmosphere is not very realistic. Fig 8 shows an actual example when the temperature decreased with height except for the little surface inversion.

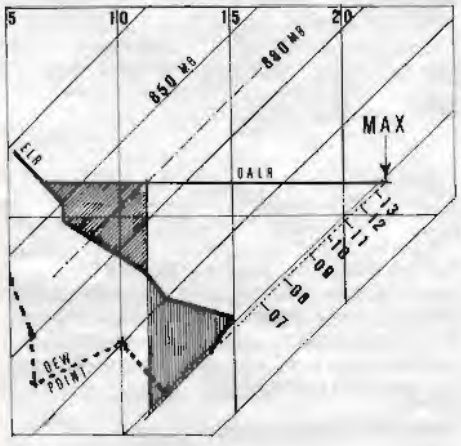


Fig 8

Here the thick black line shows the temperatures aloft. This line is also called the "Environmental Lapse Rate" and marked as ELR. The example comes from a day in July when the heating tables give a max at 126mb. The surface pressure was 1006mb that morning.

The steps to take are as follows:

(a) Subtract 126 from 1006 and we find the top of a heated layer is at 880mb. We mark this level on the diagram.

(b) Take a transparent piece of plastic and mark a large "T" on it. The top of the T needs to be long enough to extend across a temperature band of some 12° either way. This horizontal line will be parallel to the DALR when the vertical is parallel to an isotherm.

(c) Put the centre point of the "T" on the 880mb line.

(d) Slide it along this pressure line until the upright of the "T" divides the ELR into two sections of equal area, shown here by vertical and diagonal shading. Take care to keep the horizontal line parallel to one of the DALR lines on the tephigram. The object is to produce the same heated area as you would get with the isothermal atmosphere of Fig 6.

(e) Look along the right hand arm of the "T" labelled "DALR" to the point where it cuts the surface pressure of 1006mb. The temperature at that point is the predicted max (22°C).

(f) Look along the left hand bar of the "T" to where it crosses the ELR line. That represents the top of dry thermals. (For the moment we have ignored the dew point line.)

If you carry out this process for the figures given for 07, 08, 09 GMT etc you get the temperature rise hour by hour.

Bringing in the moisture

In Fig 8 we ignored the pecked line marking the dew point. Fig 9 shows how to use this to work out a cloudbase. The construction is the same as that given in Fig 5.

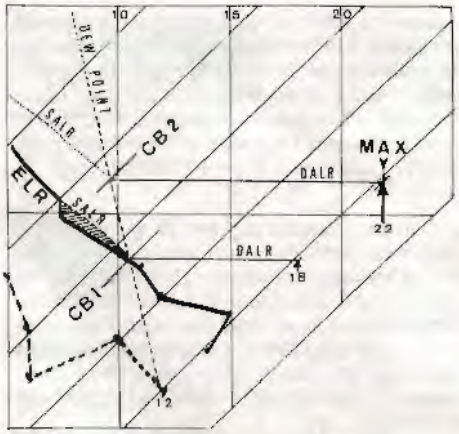


Fig 9

1. The surface dew point is 12. Follow the dew point line up from there until it crosses the environment curve (ELR).
2. From that point follow a DALR down to the surface. Here it reads 18.
3. This means that with a surface temperature of 18 and a dew point of 12 we get a condensation level at CB1. Cu should form when the temp passes 18.
4. Subtract the dew point (12) from the air temp (18) and find the difference (6). Multiply by 400 to get the cloudbase in feet (approx 2400ft).
5. From CB1 follow a saturated adiabat (SALR) up till it meets the ELR. The shaded area shows the difference between the two curves. This area represents the energy of the cloud formed above CB1. (Quite small in this case.)

How the cloudbase rises by day

1. Follow a DALR from the predicted max until it crosses the dew point line at CB2.
2. The temperature difference is now 22-12 or 10° C; this gives a cloudbase of about 4000ft.
3. Draw the SALR up from CB2. It goes off the diagram without meeting the environment curve again.

Clearly there is more energy available now but the diagram does not go high enough to give the cloud top.

Cloud Tops

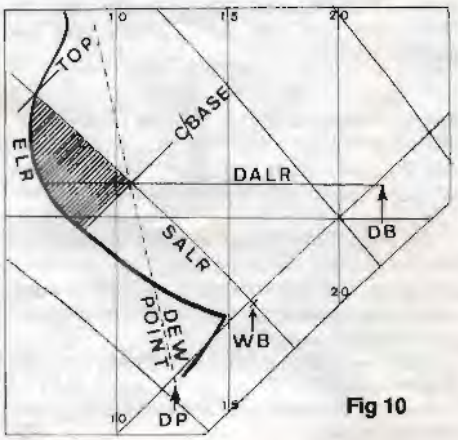


Fig 10

Fig 10 shows a similar construction; this time the air aloft is warmer and the SALR from cloudbase now crosses the ELR higher up. This is our first estimate of the cloud top. The shaded area between ELR and SALR represents the extra energy of the cloud between the C/BASE and TOP.

In practice one might find the cloud rose with so much energy that its momentum carried it beyond the level marked top. It would then find itself colder than the environment and would soon sink back.

Drawing a temperature/time curve

The hourly values quoted in Table 1 make it possible to draw a temperature/time curve. Fig 11 shows an example on July 28, 1990 during the Lasham Comps. The upper diagram shows a skeleton tephigram with the ascent from Crawley

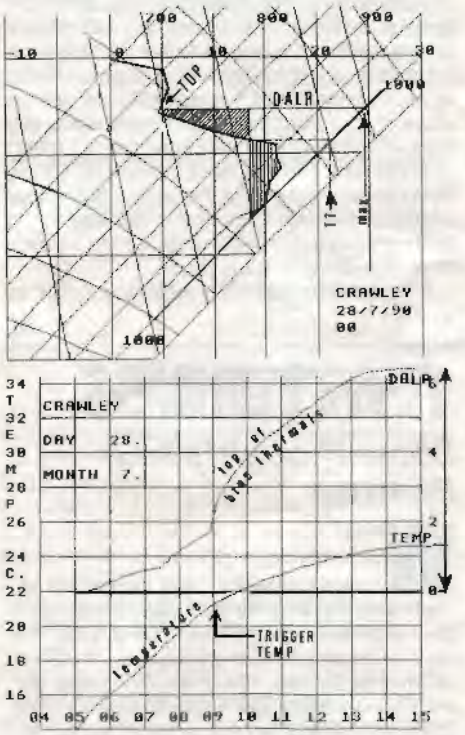


Fig 11

plotted on it. The shaded sections show how the areas were balanced to give a predicted maximum of 24.5°C (marked MAX).

The lower part of Fig 11 shows the predicted rise of temperature. The GMT times are along the bottom and the temperatures up the left hand side. On the right hand side (beside the arrowed section) are figures showing the height to which the DALR extends before it meets the environment curve; this is also the height of blue thermals. The zero line has been lifted to avoid confusion with the temp curve.

Trigger temperature

Look at the upper curve: it gives a big upward jump at about 09 GMT. This occurs when the temperature rises past 21°C. This is called the trigger temperature, perhaps because thermals then start to shoot up.

Turning our attention back to the tephigram we see that at 21°C the DALR (a pecked line from the point "TT") has just topped the early morning temperature inversion. Until this inversion had been broken no useful thermals could develop. When the max temperature was reached blue thermals could be expected to extend up to the level marked "TOP" which in this case happens to coincide with an upper level inversion.

Two points to notice:

1. The slope of the temperature curve began to flatten out after it passed the trigger temperature. This was because the heat was no longer confined beneath the inversion but was being distributed through a greater depth of air.
2. The "top of thermals" curve also flattened out after 13 GMT. The upper inversion was the limiting factor here. Even if the temperature had risen three or four more degrees the thermals would still have been halted at much the same level by that solid lid.

The "how-goes-it" plot

One of the problems facing directors is when to start stream-launching the competitors. On days when cumuli appear early one can see when it becomes soarable. On cloudless blue days it is useful to keep a "how-goes-it" plot on which the actual rise of temperature can be compared with the prediction. Fig 12 shows such a curve used during the Lasham Comps on August 3.

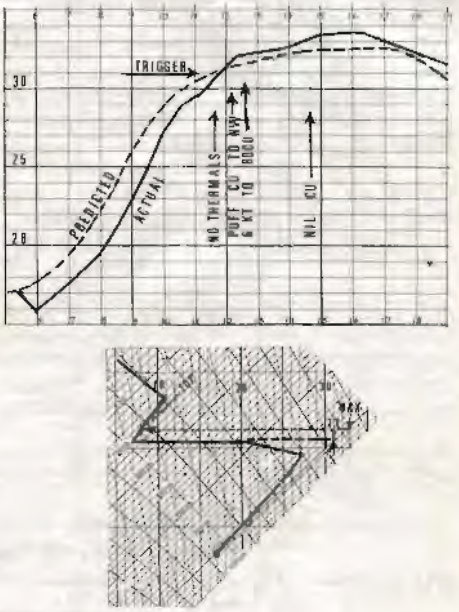


Fig 12

The tephigram shows that once the trigger temperature of 31°C (marked TT) was reached thermals could get past the stable layer and shoot up very high.

The predicted temperature curve is shown by a pecked line. It was begun from the measured value at about 0525 local time. The actual is the solid line. Disconcertingly the temperature fell a degree by 6am so the actual curve was displaced from the predicted by nearly an hour. The two ➡

curves converged at midday when the trigger temperature was passed.

Things then developed fast. Up to midday none of the two-seaters had found any usable lift over Lasham though a Nimbus 3 had managed to get away. Just after midday a tiny puff of cu appeared. It looked insignificant. Within minutes the Nimbus reported 6kt to 8000ft near Newbury. (One may not go that high over Lasham because of the airway overhead.)

During the afternoon the actual temperature exceeded the predicted by a degree. This excess may have been because the country was extremely dry so very little heat was wasted in evaporation. The heating tables assume that the English countryside will always be rather moist, even in midsummer.

Strength of thermals

It is not easy to get reliable figures for this. Pilots who have achieved the best speeds usually report the strongest thermals. The last person back complains that lift was much weaker than forecast.

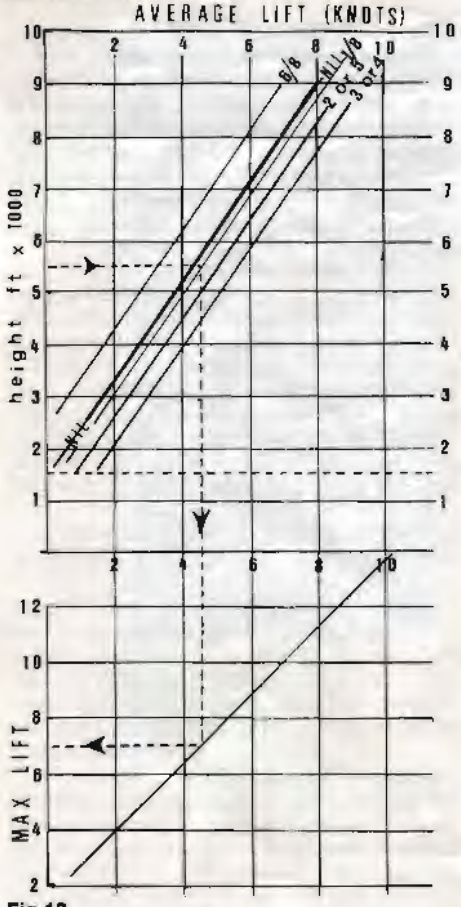


Fig 13

The French devised a graph (Fig 13) for predicting thermal strengths; this is an empirical method based on numerous reports by their pilots.

The system depends on the cloudbase. The dotted line shows an example of its use.

1. Move up the left hand scale to the cloudbase (shown here in thousands of feet). Suppose it is 5500ft.
2. Follow a horizontal line until it meets one of the diagonals labelled with cloud amount.
3. The cloud amount lines go 6/8, nil, 1/8, 2 or 5/8, 3 or 4/8. The French found that the lift varied according to the amount of cu. Follow the dotted line along to the 1/8 line.
4. Then take the line down to the AVERAGE LIFT scale (which reads about 4¼ in this example).
5. Continue down the same line into the lower half of the diagram where there is another diagonal line.
6. From this turn to the MAX LIFT scale and read off the value (nearly 7kt).

Thus if the cloud was predicted to be 1/8 at 5500ft the forecast is for lift to average 4¼kt with peaks at about 7kt.

Does this work out in the UK? Well it seems to be a reasonable estimate but it is much higher than the absolute average given by electronic devices such as the Peschges. The electronic average includes time circling in weak lift low down as well as the powerful thermals higher up.

On August 3 there were blue thermals going up to at least 8000ft, occasionally capped by wisps of cu. Taking this as effectively a blue day the average lift should have been nearly 7kt with peaks at 10kt. The Peschges average ROC turned out to be only 3.6kt but the Open Class winner averaged 122km/h. Despite this low figure from the Peschges a number of pilots did find genuine lift of at least 7kt in some places.

It seems to depend on what you mean by average lift.

TWITTERINGS

Some thoughts from Sparrow

We were having the usual debrief "on the hoof" whilst walking the K-13 back to the launch point. Sufficient rope betweeen us and the "Big Red" motor trike permitted a measure of conversation interspersed with changing wings and other sundry tasks. The nagging doubts of ever going solo hovered around my minimal grey matter as the instructor emphasised the need to work hard on circuits and landings.

At that point, I noticed some of our welcome seasonal visitors, somehow convinced that summer had arrived. They seemed to be vying with each other in their aerobatics and indulging in passes so low that "air misses" with dandelion clocks could have been reported. It was small consolation to me that swallows have had thousands of years to polish up their circuit procedures.

★ ★ ★

In addition to our gliding club, I have the great pleasure of belonging to an excellent lunchtime society where members have, at various venues, access to a wide range of literature on technical, artistic and sporting subjects. My attendance, dictated as it is by the constraints of wage slavery, is not as frequent as I would like but I manage at least one visit a month. This enables me to take in *Flight International*, *Pilot* and *Flypast* as well as collect my copy of this august journal when it is published. Naturally, I avoid the upper displays, not because of the effort to reach up but more because of the nature of the material there. Yes, W H Smith are a great institution.

★ ★ ★

One step forward and two back looks like a doddle in comparison with learning this gliding lark. In honesty, it is probably a lack of aptitude on my part but it seems to lead the sporting frustration index by the odd light year or so. Sparrow is at that awkward point of being nearly but not quite and the natural reluctance of instructors, while understandable, is difficult to accept with equanimity.

It is a process endowed with barriers which, having been struggled over, can be seen as eminently avoidable. It would take a soul more literate than myself to do it but could someone pen a "Coarse Guide to Gliding".

★ ★ ★

Sparrow was interested to note the views of recent correspondents to *S&G* on the subject of the broadcasting of the video "Liftin' the Blues". On the appointed night I persuaded Mrs Sparrow and Sparrow Jnr to loiter in front of the idiots' lantern on the promise of something rather special.

Not wishing to hurt his benefactors' feelings, Junior was later maintaining an eloquent silence, an event so rare as to deserve mention in dispatches. Upon being pressed, he commented, somewhat tartly, that if Peter Alliss were to interview the wives of several golfers, however charming, whilst play continued elsewhere unseen, he would be making himself eligible for unemployment benefit fairly rapidly.

After pressing the reset button for my aplomb, I was caused to consider his rash opinions blaming myself all the while for spending too much on his education. Maybe he is right though. Pursuits like soaring, sailing and their like are not meant to be televised. The joy, or should it be pain, cannot be translated on to film however artistic the presentation.

By all means try and interest Joe Public with stunning air to air shots of elegant sailplanes. Spice it up with a bit of racy dialogue if you will but to expect anyone not intimately involved to appreciate the convolutions of competition must surely be a hopeless task. The gee gees on Grandstand will get Joe Public's vote by several lengths.

★ ★ ★

Twice in recent months our regional TV news has trumpeted the temporary closure of an airfield so that the lucky guys from the ordnance depot could pop along and rip up runways to remove "pipe mines".

The programme treated us to the picture of an earnest Sapper, holding a length of rusty tube, explaining that these demolition charges were laid during the war in case of the sudden arrival of unwelcome guests.

Now, aren't there a number of gliding clubs on ex MoD airfields?

Tread lightly, land softly and maintain your life insurance folks!

'CHUTE TO KILL

Terry Hurley joined an Iris syndicate but there were severe doubts about the parachute

And in addition to all these other good things the syndicate had told me, the Iris comes complete with a parachute. In fairness to them they didn't say a lot about this parachute as a safety device - the emphasis was more on its qualities as soft furnishing for the unyielding glass-fibre seat. They also said that if I was not pleased with the 'chute they felt confident that I could dispose of it easily for a substantial sum, probably to one of the many manufacturers of ladies' underwear who were always on the look-out for such high quality raw material. And it is a measure of how besotted I was with the glider that this statement seemed reasonable to me.

I thought it only prudent, however, to phone the manufacturers and check, the remaining life of the thing before putting myself in a situation where I might want to use it. I quoted the model number to them. They didn't recognise it. I described in detail the method of construction and the complex of straps and buckles that held it in the same position on your back as Quasimodo's hump. Still nobody remembered it.

I began to suspect that they were embarrassed by it. Perhaps this particular model was some sort of ancient skeleton in the manufacturer's cupboard, some past blunder which they now regretted? Anyway, it was obviously so old that it went far beyond mere calendar age and on into the regions of carbon-dating.

"How about," the saleslady asked me cheerfully, "a nice new parachute?"

Cautiously I inquired the price. She quoted a figure comparable with the GNP of a minor nation (Belgium, for example) and added, "Plus VAT, of course. And packing."

Would the manufacturers be interested in my old canopy? They wouldn't, but they were sure somebody would - perhaps a parachute club?

I rang the local club and asked for their advice. They were loudly amused by what I told them of my dealings with the manufacturers. "That's just the sort of thing they would say. Don't worry - your parachute will be good for years longer than its official life. Bring it over to us and we'll repack it for you."

Happily I drove the thirty miles to their airfield where a very pretty sun-tanned girl in shorts met me and insisted on carrying my parachute for me. It was a hot day, but I still believe I could have managed to carry it myself without dangerous over-exertion. I was worried though - perhaps the way I feel first thing in the mornings is now the way I look all day?

"I placed a protective hand over my cheque book in a swift reflex gesture"

Later that afternoon the girl rang me at my office. She wanted to know if I had a sense of humour. Alarm bells rang in my brain and I placed a protective hand over my cheque book in a swift, reflex gesture.

"It's about your old parachute," the child said gaily. "Whoever packed it last didn't know what they were doing. If you'd ever had to jump it probably wouldn't have opened."

She paused while I gulped and wondered if now was the time to demonstrate my sense of humour.

"On the other hand," she went on cheerfully, "the harness was so frayed that even if the 'chute had deployed . . . you would have dropped right out of it."

Irrelevantly I wondered why we only use the word deploy for parachutes and soldiers. Then, realising that this was the moment for humour, I laughed a little laugh. I can do that - I've had plenty of practice in laughing in the face of imminent financial disaster.

"Of course," the girl said more seriously, "you can probably sell the old canopy to defray the cost of a new one. That's rather good, isn't it – defray? Your 'chute being so . . . Oh, well."

I wondered aloud if her parachute club would be interested in buying - but she said no thanks rather quickly as if she'd been prepared for the suggestion. She did, however, give me the phone number of a specialist sports parachute manufacturer in Bridlington who, she thought, might be able to offer me something at the sort of modest figure I could afford.

I rang Bridlington. The voice at the other end was London, know what I mean, rather than Yorkshire - brisk, practical, knowledgeable, and thirty-two years in the Para's sir and still love it. He made a rapid calculation involving my weight and height, the cockpit of the Iris, time to deploy, rate of descent, then said, "About five hundred quid, sir. Might I suggest a black canopy with scarlet rigging and the registration letters of your glider embroidered on the harness in gold?"

"Are you," I asked, almost doubting what I'd just heard, "offering to make me a **bespoke** parachute?"

Silence separated us for a moment, then he laughed. "Yes, I s'pose I am."

If only, if only, if only I'd had five hundred quid. It would have been worth that sum just to swank around in that marvellous parachute saying offhandedly "Just something a little man runs up for me." But as ever I was too broke, though I remember the offer with pleasure and recommend the gentleman in Bridlington to any parachuteless glider pilots who'd like something a little bit different. And just a little bit flashy.

