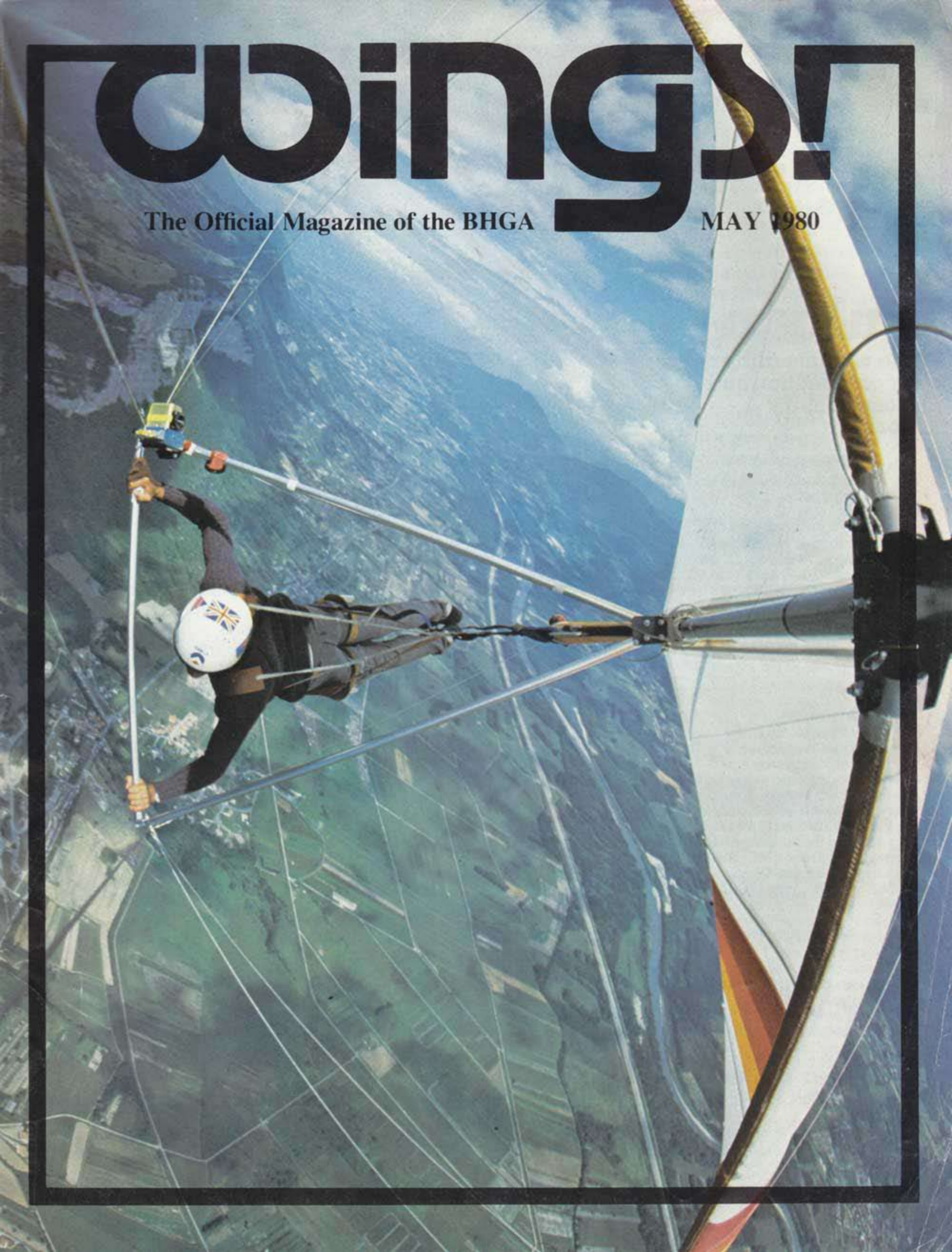


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The Official Magazine of the BHGA

MAY 1980



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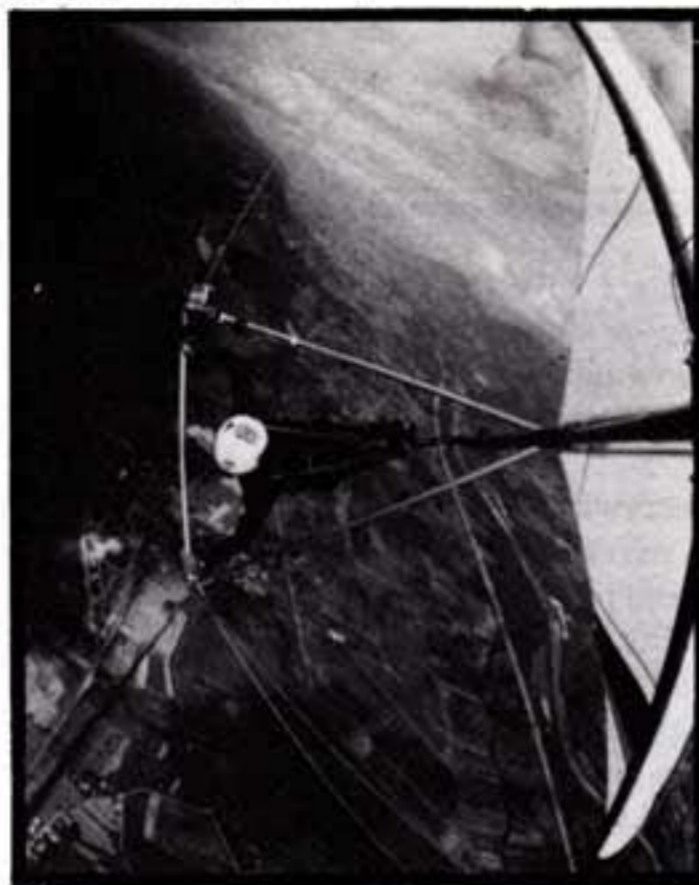


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Editor: Brian Milton, 31 Westbury Rd, Bristol BS9 3AK. Bristol 621412

Layout Artist: Mike Hibbit, 2 Mitford Close, Whitley Wood, Reading. (0734) 864543

Commercial Editor: Sylvia Howard, 4 Somerwood, Rodington, near Shrewsbury, Salop. Tel: Upton Magna (074 377) 365.

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BHGA Council: President of Association: Ann Welch, OBE., Chairman: Roy Hill (0865 735204), Treasurer: Percy Moss 0926 59924

Brian Milton, David Bedding 08444 7186, Diane Hanlon 051 652-5918, John Ievers 049 525-4521

John Hunter (Hatfield 71027), Clive Smith 09273 61270, Colin Lark 0453 46592, Bob Mackay 0792 813318

Northern Ireland: Chris Simmons, **Council Officers:** Technical Officer: Alan Barnard (Crewkerne 72478)

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Development Officer: Barry Blore (0235 834033)

Secretary: Chris Corston (Taunton 88140)

British Hang Gliding Association, 167a Cheddon Road, Taunton, Somerset, TA2 7AH.

Letters Editor: Stanley Pottinger, 31 Westbury Rd, Bristol BS9 3AX

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WINGS! may be obtained regularly by joining the BHGA or on a subscription. For full details and information about the sport send a s.a.e. to BHGA, 167A Cheddon Road, Taunton, Somerset. Membership of BHGA includes Public Liability Insurance cover.

If members or subscribers change address or copies of *Wings!* do not arrive please contact the Membership Secretary at the Taunton Office. In all correspondence give your full name, address and membership number (if applicable).

If you, your club or any local hang gliding activity gets written up in a local paper, national paper or magazine please send a copy to the Taunton Office for the BHGA press cuttings collection. This applies to the UK only.

EDITORIAL

If *Wings* goes public in the next year — the target date I gave the last BHGA Council meeting was April, 1981 — it's going to need a tough management team. The gross effective budget, following increase in membership subscriptions, is not much off £30,000. Advertising, in the next year, must pay at least £7,000.

But with a readership of about 4,000, *Wings* has everywhere to go. It hasn't made a dent in the American, or European market, although more and more it's carrying news of interest to overseas fliers.

As an editor, what I'm really interested in is creating a readable magazine, one which chronicles the passing scene in powered microlites as well as hang gliding. If something happens in hang gliding, you should be able to read about it in the next *Wings*. The area reporter system doesn't work at the moment, and essential *news* items, like AGMs, or the first Wellesbourne Power Meet, or the first 1980 League, were all written up by me. By a mixture of the Old Boys Act, being a bit heavy, pleading, and filling any spare moment writing news items, I'm getting by. Some of you turn out to be very good writers, and photographers, and I'll do what I can to encourage you.

But the three hard guys are needed to actually *manage* *Wings*. They're needed — as I've convinced BHGA Council, and I hope to convince you — to bring in business, marketing and financial skills we just don't have at the moment.

If there's to be a campaign to pick up a thousand readers, which thousand readers should we go for? Should they be in Europe, and if so, how can we reach them? How can we pay, on our limited budget, for such a campaign? Tackling the American market may mean part-employing an American reporter to ship over news items, so how could that be done? At what point, financially, should *Wings* take the first steps to see national distributors?

These are jobs for a management team, tightly-knit, strong minded, able to assess business risks with the BHGA's money and make the right decisions. They'll have no editorial veto, but they will be able to swop advertisements for example, with foreign magazines. They will be able to suggest areas of hang gliding, and coax them to part with money, which could advertise in *Wings* and therefore begin to lift the massive burden being carried by the membership. We have no fat at the moment, nothing spare to go out and sell hang gliding, and the management team will both suggest how we get that fat, and then make it happen.

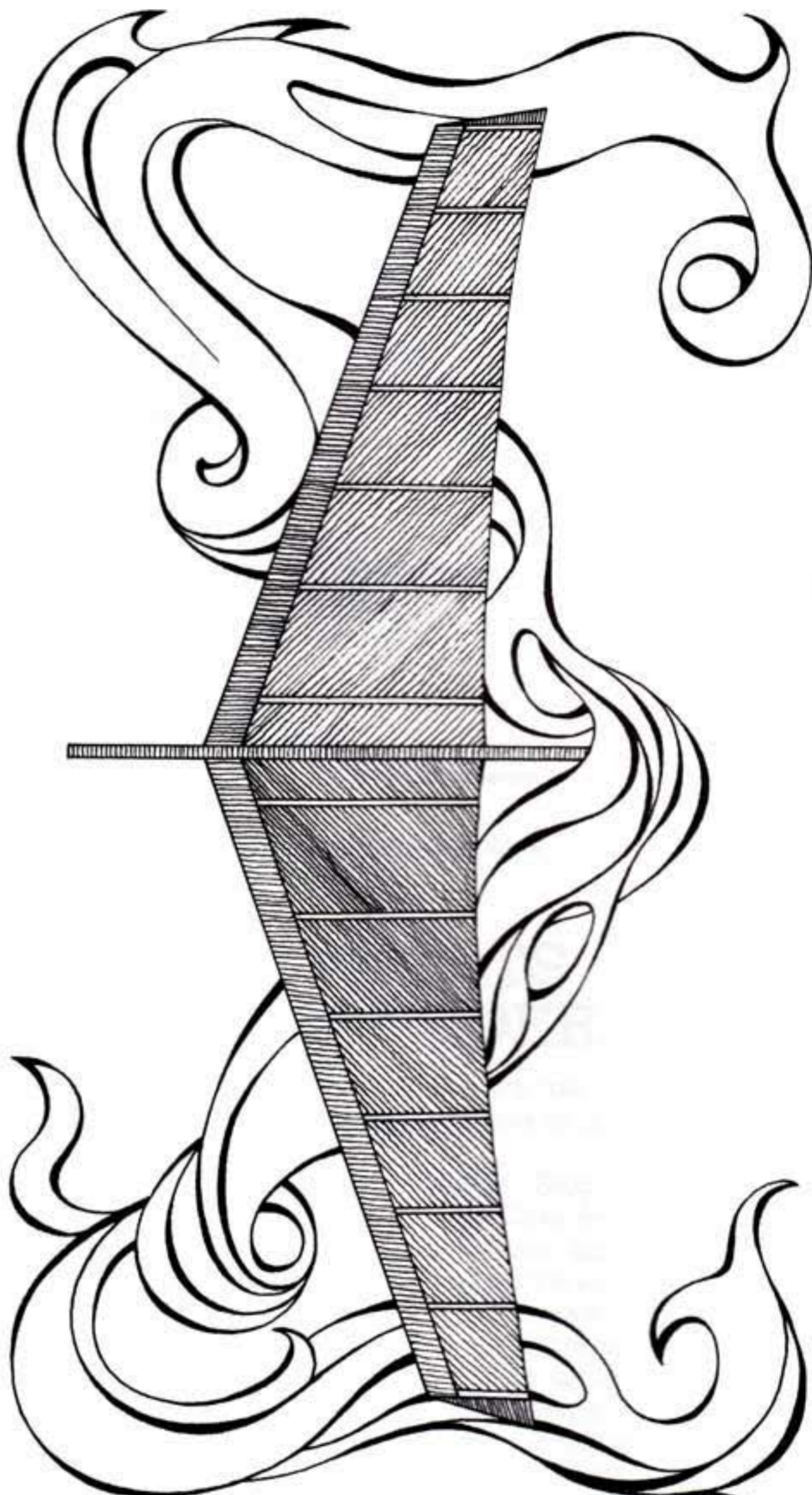
Politically, the management team must be hang glider pilots because it isn't the intention of Council, or the membership, or me, that we should end up with a profitable magazine that isn't serving the interests of hang gliding. (It could be profitable pushing a certain part of hang gliding, plus other forms of aviation.) Management must have hang gliding souls, in other words.

I've picked on a group of three because that seems ideal, but it could be bigger, depending on who comes forward. They should be in touch with each other regularly, and they should — individually — know their own mind and be able to intelligently make, and sometimes destroy, a case. And they've got to work, in the first place, with me.

One day, *Wings* could be on sale everywhere. It could meet the critics of the sport head on, out in public. It could be hang gliding, as you want it to be, because ultimately you will own it. The next ten years in hang gliding will see some of the most exciting developments of all, with *Wings* as the chronicle. The management team that puts it on the right footing will have everything to be proud of. It's a big job, and it needs doing by big-minded people.

If that's you, tell me about yourself. Write and say why you should be one of the managers, where you could get *Wings* to go, what skills you have to offer. If it's a group of you, write about that, sell the whole group.

There are really tremendous options in front of us, and the right decisions now, backed by the right people, could take us out of the aviation freak-show to which we are being confined, and confirm that microlites — foot-launched, towed or under power — are the new aviation mainstream, and need their own medium — *Wings* — to say where they are going.



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NEWS

HASTINGS TRIUMPH

Peter Harris, of the Dover and Folkestone HGC, had a public relations triumph in March with the official opening of a cliff site at the Norman invasion town of Hastings, in Kent. Civic dignitaries, plus local TV and press, turned up to hand the site over to the club, and to see if P1 holder, the Reverend John Pyke, would leap off in semi-downwind conditions as a sort of site blessing. Thankfully, the Reverend Pyke didn't, and is still with us, though League pilot Brian Edmeades put on a show for the photographers and, like many a brave man before him, survived the experience. The Hastings site is rent free, open to all BHGA members, and the town sees hang gliding as a tourist attraction. It was co-operation between the club and the town council last year during the 1066 Carnival Week that laid the foundations of the whole idea.

HEATHROW GLIDER

The lost property office at London's Heathrow Airport has had an OLYMPUS 150 hang glider in store since July 1st, 1979. It's in an orange canvas bag, and the office can't find its owner. It should go for auction, but Heathrow have asked BHGA if they could suggest the name and address of any "putative owner". Putative owners please contact Chris Corston on Taunton (0823) 88140.

NEW FRENCH MAGAZINE

A rival has appeared to *Vol Libre* in France. It's called *Finesse 10*, and it costs 10F (about £1) an issue, or 110F for 12 issues a year. It's editor is Marc Pouillard, and the first edition carries, among its 36 pages — including a colour cover — a 6 page feature on the life and times of *Hiway Aviation*.

Finesse 10 also carries a survey of 11 magazines coping with hang gliding. These are *Glider Rider*, *Hang Gliding (USA)*, *Drage Sport (Denmark)*, *Delata Magazine (Holland)*, *Drachenflieger (Austria)*, *Delta Info (Switzerland)*, *L'Aquilone (Italy)*, *Drachenflieger Magazine (Germany)*, *Vol Libre*, *Finesse 10 (France)* and *Wings (Britain)*.

The addresses of all those magazines are included, exclusively, in *Finesse 10*.

There are 11 magazines, in 6 languages, from 9 countries. Eight of them are monthly, 3 bi-monthly. Nine of the magazines are professional, in that people make a living from them, and 2 are amateur (including *Wings!*). Nine are European, 2 are American. Eight of the magazines are published by national associations, and 3 are not. Likewise, 8 of the magazines are available on the public bookstands, and 3 are not.