In the end, as I'd known all along I'd have to do, I bought a new 'chute from those efficient Poles who advertise in *S&G*. It fits well, it's comfortable and I hope I never have to use it.

I still have my old parachute. Believe me, there is absolutely no market for an out-of-date canopy. You've as much chance of making nylon knickers out of an old parachute as Winston Churchill had of making a Spitfire out of my grandmother's saucepans.

DEREK PIGGOTT

FLYING THE DG-500M

The DG-500M is the long awaited two-seater self launching powered sailplane from Glaser-Dirks, developed from the DG-400 self launcher seen several years ago at the BGA conference. It is the 22m version of the new family of Glaser Dirks' two-seaters, starting with the DG-500 18m trainer and the high performance 22m DG-500.

I was lucky to be asked to do the handling tests for certification for it to fly in this country pending the German C of A, which it has now been given. This DG-500M, owned by a syndicate at Sutton Bank formed by Alan White, was ordered in April 1984 and has rested in its trailer since January 1990 awaiting German and British Cs of A.

Production is at about three per month with a two year waiting list. The second aircraft, ordered by Bob McLean and John Ellis, will be based at Rufforth and no doubt serve as a demonstrator as well as a private aircraft.

All the flying I did was solo and no attempt was made to evaluate performance. The makers claim a glide ratio of better than 47:1 at 60kt (nearly 9 miles/1000ft!) or roughly similar to a Nimbus 2.

Rigging

Like most of the latest production machines, all the controls are automatically connected as the aircraft is assembled. The four piece wing requires only two people for rigging and the centre portions have the spar stubs making them particularly easy to handle. Apart from the two main pins, there are no parts to get lost and the locking devices are cleverly designed and easy to operate. With the Cobra trailer, the fuselage is run out on its dolly and the wings fitted using the fuselage dolly on the trailer ramps to keep the fuselage upright. The rigging involves a minimum of heavy lifting on to the wing stands. The outboard sections are very light. The longest job is probably taping up the wingroot and other joints.

Fuelling

The aircraft electric fuel pump is used to draw fuel from the cans and to filter it again before it enters the aircraft tanks. This seems a super way to guarantee absolutely clean fuel. The fuel is good grade garage leaded petrol with two stroke oil in a 50:1 mix. The electronic fuel gauge registers exactly what fuel is held and the fuselage tank holds 40 litres. Additional wing tanks can be used increasing the fuel load to 80 litres which should give it a range of over 1000km in the climb and glide mode of cruising.

Starting

The engine starting and handling is simplicity itself. I think the manufacturers must have read Ian Strachan's appeal for improvements to the systems on the PIK 20E and the earlier DG-400.

The master switch is a large toggle on the right hand side of the front cockpit. There are also switches for the avionics and electric priming which can be left on all the time without harm.

Once the master and electronic switches are on, the Digital Engine Indicator (DEI), which is a liquid crystal display panel, comes to life showing the fuel state, engine rpm and coolant temperature. With the flick of a switch the temperature changes to the battery voltage. The engine DEI unit is cleverly designed to give the pilot a warning by flashing the numbers if the engine is overspeeding or the temperatures exceed the limits and, of course, it eliminates the need for five separate instruments which would clutter up the instrument panel and leave little room for essential soaring instruments. There is even a button which activates a display of elapsed daily engine running time. In addition, the electronic circuits in it control the fuel injection unit for the engine.

The main engine switch requires a small pull out before moving it so that it cannot be switched ON or OFF accidentally. It starts the engine erection process and as this is completed it automatically switches on the priming and magnetos ready for starting. The starter button is let into the end of the throttle knob so that it can be pressed in as the engine comes up, giving an immediate start. In place of the usual choke this engine has a fuel injection system for priming, and this seems to work well in all situations, whether the engine is hot or cold.

The cockpit layout

The cockpits are large and very comfortable. The front cockpit has adjustable rudder pedals and the rear one an adjustable seat to cater for all sizes of pilots. On the left hand side wall the airbrake and flap levers are adjacent to each other and can interlock, but this does not cause a problem as the flaps are always set first before using the airbrakes on an approach. The very powerful hydraulic wheel brake is applied with the airbrake lever as full airbrake is pulled and is good enough to hold the aircraft stationary with the engine at full power.

The undercarriage main wheel retracting lever is below the flap and airbrake lever and well clear of them, making it highly unlikely that it will be pulled in mistake for the airbrakes, as has been done in some aircraft with serious results.

The elevator trimming is by a spring trimmer with a trigger on the stick. Pulling the trigger adjusts the trimmer automatically. For setting extreme amounts of trim it can be operated by pulling the trigger, moving the trim knob/indicator on the left hand cockpit wall to the desired position and then releasing the trigger again. This system is well proven on the other DG aircraft and was also used on the Libelle, Kestrel and many other types.

The release knob is mounted on the instrument panel and operates the nose and winch launching release hooks.

The flaps have a range from +15 for landing to −10 for very high speed flight with the ailerons moving up and down in harmony with the flaps to maintain the eliptical lift distribution over the whole wing.

The engine operation can be controlled and monitored from either cockpit.

Normal radio headsets are used to act as ear defenders during powered flight and these make communications between cockpits and the use of radio very easy.

Taxying

This is the first motor glider I have flown with a steerable nose wheel and it works well. The nose wheel is steerable through the rudder pedals and provides very good control even in crosswinds. With a light pilot and the C of G near the aft limit, the aircraft is almost exactly balanced on the main wheel and a little power, or wheel brake, is occasionally needed to keep the nose down to make the steering effective. The wingtips are fitted with small wheels so that no help is needed in any normal conditions. Taxying into any slight breeze the wings can be held level if the flaps are set to −10 for maximum aileron control.

Take-off

Although there is only one main engine operating switch, the engine has twin ignition and this can be checked on the run up by cutting out each magneto in turn with a little spring loaded, self-centring toggle switch. Moving it to the left or right cuts each magneto in turn showing up any magneto fault or oiled up plug etc.

The normal glider CBSIFT CB is used plus a check of the fuel state. +10 of flap is recommended but in very light winds better aileron control can be had by starting in −10 and making the change once the wings are level. However, with the +10 of flap in no wind the wing can be lifted after a short run. The acceleration is very brisk and the aircraft will leave the ground at around 40kt, accelerating and climbing away quickly. The best climbing speed is 49kt and the wheel is raised and the aircraft retrimmed for the climb. The rate of climb with a cockpit load of 190lbs was 5-600ft/min.

During all my flights, the engine coolant temperatures remained well below the limits and after reaching a peak of 62°C actually dropped to 60°C on a prolonged climb. With liquid cooling the problems associate with rapid heating and cooling are greatly reduced and it also acts to some extent as a sound damper.

Shutting down

Having climbed to height, the engine is throttled back and allowed to cool for a few moments before switching off the main engine switch to stop the propeller. At about 50kt the propeller moves slowly round against the compressions and as it comes round to the vertical position, seen in a little mirror mounted on top of the instrument cowling, the propeller brake is applied and the automatic retraction begins. A solid thump indicates that the retraction is complete

and the engine bay doors have closed. Until the propeller is in the right position the retraction cycle cannot begin and it takes about 8sec to complete. (For emergencies, this safety device can be over ridden to bring the engine down to a semi-retracted position regardless of the propeller position.)

Immediately the aircraft accelerates it becomes a high performance sailplane instead of a somewhat draggy motor glider.

The handling

Above 60kt, increasing the speed is mainly a matter of raising the flaps to the negative positions and at 100kt with the −10 flap the glide angle is about 28:1 or over 4.5miles/1000ft. At this speed the controls are considerably heavier and pulling up to use any lift gives an impressive gain of height of several hundred feet. The cockpit is extremely quiet, so quiet in fact that differences in flying speeds were hardly audible on my tape recordings. Something I have never noticed before.

Thermalling with the +5 of flap in tight turns needs about 50kt and the handling and control response are very good. In spite of the 22m wingspan, rolling from 45 to 45° at these speeds takes only 5sec, making centring in thermals as easy as with a 15m machine. The large fin and rudder make turning and accurate straight flight very easy and only at very large angles of yaw is there any over-balance of the rudder.

The stall with zero flap is at 40kt and results in a gentle wing and nose drop with a pre-stall buffet a few knots before the stall. Lowering the flaps to the landing position (+15) lowers the stalling speed by 2-3kt and opening the airbrakes increases the stalling speed back to about 40kt. It is dificult to stall in steep turns and there is an obvious buffet and then a gentle inner wing drop. Recovery is instantaneous on relaxing the backward pressure on the stick and the height loss is usually less than 100ft. As the test permit was for restricted flying, I was unable to try spinning or aerobatics.

With full power the aircraft has to be brought up to a ridiculously nose high attitude to make it stall. The bufteting is still very obvious and the nose lowers itself gently until it unstalls itself.

Below: The cockpit.

Derek with the DG-500M. Photos: John Ellis.

Side-slipping

Using moderate amounts of rudder, the side-slipping is perfectly normal. However, with movements beyond about three quarters of its travel, the rudder overbalances. In the DG-500M the loads are quite reasonable and are easily overcome. With full rudder applied quickly the glider yaws to a very large angle and finally drops the nose. This is a not unusual characteristic in modern machines and could be very embarrassing if it happened to you on an approach. For this reason I have always recommended exploring the side-slipping with full rudder at a safe height on every new type you are flying. With such powerful airbrakes it seems unlikely that side-slipping will often if ever be necessary.

Re-starting

Erecting the engine and starting only involves switching the main engine switch to ON. It takes about 10sec to come up and if the starter button is already pressed during the process, it starts immediately it has locked up. This involves a loss of height of 80-100ft and seems to be very reliable. Of course it could be embarrassing if the engine refused to come up because of a flat battery.

Personally, I would like a second battery to ensure that this could not happen. However, the clever little DEI display switches over automatically to Battery Voltage and starts blinking when the battery gives less than 11v.

I did a few starts by diving and getting the airstream to turn the engine over. This also works well and takes 90kt and an average loss of height of 300ft.

For interest I made a touch and go landing using full flap and full airbrake to see if it would climb with the airbrakes out. It would just hold height against all the extra drag, but as soon as I let the airbrakes' spring close, it climbed away with the full flap and wheel down at almost 500ft/min. The double tier airbrakes are spring loaded sufficiently to close themselves and single handed it is impossible to both open the throttle and keep the airbrakes out – a good safety feature.

Landing procedures

To avoid any possible trouble between operating the flaps and airbrakes, it is essential to be systematic about the preparations for landing. First the wheel is lowered, making sure the handle pushes fully forward and is locked. Then the flaps are lowered to +10 which scarcely affects the glide but lowers the stalling speed and gives a better view ahead. 60kt is ideal for the base leg in most conditions and the full landing flap is only lowered when the glide needs to be steepened. This will usually be on the base leg unless the glider is already getting low. Lowering the flaps spoils the glide and a definite nose down change of attitude is needed to maintain speed.

As soon as the full flap has been selected the left hand should be transferred on to the airbrake lever and the airbrakes unlocked ready for use. The airbrakes are top surface only with double blades and are very effective. They produce a really steep approach which in most situations will bring the aircraft down to a position where they will need to be reduced for the final approach and landing. I only made one complete landing with the full flap and full airbrake. This seemed terrifyingly steep and I nearly chickened out and reduced them for the round out.

Holding off fully gives a wheel and tailwheel landing and if it is kept in this attitude the large, fixed tail wheel prevents any swing. Easing forward gently or applying full airbrake to use the wheel brake brings the nose wheel down so that the nose wheel steering can be used. With the main wheel so close to the C of G there is very little tendency to weathercock and it is easy to keep straight. During the ground run the flaps can be raised to give better aileron control but this is not essential except perhaps landing in long grass, or on very rough ground.

What a joy it is not to have to wait for a crew to move off the landing area. Just switch on, up comes the engine, press the starter button and away we go!

Impressions

What an elegant glider!

Because the aircraft was restricted to solo flying for the testing, I was unable to fly in the back cockpit or to get much idea of it as a trainer. Certainly the stalling characteristics are better for instructional work than most of the other modern two-seaters as it will drop a wing and probably will spin if provoked. As it is really a cross-country machine I don't suppose there will ever be many first solos in this version of the aircraft.

The engine operation is super and very simple. Gone are the days of having to have three hands to get the engine up for a quick start.

I have not yet had the opportunity of flying the other Open Class two-seater self launchers to make direct comparisons, but there is no doubt that the DG-500M has a very high performance and is a well thought out machine with many excellent design features.

Considering its performance compared with the Nimbus 3DM and ASH-25M, I cannot help wondering if the ultimate performance is really necessary on a self launcher. Apart from National Championships, once the nuisance of a possible outlanding is eliminated, the differences in performance seem less important than in a normal glider when a better performance can make all the difference between getting home and landing in a field.

The DG-500 Elan Trainer

The DG-500 Elan two-seater trainer was in this country for a short visit and many people had the opportunity to fly it. Testing it, I made several flights by aerotow and winch launch and was very impressed with the general handling and particularly the stalling and spinning characteristics. These seem ideal for training as the stall has a good warning buffet and it can be made to stall straight or drop a wing without being vicious. With a cockpit load of 200lbs it would enter a full spin and the recovery was very rapid, less than half a turn in most cases, even with the C of G on the aft limit.

It has a retractable main wheel with a hydraulic brake, nose and tailwheel and small wingtip wheels. Unlike the 22m version and the DG-500M, the Trainer is not fitted with flaps.

It is stressed for +7*g* −5*g* and certificated in Germany for rolling and inverted manoeuvres. Unfortunately I did not have time to try any advanced aerobatics. The general handling is very good indeed and probably sets new standards for a basic trainer of this kind.

LOOKING BACK AT 'LOOKING BACK'

This is the last article in the series "Looking Back". The bars on the time-chart represent the lifetimes of the pioneers on whom the series has been based, highlighting the period of aeronautical activity of each one. Certain key events are also indicated.

Leaving aside the uncertain nature of what Daedalus and Icarus did, the sequence starts with Sir George Cayley, who as a young boy had read about the earliest ballooning exploits in France. He kept his early aeronautical experiments to himself and, curiously, was only inspired to publish his famous triple paper in 1809 after reading (in Nicholson's *Journal*) of a report from Vienna "that a watchmaker, of the name of Degen, has succeeded in raising himself in the air by mechanical means."

Jacob Degen's ornithopter.

Cayley did not know that Degen's unsuccessful ornithopter had not been raised by mechanical means but by a gas balloon to which it stayed firmly attached. Perhaps we should have given greater prominence to poor Degen (who later in Paris was ill-treated by an ugly crowd) for having pushed Cayley into print!

From Cayley onwards our pioneers provided a continuous chain of aeronautical thought and experimentation right through to Orville Wright's gliding record of 1911. "Chain" is a good word, because our pioneers were worthy research students, having studied the literature before starting on their own work; a characteristic which sets them apart from many other nineteenth-century experimenters, who worked in isolation and repeated the errors, sometimes fatal, of the past.

From among the hundreds of engineers, designers, constructors, experimenters, writers, promoters, tower-jumpers, and exhibitionists who have some claim to a place in aeronautical history before 1902, I have selected those with the greatest claims to have made a contribution to progress. Progress, that is, in a forward sense towards the first sustained and controlled gliding flights by the Wright brothers.

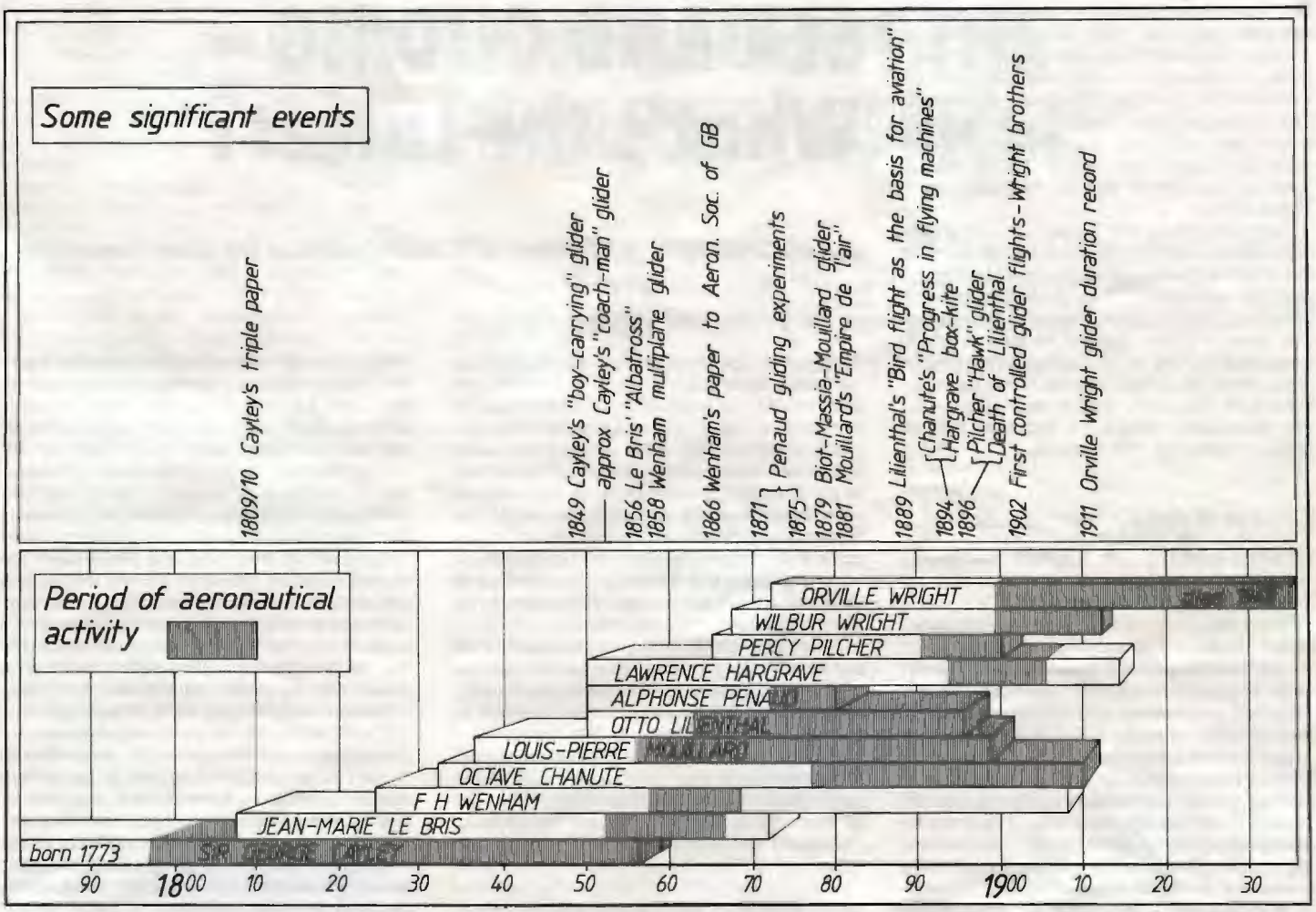
We should not forget the others who made "progress" in a negative sense. Those who pursued blind alleys and demonstrated the ways not to go. For example, balloons and ornithopters captured the public imagination but had led nowhere. There were also many famous experimenters who thought that the aeroplane would be invented as soon as enough power could be applied to drive a large inclined surface through the air. Their analysis did not include how to control the machine once in the air. They relied too heavily on inherent stability, which they discovered was difficult to achieve for more than a few moments. Thus crashed the hopes of men like Ader, Langley, Maxim and Santos Dumont.

Inspired by bird flight

This brings us to the most important and, for glider pilots, the most satisfying conclusion to be drawn from the series. It is clear that the pioneers who contributed most to the birth of aviation are exactly the same group we would choose to honour in the development of gliding. They were all inspired by bird flight, particularly the gliding and soaring flight of larger birds. They all realised that before attempting powered flight it was necessary to learn to pilot an aeroplane, to "balance in the air" as some of them called it . . . Finally, they all decided that the best way to learn, was to fly a lightweight glider, before taking the ultimate step of adding a motor.

If you wish to look back again at these pioneers of gliding and aviation, here are the references to the complete series:

Alphonse Pénaud, August 1986, p178; **Percy Sinclair Pilcher,** December 1986, p268; **The Biot-Massoa Glider Mystery,** April 1987. p68; Octave Chanute, August 1987, p187; **Orville Wright,** October 1987, p234; **Daedalus and Icarus,** February 1988, p16; **George Cayle,** June 1988, p132; **Jean-Marie Le Bris,** October 1988, p234; **Louis-Pierre Mouillard,** February 1989, p15; **Otto Lilienthal,** February 1990, p22; **Laurence Hargrave,** June 1990, p134; **Francis Herbert Wenham,** December 1990, p307.



The time-chart representing the lifetimes of the pioneers on whom the series has been based. Devised by William and drawn by Steve Longland.

SEX AND GLIDING – What's the Latest?*

An update on the Women's Working Group by their chairman

I was quite amazed after I launched into print last year (see April 1990 issue, p71) when a dozen or so women from clubs all over the country got in touch with me to ask what they could do to help further the cause of "Women in Gliding". Talk about opening my big mouth! Before I knew where I was I was chairing a Working Group with some BGA funds and people rushing around investigating diferent aspects of gliding as it affects women.

Members of the group turned out to have various interests and so we have started with the members, either singly or in pairs, looking at particular subjects which seemed to be causing difficulties. The interesting thing we have found is that some problems are just as likely to affect *some* men, but that the numbers affected are not large enough to have prompted much research in the past. Now we hope that we may come up with some ideas which could help quite a lot of people of all sexes. For example:

Create a database of ballasting methods

Two of the group are taking an interest in Safety and Technical matters. Some of their work is female specific (*eg* is it safe for women to fly when pregnant, and if so under what circumstances?), but they are also considering ballast, impact cushions and the like. In fact, our first "publication" was in this field, in the form of a questionnaire to all clubs to find out common practice and identify problems. Thank you to all those CFIs (65%) who responded – we are preparing a report which we hope will in due course appear in the Technical Newsletter. We also plan to create a database of ballasting methods and other ways of being safe and comfortable in the air. This can be a challenge in a cockpit designed for the standard German male if you measure 5ft nothing and weigh 7½ stone.

Other members are looking into the question of instruction and how people – particularly women – progress (or don't, as the case may be) in the normal BGA club system. A questionnaire has been devised and will be circulated shortly to as many women pilots or ex-pilots as we can track down. We hope that club secretaries or the volunteer club representatives will help us by getting the questionnaire to their women members. We aim to find out what people's training requirements are and what they think they need to help them to make better progress, at whatever standard they are flying. It is possible that the replies may lead to some revolutionary ideas in this area of instruction and coaching. If you don't receive a copy of the questionnaire and you think you should have done, please speak to your club secretary.

We think that quite a lot of women find the idea of gliding daunting and that this may be exacerbated by male chauvinism, often unintentional, encountered in the clubs. To help overcome this difficulty we are experimenting with some special courses reserved for women or where women will receive priority booking. (See the last issue, p90.)

In the smaller clubs there may be only a very small number of women flying members and they can feel quite isolated. Some of us don't find it a problem to be in predominantly male company, or even see it as a social advantage! There are plenty of women who aren't so brave and would appreciate some intercourse with other women (if you'll pardon the expression). To tackle this we have established the Women's Newsletter and have already circulated the first issue. Its purpose is to bring women into contact with each other and provide a forum for the exchange of ideas, so we are encouraged to find that it has already attracted some feedback.

At present circulation is *via* club secretaries but we are asking anyone interested to volunteer as a club representative and take responsibility for circulating this as well as other papers to all the women pilots in their club. We already have reps at about 24 clubs and would welcome more. If you haven't yet received your own copy, tackle your club secretary for one! If you want to be sure of your copy in the future, why not volunteer as your club's rep? Names to the BGA office please.

Allowed to write about our side of the problem

As an aside, I hear that some men think that there is too much in the newsletter about p**ing and babies – to which I can only say, "no one asked you to read it!" Anyway if Platypus can write about p** tubes or v***ctomy I think we should be allowed to write about our side of the problem. To any men reading the newsletter, can I also say "You're very welcome, but please pass the copy on to the women in your club, for whom it is written."

Still on the publicity front, we have plans for feature articles in selected women's magazines where we have contacts in the hope of attracting new participants to the sport. We will also be publicising the special courses in a wide range of media.

We have started investigating and collating the available information on pregnancy and specific female medical problems in the context of flying. The plan is to build up a base of information which can be made available to anyone needing it. Articles on these subjects are also being published in the newsletter.

Several clubs are now looking into the viability of organising child care facilities, either for specific events such as competitions or on a regular basis. There appear to be difficulties over legalities and insurance but we are pursuing the problem. We are also considering how best to convince clubs of the advantages of providing adequate facilities, such as clean loos.

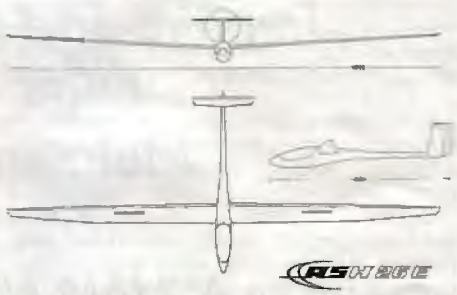
Most recently the group has turned its attention to leadership for women. Not only do we have a very small number of women in gliding – their measurable achievements are proportionately less than the men's. We see a need for women taking up gliding for the first time to see role models already in the sport, to encourage them and to help them believe that it is a sport which is fully open to them. In order to achieve this, we need to see women making better progress into the ranks of Official Observers, instructors, club officials, competition pilots etc.

We do not want token or representative women in these roles— that misses the point. What is needed is for competent women to be recognised and recognise themselves as such and to take or be given the opportunity to make the most of their abilities. We hope that by giving publicity to people already in these positions we may encourage others to have a go and to raise the standard of women's flying.

That's as far as we've got – any more ideas gratefully received! Flak and brickbats should be sent to me in a plain brown envelope (address from the BGA). Bouquets please to Barry Rolfe and his staff who have been very helpful to us and have promised to go on being so.

***PS.** *Well you have to admit you wouldn't have read an article called "Report of Women's Working Group" would you?* ■

THE ASH-26E



Peter Selinger writes from Germany with news of two gliders from the Schleicher stable. Gerhard Waibel is using the ASW-24 fuselage as a basis for his 15m ASW-27 while Martin Heide is developing the 18m ASH-26E.

DON'T SHOOT THE PUBLICITY OFFICER

When is an advertisement free? When it is a news item, says Gordon Peters. But asks "How many clubs exploit this device?". After ten years as the Devon & Somerset GC's publicity officer he jotted down a few notes for his successor which others may find useful

It's no use writing an article saying what a wonderful club you have and how people can join. That is advertising and has to be paid for.

The media are keen to hear about interesting things by people living in their patch. The press relations officer's first task is to determine the club's catchment area, so start with the list of members.

Use the yellow pages to get a list of newspapers, free drops, radio and television stations that cover the area. People are prepared to travel a long way to fly so you may have to get members to bring you their local edition. I found a list of 80 possible outlets of which 30 get all news items.

Editors, not writers, decide what is newsworthy, so learn to think like an editor and trawl the club's activities for the sort of thing that catches his eye.

Solos on 16th birthdays are dead certs as are photos of the event. Ideally they should be black and white with good contrast. Difficulties in getting the films developed usually mean taking photos in advance.

Results of competitions are news. Photograph all the contestants in their cockpits on the first day together with a series of landing and take-off pictures and run off several enprints of each shot.

Make sure each newspaper gets a good picture of its local pilot, whether successful or not, with a short note about something he or she has done tacked on the bottom of the report.

Don't forget to give the home town of each pilot and if sending to small area newspapers, highlight the names of local pilots in yellow. They run on a skeleton staff and appreciate the selection of information.

All copy should have your work and home telephone numbers. You may have omitted such important details as age, matrimonial status, number of children and work of the winner.

The reports should try to take readers from the popular view of gliders (dangerous things that fall out of the air when the wind drops) towards the informed views printed in *S&G*. The language and technical content has to be in between without appearing condescending.

I grant myself poetic licence and weave simplistic explanations of gliding into an outline of each day's task. For example a big task was made possible by a sea breeze front. This was described as a line of rising air caused by a collision between hot air inland and cool air from the sea. Several pundits choked on their beer but it was printed.

If you want television cameras to appear they need a month's notice. On the odd occasions they have responded, their energy and enthusiasm has produced great programmes.

They will have their own plans but think how they can get interesting shots ground to air and air to air. Can you borrow a second power plane with insurance to cover the cameraman? Tell the tugmaster in good time or it will be out of hours.

One thing that caught their imagination was a first flight for a 70 year-old lady. We have few female members and this one had a title. You can imagine the corny first line to the press release.

She was a dynamic personality and had been involved in fund raising for charity so we all basked in the publicity. The trip came over as a bundle of fun.

We have had frequent slots on sound. A tape of me teaching a blind man how to fly was broadcast on local and hospital radio right across the peninsula. Yes, he did have a lesson.

The blind enhance their other senses and he could level the wings with positive stick movements. We also got well into speed control by ear as we all do.

Beware of glider buff jokes. Funny happenings on field landings went down well in a farming magazine but tend to freeze the average citizen. The perceived danger stops them getting to the punch line.

One that was printed was the radio exchange "Getting low near Wellington, I won't make it back." "There's a terrific thermal over the Monument" "I'm below the Monument." All the locals know the edifice is on top of the hill.

"I even made the front cover of a medical magazine about doctors' hobbies"

Inevitably one gets personally involved in the publicity. I even made the front cover of a medical magazine about doctors' hobbies. It was I hasten to add the back of my head on the final turn. The clouds, trees, sheep and instrument panel showing my slip were in perfect focus.

Sometimes you have to persuade other members to write up their ideas. Most resist writing so one occasion had me locking a winch designer in a room to complete his account, while ringing the editor to beg extension of the deadline.

Later I learned that most members with ideas like to be interviewed and let you do the writing. Here objectivity is essential, that is you must report the member's ideas and not your interpretation of those ideas.

The press often lack that objectivity. When telephoned about buying a field to extend the site I mentioned increased safety as one of six reasons. The banner headline was "Crash Danger at Gliding Club".

Some felt this would be bad for the club but I retained my belief that all publicity is good publicity. A letter to the editor suggesting that the headline was misleading and explaining the relative safety of the sport was published giving us double exposure that week.

Crashes are of course news and will be in tomorrow's newspaper. It is not possible to block this so it is better that the report is based on your information.

Most clubs specify CFI or safety officer to deal with this but they need a prepared plan. Name, address, age, matrimonial status, position in the club, number of years experience and probable injuries is all they need. The press accept that the cause of the incident is to be investigated but will publish and embroider any off the cuff remark, so beware.

So it's been an entertaining ten years. Some reports come at the request of the press. No doubt I have missed half the opportunities but have developed a nose to sniff out the morsels that the press will enjoy.

Has it done the club any good? Well we are thriving, there is a queue at the launch point and we can not get enough instructors to give up a week to satisfy the demand for course weeks. Then again the same was true 11 years ago.

There is no way of measuring success but the cost is negligible and reports may get national exposure. We all benefit from one another's activities.

If asked to act for your club, don't run away. Fear not, many exhibitionists have been created from modest, self effacing introverts once they get a keyboard between their teeth.

Technical Notes

1. Word processors make anybody a competent typist. The deleting and inserting, even shifting paragraphs, makes for a tidy, legible script. Beware the spell check option. Most are American so try to get one with English spellings.
2. Only send copy to small town journals if one of their flock is mentioned in your report. That said some general reports should go everywhere; *eg* you could announce your appointment and invite inquiries. Twice newspapers rang to say please don't send reports unless a local has done some- ➡

thing, but by the way while I'm on the phone one of our reporters said he would like a flight.

They were of course welcomed with the red carpet and wrote up their experience. Would that have happened without the unnecessary report? So cast a wide net.

3. If a weak point get the grammar checked. (The average woman has a better command of langauge than the average man.) Editors accept that most of the reports arriving on their doorstep have to be rewritten but if the quality is high they are likely to read beyond the first paragraph.
4. Ideally put in a catchy, humorous or dramatic heading and/or first sentence. They will be removed but should encourage the editor to read on.
5. Do not get angry when the editor's shortening of the article completely reverses the meaning of the key sentence. Just write a letter asking for a correction to be made: it will probably be printed.
6. If 30% of what you write is printed you are doing well. As a minority interest gliding is well down the priority list for space. For a real success pray for a week in which nothing much happens!
7. Maybe the gliding movement does not submit enough worthwhile copy. Good material gets published. This generates interest which increases the time and space that editors will offer. Go for it all PROs.

RAMBLINGS FROM GERMANY

From November 5 the ADIZ was lifted. This was the "buffer zone" with a width of around 30km "our' side of the border to former East Germany. The iron curtain remains in position - it now hangs to within two metres above ground thus allowing road and rail transport to slip under! The width of the buffer zone to Czechoslovakia has been reduced.

The removal of the ADIZ has been a longed for dream, opening up the possibility of triangles around Hamburg etc. Currently the ex-GDR is essentially closed to glider - VFR traffic there is restricted to a network of narrow corridors, maximum altitude being 1000ft weekdays and FL55 at weekends. The authorities offer hope of improvements for this season - the as yet unknown practices of the still present Russian forces are said to be the main reason. We hope that the airspace is soon opened up, with the slight fear that the authorities might grab the opportunity to apply the FL55 restriction over the rest of Germany as well (instead of the current FL100).

I went to a most entertaining talk by Gerhard Waibel who presented the early design for the ASW-27 - a 15m Class glider with a claimed performance improvement over the ASW-20 similar to that of the ASW-24 over the ASW-19.

By the way - up to now four German members of our club have ordered *S&G* - they say it helps improve their English (!) and like the style of the magazine. German publications tend to be rather serious - if anyone here attempted to write in the style of Platypus I suspect that many readers would be contacting their solicitors, whereas I get the impression that UK clubs almost queue up for the honour of being lambasted by his pen!

HOWARD E. MILLS

DENNIS R. GALOTTI

THE CI S-NAV COMPUTER

Dennis Galotti was so impressed with the Cambridge Aero Instruments' S-Nav computer, which he used in his Discus for the first time in the Lasham Regionals, he has written this assessment

Now let me tell you a little about this new toy of mine, the Cambridge S-Nav. Vis was so bad at Lasham, without a Bohli I might have wound up in France if it wasn't for the S-Nav. There didn't seem to be too many of them at Lasham so I thought some details might be of general interest. For the sake of brevity, I'll assume that most people have a working knowledge of flight computers for soaring use. If you don't, just ask some of the local pundits, keeping in mind that these things are like new cars and everyone who owns one has the best type available. I know I do.

The S-Nav is comprised of the computer with a large LCD display and a standard variometer. The vario can either display standard TE or super-netto and can operate at one of three speeds (.3, .6, or 2.4sec) and one of three scales (x1, x.5, or x2) depending on flight conditions and pilot preference. These selections, like most things in the S-Nav, can be changed in-flight. A second meter can also be used and configured the same as Meter 1 or like an analog *g* meter, as a standard netto or super-netto vario, or as an averager.

Although there are many available menus, don't be put off by this since in practice a whole task can be flown without ever leaving the main flying screen. During installation, you enter the basic information about your particular glider like the flying weight, waterballast capacity, polar information (two sets if you have wingtip extensions), units of measure etc. These may be changed in flight and are otherwise preserved by an internal battery.

Now let's assume a typical contest day with two possible tasks with final selection on the grid. When you switch it on the S-Nav will display the pressure and altitude and allow you to enter the current setting. The internal altimeter will be used on the main flying screen during final glides to display your position above or below the glider slope both numerically and graphically. You don't have to compare or compute numbers yourself during this critical phase of the flight.

You might then go to the polar screen and tell it what percentage of maximum capacity of water you are carrying. You will only come back to this screen during the flight if you have dumped water or want to input a percentage for performance degradation due to bug accumulation. (If you are like some of my friends you may need to put in a bug accumulation degradation factor prior to the flight.)

The S-Nav will allow you to enter up to five tasks with up to six legs each. You enter the distance for each leg and the altitude you desire at the TP making each leg a mini final glide to that altitude. This allows you to arrive at the TP at the appropriate altitude for the wind conditions, *ie* low into upwind TPs and high into downwind ones.

As you can see from the picture, the appearance of the face of the S-Nav is quite simple with only one knob (on/off volume) and five buttons. A second set of these five buttons can be remote. Housed in a very small case that can be fixed to the stick or side of the cockpit, you can then operate the unit without ever having to reach for the panel.

In the air now, the main flying screen graphically displays speed-to-fly, averager, MacCready and wind settings. Just prior to starting the task you move one screen menu, select a task and press the GO button as you take your start photo. From now on it additionally displays the fact that you are in either cruise or climb mode, the distance to the next TP or finish, the altitude required to get there and the graphic glide slope.

ANSWERED – A NOVICE'S PRAYER

Al Cleaver, an RAF pilot, came rather late to gliding, apart from a rained-out, residential course as a 17 year-old. But last summer he made up for the delay in Gertrude, his Astir CS.

In 1985 I was bitten by gliding at Gutersloh but after an encouraging start stagnated at Silver. Consequently in 1990, following two seasons at Bannerdown GC (Hullavington) and with the Inter-Club League Novice Class and a Comp training week as preparation, I approached the 1990 Inter-Service Regionals with trepidation but desperately keen to achieve the magic 300km. Thus I despatched my novice's prayer – not expecting the answer it received!

As you may have read in the December issue, p316, the Inter-Services was a huge success being greatly blessed by the weather gods. After a rain sodden practice day the competition started with a bang with 304km being set for the Club Class.

Would I make the magic leap on my first competition sortie? No! I landed out after 295km. But on the next day I flew a fairly cautious 307km in 6hrs 18min for Gold distance/Diamond goal, having remained above launch height *en route*.

The following five days merged into a succession of long sorties and fine conditions with better to come. We finally arrived for early briefing on August 7 ready for the "long haul". The weather check was good – 6-8kt thermals and plenty of cloud to show the lift with light winds. The same task was set for both Classes, a 509.4km polygon, Tewkesbury, Caxton Gibbet, Frome, Bicester.

Al, who joined the RAF in 1957, has 4925 power hours including JPs, Hunters, Harriers and Pumas, and 285 gliding hours.

Having climbed to 3000ft, I departed without delay at about 1100 and 10min later was struggling at 1400ft south of Upper Heyford. The weather had quickly over-convected and conditions remained indifferent to Tewkesbury which I reached at around 1300hrs (68km in 2hrs) – no chance of completing 500km at that speed!

Back over the Wolds at Chipping Norton the sun started to break through and I got above 4000ft. West of St Neots a good thermal took me to 5300ft and I sailed on to find a stubble fire just short of Caxton Gibbet. Although I did grab some height in this smoke stack, too many other gliders were buzzing around it like bees so I departed for the TP.

Around 1545hrs (roughly 210km in 4½hrs) I set course SW towards distant sunlight and found 6kt lift to 5000ft near Ampthill. Thereafter it was 75-80kt cruise and 6kt up under most SW corners of randomly scattered, sun-kissed clouds with R/T from the pundit pack indicating even better beyond Oxford.

Was there time to get home?

But beyond Devizes I could only see overcast ahead so the speed was back to 60kt. I photographed Frome station from about 1800ft agl – this was no longer a race but a **possible** 500km. I had covered the 185km of leg 3 in about 2hrs but was there sufficient gliding time left to get home?

A cloud line with 3-4kt took me towards Bath and then bent south of Chippenham; Gertrude danced gently along below them. East of Calne the sky cleared completely – evening had arrived. Ahead blossomed another fire – and it was big. I climbed on instruments in very thick smoke just NW of Marlborough to 6500ft and then chickened out on both gustiness and airspace grounds.

I set off for home at 55kt in clear, calm air – not a ripple in the sky and little hope of making the 35nm to Bicester. So I headed for Didcot on the most enjoyable, smooth and enchanting piece of flying I've ever known, reaching the cooling towers at about 3000ft. Nothing, or perhaps I didn't search sufficiently, hoping I might just get home.

A steady 3kt took me to 5000ft

Turning northwards I espied some thin smoke emanating from Abingdon Airfield and zeroed in on it. My heartfelt thanks to those fireman who, I guess, had burnt off some contaminated fuel. Whatever the source, at 1920hrs a steady 3kt took me to 5000ft to ensure a definite home run to land at 1942.