MEMBERSHIP FIGURES

BHGA membership has broken the 4,000 level for the first time with the publication of the March, 1980 figures. Total membership, including 118 family, and 41 affiliate, is 4,010. Good news is that there were more new members in March than ever before, bad news is that more people didn't renew membership this year than previously. The figures are shown below:

March	1977	1978	1979	1980
New	190	132	104	202
Renewed	152	200	251	216
Didn't renew	132	136	81	139
Total Members	3268	3350	3560	4010

POWER INSURANCE

Reggie Spooner says personal accident, and 3rd party insurance, for Ultralite Powered Aircraft could cost the same as motor car insurance. Underwriters, he says in a letter to the BMAA, watched the pioneers of powered ultralites with interest, and put a high premium on insurance. But whether flying for pleasure, exhibition — including displays at MOD airfields, filming or whatever — it's now obvious that powered hang gliding isn't as dangerous as was first thought. If sufficient people take up powered insurance, says Reggie, the premium will be comparable to what you pay on your motor car.

On *Wings!*, *Finesse 10* has this — not unfairly — to say: "*Wings*, the official magazine of the British Hang Gliding Association, Monthly, English language. *Wings* is only really of interest to British pilots. It's 20 pages, almost all in black and white, contain articles relating totally to British hang gliding. In its accounts of international competition, only the placings of British pilots are mentioned. Formerly with a mini-format, for the last 3 years *Wings* has been published in (American) quarto. *Wings* has the advantage of having only 15 per cent advertising, and the disadvantage of being financially poor, though this could be seen as an advantage. It's not sold on the public bookstands, being distributed to all BHGA members . . ."

Some of the comments, such as '20 pages,' and articles just on British pilots, are a little out of date, but in general, that's fair comment. It's also a reason we haven't cracked a European readership.

Finesse 10's address: 2, Passage du Chantier, 75012, Paris, France, telephone 16 (1) 307.50.50.

FRENCH COMPROMISE

More on the dramatic relationship between France's top pilot, and the French Federation. As you may remember from March, 1980 *Wings*,

JOHN KING OBITUARY by R. W. Elsdon

As reported in March *Wings!*, John King was killed in a hang gliding accident at the Long Mynd, Shropshire on Sunday, 20th February and leaves a wife and two sons.

To know John was to like him. As Club Coach and Committee man he worked tirelessly for the Malvern Club, and also as Secretary of The Midland Federation.

He gave illustrated talks, and films on Hang Gliding, and was one of the sport's keenest disciples, always trying to educate the public about our sport, anywhere, anytime, from an evening with a Women's Institute Group to a Rotary Luncheon, or just sitting with a cup of tea in his famous Sherpa Van on the hill.

His wit, boundless energy and enthusiasm will be sadly missed by all who knew him, and in the longer term by the whole of the Hang Gliding movement.

PILOT FEES

Members who were rated "Pilot" under the old system or who have in their possession an uncompleted "Pilot" Task Form should now send £2 if they wish to enter the new Pilot Rating System.

there's a certain amount of aggro between Gerard Thevenot, the French Champion of Europe, and the French Federation, but it was thought Gerard would be cut up at the federation AGM, because he'd opted to go to Brazil.

What happened was, a group of La Mouette pilots turned up to the AGM and made the going rough with points of order and reference back and other committee weapons. But they turned out — to the relief of the federation, and their own surprise — to be in a substantial minority, and the AGM survived. Displaying a masterly sense of diplomacy, and an awareness of the La Mouette team flying skills, the federation has banned Gerard and his friends from representing France until the end of May. The European Championships are in June . . .



JANET HAYES

Janet Hayes has settled in and is doing a magnificent job. She processes membership applications and renewals, deals with the Pilot Rating System, handles enquiries, banking and all mail plus a few other duties. The job has grown over the years and the duties listed above now take up all of her time. We find that a few loose ends were left by the previous Membership Secretary, so if letters concerning membership or the Pilot Rating System have not been satisfactorily answered in the past, please write again.

When Janet joined us recently she had already arranged her holiday for the period 26th May to 15th June, inclusive. PLEASE DO NOT 'PHONE IN WITH QUERIES CONCERNING THE AREAS LISTED ABOVE DURING THE PERIOD OF HER HOLIDAY. Only Janet will be able to deal with them. Whilst she is away our other member of staff, Joyce Williams, will be standing in for Janet. Joyce is normally involved in the Secretarial side of the business and is able to cope with the routine jobs done by the Membership Secretary but will just not have time to look into unusual queries.

Chris Corston

WISELEY INJURED

The 1976 National Champion, Bob Wiseley, was injured at Beachy Head in Sussex in March, wire-launching a pilot called Barry Puckey. As Puckey took off, he apparently knocked Wiseley over, who turned head over heels three times and got up, obviously in pain. He said he was OK, got into his car, and drove off to hospital. On the way, his legs "siezed up", and he crashed into another car. It turned out he had broken a couple of bones in his back, he was in hospital for six days and won't be able to fly for a couple of months. One irony is that he's been booked by the police for alleged dangerous driving. Puckey has now been elected to join that august company who empty the hill by calling for a wireman.

BRISTOL CITY DITTIES

Seen those T-shirts with slogans like "Surfboarders do it standing up", and "Glider pilots do it in the air"? Who can fill in the best few words to "Hang Gliders Do it"? Best heard so far, and that's pretty informal, is "Hang Gliders Do it near the Sun", and "Hang Gliders do it in their underpants". Entries, please, to Stan Pottinger, 31 Westbury Road, Bristol. The winner could end up strung between two Bristols.

NEWS EXTRA

SCOTTISH OPEN

This competition will take place July 4/6 at Glenshee, in Perthshire. Flying here is always interesting, and there will be prizes for the overall winner, and the best Scottish pilot. 1979 Champion, Bob Harrison. Champion in 1977 and 1978 — Robert Bailey.

Entry open to anyone with P2 or equivalent experience.

Entry fee will be £5 — this will *not* include the price of chairlift tickets. Intending competitors should send entry fee with information on name, address, glider flown, club and previous competition experience to: Simon Ogston, 33 Seymour Street, Dundee, Scotland. 0382-65437

Further details send s.a.e.

£3 FLYING FEE WEEKLY

The North Devon Sailing Club, which administers Woolacombe site, wishes visitors to know the club proposes to charge £1 a day to fly their sites, or £3 a week. This will help cover the cost of Woolacombe, according to the club's secretary, Dave Beard. The club says that *under no circumstances* should cars be taken across any of their sites. On arrival, visitors are asked to contact Ken Sheaf, Headlands Hotel, Woolacombe, telephone Woolacombe 320. Failure to follow these rules will cost the club 'without doubt' its Woolacombe site.



SAFARI STREAK

Dennis Munn, chairman of the Dunstable HGC, who lives in Uxbridge in Middlesex, flies a Skyhook Safari, which he keeps in his garage. One night his wife woke up and heard suspicious noises just outside the house. She woke Dennis and persuaded him to investigate. Dennis, reluctant to get out of bed, finally did so and went downstairs without a stitch of clothing on him. He was just in time to see a thief running away with his glider on his shoulder. Naked as a babe, Dennis set off after him, hobbling down the road, not fast enough to catch the thief, but quick enough to make him drop the glider.

What would a punter want with a hang glider?

BABY NEWS

For those who saw the diminutive Caroline de Glanville at the AGM, highly pregnant with a second child,

SERVICE FLYING

Commander Mike Collis has just retired as our Hang gliding liaison officer; having taken on his job, I find that we know very little about R.N. and R.M. flyers outside the H.M.S. DOLPHIN HGC. We need up-to-date information on R.N. and R.M. participants to back up any request for service recognition. I would like to hear from any personnel who are already flying, or any who are interested. Please also state your Pilot Rating and type of glider.

S/Lt. Chris Hopkinson
St. John's Priory
Poling
ARUNDEL, W. Sussex

NO HASSLES, NO FEES, £100 PRIZE MONEY, FRIENDLY FARMERS AND LOVELY ROADS TO THE TOP

by Chris Simmons

Ulster, a country seldom out of the headlines, but how many realise the great flying potential that this troubled land offers? Mountains in all directions, fantastic coastal cliffs, thermal ridges and gentle hills are all there for the taking. Most of the main soaring ridges have tarmac roads to the top, all have safe, huge, top landing areas, large clear landing fields, and an average usable height of about 800 ft. Overcrowding is unheard of with a usual glider-to-air ratio of approximately one glider to one square mile of soaring lift. There are no site fees, no visitors' fees and the farmers like nothing better than to stop and chat. The beer is good, too. To whet your appetites a little, read on...

'Magilligan Strand' — facing N,NW to W, mostly 900 ft. of sheer cliff system stretching 7 miles long with safe rounded T.Os, safe huge top and bottom landings, smooth coastal winds and roads to top and bottom (sailplanes have reached 17,000 ft. in thermals).



PHOTOGRAPH CREDITS/ CORRECTIONS

Many of the photographs in April WINGS were not credited, for which, apologies. The front cover and many of the powered shots were taken by Tony Fuell... he's also the pilot in one of them. Roy Hill was photographed by Mark Junak, who also did the "chorus" photo. On Bill Lehan's drawings, page 21, Beufort Scale 0 should read 9, and vice versa. I have been writing out Len Gabriels telephone number a hundred times as penance — 061-624-3427, and not 01- as originally reported.

well, it's arrived. It's an 8lb boy called Orion, at St Theresa's Hospital in Wimbledon. Mother and child are out of hospital, and Caroline says she'll be flying before the end of April. Mike says it looks just like any other baby. Caroline says it looks like Mike.

TUCK

Jean Pierre Dufour, one of the winning French World Championship team in Grenoble, 1979, walked away unhurt after tucking a Jet C in Tignes, a ski resort in the French Alps, in February this year. He was reported to be coming in to land when "the glider just pitched nose down and went very light" — his words. Next thing he knew he was lying on his back in the snow.

'Benbradagh' — Inland ridge facing W to SW, road to top/bottom, beautiful landing areas, fantastic thermal, 2 miles long, 1,100 ft. usable height.

'Spelga' — a 1,200 ft. coastal mountain, very steep, bottom landings slightly tight, rough road to top, faces S to SE with big wave sometimes present.

'Lough Navar' — Facing East is a lovely 7 mile 500 ft. ridge, good landings, usual roads to top and bottom and overlooking the most beautiful lakelands in Europe.

These sites, just a few of many, are for the lazy, as my stomach will testify. If you are energetic, how about climbing 2,000 ft. to the top of Slieve Donard, 2,796 ft. a.s.l., our highest mountain, and enjoy a 3 mile trip to arrive over Newcastle seaside resort at about 1,500 ft., eventually to land on the wide beach and be mobbed. The club responsible for Ulster, the UHGC, is small in numbers, very enthusiastic, but lacks intercourse (verbal and flying skills only*) with other experienced UK pilots. If you fancy a hospitable flying holiday this summer then feel most welcome to come across and enjoy good flying conditions. (The troubles are not as bad as they seem, really). If you come in July then ensure you are here on the weekends of 19/20th and

26/27th. David Dick of 'Protec' flying suits has given the UHGC £100 cash to award to the pilot who flies the furthest XC past the existing Irish record of 15 miles on either of the two weekends. The rules are simple, entrance fee being £0.00 and you only pay for the recovery ride. If no one beats 15 miles then £50 goes to the furthest XC using thermals. What could be simpler?

See you soon!



"If it starts to lay an egg — Run!"

Extract from a letter in March, 1980 *HANG GLIDING* magazine, part of correspondence over why the USA lost the AMERICAN CUP, and doesn't shine in international competition. The letter is from David Wilson, in Oklahoma.

Referring to Chris Price's concern over low American rankings in world competition, Dr. Hewitt draws some very questionable conclusions as to why the USHGA's safety programme is responsible and should be abandoned. He suggests that safety certification slows design advance and European gliders are better because they are not subject to this restraining influence. He further suggests that competition is impeded because many 'great' US pilots fly uncertified gliders and therefore cannot compete.

I doubt that any of these assumptions has any validity whatever, because in the first instance, European certification standards are quite as rigorous and exert the same type of restraint on design advance. In the second place, there has been no demonstrated monopoly by any particular glider or manufacturer in world class competition . . .

At the American Cup I had the opportunity to observe some of the dynamics of world class competition and a number of variables that influenced the outcome. It is reasonable to extrapolate from these observations to a general consideration of all international competition because the same factors are always present (along with a minimal luck factor).

I personally interviewed each of the English pilots competing in the Cup regarding a wide variety of factors relevant to their overall performance and I can assure Dr. Hewitt that there was a hell of a lot more involved than simply 'better equipment' or 'gimmicks'.

First, and probably the dominant reason for the obvious superiority of the English pilots, is a matrix of what can be referred to as psychological factors. These include vigilance and attention to task, mental discipline, emphasis on competition, and group (rather than individual) orientation. These factors alone far outweigh any other single or multiple causes which came into play, and in combination with other, more overt considerations, made the British unbeatable. George Worthington made reference to this prior to the Cup in his analysis of the field and the probable outcome — needless to say, he was proven right. The real lesson lies here.

These psychological factors, in combination with the amount of preparation specifically for the American Cup, constant precision drilling, familiarity with the tasks, top-to-bottom communications, and the inherent differences between the British League system and the American regionals system, made it inevitable that the British would win.

In addition, it is interesting to note that a week later, in Guatemala, these same British pilots did not come out on top. The fact that it was not a team competition, and that many of the elements were missing that were part of the Cup strategy, put the competing English pilots on their own and removed the advantage. Even flying the 'superior but uncertified' gliders that Dr. Hewitt feels made the difference in world competition, the best the British could do was sixth place. The first five spots were taken by safe and certified American-made gliders.

I am not implying that American designs are better because they are safer — that might be tough to prove. But to shift the blame to safety-consciousness rather than to the human factors of mental readiness and organisation is a dangerous proposal that could put hang gliding into a totally untenable position.'



PARACHUTE INCIDENT

Tom Hardy, 21 years old, has been flying 4½ years, and held his PILOTS badge since May, 1977. He flies a Superscorpion C. On March 23rd, having made 2 flights from one site, he went on to Rose Markie, just north of Inverness in Scotland, a coastal semi-cliff site, 150/200 feet high, ESE, with a clean easy take-off from a point just in front of a wire fence. The wind was 18mph and smooth.

Tom had a prone harness similar to that made by Hiway, with a Windhaven 24' parachute. He had never flown Rose Markie before.

After pre-fighting, he climbed over the fence to T/O. He elected a prone launch from Jesse Flynn, who's been flying 9 months, but who had been fully briefed and had prone-launched Tom before. There were also two wing-men who are not relevant to the story.

Flynn got Hardy flying, who then said "RELEASE" and pulled the bar down around his knees to clear the hill. Flynn didn't toss Hardy forward as sometimes happens with a prone launch. Hardy climbed to 50 feet and then heard the sound of velcro ripping.

"I looked down and there was my 'chute disappearing at the end of its bridle," said Hardy. "It was just a bit worrying. My first thought was, how can I get rid of it? But of course, you can't."

He realised he had no option but to listen to his bridle ripping. Next, his kite pitched nose down hard and he bashed his head on the keel.

Next thing he remembers he was kneeling on the ground, kite in a parked position on nose and control bar, behind the fence, with the parachute in rotor being blown towards him. The kite was undamaged, pilot undamaged, even the parachute was undamaged. The spectators — understandably — were amazed.

Later that day, without his 'chute, Tom Hardy successfully flew the site.

His comments later: The parachute opened because he was too low on the control bar, and in certain positions, it was possible for the bar to open the bag. He was impressed by the speed of operation, estimated at 2 seconds to full deploy. He has raised his harness by four inches (over reaction?) and says he may lower it an inch or two later.



XC LEAGUE — by Dave Harrison

It is very good to see that the XC League got under way so soon. The early spring has started with a boom, and there have been plenty of good long XC flights already.

It has been a great shame that some notable XC's by very eminent pilots have not been acceptable for the League table, because of one factor, 'airlaw'. Unfortunately this subject is fact. It is law, which must be complied with by everyone.

Find out where your airbases are and fly round, under or even over them. It is far better and safer to land 2 miles short than land just inside a 'special rules zone' or even an airport! I know it is a big hassle but we do have to share our air with others, and they are rather larger than us so we must obey their rules.

Apart from this major teething problem, I am very pleased with the response so far. Do let me know of any XC's you have done. It doesn't cost anything and with a bit of luck and sponsorship I hope to award some good prizes (even cash). At the very least an impressive trophy will be awarded.

Don't wait too long after your XC's before sending in details as this will falsify the positions in the table.

Name	Club	1st Flight	2nd Flight	3rd Flight	Average
Robert Bailey	Dales	22.2 miles	—	—	7.4
Pete Hargreaves	N.Yorks	18.0 miles	—	—	6.0
Jim Brown	Dales	11.0 miles	—	—	3.7

1980 DIARY

May

3/4 (Sat/Sun), Roses Competition - Yorkshire v. Lancs (1-on-1 or XC)
24/26 (Sat/Mon), 4th League, Dales, organiser Bob Harrison.
24/26 (Sat/Mon), Irish v. Welsh Celtic Cup, organiser Bob Mackay.