I had "broadcast" my Marlborough stubble fire and the Abingdon thermal and was delighted to see the last successful Astir arriving back at 2000hrs. **What a day!** And what did I learn?

Follow the best weather, not the track. I calculated I flew over 560 to achieve the 509km task.

Fly fast whenever conditions allow.

Listen to the R/T – use the radio to help yourself and your mates – especially when you are striving for a goal rather than a win.

Never give up however difficult the condition or behind the clock you may be.

Keep praying – you never know what your prayers may bring!

Footnote: I managed to finish as highest placed novice in the Club Class (7th) and gained Gold distance plus Diamond goal and distance, which is more than any novice could expect. Now there is a small notice in the cockpit which says: *"To Gertrude, for lifting him for 8hrs 50min over 509km on August 7, 1990 – grateful thanks. Al Cleaver."*

(Read the *1991 S&G Yearbook*, now available from the BGA, for seven pilots' accounts of flying on this particular day.)

The S-Nav needs to know when you are cruising and when you are climbing to calculate distances and other statistical information (climb rate, % of time climbing, speed etc.). Although this can be done, as with other makes, by either a manual switch on the stick or flap handle, there is an option for using an internal *g* meter. And this is by far the best option for the "unflapped". Monitoring the *g* meter, it automatically switches between cruise and climb. It works flawlessly and can be overridden by a manual switch for cruising off course.

Certain cameras can be wired to a single button that when pushed triggers both the cameras and the computer, solving the problem of remembering to tell the computer that you have just passed a TP and are starting a new leg – a common mistake. In addition, a second (or third) set of TP pictures taken within a few minutes of the first set will be ignored by the computer for obvious reasons.

The audio features are also quite advanced. Along with the normal "go-faster, go-slower" and climb rate information there is subtle variation available. The climb tone can operate so that it alerts you when the climb rate falls below the MacCready setting, indicating that it may be time to leave this thermal. There were a few pilots at the Lasham Regionals who could have benefited from this feature. Outside air temperature and main battery voltage are also available here. Should the main battery voltage become critical it will be displayed on the main flying screen as a warning and you may want to shut down other non-critical systems.

There are many other nice features but I didn't intend to rewrite the manual and this should be enough to give you an idea of the S-Nav's capabilities. By the way, it did help me to ultimate come back from 19th place after Day 1 to finish 7th.

TURNING POINT-OK?

Far too often a good flight can be ruined by poor set of turning point photographs. Andy Davis describes how he succeeds in cracking what many find a problem

The purpose of turning photography is to provide conclusive evidence that a glider passed around a set of TPs in the correct order on a particular day. It may also be used to establish start and finish times on speed tasks.

It sounds very simple as indeed it is, yet every year many cross-country flights are ruined by poor TP technique or camera failure. With proper attention to detail, planning and a little practice TP photography should become just another technical skill carried out with confidence and success on every occasion.

Equipment

Cameras used for TP photography should be tried, tested and utterly reliable. My experience has shown that the greater the complexity of the camera, particularly reliance on battery power, the greater the possibility of a disappointing failure.

Never rely on a motor wind camera, as electrical failure guarantees your film will be ruined. Auto focus and auto exposure are great when working correctly, but certain lighting conditions can create havoc with the quality of the exposures, making assessment of marginal TP claims difficult if not impossible.

In my opinion simple fixed focus, manual exposure, manual advance cameras are the only reliable option, albeit at the expense of a small deterioration in picture quality.

The chosen camera should be of relatively small size and weight so that it can be easily mounted inside the cockpit. For competition use the camera should be of **fixed** focal length between 30 and 56mm and take 35mm cartridge film. See John Wright's article in the December 1989 issue of S&G, p303, for detailed comparison of the many different types of cameras on the market.

Never rely solely on just one camera. Always use two to be sure that an isolated failure or finger trouble doesn't ruin your day. The back up camera can be very cheap indeed.

They should be mounted inside the cockpit with the lenses close to the perspex. The wingtip should appear in the frame so that it can be used as a sight when aiming at the TP. For competition use, the wingtip must appear in the frame. It may take a bit of trial and error to get the alignment just right, but when it is, fix the mount so that the camera can be replaced in exactly the same position every time. The mounting should be stiff enough to prevent vibration reducing the picture quality.

On cameras with manual exposure, always set the "cloudy" position. This ensures that TPs lying in cloud shadow are adequately exposed. TPs lying in bright sunlight may be slightly over-exposed but this doesn't particularly matter.

TP photo sector

The 90° photo sector is orientated symmetrically about the bisector of the inbound and outbound tracks. For competition use, the radius of the photo sector is 5km, but for FAI badge flights there is no limiting radius. The sector is always placed on the outside of the TP and all photographs of the TP must be taken from within it.

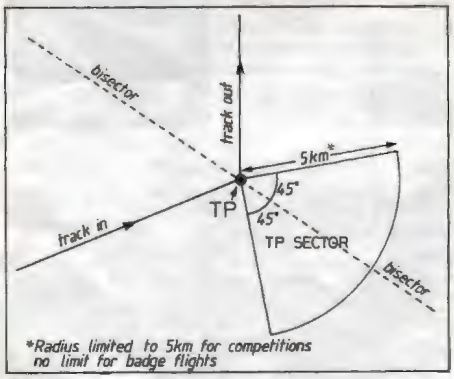


Fig 1

Start sector

When using remote start, the start sector is orientated somewhat differently to a TP sector. The 90° start sector is placed symmetrically about the track of the first leg extended back over the start point.

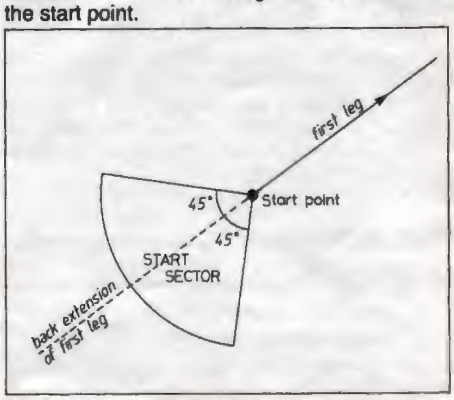


Fig 2

Photographic starts are commonly used in competitions when the start sector has a 2km radius and is orientated so that one boundary lies along the startline, as defined by the task setter.

Finish sector

The 90° degree finish sector is placed symmentrically about the extension of the last leg past the finish point.

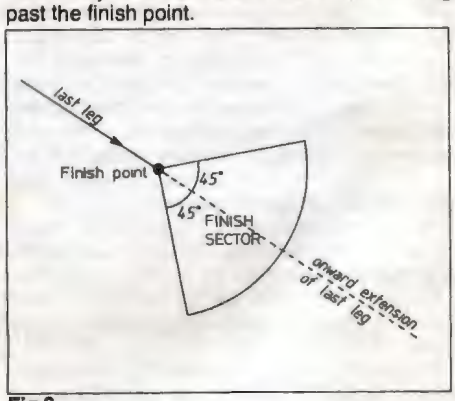


Fig 3

Photo sequence

To satisfy FAI badge requirements, photographs must be taken in the following order:-

1. Task declaration.
2. Remote start point (if applicable).
3. TPs in the correct order.
4. Remote finish point (if applicable) or if an out landing, a photo of the glider in the field with prominent features of the landing place.
5. Photo of glider registration or contest number.

If a traditional startline is used this sequence will also satisfy competition requirements. When photographic starts are in operation the sequence is amended as follows:

1. Control clock and declaration board.
2. Start point.
3. TPs in the correct order.
4. In an out landing, a photo of the glider in the field with prominent features of landing place.
5. Photo of glider registration or contest number.
6. Control clock.

The latter sequence will also satisfy speed record requirements and by the addition of a finish point photograph the finish time may also be recorded.

Flight planning

At the planning stage of the flight confirm the exact position of the TP from a large scale map or print before drawing the track lines in and out of the TP on your normal map. It is helpful to have 1:250 000 map coverage of all the areas in which your TPs are likely to lie. A good cheap alternative is the **OS Routemaster Road Atlas** which is indentical except for airfields and airspace.

Having drawn the task on your normal map, go back to the 1:250 000 map for each TP in turn and study the TP in detail. Make a note of the position of the TP photo sector and in particular try to form a mental picture of how the TP should look when the glider is correctly placed in the sector.

At an early stage of cross-country flying it is probably beneficial to actually draw the inbound and outbound legs on to your 1:250 000 map for each TP. Then for each TP in turn draw the bisector and sector boundaries (see Fig 4). Measure, calculate or estimate the magnetic bearing of the bisector through the photo sector. Note this on the map.

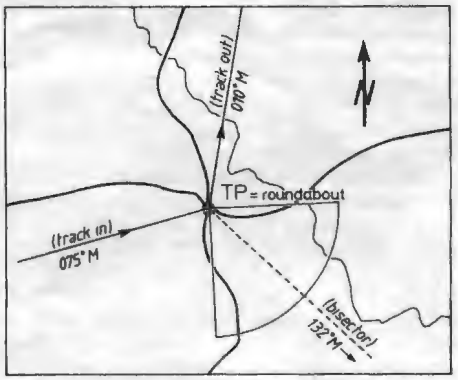


Fig 4

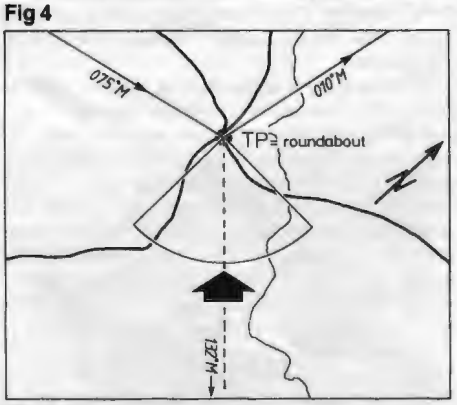


Fig 5

Turn the map so that you are looking along the bisector towards the TP. This is how the TP should appear when the glider is correctly placed in the photo sector and helps to reinforce the correct mental picture (Fig 5).

Technique

There is more than one way to take TP photographs, but this is the way I have developed over the years which works well for me.

Approaching the TP, haul out your 1:250 000 map and confirm you are indeed approaching the correct feature on the ground. Be particularly wary of TPs such as motorway intersections and make doubly sure you have got the right one by reference to other features. Orientate the map on the photo sector bisector to give you the correct picture.

Fly absolutely overhead the TP. This isn't as easy as it sounds and it may prove necessary to bank alternately one way and then the other as you get close to help downward visibility. Once directly overhead, turn immediately on to the bisector bearing making a suitable adjustment for the wind.

Simultaneously start counting and fly for 20sec on this heading. Then bank steeply aiming the wingtip at the TP below. If the picture you see corresponds with your mental picture of the TP from within the sector, take one photograph with each camera and get on with the next leg. If the picture doesn't look right, ask yourself why. Make an appropriate correction, usually by flying an orbit, and then take another photograph with each camera.

This technique positions you accurately on the centreline of the TP photo sector approximately 1/4 to 1/2 a mile from the TP. The beauty of it is that if the view of the TP matches your mental picture, you have immediate confirmation that everything is good so you don't have to waste time taking second photographs. As your confidence increases you can reduce the time spent flying out along the bisector, with near vertical photographs reducing additional distance to a minimum.

Do remember to wind on your cameras approaching the TP, and please remember to lookout before you turn as there may well be other gliders at the TP with you.

Practices

Do practise your TP technique before flying on that important task. If you fly from a ridge site choose a TP at each end of the ridge and practise TP photography for an hour. Consider and practise how to get a satisfactory photograph from within the sector if the situation doesn't allow you to overfly the TP, for example if theTP itself is covered by a heavy shower.

When practising use films in your cameras, develop them and study the results. The TP itself should appear clearly in the frame unless obscured by another glider or patch of cloud. If the picture is blurred, the camera mount is not stiff enough or the photograph was taken whilst rolling rapidly. Check that you were placed comfortably inside the photo sector.

Conclusion

Pilots may wish to develop their own approach to TP photography. In this article I have suggested just one way that works well for me in most situations. By careful thought, planning and regular practice it should be possible to develop the technique and skills required for reliable TP photography on every occasion.

(See also John Glossop's article in the 1991 S&G Yearbook, p17).

SAILPLANE NEWS

Recent flights tests by Ron Tabery and Peter Masak on an ASW-20 have confirmed a dramatic reduction in profile drag, controlled from the cockpit *via* an electric device which acts to eliminate the laminar separation bubble from the wing. The device reduces the profile drag at the Wortmann airfoil by an average of 18% at both low and high speed regimes.

The physics of the laminar separation bubble and its elimination have only recently been understood by researchers at the NASA Lewis Research Center in Cleveland, Ohio. The phenomenon of the laminar separation bubble is mostly only a problem for low speed aircraft which operate at Reynold's numbers below one-million.

The full range of improvement with this technology has not been fully exploited, however wind tunnel tests demonstrate that the maximum lift of the airfoil can also be increased, along with a dramatic reduction in drag.

This technology breakthrough is expected to result in a new Class of sailplanes of substantially higher performance. Tests are being done to determine whether the technology can be adapted to a Nimbus 3 for demonstration at the World Championships in Uvalde, Texas in July.

From a press release by Peter Masak.

WEEK LINK

Or The Art of Course Gliding – very coarse! Ray Hoile and his two children discover gliding

With a Horsa on tow the Stirling climbed away like a slow milk-float and taking off was always a slight sweat. Once – just once – I scrounged a ride in a Horsa, to taste life at that end of the cable. Years later, towing with a Tiger Moth, there were the same moments of doubt, those little surges when you clawed for extra height and that lurch when the glider pulled off. All very instructive, but no kind of preparation for a K-13. Except for the plywood, perhaps: the Horsa had more of it.

Doubts creep in on Day 1, minute 1, when the course instructor at Snitterfield says something about "... looks promising – unless it over-develops and-good-morning-all-I'm-Jim." What's this *over-develop* jazz? Whose idea was this "holiday(?)" for Dad and two unsuspecting offspring? What makes an old has-been think he can be a still-is? If the Gods had meant us to fly would they have given us the railway and bus passes?

A stranger outside looks straight at me and comments on "the weak link", which seems harsh judgment, after which life suddenly gets confusing. The launch leaves my head somewhere down by the tail skid, putting the C of G well aft. Jolly Jim in the back, poor innocent fool, doesn't notice the ridiculous nose-up attitude but mutters what sounds like "There might be a bit of a bang ..." when the K-13 obviously starts breaking up, very noisily, about one millimetre under my bum.

"Always pull the cable release **twice**" says Jim, but my instincts are already shoving the stick forward to see if Stratford on Avon is still there. After that things get *really* confusing. I think we've hit a high manhole cover but apparently there is lift about and Jim screws the K-13 nauseatingly into the sky. Steep turns in a Tiger Moth were more fun. Cooler too. When this lot say "wave" the obviously mean microwave, under a K-13 canopy.

Tuesday is hot as hell but I keep my breakfast down. Just. Nice and cool retrieving with the tractor, though. The club members are making the week. No grudging tolerance of outsiders, but an unreserved welcome to the inside. Suddenly it's a real holiday, healthy and enjoyable. All you ➡

(Continued on the next page at the bottom of the first column.)

THERMALYSER MK 2

Stan Barcroft described his Thermalyser Mk 1 in the August 1987 issue, p178, with a report by Alan Purnell who tested it in his Nimbus 3. Some of Alan's suggested improvements have been incorporated in the Mk 2 version

Alan's main recommendation was that a "confidence factor" should be displayed because a direction is always given by the instrument even if the glider is already centred, or when there are several weak lift areas round the circle which possibly have no directional significance when analysed.

So the digitial display now has an extra digit to indicate confidence factors of 0 to 9. The number represents the amplitude of the fundamental sine-wave sensed by the variometer during one flight circle (wave (b) in the 1987 article), measured in 10ths of a kt. Amplitudes greater than 0.9kt saturate the display and a reading of 5 or more can be taken to signify high confidence that the given direction leads to better lift.

For those interested in the mathematics, the amplitude is the so-called Modulus (M) obtained from

$$M = \sqrt{A^2 + B^2}$$

such that $A = \int_0^T V \cos \frac{2\pi t}{T} dt$

and $B = \int_0^T V \sin \frac{2\pi t}{T} dt$

where T is the periodic time round the circle and V is the variometer reading at time (t) measured from the commencement of the circle. Whereas Mk 1 only provided a direction, Mk 2 therefore provides a complete vector by which the circle can be more accurately shifted.

Another suggestion was that the indications be updated with every new reading of the variometer. Unfortunately, to do this would require continuous heading information which is not easily provided, except possibly by connecting the instrument to Alan's radio-compass. Instead "Interrupts" have been written into the new program to enable analysis and display to be carried out while variometer sampling continues.

The analysis remains accurate

As a result Mk 2 can provide analysis of every completed flight circle provided that the Reference Heading push-button is pressed at the same heading each time round. Accuracy then depends also on the circles being shifted only momentarily; in simulated testing the analysis remains accurate if the corrections are less than about two seconds in duration.

A major limitation of the Mk 1 instrument was its high current consumption of 500mA using the 6802 microprocessor. By redesigning it around the CMOS version of Z80, consumption is now reduced to a more manageable 100mA and further reductions are possible.

Another weakness was the way it handled the situation when the computed direction turned out to be close to the reference heading. The instrument then called for an extra circle to be flown during which the normal audio signal could be sounded. This could waste a lot of time so in Mk 2 if the indicated direction is within 2sec circling time of the reference heading, an **"urgent"** signal consisting of repeated pips is given as soon as the analysis is completed.

The normal audio signal remains as —••— (X in morse code) with a duration of 2sec. Alan suggested increasing this to 5sec but to do this would eliminate a sector of 75° assuming 15°/sec rate of turn. If the turn cannot be taken off immediately the signal terminates; an alternative procedure is to merely note where the glider is pointing at the critical moment and then straighten course in that direction in one's own time. The glider should then be on a track parallel to the ideal one but taking it closer to the core of the thermal.

Brennig James suggested in the April 1989 issue, p.57, that centring could be assisted by an instrument which, when triggered by the "kick" of a magnetic compass, would divide a circle into quadrants and display the average rate of climb in each. I suggest that to mentally deduce an optimum direction from this would not be easy and the necessary microprocessor would be better utilised in performing an accurate analysis as the Thermalyser does, and outputting the optimum direction in a more convenient form. Incidentally the rectangular integration employed in Mk 1 has been replaced by the more accurate trapezoidal integration in Mk 2, probably better known as the Mid-Ordinate Rule.

I have not yet flown with the Mk 2 Thermalyser but Alan Purnell has made comprehensive tests with it fitted to his Nimbus 3. A second one is being adapted to suit a hang glider to be flown by Steve Gale.

Alan's observations are:

The Mk 2 Thermalyser is a great improvement on the Mk 1 for the reasons Stan has outlined. The display of the confidence factor and the ability to enter the reference point on each turn (instead of every other turn) were as helpful as predicted.

One could be confident that a shift of circle was indeed necessary or that the thermal was correctly centred, or that there was no usable thermal nearby.

To make the unit still more practical Stan needs to:

(a) Reduce the confidence factor sensitivity by a factor of 3 or 4 so that 0-1 can be safely ignored and 2-9 gives an amplified scale of confidence (at present 0-3 or 4 have to be ignored, leaving 5-9 as the only useful indications).

(b) Incorporate an automatic means of determining direction. This will reduce the work-load on the pilot, and also enable previously valid points on the circle to be re-used, thereby eliminating the "dead band". It should also reduce the time the pilot has to wait for an indication and allow the warning signal to be lengthened. Experienced pilots will always prefer to recentre at the earliest moment when only part way round the circle.

(c) Install the instrument in a standard panel hole and to reduce the power consumption still further.

You are going in the right direction, Stan. Perhaps the next step, in addition to the points above, is to include it as an option in an existing microprocessor-controlled glide director.

(Continued from previous page.)

have to do is muck in. It throws you a bit to find a Tornado rolling out just off the nose at the top of the launch, and a Hercules on a reciprocal slightly to starboard, but how were we to know it was a NATO cowboys-and-indians week . . .?

Wednesday it blows, with right-hand circuits, and the kids are way ahead of me up the learning curve. It's odd to see them coming in, wings rocking in the gusts. At school not long ago, and sideways-looking airline passengers, they'll never be the same again. I'd often tried describing it to them but now Philippa has seen the world spread out in front of her, and Greg has felt the difference between a computer joystick and the real thing. Wish I was 22 again.

On Thursday the sun comes back. All this activity and fresh air is leaving me knackered but I'm sleeping like a log at night. It doesn't seem possible that tomorrow's the last day.

Friday is full of lift, and I clock up two long stints. Daughter comes down looking a bit wide-eyed. Apparently they had the nose up, speed down, and full brakes, but kept going up like the cost of living. I used to enjoy sideslipping a Tiger. I still balk at *increasing* speed on the approach, and I haven't got the hang of these airbrakes, but time is a great healer, some say.

Join properly and maybe I'll find there is still some life before death. Wondering about it yourself, dear elderly reader? Give it a shot. At least I've picked the right club, not one of these snooty places you read about. Watch this space.

OVERSEAS NEWS

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

VINTAGE OCCASION

The Oldtimer Meeting for vintage planes at Hahnweide Airfield, near Stuttgart, from September 6-8, is likely to attract more than 250 pilots and a large range of aircraft from the Junkers Ju 52 to such gliders as the Grunau 9 and the Minimoa.

For more details contact Klaus Lassing, Markt Str 45, D-7312 Kirchheim-Teck, W. Germanv.

VINTAGE REGATTA

Ged Terry, a Newcastle GC instructor, photographed at the Vintage Glider Association of Australia's annual regatta at Swan Hill. Ged, a regular visitor to Australia and to the regatta, flew several gliders including a Cherokee 2, designed by Stan Hall (USA) and built in Australia in the 1950s, which he took to 7000ft.

Our photograph is of Henryk Doktor, CFI of Yorkshire GC for some 30 years until December, and his wife Susan, being presented with a car by club chairman David Chaplin (far right). It was taken during Henryk's retirement dinner-dance at the Old Swan Hotel, Harrogate in February when more than 200 attended to say thank you for his help and guidance over the years and the gift of the car was a mark of the club's gratitude. Henryk has been made a life member and will continue to work part time for the club.

THE THERMAL SNIFFER

The early post-W2 years were celebrated by soaring pilots in Ireland with a great surge of activity. One group had enlisted a new recruit, a well-known Spitfire ace to whom flying was a great passion. Sailplanes appealed to him as a proper unwarlike vehicle in which to express his love of flight.

He was, however, constantly piqued by the fact that pilots with much less air time than he made considerable cross-country distance flights, while he always landed near the launch site. After several disappointing days he decided to join the more successful pilots at dinner. Perhaps he could pick up some pointers.

One neophyte who had got Silver distance off their winch launch described a save at low altitude about halfway out on his course. He had been on final approach into a meadow where sheep were grazing, and when he smelled them, he rolled into a turn (for he rightly assumed that the smell was borne upwards by a thermal) and off he went! Another pilot told of a similar situation when, as he crossed over a cottage on his base leg, he smelled peat smoke. A smart 360 centred the thermal and he too climbed out and soared away.

This, obviously, was what the ace needed to know: one smelled thermals! Accordingly the next day, immediately off the winch, he began to sniff away. Suddenly, there it was - the smell of sheep, and below him in the field where he had pitched his tent, the wooolies were grazing away.

Round and round he went, only to land amongst the ewes and rams. Puzzled, he got out of the glider . . . and discovered he'd stepped in the stuff before take-off!

Vic Saudek, from *Bungee Cord* - First published in *Free Flight* (Canada).

TAIL FEATHERS

No, I'm not going to write a blow-by-blow account of my last trip to Australia. These notes are just a few impressions of varying degrees of irrelevance. My dilemma is this: If I rhapsodise about gliding in Oz, the planes will be packed with Poms next Christmas and there will be no accommodation within miles of any decent site, and all the club gliders will be booked up months ahead. On the other hand if I *don't* rhapsodise, it will be about as safe for me to pitch up at an Aussie gliding site as for Salman Rushdie to breeze into a mullah's convention shouting "The drinks are on me, boys!".

"England fail to collapse"

This headline appeared in the *Melbourne Age* when the Test matches were on. (So the grand reception at the airport wasn't for me, after all. Hardly surprising, since I usually travel incognito to prevent crowds – you know, fans, celebrity hunters, creditors, libel lawyers, lynch mobs *et al.*) In four words the newspaper indicated, to paraphrase Nelson, that Australia expects every English cricketer to do his duty and get out first ball. And we'd let them down. We'd *failed*. We made it up to them later on in the series and kept our promise, and normal relations between the two countries were restored.

However, the great Benalla Boxing Day cricket match between the Aussies and the Poms was quite different. For a start it had interesting rules. You had two overs in which to hit every ball out of the ground and achieve glory, during which time *you could never be out;* being caught, bowled (very rare) or run out (very frequent) simply cost you three runs each time. Consequently some batspersons piled up, or should I say excavated, a gaping negative score, rather in the way that I used to accumulate TP photo penalties that exceeded my daily total. So when the Aussies' top bats had passed the Pommie score, they wished to declare[1] but were told, between gritted teeth, to continue till their tailenders[2] had been through the system, just as ours had. Rightly so: the Aussie tail, admittedly including all nationalities, achieved a brisk minus run rate which handed the smug Poms victory by default at the last minute. A brilliant high catch by an English-born lady of immaculate complexion – preserved by avoiding the sun under a vast hat, so her seeing the lofted ball was an achievement in itself – ended the Antipodean challenge, and the first Soapie-Stubbie trophy went to the Poms.

As the prize was presented, beautifully crafted out of a virgin pack of Imperial Leather and a Foster's bottle (far from virgin) mounted on a plinth, Platypus did an oration. He explained for the benefit of baffled representatives of other nations[3] that it sums up our two cultures: it symbolised the Australian belief that Britons revere soap so much that they never like to spoil it by taking it out of its wrapper, while Australian beer - well, it speaks, or belches, for itself.

[1]*Note for foreign readers: to declare is to say "We've won, we wish to cease playing; where's the beer tent?"*

[2]*Tail-enders = "rabbits"* ie *inexperienced cricketers,* eg *Germans, Scandinavians, Lithuanians plus those handicapped by injury (inflicted by others during the match) or drink (usually self-inflicted during the whole day). Easy meat for any bowler who can see down the length of the pitch.*

[3]*Not half so baffled as those Continentals that we cunningly persuaded to play for the Australians during the actual match. However, we were nearly scuppered by two Swiss who showed unexpected talent with bat and ball. You can't trust some people.*

Strine	Translation
Small paddock	500 acre field
Tinnie	Beercan
Large paddock	New South Wales
Stubbie	Squat beer bottle
Barbie	Burnt beef at sunset
Slabbabeer	24 pack of tinnies
Eskie	Icebox full of stubbies
Open Class eskie	Icebox full of champagne
Tuggie	Towpilot
Toe-cah	Rusting death-trap
Pommie	Freeloader
Pommie bastard	Freeloader who can bowl
Willie-willie	Dust devil
Foynaigloyd	Am 200km out
Fakkinleech	Any other competitor
BYO	Bring your own[5]
Garblamince	Two hours[6]

Vanilla dollops.

Hogmanay boat-burning

The most memorable flight of the whole trip was the result of a fumble, as memorable flights usually are. After two days of upwind struggle from Benalla (scene of the 1987 World Champs) 610km west-north-west to Waikerie (scene of the 1974 World Champs), Ian Newman and I planned to fly back to Benalla in one go, with about 10-15kt behind us, on the third day, New Year's Eve. It dawned with a dazzling forecast, which promptly began to go wrong. High cover was racing over much faster than expected, and much faster than the wind at soaring height. This deadening blanket would arrive before there was any chance to stay airborne locally.

"It's too late!" we said. We would have to leave the ASH-25 tethered down, see the New Year in at Waikerie (not such a grim prospect) and just hope that January 1st would be a good enough day for us to fly back, hangovers and all. Then we realised that our crew-lady had already set off on the 800km road trip to Benalla, and all our essential kit, toothbrushes, underwear, corkscrew etc

Local specialities.

etc was in the trailer or car. She was out of radio contact, and besides was planning to see a boyfriend for the New Year's celebrations and had her foot as hard down as the old Ford Falcon would tolerate in that heat.

A quick decision had to be made. Although the high cloud was already overhead, we mortgaged my credit card to the tuggie, rushed the heavy beast on to the strip – exhausted even before we got airborne – and were towed off eastwards under the clamp. Finally, about 30km east of Waikerie, we released in dead air, but drawn by the vista of a vast expanse of blue sky, now beginning to be dotted with delicious scoops of ice-cream. There was no question of turning back; we could see behind us a squall line whipping up the dust into a vicious red curtain that stretched hundreds of kilometres from north to south; Maurie Bradney reported that after we took off Waikerie did one more launch then had to shut down for the day.

The first dollop of vanilla produced 7kt up to 9000ft and ecstatic yells filled the cockpit; we were saved. Cloudbase steadily mounted till we were yo-yoing between 10 000 and 14 000ft, and we began to sulk if we got below 8000ft. This was all too good to last, of course. After two hours monster cu-nims began to fill the sky and a typical English summer afternoon ensued, only on a grand scale. An abrupt switch to stay-out-of-trouble mode brought us far south of track to the only source of lift, a brute that issued hail and lightning from its dark underbelly. Cautious nibbling around the edge produced enough lift to enable us to tiptoe through the veils of rain into a great empty blue space the size of Norfolk. What a lovely thing is 58:1! More vanilla dollops began to grow, way off in the distance, and we breezed into Benalla exactly four hours and nought minutes after release, 575kms at 146km/h. The driver had only covered a third of the distance by this time. When she got to Benalla late in the evening, she didn't hang around, but got into her own little car and drove off north to Tocumwal to meet her boyfriend before the New Year. They build the Sheilas tough out there, The way the men treat'em, they *have* to be tough[4].

If we'd had time to declare the release point, they said afterwards, it would have been a goal speed record. On a later flight I'd have had the O/R two-seater record, only I'd declared something else. No worry, mate. The only record that matters is the video that you play back in your head.

[4]*Aussie feminist joke "Is your wife difficult to please?" "I dunno, I never tried."*
[5]*Wine, women, glider, money etc.*
[6]*As in "the barbie'll be ready inna garblamince".*

Transport of delight

The average Pommie glider pilot has one moderately decent smallish car, whereas the average Aussie glider pilot has several largish American-style wrecks, each insured, for the sake of economy, to the minimum legal level, which is for death and injury to third parties. So if you run your wreck into someone else's car, you have to persuade him that it isn't worth his while suing you (the fact that you have no shoes or shirt and are wearing four day's beard, not to mention the general state of your own car, helps to convince him that you are not a member of the suable classes) and that he had better try and recover the money from his own insurance company. If *his* car is not insured for damage inflicted on it, then it too is probably another wreck, and both drivers just put the incident down to experience. Nobody I knew ever bothered to repair the damage, of course, first because pride in one's car has a zero priority for Aussie glider pilots and also because the dents advertise the fact that your insurance is minimal, guaranteeing a wide berth from other road users.

The typical Aussie glider pilot's car is filled with all the usual impedimenta that Pommie cars have, about which I have written in earlier issues of *S&G*, namely tail dollies and waterballast gear

John Willy wondering where his next stubbie is coming from.

and tow bars and wing covers etc etc, so that there is nowhere for anybody but the driver to sit – but in addition there are some local specialities. A giant eskie – short for eskimo, naturally – full of ice and stubbies and tinnies (depending whether you like your beer straight from the bottle or straight from the can – only Poms and wimps ask for a glass(takes up a fair amount of space. You also need a large lump of card for wedging against the windshield to keep the sun from roasting the interior. Plastic containers of anti-sun and anti-insect gunge fill the glove compartment. (That's a thought, when did you ever see *gloves* in a glove compartment, in any country?

The Ozmobile also has a rather neat rate-of-turn indicator; if you go round a bend at more than 0.3*g* acceleration there is a tremendous clattering and clinking sound from just below and behind your seat. Don't worry, this isn't the exhaust pipe falling off or the transmission going (they fell off and/or went years ago) but the dozens of empty stubbies and tinnies surging back and forth in the back, where they have been thrown by the occupants over the previous months. I missed the end-of season ritual of the clearing-out of the stubbies: a rather elegaic and tearful moment, I should imagine, as the sun sets on the very last barbie before the glider pilot's curse, work, recommences for six terrible months.

Below: Mike Burke, the tuggie with the welcoming stubbies at Swan Hill, half way between Benalla and Waikerie. Photos: Platypus.

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BGA & GENERAL NEWS

BGA AGM

This year, in an attempt to attract more people, the BGA AGM was divorced from the dinner-dance and prizegiving and held at the Post-house Hotel on the M1 motorway at Crick on February 23. It was also hoped that being less expensive than the traditional weekend, younger people might come.

As it happened, it achieved the first aim. More than 80 from a good spread of clubs made it a lively, often contentious AGM, but the average age was 49.

Earlier in the day there was a talk about the coaching programme by Chris Rollings, senior national coach, followed by Chris Garton, chairman of the BGA Airspace Committee, giving an update on the airspace position.

Tom Zealley later commented on the great debt everyone owed to Chris Garton who worked tirelessly for gliding and was held in very high regard by all those involved with airspace.

Don Spottiswood, BGA chairman, presented BGA diplomas to John Stirk and Peter Bisgood.

John, chairman of Burn GC, has been involved with the club, formerly Doncaster GC, since the late 1950s. He was CFI for many years and until recently the senior regional examiner in the north-east for gliders and motor gliders. His dedication and high standards were an outstanding example of service in the true spirit of gliding.

Peter served the technical gliding community throughout a long, distinguished career. He was on the BGA Technical Committee and managed the Bedford Flight Test Group for more years than records show. His calmness in investigating unexplored, often highly hazardous, flight test situations and returning unscathed and with cogent advice on improvements has been an example to us all.

BGA ANNUAL DINNER

The Norfolk GC hosted the BGA's annual dinner-dance and prizegiving at the Airport Hotel, Norwich on March 23. It was in conjunction with their own dinner-dance and a great success, followed by flying at their Tibenham site on the Sunday.

Ken Wallis, the famous autogyro designer, presented the awards as follows: **Du Garde Peach** trophy (National Ladder Weekend winner), Ed Johnston (Cotswold); **Slingsby** trophy (2nd place on the Weekend Ladder), Richard Palmer (Avon); **Enigma** trophy (National Ladder Open winner); **Wakefield** trophy (longest distance flight) with 757km and the **Frank Foster** trophy (fastest 500km), Andy Davis (Bristol & Gloucestershire); **Firth Vickers** cup (2nd place on Open Ladder), Phil Jefferies (Cambridge University); **John Hands** trophy (outstanding support to the organisation and running of competitions), Eric Giles (Enstone); **Volk** cup (longest O/R flight) with 536km, Malcolm Guard (Coventry); **Furlong** trophy (longest triangular flight) with 770km, Chris Rollings (Booker); **Manio** cup (fastest 300km triangle) with 116km/h, John Gorringe (Booker); **Rex Pilcher** trophy (earliest 500km by a pilot completing the task for the first time), John Rice (Trent Valley); **California in England** cup (longest flight by a female pilot) with 502km, Geralyn Macfadyen (Cotswold); **Seager** cup (longest distance in a two-seater), Chris Rollings and Basil Fairston (Booker) and the **De Havilland** trophy (greatest gain of height) with 33 568ft, Alister Kay and Kevin Wilson (Booker).

AIRSPACE CHANGES

Significant changes to the Birmingham CTR/SRA come into effect on May 30. The increase in controlled airspace will impinge upon cross-country routes and turning points used by many clubs, so it is essential that all cross-country pilots are aware of the situation.

The 1991 edition of the Southern England 1:500,000 chart was due to be published in May and depicts the new Birmingham airspace. Flying with obsolete maps is not an acceptable practice at the best of times, and we cannot afford airspace infringements through lack of awareness. Please ensure you have a copy of the new map.

Although this increase in controlled airspace in the centre of the country is unwelcome, the BGA was fully consulted in the design stages and able to propose amendments acceptable to NATS and which alleviate the effect on gliding. Raising the base levels of the Daventry CTA remains a BGA objective.

Chris Garton, *chairman, BGA Airspace Committee*

NATIONAL LADDERS

Open Ladder

Leading pilot	*Club*	*Fits*	*Pts*
1. A. Grimley	Avon	2	1950
2. C. Morris	Avon	2	1890
3. R. Palmer	Avon	2	1755

Weekend Ladder

Leading pilot	*Club*	*Fits*	*Pts*
1. R. Palmer	Avon	2	2150
2. C. Morris	Avon	2	1740
3. A. Grimley	Avon	2	1630

BGA LIST OF TPs AND SITES

The BGA List of nearly 500 turning points has been successfully launched and sent to all clubs and those individuals concerned with computerised distance and task setting calculation programmes. The BGA has also circulated Amendment List No. 1 which contains a few small corrections and some additions. It is emphasised that the list is for information only and pilots retain absolute freedom to use other points within the rules of airspace and good behaviour to other air users.

Many clubs and individuals have sent 3.5in floppy discs to be copied with the list, and as a result of this good response an additional service is now offered. This is a neatly formatted heading for a TP briefing sheet for each of the listed points, using the information from the main TP list. This is primarily in Word Perfect 5.1 and uses large font sizes for the main heading, and smaller fonts for the detailed information, grid reference and lat/long.

A DOS/ASCII version is also available for those without access to Word Perfect. Individual sheets for each TP may then be printed out in A4 size (preferably on a laser printer which gives a good cosmetic effect) from which they can be blown up to A3 on a photocopier for the addition of photographs and cut-outs of maps for pilot briefing purposes. The complete briefing sheets can then be stored, for instance in plastic wallets in ring-binders ready for use by pilots.

To avoid duplication of work, it is hoped that clubs will exchange photocopies of the best briefing sheets complete with current photographs and maps. For standardisation purposes, it is recommended that photos are taken looking north to coincide with the map orientation on the briefing sheets, and in addition to a detailed map, a cut-out from the CAA/ICAO 1:500 000 air map is also included since this is a map all pilots should carry in the air, and all of the 500 or so TPs (except a few included for special purposes) can be clearly indentified on it.

For comments, additions, corrections, more information, copies of Amendment List 1, the lists themselves, or the new briefing sheet headings, write (including return postage) to the BGA or direct to the TP Co-ordinator at Bentworth Hall, West Bentworth, Alton, Hants GU34 5LA (0420-64195). For those sending discs, two 720k or one 1.4 Mbyte disc is needed for the full set of data currently offered if you want both Word Perfect and DOS/ASCII versions; otherwise 720k will do.

Ian Strachan, BGA Competitions and Badges Committee TP Co-ordinator
(Not, as stated in the last issue, chairman of the Committee. Sorry Ted!)

AIR LEAGUE SCHOLARSHIPS

Young people aspiring to become power pilots are given a great opportunity with the Air League Educational Trust's annual flying scholarships.

The winners are selected after interviews, aptitude and medical tests and awarded up to 15hrs flying instruction during the spring and summer of 1992. Applicants must be over 18 and under 22 on May 31, 1991.

For an application form (which must be returned by June 30) write to The Secretary, The Air League Educational Trust, 4 Hamilton Place, London W1V 0BQ.

AVIATION ART EXHIBITION

The Guild of Aviation Artists have their 1991 Aviation Painting of the Year Exhibition at the Carisbrooke Gallery, 70 Seymour Street

(Marble Arch), London from July 16-25 when it is anticipated that more than 250 paintings will be on show.

EDGEHILL REGIONALS

The Edgehill Regionals will be held at the Shenington GC site, five miles NW of Banbury, from August 25 – September 1.

Organised by Mary Meagher, Ron Bridges is the director with scoring by Paul and Stephen Crabb.

It will be limited to 30 and entry forms are from Mary at 21 Pitts Road, Oxford OX3 8BA

FATAL ACCIDENT

Isobel Lindsay was killed on February 24 flying a Pirat at Connel Airfield. After a poor autotow launch the pilot turned back at about 200ft to land downwind on the airfield and spun in.

POTENTIAL DANGER

The Norfolk GC have recently started winch launching and warn visiting pilots to beware of the potential danger of winch cables.