June

7/8, Powered Meet, Wellesbourne Airfield. Details — Paul Baker, 0789-841114.
9/15, Lachens Mountain XC, South of France, Open XC organiser Mike de Glanville.
21/29, European Championships, Kossen, Austria. British team of 6+2+2, manager Roy Hill.

July

4/6, Scottish Open, Glenshee. Details — Simon Ogston, 0382-65437.
7/15, Owens Valley XC, Bishop, California, British team of 4.
18/21, Grouse Mountain World Invitational Championships, British team of 8+2, Vancouver, BC.
19/20, 26/27, Ulster XC, Prizes by Protec, £50 to winner, £100 if winner makes more than 10 miles.

August

3/11, Japan Dry Run for 1981 World Championships. Derek Evans, John Fack and possibly one other to go.
9/11, Fifth League, venue still undecided.
13/20, Understanding weather, Course at Met.Dept., Edinburgh University. £70.
16/24, Bleriot Cup, proposed dates still to be agreed, Anglo-French team XC, teams of 8.

September

12/14, League Final, venue still not decided.

October

11/19, American Cup team championships, Tennessee/Georgia, USA.

Brothers In Law - Two

By Gerry Stapleton

SUTTON BANK

The basis of the argument is simple enough. Sutton Bank is a prime westerly bowl, with road access to the top, and only a short walk to the take-off point. We have better westerly/north westerly sites, and it is only the northerly end of the bowl, for south-westerly winds, which is of interest to us. It is very soarable. Mr. Redman, the owner of the fields behind the take-off, allows us to top-land, subject to crops, and Mr. Brown, who owns fields at the bottom, nominates fields for bottom landing. We have reasonable relationships with both farmers. The owner of the majority of the bottom land, the face and edge of the hill in front of Redman's land, is Mr. Woods. We used to have a good relationship with him too; but more of that later. A public foot-path runs from the road to the take-off on Mr. Woods' land. The site is flown mainly by the North Yorks Sailwing Club, the George Cayley Sailwing Club and the Dales Hang Gliding Club, and is controlled, jointly, by all three. We would like to keep it this way.

The Yorkshire Gliding Club owns a site at the southerly end of the bowl, nearly a mile away. The club is run as a business and they feel that *any* restrictions on their use of the site may affect their profitability as well as their enjoyment. We have had some sympathy with them. They were there first, are one of the country's premier gliding clubs, and have had the hill to themselves for many years. They would like to keep it that way.

HISTORY

The site has been flown by hang glider pilots since 1975, but our trouble began early in 1976, when we started to go up instead of just down. In response to complaints from YGC, Derek Reynolds, then Chairman of NYSC, negotiated some simple flying rules, confining us to the north of the A170. These were to be for a trial period of six months. The agreement had hardly started however when, in early August 1976, a glider crashed into trees at the southerly end of the bowl. Several hang glider pilots saw the crash and confirm that no hang glider was involved.

However, the YGC used this as an excuse to renege on our agreement, claiming pressure from their instructors, and demanded that we stop flying. They claimed their right to do this under the Air Navigation Order 1974. The dreaded Rule 34 of the Rules of the Air and Air Traffic Control Regulations, which stemmed from the ANO, reared its ugly head for the first time. It was, by the way, not until June 1978 that we discovered that the YGC blamed the presence of a hang glider for the cause of the turn which indicated the pilot's difficulties, and ultimately led to the crash, but as far as we can tell, neither the BHGA, nor any of our members, were ever consulted or asked to comment, or attend any hearing. Nor did the CAA become involved as it surely should have done if the YGC's version was correct.

The scene was now set. The YGC had hinted that by co-operating in banning all hang gliding, they would discuss the matter again 'in a few months'. Tim White, now NYSC Chairman, wrote to BHGA for clarification, and in September 1976 they not only confirmed the YGC's position, but went on to say that if flying did take place we would be in trouble with them as well. Accepting the YGC's legal right to a ban without further question we were only marginally disappointed when, in the same month at our subsequent meeting with YGC, they not only

restated the ban but threatened to "handle any cowboys with legal action". An approach to the Sports Federation for mediation in November was no help, as they also accepted the YGC's "legal" status.

MELLOWING HOPES

For over a year, with the help of our neighbouring clubs, no hang gliding took place, in the hope that the gliding club's attitude would mellow. Occasional approaches were made to test the temperature, but all were rejected. At the end of 1977 we again began to fly there, on a "one-off" basis, but whenever permission was asked from YGC it was usually refused and the site remained virtually closed for hang gliding.

A chance remark of Brian Milton's in the February, 1978 edition of *Wings!* sent me first to the extremely helpful Chief Air Traffic Controller at our local airport, and finally to Freddie Jones of the General Aviation Branch of the CAA who told me, informally, that we were probably right in thinking that a *gliding club ATZ was not enforceable at law*. A breakthrough! — but he would not commit himself in writing as he felt that CAA should not be involved at this stage.

FRANK DISCUSSION

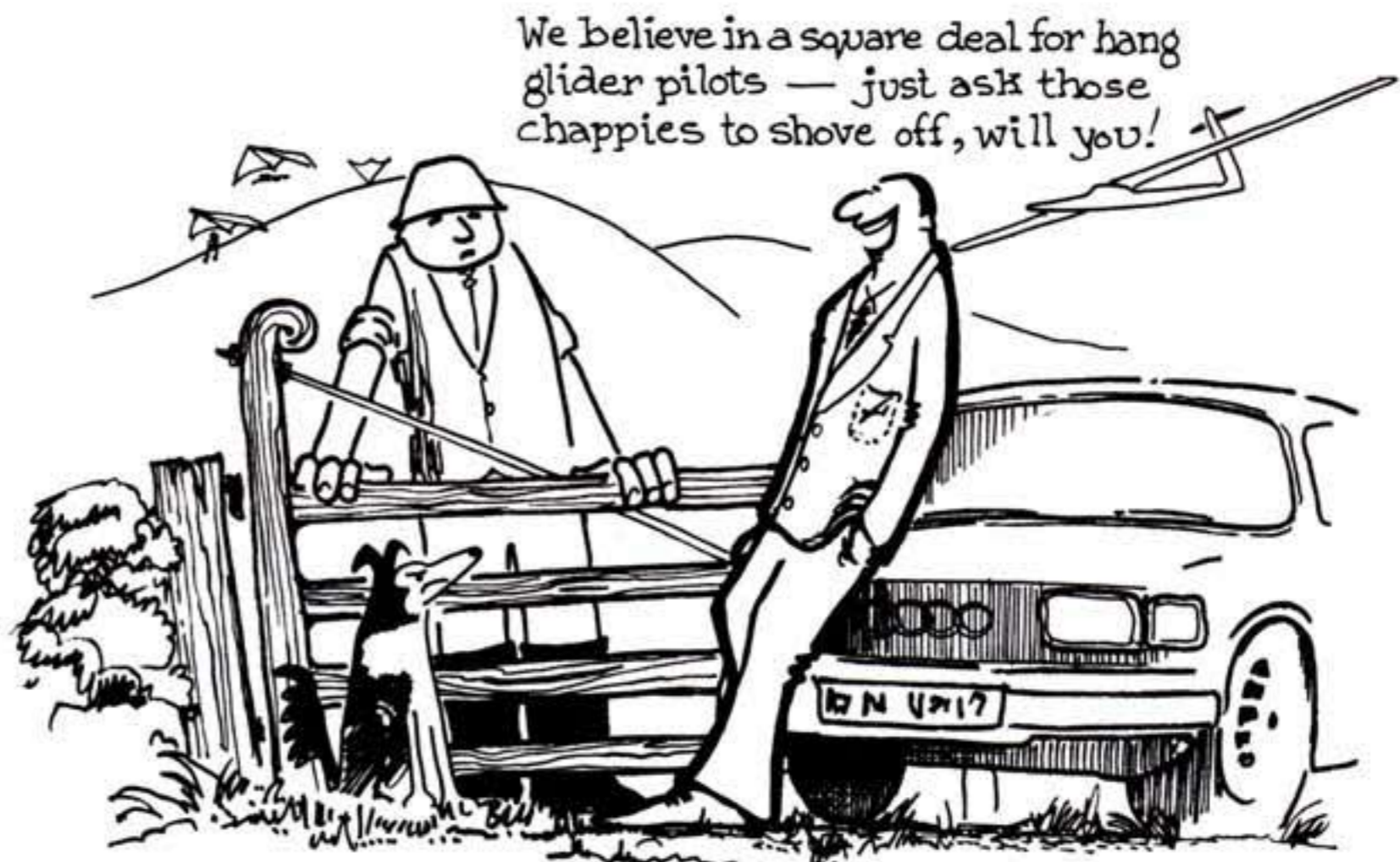
On the 12th March, 1978 we arrived en masse to fly at Sutton Bank again. The YGC had continued to refuse to meet us and we hoped to provoke some reaction. We did. As soon as we began to fly, the gliders descended to ridge-top level and began to beat back and forth in front of our take-off zone. Shortly afterwards, Alan Kenworthy, the YGC's then Flying Director (now Chairman) arrived with support and there took place what is known, in political circles, as a 'full and frank discussion' with Kenworthy threatening, amongst other things, legal, police and CAA action. Fortunately, God, in the shape of Freddie Jones, was on our side — or so we thought. Kenworthy wrote to us repeating his demands and quoting BGA and CAA support. He and the BGA had, apparently, done some pretty strong lobbying, for I also received a letter from Mr. Jones dealing directly with the Sutton Bank problem about which he had previously refused to write to me. Needless to say, it supported the gliding club's

case, and in spite of further telephone calls I could get no further comment from Mr. Jones or his superior.

The hang gliding clubs continued the policy of stating that Sutton Bank was not an official site, and members were not recommended to fly there. For some strange reason this official policy was largely ignored and flying continued. We pointed out to the YGC that these 'cowboys' would probably continue to fly unless the site could be regulated by a club but that, whilst the total ban existed, no club was able, nor willing, to take over the site. The YGC continued to apply pressure; beating up the ridge when hang gliders were rigging; re-routing the aero-tugs' landing approach to pass over our take-off point at low level, trailing the wire. These tactics still continue. At one stage, the police were called but, sensible gentlemen that they were, they merely passed on the gliding club's complaints, and spent a pleasant hour watching us fly, refusing to become involved in the complexities of the ANO.

MOMENT OF WEAKNESS

In May 1978, we wrote to BHGA asking for clarification of the legal position and support for a test case in the event of a prosecution, which we felt would be a national issue. Again, BHGA ducked. In June Kenworthy wrote, threatening formal CAA action, and in July Reggie Spooner offered help in smoothing the way to a meeting with the Chairman of the YGC. But in spite of a lot of effort, Kenworthy finally reported us to CAA in August. On August 14th Tim White received a letter from CAA Air Safety Section reiterating Rule 34, and threatening that any further reports from YGC might be investigated as breaches of the Civil Aviation legislation. This date is significant, because with effect from 1st July, *six weeks before Tim's letter*, Rule 34 had been amended to *specifically exclude the need for permission to fly in ATZs such as those around gliding clubs*. Nothing is further from my mind than the suggestion that there was anything deliberately misleading about this letter. I assume that Mr. R.N. Croxford, the writer, had, in a moment of weakness, merely overlooked this important change or had been given a rather interesting story by the YGC. I, of course, informed Kenworthy of the change imme-



ately, in case he too had overlooked it.

Meanwhile, Reggie continued his work at national level. By the end of 1978, the YGC's objections to our flying had been clarified into three points: lack of visibility from the rear seat of a glider for the instructor; in the event of a cable break the northern bowl is used by gliders at low level; in the event of a low return from cross-country the whole bowl is needed to gain height to land. We felt that all these objections, which were in any event hardly our fault, could be overcome with a little goodwill. But that was not to be, and the fighting became dirtier.

The problems between gliding and hang gliding at Sutton were scheduled for discussion by the Yorkshire and Humberside Sports Federation at its inaugural meeting in January, 1979. This would have been missed but for the ever-vigilant Pete Anstey, Secretary of the Dales Hang Gliding Club, as hang gliding was not represented in this federation! After complaints, the item was dropped. In March, 1979, Kenworthy asked National Air Traffic Services to establish an overriding ATZ in favour of the YGC. This politely but firmly refused until agreement had been reached between us. There was more activity at national level again by Reggie which finally, in July, resulted in a meeting between BHGA, BGA, YGC and the three hang gliding clubs, at Sutton Bank. It immediately became clear that the YGC's attitude had not changed, although interestingly, the club's Chief Flying Instructor, always a fair man, was prepared to cope with hang gliding if it took place under his control. The YGC's Flying Committee overruled him, however, and pressed for a ban.

UNUSUAL "TRUTH"

Kenworthy's letter, confirming his club's decision, contained one surprise. It said that Mr. Woods, the owner of the take-off area, had given the YGC his permission for them to stop hang gliding from his land! Colin Potter, an NYSC member who farms in the area, had put tremendous effort into keeping in touch with the landowners. He arranged a meeting with the Woods, and it became clear that they had little personal complaint against us. The Gliding Club had approached them to discuss the problem, and over drinks at the club had given them what I can only describe as a highly unusual version of the truth, which hinged on three main points. These were:

1. We were a danger to glider flying, the public and landowners, as we were not trained or organised in any way.
2. We had never approached the gliding club for permission to fly.
3. The gliding club had the legal right to ban us



Gerry Stapleton

under Air Law, but as nice chaps were unwilling to prosecute.

We gave the Woods copies of all our correspondence with the gliding club and details of our insurance, the revised Air Law, Club and BHGA organisation and training procedure, to counter the YGC's arguments. This was clearly embarrassing, as the Woods had agreed to attend another social evening at the gliding club, but they did promise to raise the matter again. On speaking to Mr. and Mrs. Woods, after this visit, it was apparent that they had become involved, through the actions of the YGC, in an argument about which they knew little and cared even less, and really wished to wash their hands of it. We let the matter rest and, to date, neither the Woods, nor the YGC, have invoked this ban.

MORE EMBARRASSMENT

Since October Reggie Spooner has been striving to obtain some agreement to a gliding/hang gliding mix at gliding club sites. Roger Barrett, Chairman of BGA, has stated that a total ban is unreasonable and has admitted to being embarrassed by Kenworthy's and the YGC's attitude, even suggesting that this particular problem be shelved and progress made on other sites. The problem at present rests there, with

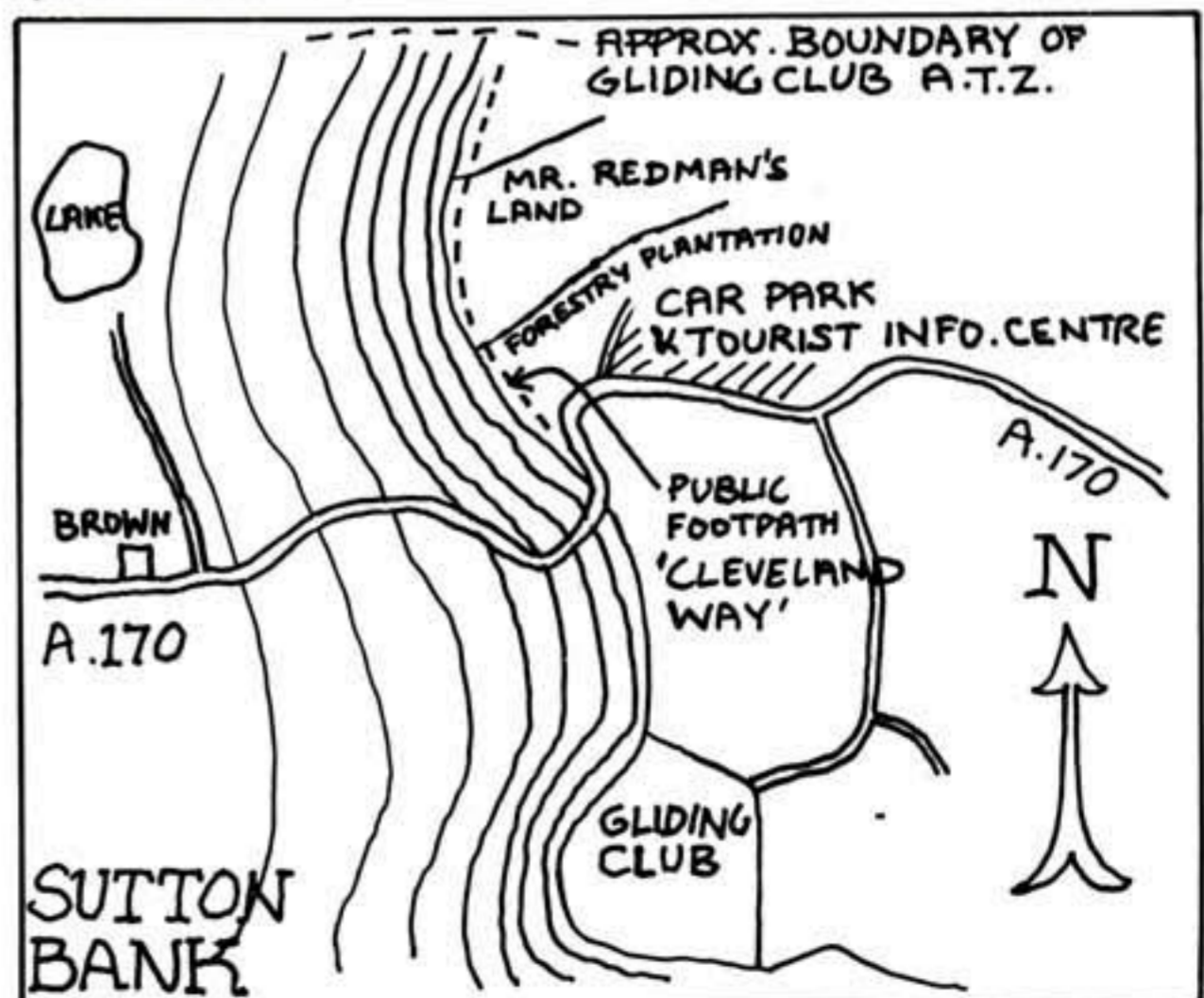
Reggie struggling to arrange a meeting, to be chaired by NATMAC, to get some agreed flying rules.

The position is clear. We do not need the YGC's permission to fly within their ATZ, and we do wish to fly there. There are times when a mix between gliders and hang gliders is perfectly acceptable and we will continue to fly there. A few simple rules will prevent most of the incidents which the gliding club, and ourselves, fear may happen. We already operate these rules. The YGC do not. After some early reluctance, the BHGA has (via Reggie) worked at national level to convince BGA and CAA of our good intentions and responsible attitude, and it is the YGC who are now out on a limb. We are concerned that further approaches may be made by them to our other landowners, as they are a large, powerful and wealthy club.

IRONIC CONTRAST

When the gliding movement first began, they were threatened by control and legislation which they successfully fought in order to maintain their freedom. It seems ironic that they should now try to bind us in the same way.

What makes it doubly ironic is that less than fifteen miles away, there is the Newcastle and Teesside Gliding Club, at Carlton Bank, with whom we have a completely different relationship. They lease the site, and the sole means of road access to the top, from a local landowner. Our take-off/top landing zone is the edge of one of their runways, actually within the airfield boundary. It often is in use when we are flying and to get to it from their car park we need to cross the end of that runway. As lessees, the NTGC could refuse to allow us on the land, even if we had the landowner's permission to fly. In fact, the landowner is opposed to us at present, and he has complained to the gliding club that hang gliding is a separate activity for which he should be paid. The Gliding Club have supported us by telling the landowner that hang gliding is a legitimate gliding activity, carried out under the auspices of their club. We make a contribution to the cost of the upkeep of their road, and we use it more than they do. The flying rules which do exist are simple and sensible and, above all, they seem to work. This is not say that there are never problems but, with the help and co-operation of a gliding club CFI, Secretary, Chairman and membership whose interests are in all forms of flying, a glider/hang glider mix is possible and enjoyable. I raise my hat to some true flyers.



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Hang Glider / Life Raft

By Damon Robinson

I am writing this article as a follow-on to John Lythgoe's comments in *Wings* of July '78 entitled "Going down into the Sea" in which he describes escaping from a ditched glider. I had earlier considered this problem, and decided to try filling all a glider's tubes with polyurethane foam. This was done in early June, 1979 with foam given to me by Messrs. Strand Glassfibre Ltd. It was a very simple process, and only necessitated mixing two equal parts of the liquids supplied and pouring it into the tubes held vertically, the end plugs removed. This was accomplished by standing on a convenient flat roof and a 150 seconds later the foam generated by the reaction reached the top of the tubes. The sail itself was protected by an old sheet and tape was put over the bolt holes. The glider was then used every weekend for five months, covering such epics as Grenoble, Steyning and Mere, with no erosion or corrosion of the tubing.

Two pilots in my club have made crash landings into the sea, and both considered it the worst experience of their lives, and one even gave up flying after this experience. In both cases the Hang Gliders sank within three minutes, leaving the pilots with the unenviable task of swimming to the shore, not an easy thing to do in full flying kit. Try it sometime!

When I got round to testing my foam loaded Glider, I sought the help of Liz Baker, an experienced life-saver. She arranged the pool which was lent by the Duke of York School at Dover. Photographs were taken by the Dover and Folkestone Clubs' Safety Officer, Derek Austen, and my thanks are due to the help given by Paula and Robin Lewis. From these tests, the following observations were made.

Once in the water, the foam-loaded glider is so buoyant that the pilot can unclip his harness in his own time. With a kitchen knife taped to the control frame it is possible to cut a hole in the top of the sail and poke your head through if unclipping proves difficult. From then on, it is possible to unclip at leisure, as the glider is not going to sink and drag the pilot to a watery grave . . . and sails are expendable, life is not.

Once unclipped, the John Lythgoe method should be used, working backwards along the tube. Once free of the sail, work around the nose and climb on top of the sail. This will support your head and shoulders above the water, and make it possible to remove your boots, but no other clothing. Here I am advised by Liz Baker that the chances of survival are increased if the clothes are left on. If you are too far out

to paddle the glider to the shore, leave it rigged so that rescuers can spot you more easily. However, if you are close enough to the shore, it is a simple matter to fold and roll the glider in the water and paddle it to the shore. In its rolled state it is less likely to be damaged by the waves when the shore is reached.

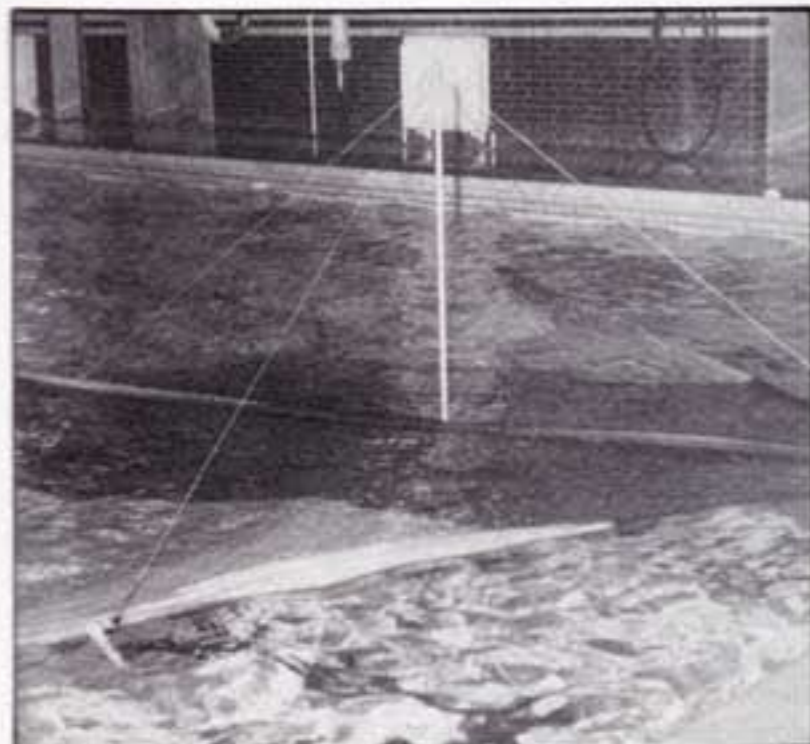
To sum up. Here we have a Life Saving device which cost about £5.00 and fulfils the following criteria:-

1. Prevents your glider from sinking;
2. Allows time to escape;
3. Acts as a life jacket and
4. Gives strength to the tubes and makes them kink resistant.

The only disadvantage is that your hang glider weighs 1 kilo more. This is more than compensated by the fact that it adds more than 34 kilos of buoyancy in fresh water and does nothing to change the flying or handling of the glider. And so, manufacturers take note, this is a life-saving optional extra for all pilots who fly coastal sites. For a small outlay, the pilot can gain a very effective insurance for himself and his glider.

NOT SO MUCH A LIFE JACKET

. . . MORE A LIFE-RAFT!



Free floating hang-glider.



Climbing aboard the glider.



Removing boots whilst supported by the hang-glider.



Aerial view of the pilot and glider.



Pilot makes light of choppy conditions.



Swimming with glider which was folded up in the water by the pilot.

Turbulence Is Fun!

By Ian Trotter

Unfortunately for us, "turbulence" is a relative term — you can fly it, watch others flying it and talk about it, but, because hang gliders are essentially solo aircraft, only the pilot *really* knows what's going on. If we all regularly flew two-up as the cockpit boys do, communication about turbulence would be infinitely easier. As the Americans are reputed to say — "That's not a problem, it's an opportunity."

Turbulence itself is objective, but the experience of turbulence is highly subjective. On identical gliders in identical air, one pilot may need full roll input often, while another, through quicker reflexes or better perception of the behaviour of the gusts, can save his big guns. What looks hairy may be safe and what looks safe may be hairy. If you're watching someone, concentrate on pilot inputs and their effect on the glider, not merely on the wing itself. Try to work out whether the wing movement is gust-induced or caused by the pilot.

The reaction to turbulence depends very much on the experience of the pilot, and the quantity and quality of that experience. A pilot who has done the bare minimum for Pilot 2 reaches his T-limit much sooner than the man whose experience includes a couple of XCs. Someone with many hours in the glassy-smooth air of Rhossili could blow his mind in the bumps of that aptly named site, Clatter, or in Scottish terms, umpteen hours floating around high on Bishop is no very great preparation for Mendick on a strong day. Conversely a pilot with only a few hours, all on bumpy inland sites, will be much less unhappy being thrown around than the pilot with several hundred hours, all of which is coastal.

Bumpy Thermals

The title is intended. I really do have fun in turbulence, at least such as I've encountered so far. Floating up to the top of the stack does very little for me (perhaps because I rarely get there), unless that situation offers XC scope. Straight ridge-soaring is not where it's at any more. I've no experience of the huge ups and downs of the Owens Valley, nor of the dark and dangerous depths of Cu-nim. Short of these though, orographic turbulence of the sort commonly found on many inland Scottish sites in winds over, say, 20 knots seems to scare many competent pilots. I believe they're missing a lot: *simple airtime*, through being grounded unnecessarily; *XC possibilities* — there's no such thing as a bump-free thermal unless like Calvert you fly them in still air; *confidence* in one's glider and in one's own skill as a pilot. Strong lift, whether orographic, thermal, wave or convergence inevitably carries the risk, if not the certainty, of strong turbulence. The extremes are still stable air and Cu-nim. *If you seek lift, you must be prepared for bumps. If you can't hack big bumps, then you can't expect to go high or far — not where I fly anyway.*

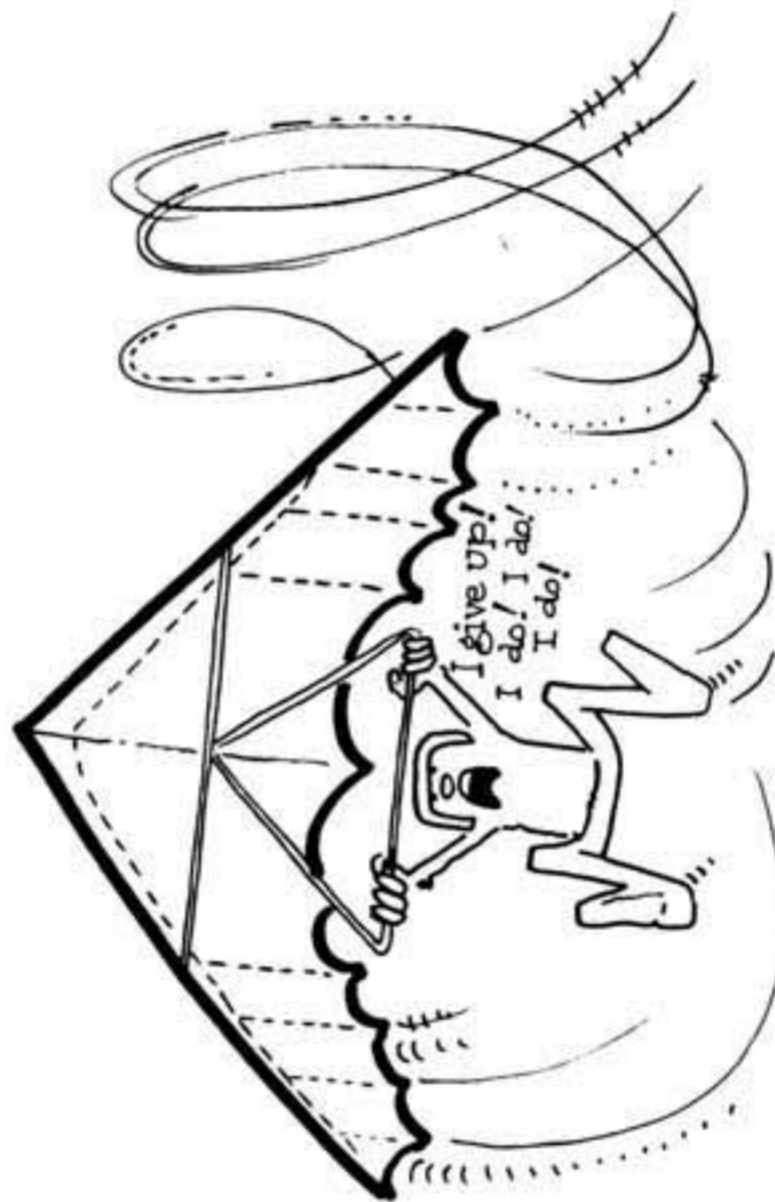
Probably the best single piece of advice possible for an intermediate pilot, and I remember Lester Cruse, who should know, giving it at Glenshee in '78, is: "Don't exceed your limitations". The problem is that if you always stay within your limitations and don't stretch them, you won't develop: taken to the ultimate, you'd never have started flying. What this article hopes to get across is that it is possible, advisable and fun to extend one's limits, in terms of turbulence, without ever exceeding them. If you follow any of the suggestions here, please do so discreetly.

Glider Choice

Choice of glider is critical. Where possible, tune for handling and speed. Heavy wing-loading helps, and may account for my liking for strong bumpy winds because, until recently, I couldn't find a glider to

keep me up in smooth light ones. If you're under 11 stones, consider a trick I saw on the Mynd: get a glider that's big for you and load yourself up with 30 lb. of ballast if the wind is strong.

Glider and wing-loading must be such that you can impose your will on the glider in a sort of "co-operative defiance" of whatever gusts you encounter. Don't expect instant response, but if full roll input doesn't level the glider fairly quickly, change something or tighten your turbulence limit. I've never had an involuntary 360 and, if I ever do, I'll probably give up. Loss of control to that degree is major pilot error, either in flying skill, choice or condition of glider or choice of conditions.



Careful Progression

Given good equipment, well-matched to the pilot and properly tuned, the key to learning to fly turbulence, or perhaps simply learning to fly, is careful progression. Choose a convenient site, with good top and bottom landing areas and minimal obstructions, which can be soared in say 16 mph. It should also have hilly features upwind which on strong thermic days will generate turbulence but which do not greatly affect the hill in moderate winds. Mendick is a perfect example. Clatter might be. Nonts; from what little I could see of it, looks such a place. Get to know the site intimately in easy conditions and get to know your glider intimately too. Then, and not before, start increasing your take-off windspeed

limit in gentle steps — 2 mph for example — and consolidate the added knowledge from each flight before you take another step. Instability must be taken step-wise too. Assuming you've never handled more than 20 mph, 20 gusting 24 is much safer than 10 gusting 18. Learn to judge wind speed and gustiness from the feel of the glider on the ground and when floating it by the wires. Dispense with the Ventimeter as far as possible unless you insist on trying to impress your mates.

If you are 360'd involuntarily, you've overdone it, for sure. Likewise, if you fill your trousers. If you have a deflation, in UK conditions, I'd be inclined to say you'd overdone it. If you have to apply full input, in roll or pitch, for three seconds, you've probably overdone it. If you can honestly say that the flight was safe, that you were always fully in control, carry on to the next step in the progression. Stop the progression at a point safely short of loss of control.

Trotter's Top Ten Tips

That's the approach, or my approach at least, to learning to fly turbulence. What of the actual flying? What follows applies mainly to high-wind ridge soaring, in orographic/thermal bumps.