MAXIMUM ELEVATION FIGURES (MEFs)

MEFs, which indicate the highest known feature in a given area, are being introduced on to the CAA's 1:500000 series of aeronautical charts. They are shown in quadrangles bounded by lines of each half degree of latitude and longitude, and are represented in thousands and hundreds of feet above mean sea level, in the following manner:

1^3

As these charts generally do not show obstacles that are less than 300ft agl and contours lower than 500ft amsl, it follows that for any quadrangle, in the absence of a dominant obstacle the corresponding MEF will be 300ft higher than the highest spot height or highest known surface elevation (rounded up to the next hundred feet).

NB: MEFs are not a safety height. They indicate the highest known feature in each quadrangle including terrain and obstacles, and allowing for unknown features.

Neill Leary, *Head of Aeronautical Charts Section*

OBITUARIES

ROBERT LESLIE NEILL

Bob Neill, who was chairman of the Midland Gliding Club from 1953 to 1967, died at his home on 10 February.

Bob was born in Sheffield in 1903, went to Wrekin College and in later life was chairman of the Governors. In 1922 he joined Joseph Lucas in Birmingham, became a main board director and retired from there in 1969.

Gliding for Bob began on the Long Mynd in 1938 and was resumed enthusiastically after the war. In 1952 Bob gained Silver badge No. 365. In 1953, with Espin Hardwick still alive, Bob was elected chairman of the Midland Club. The most important and prolonged problem he faced was the battle with the hostile owner of most of the club's airfield. After a five year wrangle the club acquired the freehold of the heart of the airfield. That transaction was the foundation stone for other land purchases over the following 27 years. A purchase a few days before his death completed the club's ownership of its airfield.

"Uncle Bob" as he was affectionately known to those who flew at the Mynd in the 1950s and 1960s was an instructor who was very keen on well-disciplined flying. On and off the airfield he worked tirelessly and effectively for the good of the Midland Club. His many other interests included astronomy, photography, shooting and particularly sports cars.

Bob was 83 when he last flew solo in his Skylark 4. He is survived by Nora, whom he married in 1968, and by Bob, the only son of his 1931 marriage to Kitty who died in 1965. His son is the current chairman of Midland GC.

One of the "old school", Bob was a man of the highest integrity whom I am pleased and proud to have known. He will be very long remembered at the Mynd and by all who knew him.

KEITH MANSELL

JOHN THORNE

John Thorne died suddenly at the young age of 50 whilst on holiday in France.

He started gliding in the 1950s with the RAFGSA Wessex at Andover Airfield. He went on to become the leading light at Compton Abbas, the first "commercial" gliding club in the UK. He had the vision of a gliding club where the customers could book and fly instead of having to slave away at the airfield all day. It opened in 1967 and worked so well that John soon expanded the service to include power flying and parachuting. Many aviation enthusiasts have fond memories of those days with John holding control of an airfield with members with diverse interests and requirements – pleasing most of the people most of the time.

John was married to Lauretta and in 1972 they had a daughter, Rebecca. Lauretta however became ill and in 1973 John gave up the airfield. After his wife died John turned his hand to other aviation related interests. He was manager of a small airline for a while and also owned a Rallye Minerva with which he towed for various clubs.

He was currently involved in running another enterprise on Thruxton Airfield ably assisted by his second wife Ann. Their son James is now eight years-old.

It is difficult to believe that, we will never again hear John shouting "it's your round!" – always the life and soul of the party – yet ever prepared to give sound business advice. He will be greatly missed by many people. Our sympathy goes to Ann, Rebecca and James.

RALPH JONES

GLIDING CERTIFICATES

ALL THREE DIAMONDS

No.	Name	Club	1990
351	Hamilton, C. J.	SGU	7.10
352	Palmer, R.	Avon	8.10
353	Crisp. F.	Deeside	12.10
354	Crabb, P. G.	Coventry	7.8

DIAMOND DISTANCE

No.	Name	Club	1990
1/520	Hamilton, C. J.	SGU	7.10
1/521	Stingemore, G. P.	Four Counties	7.8
1/522	Crabb, P. G.	Coventry	7.8

DIAMOND GOAL

No.	Name	Club	1990
2/1937	Malcolm, S. P. C.	Wolds (in France)	29.5
2/1938	Strange, R.	Lasham (in France)	1.9

DIAMOND HEIGHT

No.	Name	Club	1990
3/1003	Smith, N. W.	Bicester	7.10
3/1004	Waldron, D. I.	Kent	8.10
3/1005	Palmer, R.	Avon	8.10
3/1006	Lincoln, B. N.	Portsmouth Naval	3.10
3/1007	Allan, J. C.	Bicester	7.10
3/1008	Wright, J. G.	Bicester	12.10
3/1009	Nelson, J. R. A.	Bicester	7.10
3/1010	Crisp, F.	Deeside	12.10
3/1011	Vincent, K. G.	Kent	12.10
3/1012	Moss, M.	Blackpool & Fylde	16.10
3/1013	Copeland, D. D.	Lasham	21.9
3/1014	Lynch, G. W.	Essex	28.9
3/1015	French, A. J.	London	14.9
3/1016	Bell, J.	Borders	24.2.91
3/1017	Cornelius, D. M.	London	18.9

All but two heights were from Aboyne - the exceptions were Feshiebridge and Galewood.)

GOLD BADGE

No.	Name	Club	1990
1510	Arthur, E. A.	Norfolk	17.9
1511	Turrell, R.	Cotswold	17.9
1512	Keates, G. H.	Deeside	17.9
1513	Gatfield, J. E.	London	18.9
1514	Mummery, R. C.	Lasham	21.9
1515	Hayden, R. B.	Essex	28.90
1516	Housden, S. R.	Cotswold	9.9
1517	Matthews, L. R.	East Sussex	2.10
1518	Aveling, A. R.	Lasham	28.9
1519	Burgoyne, R. S.	Cotswold	17.8
1520	Baker, A. A.	Lasham	28.9
1521	Wright, J. S.	Booker	4.10
1522	Barrie-Smith, N. J.	Lasham	7.10
1523	Sinclair, D. A.	Lasham	7.10
1524	Hindmarsh, G. J.	Lasham	7.10
1525	Brown, S.	Lasham	7.10
1526	Waldron, D. I.	Kent	8.10
1527	Tyler, R. M.	Lasham	8.10
1528	Davies, E. F.	Booker	10.10
1529	Pepper, R. E.	Bicester	11.10
1530	Rees, M. S.	Booker	16.10
1531	Allan, J. C.	Bicester	7.10
1532	Francis, D. P.	Bicester	16.10
1533	Wright, J. G.	Bicester	10.10
1534	Whittaker, R. F.	Lasham	12.10
1535	Lynch-Jennings, N.	Glyndwr	16.10
1536	Judd, D. M.	Wrekin	30.10
1537	Wilson, K. M. H.	Booker	12.10
1538	Atkinson, P.	Bicester	4.10

GOLD DISTANCE

Name	Club	1990
Strange, R.	Lasham (in France)	1.9
Malcom, S. P. C.	Wolds (in France)	29.5

GOLD HEIGHT

Name	Club	1990
Melville, I. R.	SGU	7.10
Harris, R. M.	Booker	10.10
Ireland, C. J.	Kent	8.10
Clayton, L. C. F.	Kent	8.10
Burden, R. J.	Kent	8.10
Waldron, D. I.	Kent	8.10

BGA ACCIDENT SUMMARY -

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

Ref No.	Glider Type	BGA No.	Damage	Date Time	Place	Pilot/Crew	Age	Injury	Hrs
152	K-8	-	N	22.9.90 1422	Dallachy		0	N	-

The K-8 was winch launched normally until, at the top of the launch, the cable broke. The cable end drifted in the crosswind and fell across nearby 11kV power lines. The electricity board were informed and cleared the cable off the lines.

153	Slingsby	3404	M	9.9.90 -	Gatewood	P2	42 13	N N	864 0

While at about 1700ft on the aerotow, with P1 flying, the rear canopy came off and hit the wing, fuselage then tailplane. After checking that the handling had not been affected, the P1 made a safe landing on the airfield. The catch had been replaced after a previous incident. A more positive locking system is to be fitted. See 130.

154	K-8cr	?	S?	20.6.90 1100	Waltham on Wolds		51	N	23

On a 50km distance attempt the pilot was five miles down track when he encountered sink and, having lost the airfield, selected a field. On final approach he realised too late that it contained standing corn which tore the tailplane off on landing.

155	K-6cr	3504	M	18.8.90 1815	Saltby		49	N	83

After a soaring flight the pilot flew a long base leg, well back from the runway, and aimed to land near the runway threshold. He decided that he was going to overshoot his aiming point so opened the airbrakes. However, he found that he was undershooting on to the grass so pulled up, without reducing brake, and stalled the glider and landed heavily.

156	K-7	2601	S	6.9.90 1153	Pocklington	P2	39 0	N N	1000 0

Previous flights had coped with the strong gusty crosswind conditions but on final approach the glider hit strong sink and turbulence. This rolled the glider and, despite P1 applying full opposite control and closing the brakes, the glider landed left wing down in the undershoot field

157	K-7	2306	W/O	9.9.90 1200	Kitson Field		49	S	10mins

On his second solo flight the pilot underestimated the wind and sink caused by the passing sea breeze front. As a result he found himself low on finals and although he put the speed up he failed to close the airbrakes. As a result a wing caught in the top of a tree and the glider cartwheeled into the ground. (Can a second solo cope with this!)

158	K-6	1216	M	1.9.90 1600	Kitson Field		27	N	6

The pilot was briefed not to climb too steeply on the initial part of the winch launch. So he held the nose down to allow the speed build up too long. The cable went slack so he released and landed but landing fast bounced back into the air then landed heavily. (The club is now stressing the importance of feedback from early solo briefings).

159	K-23	2996	S	21.8.90 1420	Dunstable		33	N	21

After a check flight, the pilot flew solo. As the aerotow speed built up he eased the stick forward to get the glider running on the main wheel. However, the nose wheel hit the ground and started a P10 and the glider bounced into the air. The pilot released as he was too high then landed heavily, damaging the wing. (K-23s are prone to P10s.)

160	Bocian	1951	M	8.9.90 1410	Crowland	P2	59 0	N N	500+ 11

The post solo P2 was flying the glider with an instructor acting as safety pilot. A high circuit was flown to practice a sideslip approach. After P1 prompted P2 to line up with the centre line he "paid no more attention" (he read the DI book!) P2 hit sink and asked P1 to take over too late. P1 could not stop the glider crashing wing first.

161	Skylark 4	1045	S	3.9.90 1239	Kenley		33	N	74

After a normal circuit the pilot chose a reference point, opened half airbrake on finals. In a strong wind gradient he misjudged his approach and undershot into a bush which he had not noticed. This spun the glider around and substantially damaged the wing.

162	PIK 20e	2513	M	16.9.90 1330	Sutton Bank		41	N	223

The pilot was distracted while rigging and forgot to couple the elevator. After an apparently satisfactory positive control check the glider was aerotow launched. Finding that he could not stop the glider ballooning above the tug the pilot released. He just managed to land in a field by using the flaps to control pitch.

163	K-13	-	M	23.5.90 1100	Thorney Island	P2	29 0	N N	785 -

P1 chose to land on the grass beside the runway to reduce the wear on the nose skid. During the ground run the glider fell into a 4×1ft depression/hole damaging the fuselage. Although P1 had walked the airfield he failed to spot the hole which was outside the area which he had walked. The airfield was only used four weeks a year for gliding courses.

164	Skylark 4	1118	W/O	24.6.90 1214	Lasham		24	N	26

After soaring downwind of the airfield the pilot found that he was low and so made a straight-in approach to the airfield. When near the boundary he realised he would be close to the trees so dived down then tried to pull up over them. However, he did not have enough speed and caught a wingtip in a tree and cartwheeled into parked trailers.

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

Tyler, R. M.	Lasham	8.10	Wright, J. G.	Bicester	10.10
Pryor, S. C.	Booker	11.10	Whittaker, R. F.	Lasham	12.10
Davies, E. F.	Booker	10.10	Vincent, K. G.	Kent	12.10
Pepper, R. E.	Bicester	11.10	Lynch-Jennings, N	Glyndwr	16.10
Mee, M. P.	Booker	11.10	Henderson, A.	Borders	12.10
Rees, M. S.	Booker	16.10	Foster, I.	Cornish	25.10
Lamb, D. E.	Booker	8.10	Puttock, D. S.	Dartmoor	25.10
Deb, M. N.	Booker	11.10	Judd, D. M.	Wrekin	30.10
Bell, Christine	Kent	11.10	Cutty, K.	Shropshire	14.10
Fairley, S. T.	Northumbria	21.9	Lovegrove, R. A.	Phoenix (in Austria)	17.10
Corcoran, M. J.	Derby & Lancs	8.10	Suttle, V. L.	Clevelands	19.8
Anderson, J.	Connel	3.11	Greenhill, D. J.	Bristol & Glos	28.9
Lincoln, B. N.	Portsmouth Naval	3.10	Kay, L. J.	Herefordshire	20.1.91
Allan, J. C.	Bicester	7.10	Dodd, M. J.	Herefordshire	20.1.91
Francis, D. P.	Bicester	16.10			

Wilson, K. M. H.	Booker	12.10
French, A. J.	London	14.9
Bint, T. E.	Kent (in New Zealand)	3.2.91
Atkinson, P.	Bicester	4.10
Best, G. A.	Culdrose	11.10
Morgan, W. D.	Black Mountains	12.12
Younger, T. D.	Northumbria	21.9
Bain, A. C.	London	17.9
Bell, J.	Borders	24.2.91

SILVER BADGE

No.	Name	Club	1990
8568	Melville, I. R.	SGU	7.10
8569	Tobin, R. J.	Humber	9.9
8570	Anderson, J.	Connel	3.11
8571	Croll, G. J.	Rattlesden	4.8
8572	Moses, R. T.	Bristol & Glos	28.9
8573	Tempest, B.	Welland	30.8
8574	Bagshaw, K. D.	622 VGS Upavon	4.8
8575	Birch, J. L.	Cambridge Univ	17.8
8576	Dunlop, M. P.	South Wales	26.5
8577	French, A. J.	London	27.5
8578	Fitzsimons, V. G.	Chilterns	8.4
8579	Evans, I. M.	South Wales	25.7
8580	Hornsey, L.	Chilterns	24.3.91
8581	Hill, J. A.	Two Rivers	29.3.91

BOOK REVIEW

Q & A for Glider Pilots by Chris Robinson, published by Desk Top Studio at £8.50 including p&p

A very great deal of time and effort has obviously gone into this book and I am reluctant to bash somebody's brainchild, however lightly, but it seems to me to be a good idea that hasn't quite worked.

It's more the schoolmasterish/exam tone than the content and personally I found that something of a bar to learning anything useful. A bit too academic for my tastes. For example, academic papers often begin with a more or less relevant quote from some piece of literature – usually written in an obscure dialect of cryptopygmy, and then left untranslated to demonstrate that the reader doesn't know very much.

The book's quote from **Alice's Adventures in Wonderland** is apt but arch, and the author's preamble contains a rather splendid "not my fault, mate" suggesting that whatever you may find wrong with the publication there is a very good reason for it! Too true, but why bother to say so! There's much good, useful stuff in Q & A – let it stand up for itself.

STEVE LONGLAND

SOMETHING SPECIAL

Bert gained his Silver badge in 1949 at Scharfoldendorf and was in the BAFO competition at Gütersloh that year. He says that because he was flying a Minimoa, Wolf Hirth took a special interest in him and witnessed both ends of his Silver distance.

Those were the days my friend, we thought they'd never end. I mean, back when I was liaison to the British Air Forces of Occupation in Germany. Membership in the AHQ BAFO Club, RAFGSA, allowed me to learn to fly gliders at Scharfoldendorf.

Like everyone else those days, I learned fundamentals in an SG-38 primary, transitioned to the Grunau Baby and eagerly awaited graduation from mere circuits to real soaring flight. The kind you read about in the books. You know, slipping the "surly bonds of earth" and all that.

My first chance came one day in early March. The wind appeared to be blowing on to the north ridge across the valley from our launching site. I drew the weather flight. The CFI suggested a good launch might provide an opportunity to cross the valley and probe the ridge. It worked.

Once there, the variometer needle suddenly rose to indicate lift and the altimeter confirmed that the Baby was indeed climbing. And then, at that very moment, it began to snow!

At first, the snow was light. The ridge remained clearly visible. I soared happily back and forth climbing steadily along the face of the ridge and then finally rising well above it. The lift was strong to about 600m over the ridge and widened with height.

An inadvertent turn towards and over the ridge made it quite clear why the instructor insisted one should always turn away fromt he ridge. Those tree tops seemed to leap hungrily toward the Baby! Fortunately, that error only cost about 30m. I was able to regain the lift area in front of the ridge. Always made turns away from the ridge after that, you know. Lesson learned.

It was not long before others launched and crossed the valley to enjoy the lift on the ridge. Unfortunately, the snow increased in intensity and the sky became completely overcast. A cold winter's day indeed. Not the sort of day you read about in books, "sun-split clouds" and all that.

The Baby's open cockpit seemed to both collect and concentrate the cold. After several more beats back and forth on the ridge, growing colder and colder with each turn, my spirits (though not my body) were warmed by a wave from the Squadron Leader sliding past snug in the fully enclosed cockpit of a Minimoa. (Yes, at the time, it did seem that rank hath its privileges.) He smiled and sailed serenely on.

I, on the other hand, with teeth chattering away, slowly succumbed to a stiffening of the fingers and an increasing numbness of both nose and ears. With a vow to wear gloves and proper headgear in the future, I returned across the valley to the landing area. Another lesson learned.

While that flight lasted only half an hour and took place many years ago in a land faraway, it is one that will never be forgotten. Indeed, those were the days my friend. Perhaps, in memory, they will never end.

(A sergeant in the American Air Force at the time of this flight, I subsequently soared to the rank of colonel. Now retired, I attended a course at the Midland GC last summer.)

If you have had a special flight and would like to tell us about it in not more than 750 words, please send it with a head and shoulders photograph and a few details about your gliding experience.

CLUB NEWS

Copy and photographs for the August-September issue of *S&G* should be sent to the Editor, 281 Queen Edith's Way, Cambridge CB1 4NH, tel 0223 247725, to arrive not later than June 11 and for the October-November issue to arrive not later than August 13.

GILLIAN BRYCE-SMITH
April 17

ANGLIA (RAF Wattisham)
One of our K-13s is having its wings re-covered and the K-8 has been restored by many helpers with special thanks to "Mouse" Akroyed, John Hicks and Chris Webb. Chris is leaving us and our thanks for his efforts as engineering member. Mike Salter is taking over.

We have won the Bicester cup (an RAFGSA award). Every member can take pride in this achievement as only through hard work and good team effort can awards of this nature be won.
J.R.C.

ANGUS (Arbroath)
Our annual dance was a great success with awards going to Malcolm Watson (most improved pilot): Francis Webster (best flight) and Bob Welch (ladder trophy).

The April flying week was marred by howling gales and squalls, nevertheless some pilots had good flights Congratulations to Jim Forbes on his Bronze badge.
D.A.P.

AQUILA (Hinton in the Hedges)
The 1990 awards were presented at the annual dinner to John Cooper (best *ab-initio*); Jon Crewe (best flight); John Rayment (best height); Richard Collins (John Wright trophy) and Steve Blackmore ("Whoops" award).

At our vigorous AGM in March the committee was asked to prepare a development plan for discussion at a general meeting.

We are celebrating our 25th anniversary and would like to hear from previous members.

Congratulations to Charlotte Rose on going solo with the Upward Bound Club.
J.R.

BATH & WILTS (Keevil Airfield)
Congratulations to Peter Holt, Catherine Jefferies and Pete Thornbury on going solo and to Dave Smith on his Bronze badge.

Our Auster tug made a welcome return after a considerable delay. Our first training week of the year was a disappointment with only two flying days. Despite soaring days nobody has done a successful cross-country but there is much activity, mainly with Cs of A.
R.H.

BLACK MOUNTAINS (Talgarth)
Diamond height in April! Congratulations to Tim Hurn who flew his Ventus to 21 000ft asl on April 14 and to Godfrey Herren for gaining Gold height with a climb in his DG-300 to 13 500ft asl on March 25, both in NE wave.
J.G.

Anglia GC's CFI, John Hicks, holding the Bicester cup with, l or r, Chris Webb, Tim Price, Andy Green, Mike Salter, Gwyn Thomas and Jim Coughlan.

BOOKER (Wycombe Air Park)
During a very successful 1990 eight two-seater records and five single-seater records were claimed by our pilots. Congratulations also to father and son Mike and Jerome Buckley, who went solo within an hour of each other, and to Tim Jenkinson who gained his Silver badge, Diamond distance and goal and an AEI rating in one season.

Basil Fairston, having moved to Leicester, retired as general manager with Derek Godfrey taking his place and our CFI, Graham McAndrew, has become a national coach, Alex Evans is now CFI with Dave Caunt as deputy. Our thanks to Basil and Graham for all their hard work.

New ATC regulations mean that all visiting tug and motor glider pilots have to obtain landing information by telephoning prior to their departure, or calling on 129.97 on approaching the field.

We now have 20 gliders from a Prefect to a Pegasus with six two-seaters and five serviceable tugs. Visiting pilots are always welcome and our Regionals start on July 27.

Best wishes and congratulations to Dave Watt on being in the British team for the World Champs.
M.J.

BBC GROUP (Booker and Lasham)
The Group flies mainly from Booker but also operates from Lasham and has been in existence for over 30 years with a membership of about 60. It has a K-21 and a Pegasus.

Tony and Anne Crowden of Booker recently sent father and son Mike and Jerome Buckley solo, Mike (a BBC engineer) first by about 5min. (See photo.)
R.E.N.

BUCKMINSTER (Saltby Airfield)
Our second Puchacz brings the club fleet to three two-seaters and two single-seaters. A syndicate Rallye is useful as a back-up and second tug - our thanks to Jim, Phil, Dave and Ray. Bill Munns is designing and building us a second winch.

We are now open seven days a week and visitors are always welcome.
D.H.

BURN (Burn Airfield)
We had a cluster of Diamond and Gold heights during our expedition to Aboyne in April. Amongst the Diamonds were John Stirk, chairman, Bill Craig and Martin Holland, Martin after only two seasons. Fred Mann, Bill Jepson and Paul Morris gained Gold heights. Our thanks to Deeside for their help and hospitality.

At home we held a disco and supper when solo certificates were presented.

Congratulations to Bill Jepson on his full category rating and to Darren Bagga and Andrew Jackson on going solo.
D.G.K.

CAIRNGORM (Feshiebridge)
With the milder winter, we were fully operational by March with the new K-10 generating much enthusiasm. The two-drum winch is in use, we have an influx of new members and celebrate our Silver jubilee this year.

There are still places on our courses between August 5-9.
S.M.

CHILTERNS (RAF Halton)
James Dean went solo on his 16th birthday and now has his 5hrs; David Allison has a Bronze badge and Luke Hornsey completed his Silver in March with a distance flight.

We had a record number of launches (6100) last year and a lot of cross-country kilometres were flown.

We now have a superbly fitted catering bus, donated by the Aylesbury Bus Co, with excellent food produced by Marion Lacey.

Visitors are welcome and if by air fly your circuit and land on the ridge side of the centre markers (if in position) and we will give you a free winch launch, subject to the flying list. If you need converting to winch launching, we will oblige at very reasonable rates.
R.E.W.

CLEVELANDS (RAF DISHFORTH)
We have said goodbye to Martin and Wendy Durham with many thanks for their very efficient work over the years, Martin as CFI and Wendy as chief soup dragon. Thanks also to Steve Olender for stepping in as CFI until the return of Dick Cole from the Gulf. Dick and his wife Annie are now here and we wish them a happy and successful time with us,

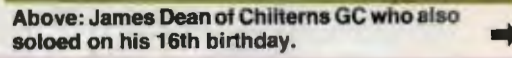
Congratulations to Rob Martin on going solo and to Martin and Jackie Clegg on their Bronze badges.
J.P.

Above: Kevin Millar of York Gliding Centre who went solo on his 16th birthday.

Northumbria GC's DG-100 on display at the Gateshead Metro Centre. Photo: John Graham.

Above: BBC Group members Mike and Jerome Buckley, father and son, with their Booker instructors, husband and wife Anne and Tony Crowden, on the left. Below: Instructor Glen Barratt congratulating Dukeries GC's Colin Pellatt after his solo.

Below: Annabel Musk of Fenlands GC after her first solo.



Above: James Dean of Chilterns GC who also soloed on his 16th birthday.

LEADING EDGE TECHNOLOGY

Motorola, a world leader in Electronics, is proud, to be the official sponsor to the British Gliding Team, in the World Championships at UVALDE, TEXAS.

'Leading Edge Technology' is the natural link between Motorola and the sport of Gliding. In the way that advances in Material Technology and Glider Design have made possible levels of performance in Gliding once never thought possible, so have our Cellular Technology and Product Design established us as the World's No. 1 in Cellular Communications.

Motorola was the first company to introduce a Hand Portable CellPhone, the first to produce a Personal Cellphone, that is the smallest, most advanced product in the market and the first to develop products for the next generation of Digital Technology in Cellular Communications. Even in Gliding it is Motorola's Technology which is at the heart of the EW Electronic Barograph – bringing new levels of information to the pilot, improving performance or simply helping him figure out where it all went wrong!

British Gliding Team

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And, when that last thermal doesn't quite get you home you can rely on your MOTOROLA CELLPHONE to speed your retrieve.

CONNEL (Connel Airfield)
Our annual dinner in January was enjoyable and well attended – our thanks to Danny Clark the organiser. At the AGM in March the chairman, John Anderson, paid tribute to the way members worked together as a team.

Generous grants from the Highlands and Islands Development Board and the Argyll and Bute District Council enabled us to buy a Puchacz which is giving us longer flights, often in wave.

The new committee are fund raising for a high performance single-seater and a permanent clubhouse. Reduced rate early morning flying, an open day and expeditions are being planned.

Congratulations to Alex Fleming on his full instructor rating.
R.W.

CORNISH (Perranporth)
We are planning a task week at the end of May and expeditions to North Hill and Aboyne.

Our 34th AGM was in March with Ruth Phillips presenting the numerous cups and trophies.

Unfortunately we had to increase subscriptions but have reduced junior subscriptions (*ie* under 18 years or those in full-time education) to encourage more youngsters.

We congratulate John Shaw on his BGA inspector's rating. He is rebuilding a T-21 and has bought a Grasshopper.
G.A.H.

COTSWOLD (Aston Down)
At our annual dinner-dance trophies were presented to Tim Macfadyen (best flight and ladder); Doug Gardner (height); Dave Reynolds (pre-Silver); Jim Rodgers (handicapped 100km); Jane Randle and Mike Pearce (two-seater) and Bill Ovell (over 50s).

Congratulations to Steve Manktelow and Dave Moore on Gold heights. Cross-country flying started in March with flights of over 200km. Our club competition is from July 29 - August 3 and visiting competitors should phone Ruth (CFI) on 0453 832061 to book.

Despite being a non-aerotowing site, the Open Class has been breeding and two Nimbus 3s have joined the ASH, Nimbus 2, Kestrels and 17ms. Is this a record?
G.M.

COVENTRY (Husband Bosworth)
Our season started on March 1 with Steve Crabb, Norman James and Alan Kangurs flying 100kms, Steve being the first.

The undershoot field has been drained, the new winch is almost ready, the courses have started and we are flying seven days a week.
T.C.W.

CRANWELL (RAFGSA)
An influx of American troops from RAF Nocton Hall boosted our winter launch rates and gave one solo while Upwood GC had a successful weekend visit.

The motor glider has been busy with field landing checks. Congratulations to John Lawson on his MGPPL and to Simon Pascoe and Neville Weir on becoming assistant Cats.

Due to the Biggin Hill move things are becoming increasingly disrupted which we are trying to overcome.
B.S.

DARTMOOR (Brentor)
At the AGM Chris Matten was succeeded as site manager by Colin Boyd and Pat Brady took over from Alan Huxham as safety officer. Membership doubled in 1990 and some of the increased capital bought a K-7.

We have four courses, one for women only, and our 1991 charity is muscular dystrophy. Colin Sanders was given honorary life membership for tremendous work for the club and John Bolt won the trophy for the first cross-country from Brentor in 1990.
F.G.M.

DEESIDE (Aboyne Airfield)
We had an excellent start to the spring wave season with Gold and Diamond climbs (six Diamond heights on April 6) with a maximum height of 22 500ft.

We have a club ASW-19 to complement the Sport Vegas and a syndicate LS-7. Our second runway, 540 by 7m and in tarmac, will be ready by mid September.

At the AGM Lionel Sole, Heather Clark and Willie Stephen joined the committee. Many thanks to the retiring members. Glen Douglas was awarded the chairman's trophy for his work as secretary.

Our lease now runs until 2016 giving additional site security.
G.D.

DEVON & SOMERSET (North Hill)
The Husky has been re-energised, a third SF-27 has arrived and a further K-6CR brings the total to eight. Expeditions are planned to Talgarth, Portmoak and Glyndwr (with the K-13).

Ron Johns celebrated his full category instructor rating with the first cross-country of the year, an O/R to Okehampton.

We plan to extend and rationalise the trailer park/hangar apron to give more parking and sheltered winter storage.
I.D.K.

DUKERIES (Garnston Airfield)
Colin Pellatt and Peter Uden have gone solo; Graham Goucher has both Bronze legs and Ian Thompson is now an instructor.

CFI John Swannack, Peter Clayton and Tony Smurthwaite have bought a fine K-6. After months of hard work our hangar is nearly completed.
N.W.

EAST SUSSEX (Ringmer)
In addition to a brace of rejuvenated Olys, a Skylark 4 has been completely rebuilt by James Edwards and a second club K-8 has also arrived.

At the AGM a new committee was elected with Fred Bishop as chairman. Congratulations to the cup winners:- Phil Staplehurst (most progress); Mike Pierpoint (best flight in a wooden glider); Barry Skilton (fastest 100km from Ringmer); Steve Barter (best all round performance) and Trentham De Leliva (service to the club).
L.M.

ENSTONE EAGLES (Enstone Airfield)
Good use has been made of the winter to work on the clubhouse. Our thanks to those giving up so much time.

Our first open weekend is in April when we hope to recruit some new members.

Congratulations to Roddy Maddocks on his AE1 rating.
M.F.S.

Obituary - Brian Jackson
Brian, one time CFI, passed away recently after a long illness. He retained his interest in the club for as long as he was able to do so. His influence on the club has been widely recognised and he will be missed by many.

Our condolences to Brian's widow, Gail, who is an instructor, and to his son Robin.
Mike Somerset

ESSEX (North Weald)
We have bought Ridgewell Oatly Airfield in North Essex and plan to move towards the end of 1992. The grass site is orientated NE-SE (05-23) with a runway length of just over 3000ft by 650ft.

We hope to spend some weekends there this summer once we have a winch to supplement our Super Cub. Contacts are John Ley (secretary) on 0277 210856 and Brian Murphy on 0438 861441. The site will help us to get back to cross-country flying, competitions and training in free airspace.
J.A.R.

FENLAND (RAFGSA)
Our proposed move to RAF Swanton Morley has sadly fallen through and we remain in our tin hut at Marham.

Our lady paraplegic, Annabel Musk, went solo on Easter Saturday and has won the Douglas Bader scholarship to learn powered flying. Andrea Gallagher also went solo.

A small wave hunting expedition to North Wales discovered a lot about mud while Mick Owen took his ASW-19 to Sisteron, France and found some good soaring.

After a two year romance with piano wire a return to seven strand cable has increased our launch rate.
M.A.E.

FULMAR (RAF Kinloss)
After a desperate 12 months due to postings and weather we are slowly picking up again, Mick Simmonds is CFI, Carol Simmonds, Bill Gordon and JJ are full Cats with Geoff Matthews the only assistant Cat.

Two went solo at the Easter *ab-initio* course and more were ready but the weather intervened. The annual expedition will probably be a return to Feshiebridge.

For anyone passing our way, we fly weekends and public holidays.
W.G.

GLYNDWR (Denbigh)
We are now a "proprietor's club" with Dave Bullock as professional manager/CFI. At the inaugural meeting Rodney Witter thanked the retiring CFI, chairman and committee for their help during the first year. Dave may be contacted on 0745 813774.

We were saddened by the death in January of Brian Sedgwick, one of our instructors. We lost an enthusiastic friend - our deepest sympathy to Shirley and family.
T.K.

GRAMPIAN (By Laurencekirk)
April 13 gave so many thermals everyone got a soaring flight. The Capstan is flying well after its C of A and looking very noticeable with its new paintwork.
R.J.S.

HEREFORDSHIRE (Shobdon)
We have had a crop of wave flights, many to over 15000ft. Our Dunstable visitors enjoyed the wave week and a number stayed on over Easter. With strong northerly winds the local hills produced lift all day and it was possible to drop the tow at 1000ft and climb in hill lift to contact wave, fly over Builth Wells, drift down to Brecon and soar back along the Black Mountains.

We are operating seven days a week from June 1 to August 26 and for a week starting October 26 Chris Rollings, with the BGA Janus, is offering advanced wave soaring training.
R.P.

KENT (Challock)
The chairman, secretary and treasurer were re-elected at the AGM with Len Clayton and "Nobby" Clark joining the committee.

Our Capstan, which we had since new, has been sold to Ulster GC and replaced by a Puchacz which is proving very popular, Mike Kemp is building a dual purpose trailer for it and a K-13.
A.R.V.

MARCHINGTON (Marchington Airfield)
The club two-seater trailer was refurbished enabling us to take the Super Blanik to Camphill for a March weekend and the Pawnee tug has been quietened by fitting a four blade propeller.

A K-23 has joined the club fleet and the DG-500 is due in June. Meanwhile preparations for moving site are still progressing.
A.R.

MENDIP (Halesland)
Congratulations to Barry Goodyer on soloing the Falke and to our CFI Peter Turner on qualifying to teach SLMGPPL.

The clubhouse now has drainage and a septic tank and inside toilets should be completed for our June courses. Our second Bocian is very popular but we had to sell our K-7

The lecture courses were well attended and covered a wide range of subjects.

Our best wishes for a speedy recovery from a heart attack to Ken Wiseman.
T.A.D.H.

MIDLAND (Long Mynd)
The AGM was well attended and a month later in March nearly 80 members enjoyed the annual dinner-dance when the trophies were presented. Roy Dalling won two for the longest flight and closed circuit and Keith Mansell was awarded a trophy for his successful negotiations over four years with the Forestry Commission to buy 64 acres to the south of the airfield.

The early courses are well booked and we are running one for women from August 27-30. Our new course secretary, Janet Stuart, works during the week and Dave Sprake looks after the office at weekends. Our custom-built winch should be ready by July.

W. Brewis went to 7890ft asl in east wind wave on March 27 and on April 7 J. Ballard gained Silver height and K. Laidler went to 11200ft asl in wave.
A.R.E.

NEWARK & NOTTS (Winthorpe)
Congratulations to Keith Dykes and John Maddison (assistant instructor ratings); Mike Evans (Bronze badge); Andy Summerfield (going solo and two Bronze legs); Roland Carver (soloing in the Moor Falke) and Dave Alvey and Bill Griffith (Bronze legs in the original K-8). We now have a second K-8 and the Rowe/Balogh Skylark 2 and the Waller/McFaddan/Heppenstall Oly 2B are almost ready to fly.
M.A.

Obituary - Arthur Foster
With great sadness we report the recent death of Arthur Foster. He learnt to fly during the war, finishing on Lancasters - indeed he finished flying for 40 years before taking up gliding with us and soloing last year.

He recently wrote to say how he regretted not taking up gliding earlier. We retain happy memories of a member for whom no task was too much trouble. Our sympathies go to his wife and family.
Mike Abrahams

NORFOLK (Tibenham)
We hosted the BGA annual dinner-dance in March and amongst the highlights was a superb slide show by Ken Wallis (of autogyro fame) and an opportunity for members to fly a Discus and SZD 55. (See BGA News.)

Club trophies were awarded to Anthony Walsh (longest flight and club ladder); Brendan Sergeant; Roy Woodhouse; Ray Hart; Derek Kitchen; Billy Middleton; Simon Denham (youngest solo); Les Roberts (oldest solo); Richard Harrowven; Eric Arthur; John Allen; Roger Abrahams; Jerry O'Dell; Norman Clowes (spring task week) and Bonnie Wade (harvest task week).
R.J.H.

NORTHUMBRIA (Currock Hill)
In March we held a promotional display at the Gateshead Metro Centre featuring a DG-100, a model of the airfield and spectacular photographs taken from our gliders by Clive Dickenson. (See photo.)

We now have our "Boutne" winch from Portmoak which we are vandal proofing before it goes into service. At a "wings" night 13 recent solo pilots were presented with their new NGC wings.

In line with our policy to progress to more cross-country flying, two of our instructors will be attending the BGA instructors' cross-country course at Pocklington.
R.D.

NORTH WALES (Rhuallt)
The winter was marked by strong winds, rain and snow, interspersed with the occasional wave day though with no great heights. By April the field started to dry out and we have five club weeks/courses planned.

Membership continues to grow as does the number of syndicates, now comprising two T-21s, a Skylark 3B and a Pirat.
N.D.J.C.

OXFORD (Weston on the Green)
On April 14 we had the unusual experience of flying in wave in a NE wind. Top of the pile was Glen Bailes at 5100ft.

We congratulate Florian Slater on going solo.
F.B.

PETERBOROUGH & SPALDING (Crowland)
Lois Thirkill and Linda Heiron are our first female pilots to go solo for some years. Congratulations also to James Crowhurst for his 16th birthday solo, the first for the club and which gave us good local press coverage.

Our thanks to Harry Worth for his work on the club aircraft.
M.J.

PHOENIX (RAF Brüggen)
The past months have been quiet with the Gulf war but members are returning in time for the soaring season. We say goodbye to "Jules" Grunwell (who completed her Bronze badge before leaving), Al Clarke and Bob Brownlow. We will miss them and are grateful for their hard work.

Congratulations to James Colter on going solo and to Jane Kennedy and Helen Tate on each gaining a Bronze leg.
H.T.

PORTSMOUTH NAVAL (Lee-on-Solent)
We welcomed Chris Joly back from service abroad. Congratulations to Tony Sowersby (Bronze badge) and Steve Briggs, Keith Howard, Mike Stainer, Ashley Sawle and George Bell on going solo, all but one during our Easter course.

At the AGM in March the following awards were presented; Chris Joly (achievement in the Inter-Services Regionals and a cup for flying achievement); Ken Stephenson and David Wadham (cups for service to the club); Tony Sowers-

James Crowhurst of Peterborough & Spalding GC who soloed on his 16th birthday. He is photographed with his father Dave, far right, who flew the tug and Norman Brown, CFI.

by (best *ab-initio*); Tony World and Michael Moore (flying achievement) and John Hale (back seat hog of the year).
Y.C.

RAE (Farnborough)
Congratulations to Andy Taylor, Peter Harrison and Jez Quirk on going solo and to Ken Hansel on resoloing.

We now have mid week flying and a questionnaire on our future sent to members resulted in a highly favourable and positive approach.

We went Italian for our annual dinner in February.
M.T.D.

RATTLESDEN (Rattlesden Airfield)
David Simpson, Tony Bartlett and Reg Smith have gone solo; Keith George and Tony Howlett have Bronze badges; John Goldsmith, David Johnstone and Mark Wright have Silver badges, Mark gaining his 100km Cross-country diploma, and Humfrey Chamberlain has a Gold badge and Diamond goal.

Mark Wright won a trophy for all his work as social secretary and the 100km cup. Steve and Mark Wright have their AEI ratings and Martin Raper is an instructor.
M.R.

SCOTTISH GLIDING UNION (Portmoak)
The pleasure of commissioning our new Supacat winch on March 14 was quickly dispelled five days later by a hangar fire, caused by an electrical fault resulting from heavy wind and rain, which destroyed a Capstan, T-21s, K-13 and K-8. Miraculously a tug, the Falke and eight other gliders in the hangar were virtually unscathed.

Congratulations to Jim Lillie and Ian Trotter (going solo); Stan Perry (Bronze badge) and "Rusty" Russell (AEI rating). The SZD 55 demonstrator, which Chris Rollings brough to the CFI's meeting in February, proved very popular, as are the Tuesday evening sessions led by Colin Hamilton for pre-Bronze to aspiring Silver badge pilots.

Our sympathies went to Isobel Lindsay's mother, sister and friends following her death in a gliding accident at Connel in February.
M.J.R.

SHALBOURNE (Rivar Hill)
After a number of break-ins and thefts we are improving our security. The Land Rover and other equipment is being stored in the 40ft container in front of the clubhouse (due to be moved when the ground is dry enough) and thanks to Geoff Nicholls we have large gates at two of the field entrances.