1. Increase your clearances above normal. Don't expect to scratch in bumps. Ten feet above the fence in normal air needs to be thirty or more to allow for a heavy down gust. Safe spot landings are impossible. Ensure you have a big enough landing area, scope to lose height by S-beats and a landing point anywhere along the beat.
2. Be decisive, and decide early. If you're losing it, cross the fence at the bottom of the hill with height.
3. Practise "semi-radical" manoeuvres, e.g. high bank, stalls, slipping, full-bore dive, when good conditions permit. The experience, confidence and knowledge will be valuable in difficult conditions.
4. Fly attitude and airspeed. If a wing rises, roll it level, immediately. If the airspeed drops, get it back, immediately. If you're blown back, get moving, immediately.
5. Rolling gusts are to be resisted. If there seems to be lift in it, do a positive turn into that lift; otherwise merely level the wings.
6. Pitching gusts must be obeyed. If you get gusted up, say thank you nicely, and let the bar out to capitalise on it. Be very sensitive to airspeed though and be ready to bar back when the gust passes, else you're stalled. If you get gusted down, don't try to maintain altitude; bar in, ensure penetration, consider bottom landing or, if safe, go elsewhere. Ridge soaring in turbulence essentially becomes gust-soaring; if you don't use the ups and avoid the downs, you're down.
7. Plan the flight in general terms, but don't have pre-conceived ideas. 90% of a really strong ridge flight consists of doing what the air orders you to do. Fly the air. Turn in lift, not sink. Lift is where the air's going up, not necessarily where the ridge is steep.
8. You'll probably require a fair airspeed to ensure penetration. If penetration isn't a problem keep a greater than normal margin above the stall anyway. Don't overstress the glider though by flying through heavy bumps at high speed.
9. Don't over-react in pitch: you'll destroy altitude. Don't under-react in roll: your attitude will be destroyed.
10. A quick small brief input is a hundred times better than a slow, heavy prolonged input. Stay alert. All inputs should be in full confidence of their results. If you don't know your glider that well, don't fly these conditions. Do you know the pitch range in prone is six feet?! Have you used it all? If not, why not? If your answer is "divergence" change your glider.

Migrate With The Storks

By Tommy Thomson

Tommy Thompson used to glide in the Middle-East 30 years ago, and has these comments on the flight routes taken by the European white stork —

They hate long sea-crossings, because their "powered" range seems to be about 20 miles, but very rarely taken to the limit, which is why they are not often seen in this country. The various groups from several parts of Africa funnel into a concentrated stream around the northern end of the Red Sea, and then follow the Eastern edge of the Great Rift Valley from Akaba past Damascus/Beirut and Northwards into Turkey, where they cross the Dardenelles at its narrowest point before fanning out again to their various breeding grounds throughout Europe. Although this adds miles to their Great-Circle-Route, they are assured of vigorous blue thermals up to 8,000 or sometimes 10,000 feet as a reliable daily occurrence.

Thirty-years-ago, it did not seem to be a practical proposition to follow the storks, since there were vast areas without airfields. There would have been no way to get a launch each morning, using a conventional sailplane. But with the advent of the hang-glider, this problem could be overcome by choosing a landing site at the end of each days gliding, suitable for a launch next morning. The hang-glider would have to serve as a form of rough shelter overnight, because there are vast areas without any habitation whatsoever. It would in fact be more in the nature of a Survival Course than a Cross-Country exercise, the soaring aspect providing no great problems in these

lift conditions, assisted visually by the spiralling columns of hundreds of storks, who it is thought, would not object to the presence of another "bird". Contrary to the objections of some conservationists, birds do not object to another motorless creature, and in fact there are on record several instances of sailplanes getting close enough to soaring buzzards to take accurate measurements of glide-angle, coefficients of lift and drag etc.

While there seem to be no great problems as regards the actual flying; there is certainly an abundance of other difficulties; diplomatic clearance would be extremely difficult in some countries; knowledge of several local languages would be essential; equipment would have to include water and provisions for at least 3 or 4 days; in the more remote and featureless regions, map-reading is well-nigh impossible, particularly in conditions of reduced visibility (and no one around to ask the way!), and it would probably be necessary to take astro-sights each night to check on daily progress.

Prevailing winds are rather an unpredictable factor because, being over land-masses, trade-winds do not really apply, and also it is just the times of year when the continental pressure-systems are changing.

From the wind point of view there seems little to choose from a northerly migration in spring, or a southerly migration in autumn. Whilst I have at one

time or another flown the complete route, I only have detailed local knowledge of the Middle East portion, but in so far as that sector is concerned, there is about a 80% chance of getting light north-westerlies or a 15% chance of strong south-easterlies and very much reduced visibility (Khamseen) in either spring or autumn.

Therefore the whole matter of timing and direction seems to evolve round the English Channel. In still air, a good flexwing would require about 13,000 feet before crossing out, and (say) a Mitchell about 7,000 feet. If we could add in the maximum tailwind component in which usable thermals would be likely to occur over the English or French coastal regions (say 15 kts), these figures would become about 7,500 feet for the flexwing, and 4,500 feet for the Mitchell. These figures would be more likely to be achieved in a north-westerly during autumn, than a south-easterly in springtime. It does therefore seem that the southerly migration would be preferable (as well as ensuring that the greatest obstacle (flyingwise) would be overcome at the start of the journey).

CALVERT COMMENTS

Gaggle Flying

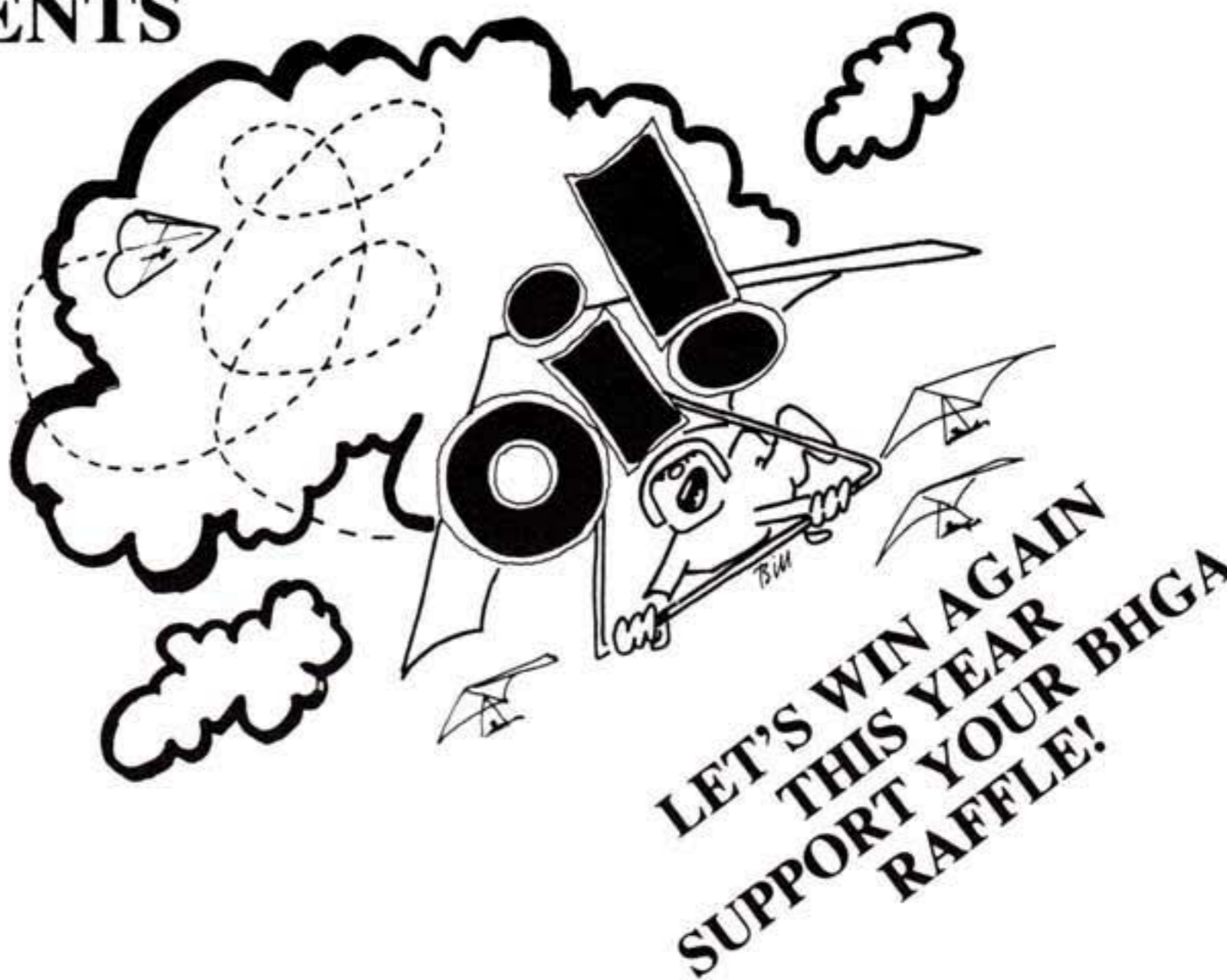
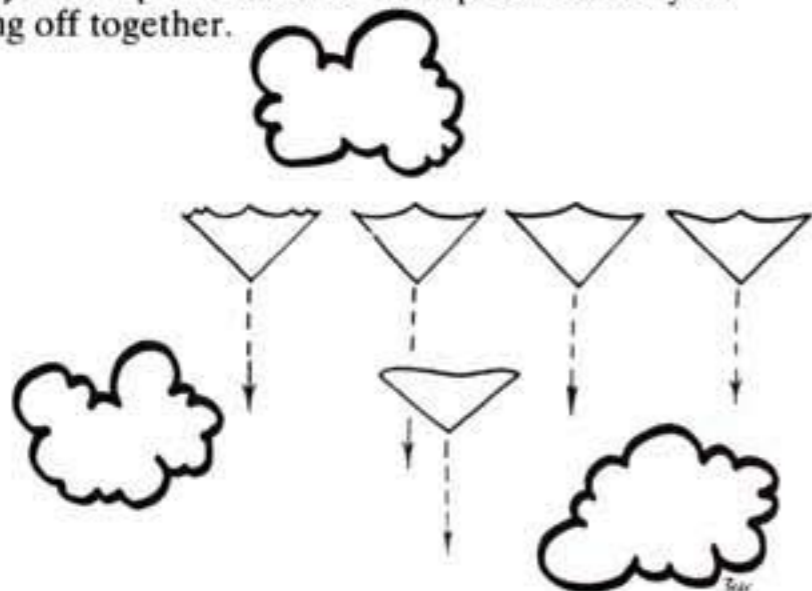
The art of XC flying owes a lot to technique, and one very important technique is to be able to fly in gaggles.

Climbing in gaggles is easy, because anyone who is going up faster than yourself will lead you to converge your 360s with his.

The greatest advantage of gaggle flying is on the inter-thermal glide.

By flying a few wingspans apart your effective performance — searching power — is vastly improved.

It is a tribute to the increasing ability of hang glider pilots that the gaggle technique is quickly becoming a reality. Perhaps the most difficult part is actually all setting off together.



An Interesting Nil-Wind Take Off

By John G. Storry

The interesting, as distinct from the uninteresting nil-wind take off which merely assures a launch at a slightly enhanced groundspeed, is a fascinating subject. The experiences gained from a well executed interesting nil-wind take off, i.n.w.t.o. for short ("I never wanted two operations"), will prove invaluable in every walk of life, and ensure you are master of any situation you may encounter. Walk tall in the knowledge that, after faithfully following your physiotherapists advice, it is YOU who will be throwing sand at the seven stone weakling; YOU, the bronzed colossus of the slopes, pulling the birds with fearsome tales of derring-do in the steaming bracken jungles of North Yorkshire, while the other flyers are sweating and struggling to perfect their technique.

Beware the false dogs who seek to divert you from the paths of truth with tales of lift and airspeed. These things lead to the dreaded soaring flights of minutes or, Icarus forbid, *hours* duration which are anathema to our cause — the search for insufficient airspeed and the skill to produce disabling, non-fatal injuries.

The ideal place to practice serious interesting nil-wind take offs is a progressively steepening slope with a rocky outcrop at the bottom on which a wingtip can be caught. Conservation of angular momentum ensures that the free wingtip will turn very smartly through 180 degrees, and the hang-glider stops dead with a satisfying crunch as it strikes the rock face. You carry on a little further and with any luck you will severely injure your outer shoulder as you go, off centre, literally through the A-frame, wrench your back as the harness allows you to smash against the keel and break a leg as you fall to the ground with the remains of the glider causing further bruising and lacerations as it collapses on top of you.

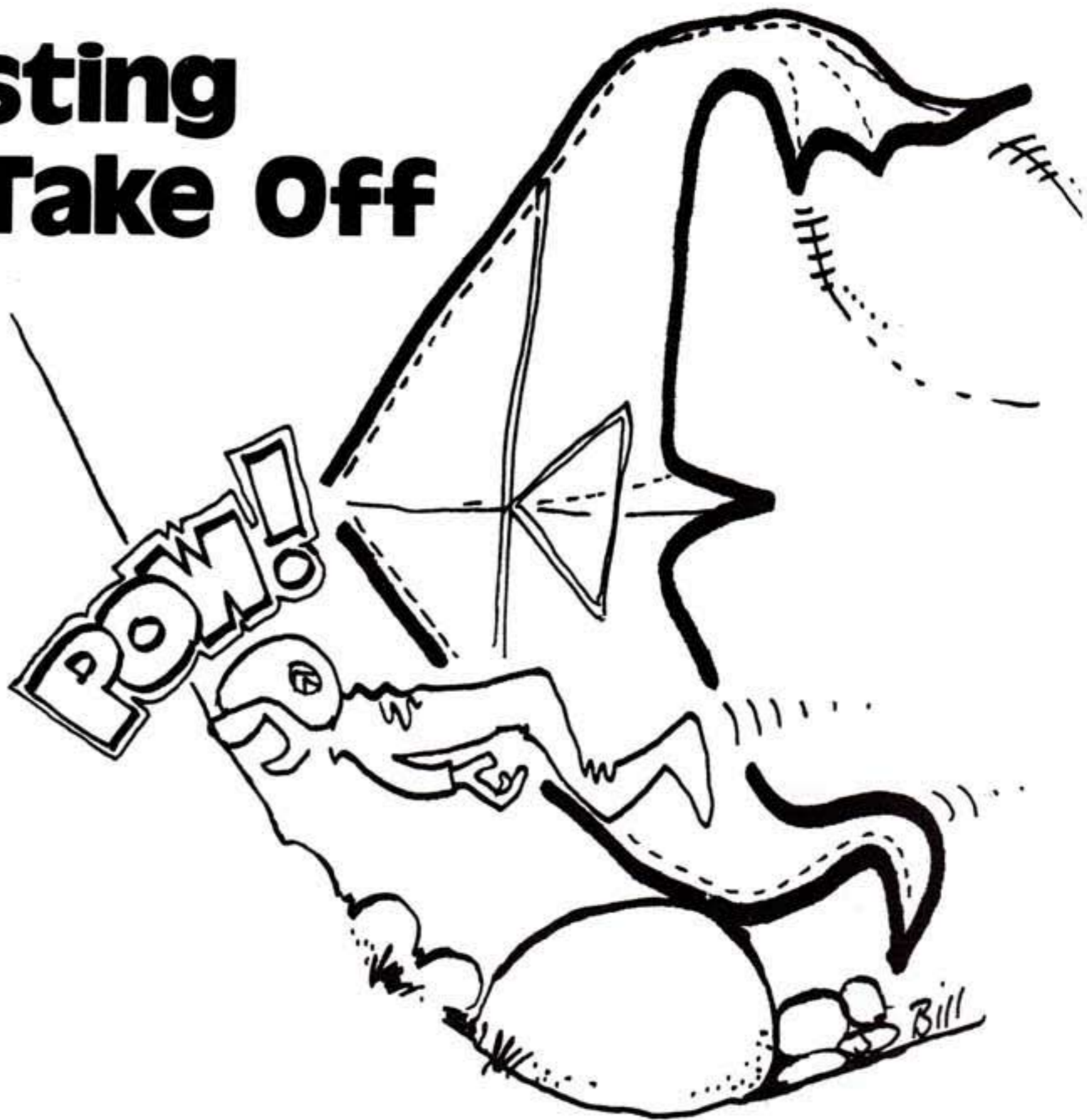
After some moments people will appear whose purpose in life is to tie the bits of you which involuntarily wag about to the bits which do not. This service is in preparation for your trip to the hospital where many things wait to be revealed. Life then assumes an air of unreality and you may at times be perplexed by the apparent contradictions in that which you see, hear and feel . . .

. . . a white coated acolyte appears and starts *doing things* to your arm. As you idly watch the magenta fluid rise up the walls of a crystal cylinder you remember with a thrill of horror that your red sports trousers are in the wash so you went flying in jeans . . . and jeans should be blue . . . and again you hear the bells and the angel choirs as you float away on a black velvet sea . . .

. . . her fragrance is overpowering as you press your face against her breasts. Dizzy with the agony of this new-born passion, you masterfully embrace her hips and raise your tortured eyes to hers.

"Turn over love", she says, "we don't want you getting bed-sores".

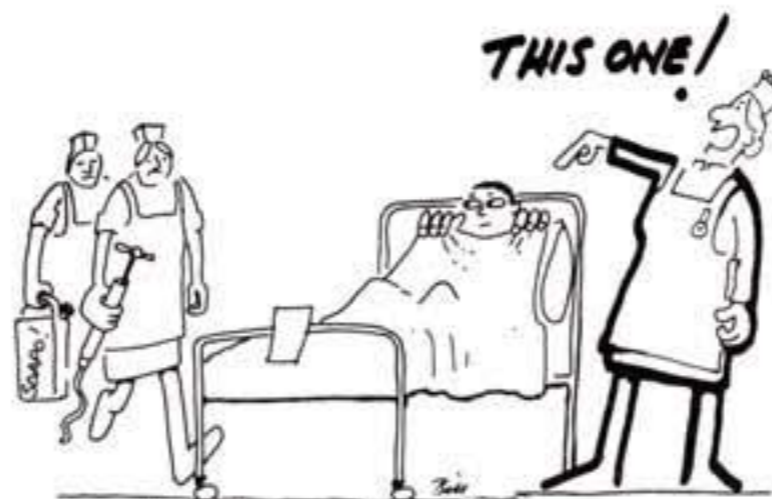
As the days pass you spend more time in the real world and your lessons begin in earnest, often at 6 a.m., a time which you did not really believe in — like Father Christmas. You learn the importance of correctly identifying personal priorities — the most important people in your life now are the tea lady and the nurse with the bed pans, followed closely by the Treatment Sister. If you fail to heed the warnings of veteran i.n.t.w.o. pilots you will spend your hours either desperately thirsty, or dying for a Gypsy's Kiss



.. with a rocky outcrop at the bottom..

or a Millstone Grit (for the uninitiated this is rhyming slang for a pee and the other thing!). Upset the Treatment Sister and all your injections will be murder. You may find, in extreme cases of victimisation, that you have been written up for the ultimate hospital weapon against intransigent patients — the Enema!

will be able to control the massive erection normally experienced when nubile females soap your naughty bits and you may even find it possible to "go" under the watchful eye of an 18-year-old trainee nurse, strategically placed to prevent you falling backwards off your crutches, as you stand at the trough in the 'Gents'.



...the ultimate hospital weapon...

At last the day arrives when you are stuck together firmly enough to be allowed out of bed for physiotherapy. This basically consists of hard faced nordic females with hands like the Bride of Frankenstein, grasping intimate portions of your anatomy while you tense and relax sets of muscles on the command, "One, Two, Hup, Two . . . etc. When you inevitably get it wrong and your muscular contraction fails to materialise on schedule to balance the grip of the iron maiden, you scream! Loudly!! Eventually you will reach degrees of self-control hitherto achieved only after years of devout meditation and a forswearing of all carnal lusts of the flesh. With faith you



..you may even find it impossible to 'go'

Truly, my friends, the rewards of the interesting nil-wind take off are many fold, but as I lie here coaxing the soft strains of Bach's Air on a G String from my traction wires I can hear the birds singing and see the sun shining, and I'm shaking my fist at you, you swine, floating about out of reach. But just wait, I'll be up there after you in . . . er . . . six or seven months!!!

ICARUS ALL SORTS

Grounded wife's lament

*Jolly crowd on lonely hill,
Rigging gliders, laughing till
At last they launch into the blue:
I'm six miles from the nearest loo.*

*Soaring high my husband flies,
Flecked with sunlight in the skies,
I wonder if he thinks of me —
O God, I'm dying for a pee.*

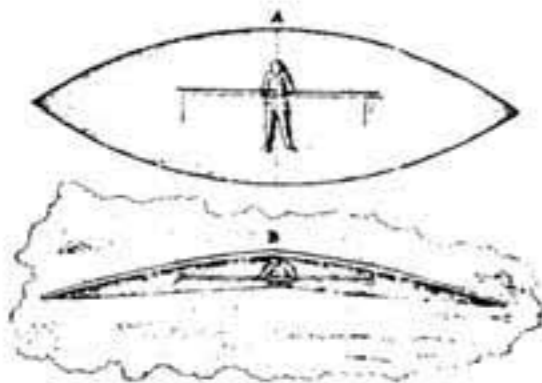
*I run cross legged down the slope
And find a bush to crouch — some hope.
A great black shadow from above —
A friendly voice — "You alright, love?"*

*They see it all from way up there,
There's nothing missed when in mid-air;
The gorse is short, the landscape free —
O God, I'm dying for a pee.*

Anon.

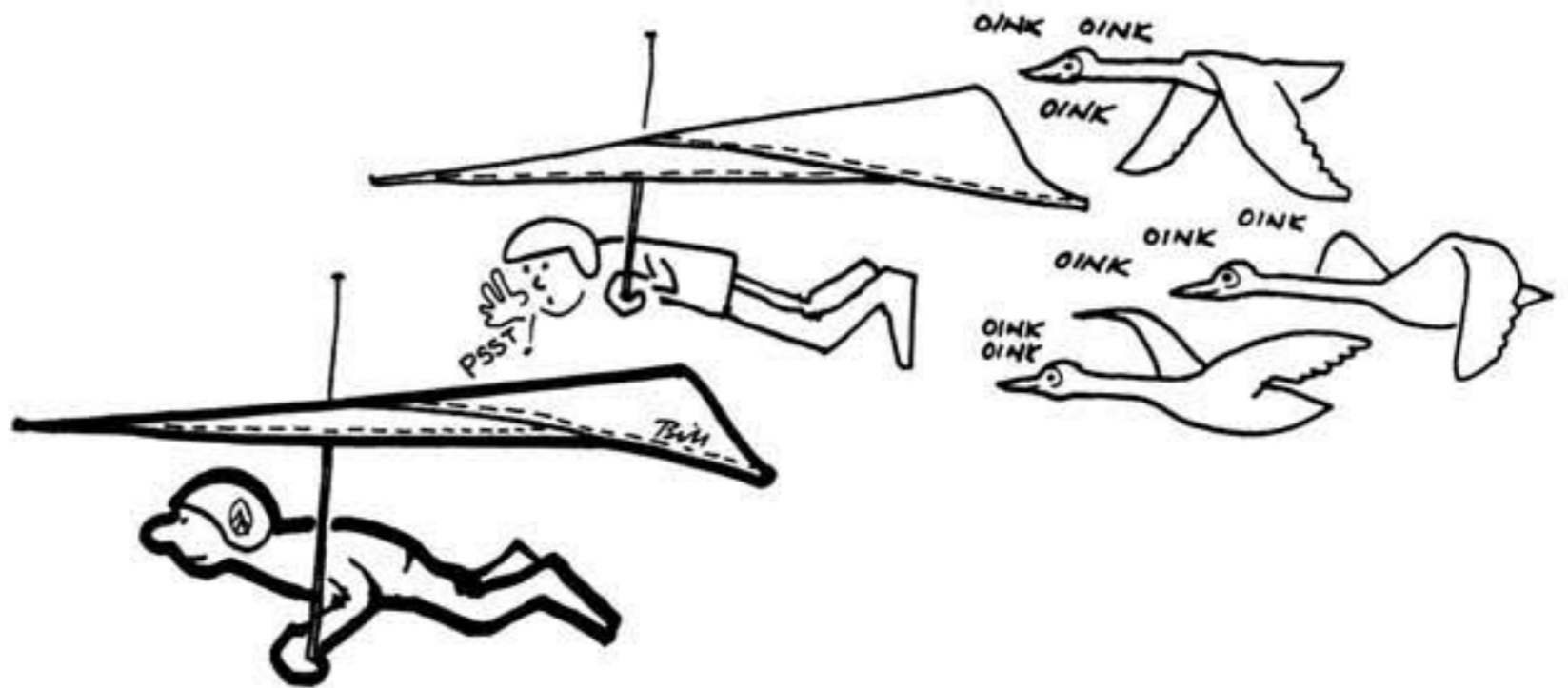
PRONE BEST FOR BREATHING

About 1780, Karl Friedrich Meerwein, an architect, and the Inspector of Public Buildings for Baden, Germany, made many scientific calculations and experiments on the size of wing surface needed to support a man in the air. He used the wild duck as a standard, and figured that a surface of 126 square feet would sustain a man in the air. This agrees with the later calculations of such experimenters as Lilienthal and Langley. But Meerwein also made some highly amusing mistakes. He said the way a man is built favours flying in a horizontal position, because his nostrils open in a direction which would be away from the wind, and so breathing won't be interfered with.



Meerwein's Flying Machine. A, shows the position of the man in the wings, their comparative size, and the operating levers; B, position when in flight.

... Classic Bloomer in latest exhibition at the Design Centre in London, which features a Hiway hang glider and all sorts of sweet burblings, you know, about Steve and John being determined international market leaders. "Their Super Scorpion", says the blurb, "a glider of classic lightness ... won the Americas Cup in 1978 and 1979", and there's a dramatic photograph of a hang glider taking off from a hill. There's only one problem. It's a Gryphon ...



ElectraFlyer is said to have virtually thrown foot-launched hang gliding out the window, and gone into building the EAGLE virtually full time. Larry Newman says he won't kill his foot-launch interest, but he's cutting it back to two days a week. J. C. Brown and Keith Nichols are feeling a little lonely working away on their own on "ancient" foot-launched kits ... where are they now? ... Eipperformance, once a name to conjure with in hang gliding — Dick Eipper was one of the leaders in the early Ground Skimmer days — has sold out to a group of businessmen, who no longer make hang gliders, only powered quicksilvers ... Hans Olfchevsky, European class 3 Gold Medalist in Kossen, 1978, ahead of Mick Evans, will be building Fledglings under licence in Germany this year. There's speculation that, if he spends all his time building, he won't have a lot of time to train for this year's European ...

... talking of Fledglings, the tragic death of Claus Hill while testing the Fledge's successor (under power) the *Voyager* last year has left an odd situation at Manta. Klaus was the Fledge's designer, but had sold the design to be built at Manta's Oakland, California, factory, across the bay from San Francisco. Two sails a day, made elsewhere, arrive at the factory, where frames are built, and the glider assembled. But Manta's main concern is building spare parts for other manufacturers, and the Fledge is said to be almost a nuisance to build. No one appears to be doing Research and Development. The present World Champion, Rex Miller, is working in the factory "bending battens" — and said not to be happy. None of this bodes well for the long term future of the Fledge, but what could be worse is that France's *enfant terrible*, Gerard Thevenot, is said to have a Fledge-type machine on the drawing board, which he thinks will sell big next year

... there's a possibility that the American air worthiness ace, Tom Price, will be in Britain May/June to have a look at our air worthiness system. AIB permitting ...

More news of that man on a long elastic rope, David Kirke. On March 17th, the man who was once described as "Marching to the sound of a different drum" went over the Royal Gorge Bridge in Colorado, USA, 1,050 ft. above the ground, on a 415 ft. bungee. He got within 60 ft. of the ground, and reached an estimated 111 mph in free fall, before bouncing back up again. "It felt quite comfortable", he said later. An American TV company paid a flat \$20,000 for the jump, which went on expenses and champagne, and the Dangerous Sports Club notched up another first. David says the object of bungee-jumping is to get as close to bottom as possible before springing back — like just getting your feet wet jumping off the Clifton Suspension Bridge ... one miscalculation could, though, make your eyes water.

news of Waspair, the once-biggest-in-Britain hang glider manufacturers which fled these shores leaving debts of more than a hundred grand ... they've set up in California's capital, a town called Sacramento, calling themselves the Waspair Corporation (sic), employing, when last seen, 6 or 7 people. Barry Bourne is there, so is his brother, and so is Robin Haynes. The factory is apparently brand-new, about 5,000 sq. ft., with a "posh" office, and we're told that all production of the so-called Super-Gryphon (nee Sabre, nee poor Bob England's Gannet) is being sold in Europe. The word is the mighty Waspair Corporation won't go into the US market before July. BEWARE!...

Incidentally, have you heard that Bob England made a (reverse charges) phone call to Robin Haynes to find out what was happening to the estimated £3,000 in design fees for the Super-Gryphon/Sabre etc? Robin, without a trace of shame, apparently went on and on about the "disloyalty" of two or three of the top former Waspair flyers in Britain who didn't carry on flying Waspair machines after the company did a bunk abroad. Robin is, of course, an expert on the subject ...



New bossman of the American magazine *Hang Gliding* is in Britain in early May. Except bossman is the wrong word, and boss bird is a bit sexist. Ms. Lavan Emerson, from California, touring Northern Ireland and Western counties of Britain with her husband until May 12th or thereabouts, wants to see *Wings!* offices (sic) and find out how we do things. If she turns up on your hill, welcome her. Says she wants to get a bit of England under her wing.

Kay Brier, author of *Dual Flying* in this issue, was safely married to Dave Simpson on Saturday, April 12th, but before going off to honeymoon in Florida, the *Daily Express* persuaded her to get into a prone harness in her wedding dress and be prone launched by husband and best man. The resultant pic made the Monday papers. The real point of the story, though, is that Dave proposed to Kay 500 ft. over the Long Mynd last July, after they'd been flying 2-man for an hour or so. "Oh well, you don't seem to be doing too badly", said the romantic David, "I suppose we'd better get married." The cad couldn't know it was mortal fear he'd unclip her that prompted Kay to agree. Expect an article soon on 2½-man flight?

Gilbey's Cross-Country

By John Fack



Photographs by Mark Junak

Bob Martin

OPEN XC

Easter, 1979 was a very good time for flying in the South West, with 4 sunny days, the first real thermals of the year, a new 34-mile XC record, unofficial height gains of 6,800 ft. and about 12 hours' air time. So we greeted an invitation from Jo Binns to participate in a XC meet this Easter with a certain amount of scepticism, knowing the effect that even semi-organised competitions can have on the weather. As it turned out, we need not have worried; Easter, 1980 provided some of us at least with another four days of superb aerial entertainment.

At the first League competition this year Jo Binns and Bob Martin said they would be holding the Gilbey Open XC, in an effort to expand the barriers of XC flying, and generally have a good time. A trip away from home sites is always a pleasure, especially when there's a possibility of flying the Long Mynd and Llandinum, and so it was that the Sigma crew from the South East, with a few Kiwis in tow, a whole bunch from the Avon Club and a few locals gathered together to do battle over as many kilometres as possible. There was prize money of £30.00 for the longest flight, and bottles of Gilbeys Gin for other notable attempts. There were 20 entrants altogether, each contributing a £2.00 entry fee, the balance of £10.00 being contributed to the BHGA Fighting Fund.

FRIDAY

It turned out that those who migrated early towards the Mynd to practise made an error. The wind was a very light NE'ly, but it was sunny with a good chance of thermal activity. Corndon Hill was the only available site, and it really was not working. But the day was brightened up by a sailplane making a forced landing in the minute area at the bottom of the hill; observers reported that, despite the apparent nonchalance of the pilot 10 minutes after the event, there was a certain amount of knee-trembling evident as he pulled back the canopy.

Meanwhile Bob England and Jeremy Fack had dropped off at the 1,500 ft. Blorange on the way up to the Mynd. Jeremy was flying his Phillips-sponsored Atlas for the first time, and Bob was using my identical machine, while I stood around nursing my mending arm and getting a tan. Soaring had been marginal, to say the least, some pilots having been forced to make the long flight to the landing area. Bob immediately made everyone ill by climbing straight up to the inversion layer 1,700 ft. above T/O, with Jeremy some way below. Winds were so light that it was easy to fly from way behind the hill to the centre of Abergavenny, some 3 miles up wind, with little height loss. Careful timing was essential for take-offs, but once up a bit it was quite easy to maintain height. Because of the low inversion and a complete lack of clouds, it was not a good day for "going for it", but it certainly gave you an appetite for thermal eating. One unfortunate pilot managed to

thermal all the way up to the top, having cored a blob about 300 ft. above the landing area, but instead of working the lift up to the inversion he opted to top land, came in too high, overshot, and sank out to the bottom landing area again as quickly as he had climbed to the top. Most of the pilots sitting around on the top watched with a combination of amazement and straightforward jealousy as Bob and Jerome worked very marginal evening lift from low down near the landing to several hundred feet above the top, in a flight lasting approximately 45 minutes. I sat around wondering why the League couldn't be blessed, just for once, with conditions like these.

Of course, no one in the Mynd area shared the jubilation of Bob and Jerome who, between them, spent over 5 hours in the air, while practically no one else had managed much more than 5 minutes.

SATURDAY

This was the official start day to the meet. It was then the unfortunates concluded, that reputations and the money would be won and lost. A light northeasterly greeted the motley assembly of competitors, some of whom were looking slightly the worse for wear after a night on Bob Martin's overcrowded floor, and a touch too much beer. Such is the spirit of competition. The Malverns were chosen as the site for the day, which proved to be a mistake. The day looked like a good one, but was more notable for repeated landings on the side of the hill by Keith Cockroft and Bill Payne than anything else.