Also, thanks to Carol Pike, we have a windsock and a large section of the hangar has been re-skinned by Jonathan Mills (who has gone solo) and John Higgs.
S.C.O.

SOUTHDOWN (Parham Airfield)
At our AGM in March Brian Bateson, Peter Henderson and Dave Connaway retired from the committee of management as chairman, treasurer and ground equipment officer respectively. The healthy state of the club is a testament to the significant contribution they have made over the years for which we are grateful.

We welcome Derek Eastell, chairman, Nigel Hancock, treasurer, and John Robbins, ground equipment officer. Paul Fritche, Chris Hancock, Rod Walker and Steve Way are assistant instructors and Barry Bartlett, Martin Roberts, Colin Robinson and Derek Tagg have AEI ratings. Our congratulations to them and to Tim Barnby, Anthony French and Kevin Pilkering on going solo
C.M.R.

SOUTH WALES (Usk)
John Phillips and his team have been fettling club equipment and built a first class briefing room. We have a new K-13 and a winch is being built.

Again this season we are flying seven days a week and course bookings are well on target.
N.S.J.

STAFFORDSHIRE (Morridge)
At the March AGM Geoff Oultram and Peter Gill were re-elected as chairman and secretary and Anne Walklate and Alan Jones as ordinary members.

Awards went to John Burke (longest cross-country); Nigel Jennings (Gold height gain); Ted Hobby ("Grotty Potty" for a field landing the wrong side of the boundary fence) and Geoff Oultram (for only the second 5hr flight from Morridge). During a successful expedition to the Borders GC Geoff Oultram (Dart 15) just missed Diamond height but gained Gold on his first wave flight and Ted Hobby (Skylark 4) achieved 5hrs and Silver height with his barograph switched off.
K.L.A.

SURREY HILLS (Kenley)
Things continue to look brighter. We have four two-seaters, a single seater, two winches and a new hangar. We are within easy distance of London for those considering summer evening flying when we operate throughout the week from 0900 to dusk.

Chris Ebbs is our new professional instructor but we are still short of instructors - is there anybody out there?
S.E.A.

TRENT VALLEY (Kirton in Lindsey)
Our annual dinner was greatly enjoyed and we were delighted to entertain guests from the Army and Humberside ATC. A posse of pilots attended the BGA dinner where John Rice was awarded the Rex Pilcher trophy (see BGA News). In addition to his first 500km John also has all three Diamonds.

Congratulations to Patrick Holland who proposed to Tracy Walker on a dual flight and placed the ring on her finger.

Our 25th anniversary is marked by the presentation of an engraved tumbler to each member and by several events. We first started flying ➡

with a T-31 and hope to soar in one at Kirton on June 1-2.
M.P.G.

TWO RIVERS (RAF Laarbruch)
We have done a great deal of cross-country flying and congratulations to Mick Ferguson (Gold distance and Diamond goal); Jon Hill, Kev Berry and Kev Morley (Silver distances to complete their Silver badges); Richard Livings (both Bronze legs and Silver height) and Simon Urry for Silver height and duration at Systeron.

Our new K-13 is very popular and the full Cats are enjoying flying the ASW-22. Garry and Linda Livings are returning to the UK. We will sorely miss Garry as a instructor and Linda for her catering and wish them well.
L.F.

ULSTER (Bellarena)
Harry Boyle returns as chairman and Mervyn Farrell steps up from DCFI. We are grateful for the efforts of Alan MacKillen and Jim Weston during their tenure.

A second Capstan has been bought from Kent and arrived in time to shorten the Easter week list. On Easter Monday we hosted the first "fly in" of the newly formed Northern Ireland branch of the PFA.

Carl Beck, a member since our inaurgural meeting in 1930, celebrated his 80th birthday in March. Also a long time member of the Midland GC, Carl no longer flies. Although in failing health he remains a mine of information, facts and figures about gliding and aviation generally.
B.T.

UNIVERSITY OF SURREY (Lasham)
The K-21 has a C of A and new instruments, radio and cockpit finish, completed with the generous help of Ralph and Steve Jones of Southern Sailplanes.

Last year we won one day of the Inter-University task week, bungyed at the Long Mynd and flew many cross-country miles around Lasham. Laura Williams, Jonathan Young and Helen Bond went solo; Paul Kirkham flew 49.5km and Alistair Nunn did well in the Regionals.
S.L.

VALE OF WHITE HORSE (Sandhill)
Our thanks to Derek Piggott who was the guest speaker at our very successful annual dinner in March.

This spring saw the arrival of the workshop and the recovering of the K-18 with "Di's Diner" providing good food for the workers. Our current projects are burying the power cables at the west end of the site and replacing the Blanik with something a bit better. We hope to soon have a tug based on the site.

Congratulations to Paul Mansfield on his assistant instructors rating.
G.J.W.

VECTIS (Isle of Wight Airport, Sandown)
Thanks to members, our club K-8 has been refurbished and is immaculate.

The season got off to a good start at Easter with soaring and plenty of trial lessons. There are plans for a clubhouse and possibly a T hangar.

John Chape gained Silver height and distance during our club expedition to Saumur, France last year.
L.T.

WELLAND (Lyveden)
The dinner was most enjoyable with amusing speeches from Peter Andrews and Norman James. Trophy winners were:- Richard Large (distance cup); Peter Strong (duration); Paul Freer (*ab-initio* trophy); Paul Warburton and Ken Payne. Peter Andres (CFI) and Peter Strong (chairman) have retired and we thank them for their hard work.

The new committee, elected at the AGM, is Eric Reeves (chairman), Barry Chadwick (secretary), Phil West (treasurer) and Mick Esden, Brian Neal, Norman Martin and Dave Strachan.
R.H.S.

WOLDS (Pocklington)
With our new Supacat winch, extra land and stranded cable we have smoother, higher launches and an increased launch rate. Holiday courses are well subscribed and our new Astir CS77 is in good order after a lay-up

We are looking forward to another splendid Two-seater Comp with even more entries and have entered the Inter-Club League after a long absence.
N.R.A.

YORK GLIDING CENTRE (Rufforth Airfield);
We have upgraded our fleet and ground equipment. One winch has a new engine and we have a new ground engineer, Rick Hornsey. The Skylark 2B we have had for 25 years has been restored thanks to aircraft engineer Dave Allan and Alan Kilbride. One of our K-13s has been refurbished, a syndicate Falke has had a re-build and the training fleet has been augmented by a K-7 by courtesy of McLean Aviation.

The course season started with a successful four day training session for aspiring Bronze pilots and we are heavily booked for *ab-initio* and advanced tuition.

A highlight will be the Vintage Glider Rally we are hosting for the second year in late spring. By then our new caravan site will be in use.

Congratulations to Thomas Davies (16) on going solo, to Dave Rowntree on his Bronze badge and our thanks to our new *chef de cuisine*, Sue Allan.
A.W.

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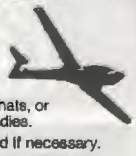

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WAY OFF TRACK

Kept on ice

Penguin's absence from the last *S&G* was not, as is being unkingly suggested, in response to public clamour. Nor was it a deplorable dereliction of duty once the first glimmber of spring sunshine had lured him to the airfield after a winter's incarceration in his office slum.

It was due, said a hi-tech eleventh-hour *billet doux* from the Ed on my fax machine, to the last-minute arrival of ads "which we couldn't refuse and which took away your space."

Yet again, dear reader, art gives way to Mammon. But after years of oppression from successive CFIs, club treasurers and syndicate partners, it is no longer in Penguin's nature to stand on affronted pride.

I know when to give way gracefully. When it comes to humility, I'm the greatest.

Glide to work? I work to glide

An overweening ego and sense of self-importance usually prevents a revealing exposé of what precisely is in any ad-man's mind so I am at a loss to express anything but mystified delight at the full-page picture of Mike Thick's ASH-25 which appeared in all the "heavy" daily and Sunday national papers recently. It was merely headed "The New Vauxhall Carlton" in 48pt caps.

You could have fooled me.

There was no other copy but clarification, of a sort, came on turning the page for the next right-hander carried a smaller picture of, indeed, a motor car with copy and the heading, in matching caps, "Why Not Glide To Work?"

The inference I draw from this is that Vauxhall's designers forgot to include an engine when they schemed the new car – which may be alarming for the over-stressed executive faced with ➡

pushing it twice daily through the traffic maelstrom of the M25.

But we ought to be grateful that, somewhere in the ranks of the laughably pompous who make up the advertising trade, there presumably lurks *one of us,* who cleverly worked in such an eye-catching and widespread plug for soaring at General Motors' expense.

Its first appearance was in the *Guardian* on March 11 and, true to form for what we love as the *Grauniad,* looked as though it was printed in cold lentil soup. It looked a lot better, sometimes in colour, in the *Independent* and other broadsheets later.

It is sobering to think that each insertion probably cost as much as the ASH-25 when new and to contemplate what the movement could do with the entire campaign budget. Not that much of that lolly passes down to the hacks that fill the accompanying editorial space.

Over the years I have filled an acre or two of the *Guardian* and the other "quality" nationals myself – but I have yet to get even a ride in an ASH-25 let alone aspire to a share in one.

Soaring sales slogans

This rather odd and blatant misrepresentation of the ASH-25 as a car prompts consideration of how more sailplanes could be introduced to other carmakers' marketing campaigns.

How about the LAK-12 being enrolled to boost a down-market car as The Sporting Woman's Lada? This would neatly capture its origin in one – albeit it dissident – part of the USSR while coincidentally giving soaring's lady pilots a plug.

The SZD Junior could be featured by VW whenever that company is pushing A Beetle for the Nineties.

And a Nimbus 4 with, perhaps, Ralph Jones grinning wickedly therefrom, would be just the ticket under the heading The *Real* Range Rover.

Welkom changes

Wrath descended upon poor Penguin's pate some years ago when he arguably misconstrued as demeaning to *indigènes* a reference to "boys" in a letter from Chris Simpson about gliding in South Africa and rashly commented thereon.

So let me be perhaps the first to go into print in *S&G* with an enthusiastic welcome for the momentous sporting changes which are now appearing in South African sport after the courageous initiatives of President de Klerk. With the mass-appeal sports of football, rugby and athletics, and others, already dismantling barriers an IOC delegation is in Pretoria as I write and sporting South Africa could be back in world competition as early as next year's Olympics in Barcelona.

The speed at which the inevitable is, at last, happening matches that at which other barriers in eastern Europe eventually collapsed.

In gliding, we have every reason to welcome the death of *apartheid* apart from human decency. Many of us who have felt unable to sample the fabled soaring conditions in South Africa may now feel the inhibitions of conscience eased. And, of course, we'll all welcome the re-appearance in international competition of soaring pilots from South Africa.

It is to be hoped that, among these, may soon appear representatives of South Africa's black, coloured and Asian communities – already predicted to make a dominant world impact upon marathon and road running, pursuits less dependent upon the addition to sweat and effort of the essential third element in soaring's winning combination, cash.

That said, British gliding has markedly few participants from our own ethnic minorities. Why?

Reach for the sky

A mad-keen teenage Silver C had taken on the job of ladder secretary, the newsletter of a gliding club well known to me recorded recently. "It's good to know someone is taking an interest in the necessary task of building maintenance – perhaps we should get him a real ladder" the editor, a noted sardonic mickey-taker, added facetiously.

Next flying day, an elegant varnished horsebox arrived on the field. The club's newest and very enthusiastic pre-solo pilot, a lady professionally involved in nags, hacks, foals and fillies, jumped down from the cab.

"I've got something here I won't be needing for some months and the club can have it" she said brightly, hauling out a 20ft extensible aluminium ladder, having taken the comment seriously.

What a bounder!

Penguin has never found ignorance of a subject to be an impediment to commenting, like almost every other national paper hack – a sentiment with which Platypus will readily agree. So let me admit that the only times I have seen paragliding in the flesh were from a distance – and then only twice.

On one day when it wasn't worth launching from Talgarth at Black Mountains' rates I sat with my back against the Cirrus trailer, alternately perusing the daily blats and watching two paragliders make slow but inexorable descents of Y Das. Later that week I spent about 20 minutes on an otherwise unexceptional ridge soaring day at a respectable altitude above Hay Bluff watching several practitioners make equally inexorable descents into the Olchon valley.

It was enough to show that the thrill quotient of paragliding would not outweigh for me the deterrent effect of a gammy right ankle and an obvious cardio-vascular inability to emulate a mountain goat. So paragliding is one airsport I am unlikely to sample even though, in my reckless youth and before my ankle was crooked with a fall from a motor scooter outside Teddington TV studios, I used to parachute for fun.

But stepping out from Bill Craig's home near Gt Missenden early one calm, frosty, Sunday morning in January and seeing four brightly coloured hot-air balloons making slow but stately progress low across an ice-blue sky stirred the blood somewhat. It reminded me that a balloon experience is one promise to myself that has for far too long gone unfulfilled.

Speaking of ballooning, but of the now virtually dead gas variety, brings to mind a prison escape plot which was at least as imaginative as the well-known Colditz Cock project, when a two-seater glider was built by irrepressibly escapist PoWs. The one of which I write was somewhat nearer Penguin Place in both place and time for it was conceived among inmates of the Long Kesh camp during the days of Northern Ireland internment in the early 1970s.

Long Kesh, which we all knew well as it was the Ulster GC's site until 1971, also houses one of the Met Office's sounding stations, where radio sondes are sent aloft beneath gas balloons every few hours to be radar tracked in the upper winds.

The internment camp authorities became aware that two internees were showing an interest in aerostatics and ballooning, to judge from the esoteric books their visitors were bringing in. Then a rather odd home-made body harness, some sketches and expert calculations were found during a thorough "rummage" of one of the inmates' huts.

The plot uncovered was to go over the relatively easily scaled wire fence around the particular compound which, being inside a tightly guarded military outer perimeter, was not the ultimate in unscaleability and then hot-foot it into the Met compound one dark night. There, two or three balloons would have been inflated and coupled to the body harness and the plotter who'd won the ballot would have bounded – virtually weightless – over the outer perimeter, and the neighbouring M1 motorway, and then crossed the Co Down countryside towards the border and sanctuary in the south with the aerostatic equivalent of seven league boots.

Low down on New York

I had an astonishing and exciting insight into the US attitude to both airspace usage and the freedom of the common man last November in New York. It was an experience which led me to wonder why American soaring pilots should ever find cause to complain about the FAA and to wish that transatlantic attitudes could be adopted by the authorities at home.

On assignment in NYC, I visited friends about 50 miles out of town for Thanksgiving weekend. On the Saturday, Nigel and I hired a 285hp Beech Bonanza at Trenton, NJ – for no more than a Spamcan would have cost at home but that is bye the bye.

On a windy but brilliantly VFR day we flew up, and then down, the Hudson River corridor at heights never above 1000ft (the corridor extends from the surface to 1100ft), turning at the George Washington Bridge and looking UP at tourist rubber-neckers in the World Trade Center looking DOWN at us.

We were flying through the centre of one of the

most visually exciting and crowded townscapes on earth – and also, incidentally, one with an enormous volume of air traffic and four busy commercial airports within a radius of ten miles. We were flying below the level of some of the higher rooftops and only two or three hundred yards to one side, yet it seemed to cause no one the slightest concern.

The next day we repeated the exercise with a major variation – climbing over NJ to run in above Manhattan just above the terminal control area ceiling of 7500ft. Again, we were flying VFR and were being bossed about by no one at all.

At that level it was blowing like Hell out of the west so we put the nose into wind, throttled back to 90kt IAS (102kt TAS) and hovered – yes, literally hovered – over mid-town Manhattan with a groundspeed of sweet damn all. We then turned north to fly up-river, beyond the TCA boundary, where we descended to make a southward transit of the Hudson corridor again at 600-800ft.

On this particular transit we were bounced around vigorously in curlover as we flew along the crest of the west bank escarpment known as the Palisades, where Wolf Hirth flew an urban soaring demonstration in the early 1930s – when, presumably, the wind was blowing from the east, *on to* the ridge.

Again, no one showed the slightest concern as we bombed past Wall Street and the West Side piers at a few hundred feet, except for one rather statuesque lady in a tiara and a bright green robe who seemed to be waving a cudgel at us as we swept past a few yards to one side and perhaps 200ft above her head.

One has to ask: if our American cousins can enjoy such airspace freedoms – granted it was VFR – why are we in the UK so tightly circumscribed with whole volumes of prescriptions, restrictions, ANOs and other thou-shalt-nots?

Curving

Geoffrey Haworth missed one or two points in his splendid tribute to Alf Warminger in the February issue, p27.

Alf's and Penguin's paths have only ever crossed on two or three annual safaris to Aboyne but I can concur in the subhead to Geoffrey's piece – "a very special Norfolk pilot."

Even after 50 years, his wartime experience as a Hurricane pilot still shines through in his uniquely graceful, tightly banked, curving approaches to the threshold, which were characteristic of the Merlin-engined, tail-dragging, fighters of the time.

They are a fine sight when Alf sets one up for Aboyne's hair-thin runway. An even finer sight is when some whipper-snapper full Cat who wasn't even born while Alf was wearing out his demob suit sees fit to criticise.

Alf is ever the gentleman but has ways of making his views felt. I would have loved to have been the fly on the wall when, still High Sheriff of Norwich, he was detained for some hours in an RAF guardroom during the 1970s for deigning to land out at a V-bomber base.

WARTIME WAVE – 50th ANNIVERSARY

Not all efforts in the Germany of 1940 were devoted to war. Professor Georgii was continuing his investigations into the "föhn effect" at his gliding research institute.

On October 11 1940, one of his test pilots, Erich Klöckner, then aged 27, took off from Ainring in a specially adapted Kranick behind a Heinkel 46 (powered by an Armstrong-Siddeley Panther) and reached a staggering height of 11 460m. The instruments on board recorded an outside air temperature of −56°C, and Klöckner returned with frozen ear-lobs and frostbite in his right hand, which gave him trouble for years afterwards.

The flight never reached the recognition it deserved because of the war and couldn't be homologated by the FAI as a world record. Fifty years later Erich Klöchner is still active in sport aviation, helping to develop microlights.

SOARING

Borne up to heav'n on eagle's wings I fly,
Not caring where the winds may carry me,
To be alone and watch the clouds rush by
Is but enough, from worldly cares set free.
My thoughts flow with the air around my craft;
Its gently rushing, signing, whisp' ring voice
Reminds me of my true love's gentle laugh,
The glider's grace, her elegance and poise.
The gift of flight is precious and, as such,
Should not be used for profit or for gain
Save that when earthly bonds become too much
And one takes to the skies to ease the pain.
To fly, to love, the joys are both as one;
We struggle upwards, hoping, t'wards the sun'

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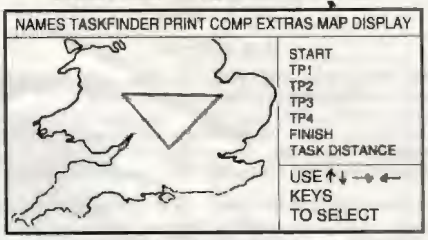

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PUBLICATIONS

NEW ZEALAND GLIDING KIWI – The official publication for the 1995 World Gliding Championships at Omarama in New Zealand and the official journal of the New Zealand Gliding Association. Edited by John Roake. Regular updates on preparations for the 1995 event – bi-monthly – annual subscription £15 Sterling. New Zealand Gliding Kiwi, Private Bag, Tauranga, New Zealand.

SOARING PILOT MAGAZINE – "a breath of fresh air". Bi-monthly – published by Tom Knauff and Doris Grove. $28 annually. SOARING PILOT MAGAZINE, 1913 Fairwood Lane, State College, Pa 16803, USA.

FREE FLIGHT, the bi-monthly journal of the Soaring Association of Canada. A lively record of the Canadian soaring scene, and relevant international news and articles. $US28pa. Suite 306, 1355 Bank St, Ottawa, ON, Canada K1H 8K7.

AUSTRALIAN GLIDING, monthly publications of the Gliding Federation of Australia, Editor Allan Ash. A complete coverage of Australian Soaring and exclusive features of international interest. Subscription. Surface mail $A38.50, airmail $A60.00pa (12 issues), payable Mastercard, Visacard or international money order. Box 1650, GPO, Adelaide, South Australia 5501.

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