Bob England showed some of his previous day's form early on by getting to 850 ft. ATO, but reported ill-formed blobs and generally rough air. Organiser Jo Binns looked set for a bottom landing downwind when he hooked a boomer which took him to 1,000 ft. about ½ mile behind the hill. The pundits on top thought he might make the best of a bad day and head off for some small clouds about a mile further downwind, but he chose to come back to the ridge and promptly went to the bottom. Ridge lift was patchy, and thermals became weaker and less frequent. Bill Payne eventually managed a staggering 3Ks over the back to take the Gilbeys Gin for the day, while Bob England and Jeremy Fack left the T/O and ridge-hopped down to Castle Morton, craftily recording just over 5Ks, not exactly XC but a pretty sneaky little run.

SUNDAY

This gave us the first real taste of XC conditions. Light NE'ly again, and everyone made the long trek down to Pandy. We learnt that heights of 3,000 ft. ATO had been made the previous day by most of the Solar Wings crew and others. The wind picked up at about noon and immediately droves of pilots headed up the ridge towards the gap near Hay Bluff. It was a good day for comparative performance testing, the Sigmas of Keith Reynolds and Mick Maher looking good in the early part of the day, the Atlases as ever impressive, and Andrew Hill's Lasor looking particularly good as the day went on. Reynolds amazed everybody by not heading off down a cloud street once he got to cloud base at 2,750 ft. ATO. Was it early season apprehension, or the very threatening appearance of the successive valleys behind the wonder of nature that is Pandy? Possibly a combination of both, but a new problem was brought to light. It was a hazy day, and once pilots got up high it was impossible to see what the clouds looked like, while to us on the ground it looked like a big distance was on. In the event it was Colin Lark who got the Gilbeys, having flown from the Gap to Crickhowell, clearing the massive Sugar Loaf Mountain by a mere 15 ft. on the way, and eventually landing 15Ks from take-off. His landing was witnessed, amazingly enough, by Chris Johnson of Hiway, languishing at home with chicken pox!

Jo Anderson was next best with 10Ks, his first real XC, to be saved for 1981 League entry, I hear. Brian

Horrel, a Kiwi, was first to make it up to the Bluff on his Lancer IV where he landed because he saw a bunch of gliders that he thought were other competitors! Bob and Jerome were once again trying hard on the identical Atlases. They flew up to the Bluff late in the evening, crossing the gap with a late thermal, and then flew back to Pandy, having totalled 4½ hours' airtime each — almost Northern application!

There was, of course, jubilation at the pub that evening, particularly from Colin Lark, as a result of an excellent day's activity. Not from BHGA Chairman Roy Hill, however, who was heard to comment to Andrew . . . "you should have gone for it, kid. We need the money."

MONDAY

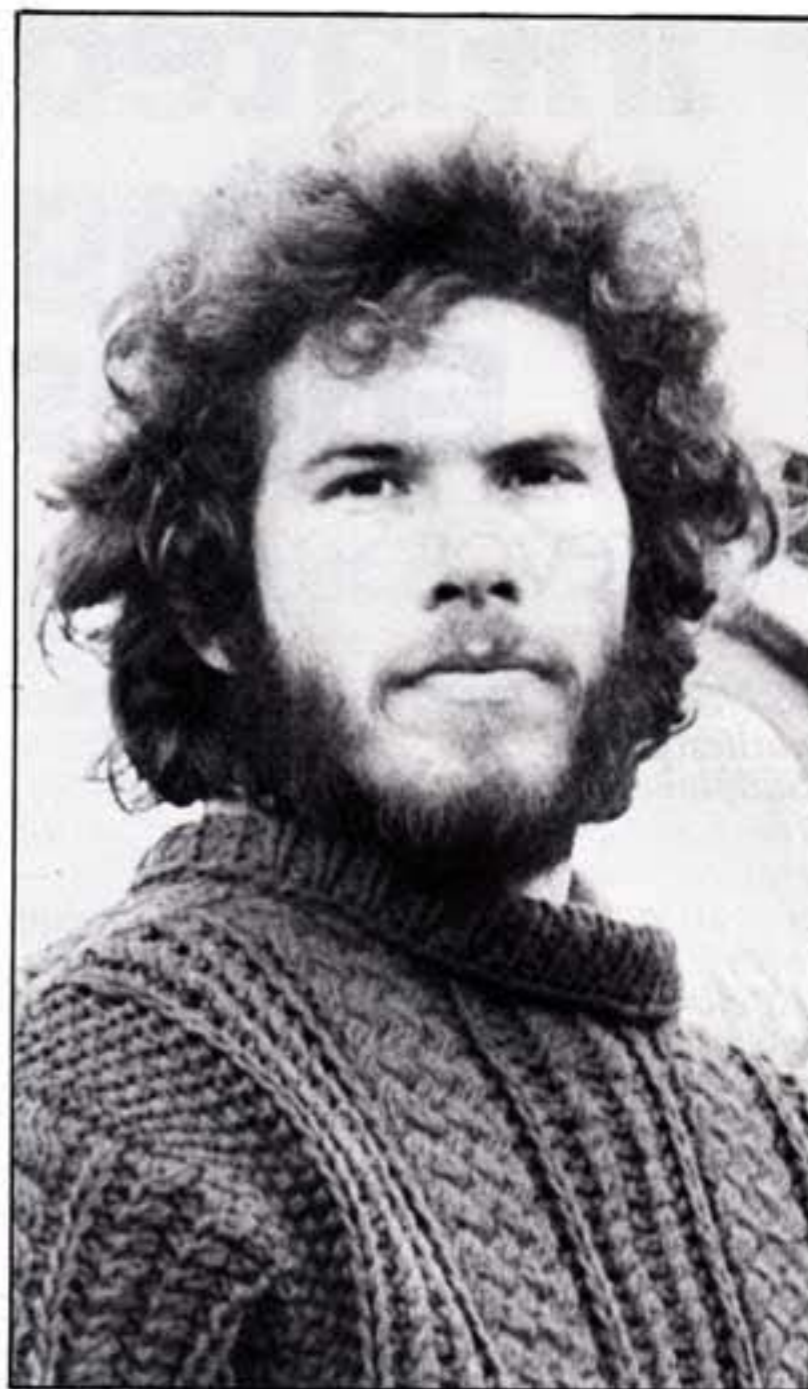
The most successful day for XC. The meet had split into groups by now, using sites of their choice. Some, like the organisers Binns and Martin, chose the Lawley, a new site in the Mynd area that really shows potential. Colin Lark and most of the Kiwis chose the Blorange, while Bob England and my brother opted for Selsey Common, reckoning the wind would be too strong in South Wales. Notable flights were to be made from each of these sites.

The wind was strong, N-NW, and there were some very tasty-looking clouds.

Lawley — The Mynd crew found the Lawley to be pumping well, and most pilots got away early. Binns and Martin both got drilled behind the ridge, while Keith Reynolds made it back to Wenlock Edge where he hung around for an hour below the trees at ridge level before hooking the big one which took him to cloudbase, 3,000 ft. ATO, and put him on the way to 38.5Ks. The thermal was so big and strong he climbed from 800 ft. to 2,000 ft., arms right out, "fully stalled", in four 360s. "Bigger than anything I hit in Owens Valley", he said later.

Blorange — Brian Horrel and Colin Lark once again showed some form, using the wave lift at the Blorange before the cold front came in. Lark landed 17Ks away, while Horrel's flight was cut short by the sea south of Cardiff, some 41.5Ks from take-off. Brian was eventually recovered at 10.00 a.m. the next day, having been taken in by a family who gave him champagne to celebrate his achievement!

Selsey — There was also wave on the 350 ft. Selsey Common, and a local pilot in an "ancient" Scorpion couldn't believe his luck as he flew out and up, and



Jo Binns

out and up, over the town of Stroud, not having noticed the neat little lenticular above him. This, of course, was too much for Bob and Jeremy, who took off in an attempt to join him. They failed, because the wave soon got out of phase. But they rounded off a fine weekend by hooking a 900ft. min. boomer and setting off into the blue. There were no clouds downwind by this stage, so observers felt the flight would be short, but they were wrong. Bob landed south of Chippenham with 33Ks, while Jeremy salvaged what looked like a 10K hop by joining a hawk just 200 ft. above ground and climbing back to 3,000 ft., for a distance of 21.4Ks.

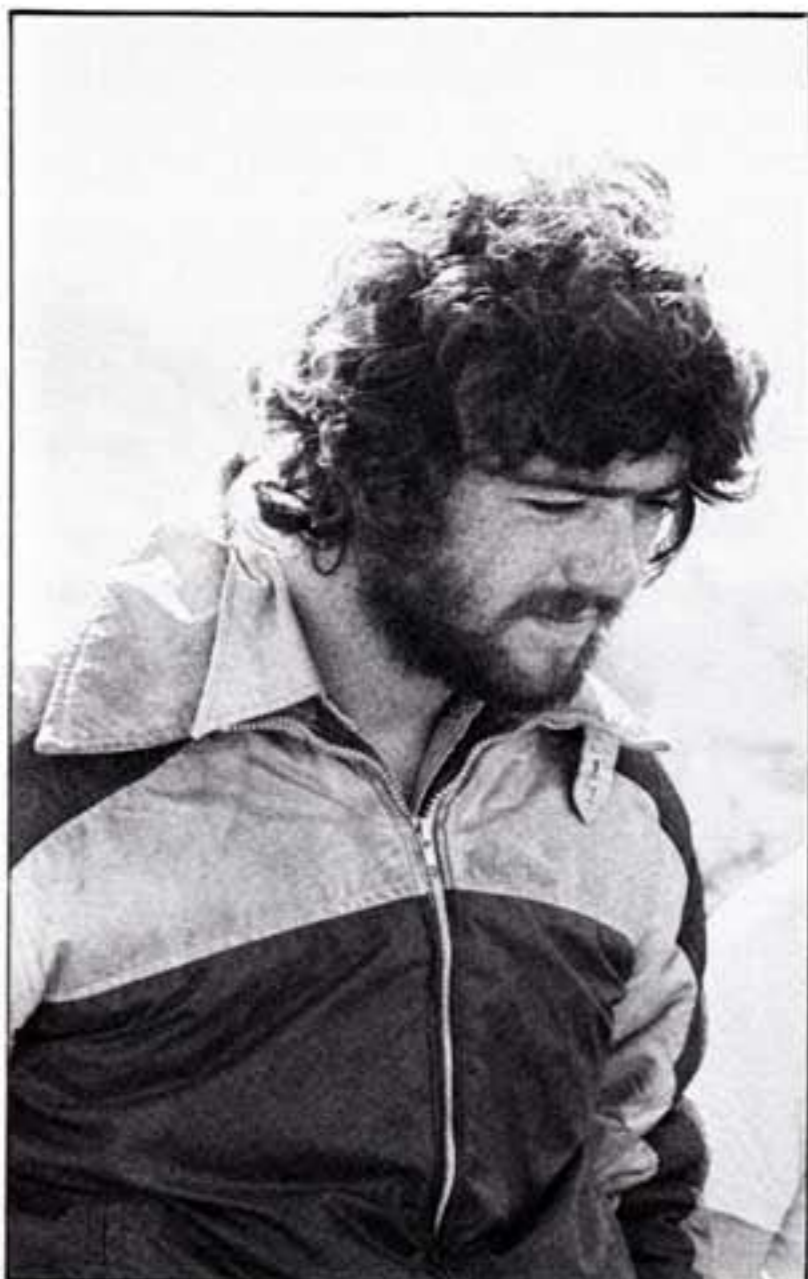
SUMMARY

More than 300Ks were flown over the four days by 20 pilots, with lots of good air time. The New Zealanders were totally amazed by the *quality* of the flying in mid and south Wales, saying they hadn't had so much fun since the Lachens XC in the South of France last August. Jo Anderson completed two flights of more than 10Ks, never before having flown further than the traffic lights at the Devil's Dyke, a mere 5Ks, so he is well on his way to League qualification.

Above all, it was a competition with more pressure to leave the ridge than the interpersonal pressure that is found in the League, and it was thoroughly enjoyed by all. Thank you, Bob and Jo and Gilbeys, and roll on the next time, when perhaps there might be a few northerners just to make it a bit more interesting.

RESULTS: Best flights GILBEY XC 1980

Brian Horrel (NZ)	Lancer IV	41.5 ks
Keith Reynolds	Sigma	38.5 ks
Bob England	Atlas	33.0 ks
Jeremy Fack	Atlas	21.4 ks
Colin Lark	S/Scorpion	17.0 ks
Mick Maher	Sigma	16.0 ks
Jo Anderson	Sigma	14.0 ks
Bob Martin	Cyclone	10.0 ks
Jo Binns	Cyclone	8.0 ks



Bob England



Keith Reynolds

Inflated Leading Edges

By Trevor Smith

47 years old. Involvement in H.G. since earliest news of American H.G. in Sailplane and Gliding. Rolls-Royce (emp.). Early attempts at H.G. in "no top rigging" home built — ground loops — loss of nerve! 20 years motorcycle racing with engine development successes. Lifetime interest and involvement in low speed aerodynamics through model work and full size gliders/light aircraft.

One previous article Wings — January 1979 — "Food for Thought" — also earlier letter published (on power) in early days of power.

It is interesting that in flexible H.G. design the wing section is one of the least considered items, whereas in all other forms of aircraft it is one of the first considerations. This is for the very good reason that the 'flexi's' have kept lightness, simplicity and portability as paramount design features, (still the only 'cartopable' aircraft). At one time it appeared that 'rigids' with their choice of efficient wing section would supercede 'flexis' but I for one am delighted that both have developed in parallel, there is room for both.

Battens have only stabilised the section and improved the ratio of the amount of wing flying with the same section. The actual section itself approximates very closely to the traditional 'curved plate,' exactly as the original Rogallo's were, albeit with a reduced thickness/chord ratio. (No! Rogs were not 'flat plate' section. A part cone was pushed through the air slightly sideways to the axis of the cone, this creates a 'curved plate' section and shows Rogs to have been true aircraft, not directional parachutes, if you don't believe me make a solid plasticine one and slice it into sections along the line of flight).

The point is that a curved plate section has good lift characteristics, but is just about the worst section for a flying wing (tail-less aircraft) as it suffers from high centre-of-pressure movement (unless reflexed e.g. GRYPHON) and being sharp nosed has a fairly abrupt stall. The fact that these problems are 'lived with' is due to, in the former case, masses of washout (which is counter-productive) and in the latter, by the extreme sensitivity in pitch, of 'weight shift' control.

My suggested line of development (with the lightness and simplicity parameters very much in mind) would be to 'pod out' the leading edge back to 40% chord. The remaining 60% can be left single surface as the glider section I have in mind has a thin TE (NACA M8/9 type). This also approximates to soaring bird sections which (I make no apology for repeating) have had 70 million years of development, so have probably got it right!

The way I suggest some manufacturer or individual tries to achieve this is (I have neither the money or flying ability to do it myself, hence throwing the idea open, in the hope that someone will try it) to double skin the LE back to 40% chord with a loose membrane such that when a completely

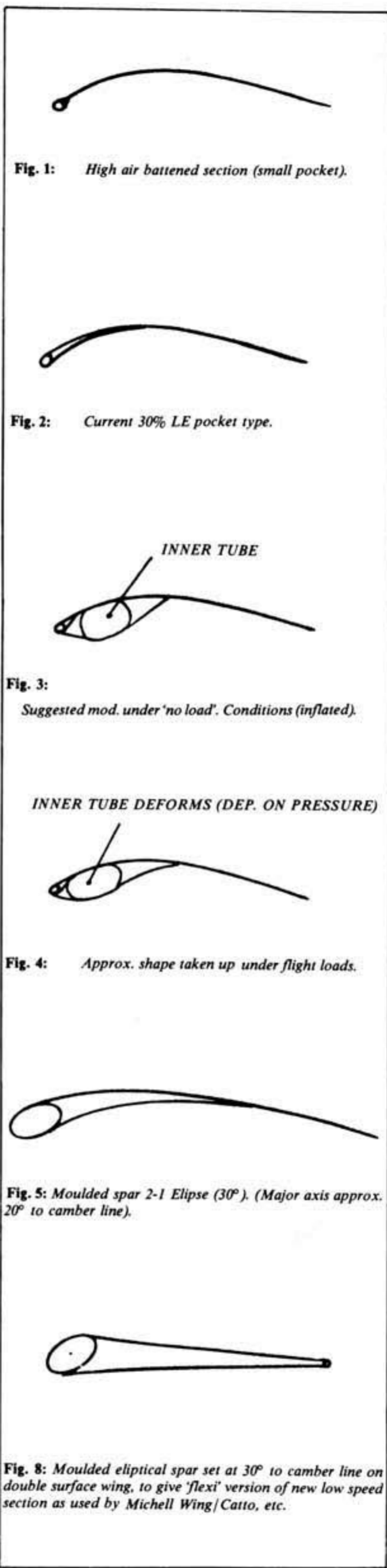


Fig. 1: High air battened section (small pocket).

Fig. 2: Current 30% LE pocket type.

Fig. 3: Suggested mod. under 'no load'. Conditions (inflated).

Fig. 4: Approx. shape taken up under flight loads.

Fig. 5: Moulded spar 2-1 Elipse (30°). (Major axis approx. 20° to camber line).

Fig. 8: Moulded elliptical spar set at 30° to camber line on double surface wing, to give 'flexi' version of new low speed section as used by Mitchell Wing/Catto, etc.

separate inflated inner tube is inserted it assumes the desired shape under flight loads. (Pause — while people 'fall about' suggesting possible supplier of said inner tube). But, seriously, this inflated tapering inner tube is inserted into the large LE pocket just behind the LE spar which creates the familiar 'tadpole' shaped section, which has good C_L , reasonable C_p movement, and gentle stall (so adds to safety). Model tests out of a car window suggest that under flight pressure differential across the wing, the shape comes out very well.

In fact, it may be necessary to have two inner tubes one in each wing, but I suggest they are connected and inflated through a common valve so that in the event of a 'puncture' the aircraft reverts to a single surface type and therefore can be safely landed, and does not become dangerously assymmetric. On reliability grounds I favour a separate inner tube rather than trying to effectively seal the LE pocket. This can be light gauge rubber or rubberised fabric since it takes little load and is mainly there to add shape. Such a modification could be added to an existing design in the first instance, so that it could be tested alongside a standard example of the same machine. Altering the pressure in the inner tube would provide a limited section 'tuning' capability. Incidentally for those who don't like sweepback this section with reflex (preformed battens/ribs) is self stable, although at some loss of lift, of course. I would keep battens as now, to keep the upper surface shape, and prevent the inner tube from distorting the critical front half of the upper surface.

The ultimate development in this direction, will probably be the replacement of the LE tube with a moulded elliptical section spar about 10 ins. deep at the 'keel' and tapered. Probably carbon fibre reinforced GRP moulding, which, because it needs to be large for aerodynamic reasons, will be very strong even with extremely thin wall section, and therefore light. The torsional rigidity of such a spar will allow low washout angles (i.e. reduced drag) without the danger of 'losing' the washout at high speed due to wing flex. Indeed such a spar would be strong enough to be a cantilever so dispensing with wing wires (or reducing them to very short ones to stabilise the 'bar').

Some manufacturers' models have 30% double surface wings. This is a step in the right direction as it 'fairs in' the LE tube avoiding the sharp change of section which occurs with the narrow pocket, and resultant turbulence. However the 'in flight' pressure differential ensures that this still reverts to effectively a 'curved plate' section. (I suspect that this also is the case with the so-called self-inflating leading edge types).

These thoughts are prompted partly by the desire for progress in performance, but mainly by a wish to see an end to what has been described as the 'silly' fatalities and injuries, caused by low level sudden stalls. True, in every case, they can be called 'pilot error', but many aircraft are not entirely blameless in this type of incident.

Can we have some 'Road Tests' please.



Slater's league

By Brian Milton

Graham Slater organised the second competition of the 1980 National League, on sites in Brighton, Sussex run by the Southern HGC, on March 28/30th. As usual, we were plagued by bad weather, with a total blow-out on the first day. But when the second day went by without any competition, things looked very grim. Although the original requirement of a League competition — that 3 tasks were necessary to qualify for League status — has been dropped, no one likes to spend all that time and money on one or two tasks.

Sunday, the last day, the weather forecast was that the wind would swing 180 degrees throughout the day. In fact, it swung about 90 degrees, and impatience, the new 5-man format, experience, and a superb team of marshalls enabled us to get three tasks in, even though we had to change sites after the first one.

The first task was deviation/duration/spot, in light winds with a bottom landing on the Devil's Dyke, with some radical take-offs later as the wind moved south. Johnny Carr, on his Cyclone, was the top scorer, but Jo Binns, Mark Sylvester, Keith Reynolds, Tony Hughes and Chris Johnson also did well.

On to Mill Hill, with sinking heart ("is it really big enough?") for one of the best-ever Mickey Mouse League tasks; in marginal conditions, speed along the ridge and back, and then around a figure 8 out of ridge lift, and top land on a target. Five of us didn't make it back on top. Top scorers were Trevor Birkbeck and newcomer Tony Hughes, on 96, but Johnny Carr continued his comeback with a 95 score, and Graham Hobson — League leader — Bob Martin, Graham Slater and Robert Bailey also did well.

Last task, going like clockwork now, was speed figure 8/duration/spot, slightly affected by the notorious Mill Hill sink, and this is where Johnny Carr came unstuck, catching a wing tip and doing badly on his duration test. Graham Slater, running around organising, said later he'd wanted to fly a Storm but had to borrow an already-rigged Atlas when his turn came up, and made the maximum score on this task. He was followed by Mark Southall, Lester Cruse, and another newcomer, Ron Freeman. Bob England, unhappily stewing in 30th place after the first competition, got an 82 and began the long haul back to the top.

The British League must be one of the few competitions in the world where a man can organise a competition, and win it, without everyone shouting "Cheat". When the scores came out, Graham Slater was the winner, ahead of Johnny Carr — who's now run up a record *four* 2nd League places without a 1st — while Jo Binns was 3rd. Graham Hobson was 6th at Slater's competition, but retains his overall League first place, although by a much reduced margin.

One man to watch is the Gilbey Cyclone Kid, Bob Martin, who made a 4th place, and now lies 2nd overall. There are familiar names at the top, like Graham Slater, Lester Cruse, Bob Calvert and Robert Bailey, but some others to keep an eye on include John Bridge, spot-landing ace Mark Sylvester, Keith Reynolds, who's jumped from 23rd to 11th, and League entry-pilot Tony Hughes. Bob Harrison hasn't got a big jump to make, but neither Jeremy Fack nor Bob England will be happy where they are. It's thought they're praying for a couple of XCs to sort out the men from the boys!



Graham Slater — Photo © Bettina Gray



Johnny Carr Feb. '80

photo Mark Junsik

BRITISH NATIONAL HANG GLIDING LEAGUE

Position after two competitions, six tasks, worse result dropped April 2nd, 1980.
Graham Slater's Competition, Southern HGC sites around Brighton, March 28th/30th.

Pos.	Name	Glider	One	Two	Three	Four	Five	Six	Total	Last Pos.
1	Graham Hobson	Atlas	100	80	84	66	93	72	429	(1)
2	Bob Martin	Cyclone	60	91	100	62	90	80	423	(3)
3	Graham Slater	Atlas	95	64	48	78	82	95	414	(9)
4	Johnny Carr	Cyclone	70	73	80	93	95	56	411	(8)
5	Lester Cruse	Cherokee	100	77	80	58	64	87	408	(2)
6	Jo Binns	Cyclone	75	59	80	82	80	79	396	(7)
7	John Bridge	Atlas	60	100	32	77	83	62	382	(13)
8	Bob Calvert	Atlas	85	89	64	65	66	72	377	(4)
9	Mark Sylvester	Atlas	85	61	64	82	50	57	369	(5)
10	Rob Bailey	Atlas	80	80	48	48	57	59	367	(8)
11	Keith Reynolds	Sigma	95	73	0	87	49	62	366	(23)
12	Tony Hughes	Cherokee	49	65	60	80	86	56	357	(12)
13	Bob Harrison	Cyclone	70	57	80	75	64	64	353	(9)
14*	Trevor Birkbeck	Comanche	70	63	48	48	71	96	351	(19)
14†	Richard Ware	Cyclone	30	74	80	50	54	73	351	(16)
16	Geof Ball	Vulcan	75	66	48	59	64	68	332	(14)
17	Chris Johnson	Vulcan	30	64	48	88	80	48	328	(32)
18	Ron Freeman	Wills XC 185	72	60	24	63	48	83	326	(132)
19†	Mike Atkinson	Storm	75	0	80	34	64	72	325	(29)
19†	Mark Southall	Storm	45	73	48	46	69	89	325	(26)
21	Jeremy Fack	Vulcan	70	66	64	42	62	56	318	(12)
22	Sandy Fairgrieve	Cyclone	75	66	48	0	80	48	317	(14)
23	Bob England	Atlas	60	44	48	62	64	82	316	(30)
24	John North	Atlas	60	78	32	62	48	64	312	(22)
25	John Hudson	S/Scorpion	30	53	64	57	48	64	306	(24)
26	Roger Black	Cherokee	60	59	60	50	0	75	304	(18)
27†	Graeme Baird	S/Scorpion	75	50	80	43	0	48	296	(11)
27†	Dave Garrison	S/Scorpion	50	66	68	46	56	56	296	(19)
29	John Fennell	Atlas	75	33	60	39	55	64	293	(25)
30	Roger Wates	Cherokee	60	67	32	73	32	56	288	(28)
31	Richard Brown	Storm	30	73	16	49	79	89	286	(33)
32	Tony Beresford	Cherokee	45	16	100	60	44	24	273	(27)
33	Ashley Doubetiere	Comanche	45	48	48	78	0	53	272	(33)
34	Colin Lark	S/Scorpion	75	47	45	47	0	56	270	(29)
35	Andrew Hill	Lazor	75	41	64	55	34	4	269	(20)
36†	Mick Maher	Sigma	55	53	64	46	45	48	266	(21)
36†	Peter Harvey	Cyclone	64	47	72	67	16	0	266	(19)
38	Alan Weeks	Cherokee	65	53	0	53	58	32	261	(36)
39	Geof Snape	Gryphon 180	15	77	32	45	84	32	250	(34)
40	Graham Leason	Cherokee	55	44	48	42	32	59	248	(31)
41	Roy Richards	S/Scorpion	49	35	60	64	26	0	234	(15)
42	John Sharpe	Cyclone	0	34	48	80	36	72	230	(39)
43†	Brian Milton	Storm	15	62	36	44	0	48	205	(37)
43†	Dave Jones	Storm	56	32	48	53	16	0	205	(47)
45	Dave Thomas	Cherokee	35	52	80	—	—	—	167	(54)
46	Brian Edmeades	Storm	40	30	0	46	16	32	164	(40)
47	Peter Day	Moonraker 78	15	—	—	44	87	0	146	(42)
48	Keith Cockroft	S/Scorpion	45	41	16	—	—	—	102	(58)
49	Richard Iddon	not flown so far because of injured foot	—	—	—	—	—	—	—	—
50	John Fack	not flown so far because of injured arm	—	—	—	—	—	—	—	—
GUESTS										
IRE	Max MacManus	Atlas	64	45	45	62	80	56	348	—
NZ	Rod Stewart	Sigma	85	62	16	16	81	48	292	—
IRE	Pat Molloy	Atlas	68	29	60	52	16	0	225	—
NZ	Allan Gerrard	Sigma	40	50	48	59	17	17	214	—

* Seven league-entry pilots had "estimated" scores and positions carried forward to the 2nd competition. In the event, 5 pilots ended worse off than estimated, and 2 better, so the estimate was generous.
Brian Milton

NATIONAL LEAGUE WINNERS

1977
1st competition — 1. Brian Wood* 2. Johnny Carr 3. Ken Messenger
2nd competition — 1. Graham Slater 2. Jeremy Fack 3. Brian Wood
3rd competition — 1. Bob Calvert 2. Johnny Carr 3. Graham Hobson
4th competition — 1. Robert Bailey 2. Johnny Carr 3. Bob England
5th competition — 1. Brian Wood 2. Graham Slater 3. Paul Baker
*1977 National Champion: BRIAN WOOD

1978
1st competition — 1. Mick Maher 2. Keith Reynolds* 3. Brian Wood
2nd competition — 1. Lester Cruse 2. Keith Reynolds 3. Bob Calvert
3rd competition — 1. Lester Cruse 2. John Fack 3. Mick Evans
4th competition — 1. Graham Hobson 2. Graham Slater 3. Bob Calvert
5th competition — 1. Robert Bailey 2. Bob Calvert 3. Graham Hobson
*1978 National Champion: KEITH REYNOLDS

1979
1st competition — 1. Graham Slater 2. Keith Reynolds 3. Mick Maher
2nd competition — 1. Graham Hobson 2. Bob Calvert* 3. Geof Snape
3rd competition — 1. Bob Calvert 2. Robert Bailey 3. Keith Reynolds
4th competition — 1. Bob Harrison 2. Jeremy Fack 3. Lester Cruse
5th competition — 1. Bob Calvert 2. Dave Thomas 3. Richard Iddon
*1979 National Champion: BOB CALVERT

1980
1st competition — 1. Graham Hobson 2. Lester Cruse 3. Bob Martin
2nd competition — 1. Graham Slater 2. Johnny Carr 3. Jo Binns

SUMMARY

Giving 3 points for 1st places, 2 points for 2nd places, and 1 point for 3rd places, and counting only those who have appeared more than once:

Name	Places	Points*
Bob Calvert	— 1, 3, 3, 2, 2, 1, 1	= 15 points
Graham Slater	— 1, 2, 2, 1, 1	= 13
Graham Hobson	— 3, 1, 3, 1, 1	= 11
Lester Cruse	— 1, 1, 3, 2	= 9
Johnny Carr	— 2, 2, 2, 2	= 8
Brian Wood	— 1, 3, 1, 3	= 8
Robert Bailey	— 1, 1, 2	= 8
Keith Reynolds	— 2, 2, 2, 3	= 7
Mick Maher	— 1, 3	= 4
Jeremy Fack	— 2, 2	= 4

More On Parachutes

By J.A. Hudson



Back in 1979 I wanted to put a stop to the 'bitchiness' and 'character assassinations' which were filling the letter columns of *Wings*.

The parachute seminar was conceived to do this and to bring into the open the many differing opinions. Along with the organisation of venue etc. I also arranged for an independent reporter to write about the seminar and fully photographed the event. Unfortunately, this report did not seem to reach *Wings* in time, and their editor extracted an article on the seminar from one of the chief protagonists, Jim Taggart.

Although as an article in the 'Briforge News Letter' this report was fine, as a report on the seminar I think that it was confusing and inconclusive.

No one is any the wiser as to whether spring drogue or manual development is better. I feel sure that those attending the seminar appreciated the significant differences and that the meeting in general understood the disadvantages of spring deployment and the more numerous advantages of manual deployment.

However, no doubt this debate will continue and will only be resolved after yet another seminar perhaps a year hence.

In the meantime I should like to make the following correction to the seminar article in February, 1980 *Wings*: On the Windhaven parachute a pin is *NOT* automatically pulled when the bag reaches full line stretch. Windhaven and Bennett parachute opening sequences were clearly shown and our 30ft. x 4ft. display board, with its 4 parachutes demonstrating the opening sequences, should have clearly indicated just how manual deployment parachutes work.

For those who did not attend the seminar, the following is a description of manual opening:

1. Pilot grabs handle on pack.
2. Pilot pulls and this action opens the container and the parachute in its cover or bag is then in the pilot's hand. The cover is held in place by either a loop of line or bridle through an elastic band.
3. Pilot throws the parachute away and when it reaches the end of the bridle line the cover is released and falls away.

4. Parachute streams and opens.

Hang glider parachutes are like hang gliders, they are a new product made for a specific use and are continually being developed. New ideas, methods of packing and deployment techniques are surfacing every month. Actual emergency deployments reveal faults or areas where improvements can be made. A number of people are continually investigating and testing better ways of deployments, but it is impossible to contact everyone who has a parachute and tell them of the finding. Every active pilot should make himself aware of all trends and improvements in his parachute just as he does for his glider. You never find anyone who does not enthusiastically find out which new gliders are about to be made, or whose latest 'hot ship' eats everything else. This is how it should be with parachutes.

If you fly you should make an effort every few months to find out what improvements or advantages may be available. As a start I should like to list a few things we have found out:

1. In our opinion, hang glider 'chutes are best deployed in a bag or cover rather than as a loose parachute.
2. Opening the container should be one action which ends with the contained parachute in your hand.
3. For speedy opening, the cover should come off the parachute as soon as possible, but it should be clear of the glider before the opening sequence starts.
4. The resistance to pack opening should be minimal. If you are falling, the bag may be falling at the same rate as yourself. Your original throw should be sufficient to 'pop' the elastics and remove the cover. Too many, or too tight bag closures may cause problems.
5. The bridle tape should be contained in some way so that as soon as the container is opened the bridle does not fall out loosely, offering the possibility that it may get entangled somewhere. We suggest a small 'line drop' flap sewn inside the container.
6. A 'clean' pack is an advantage. Stowing the lines inside the deployment cover or in a separate pouch on the outside of the cover may be better than having them on the outside where they could conceivably get snagged on parts of the glider.

INSURANCE

The following Personal Accident Insurances are placed at Lloyd's and are applicable to United Kingdom based BHGA Members. They are effective throughout Europe. Extensions beyond that can however be arranged.

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A10	£10,000	£30.00
A15	£15,000	£60.00
A20	£20,000	£80.00

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Code	Weekly Benefit	Premium
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D30	£30 per week	£18.00
D40	£40 per week	£24.00
D50	£50 per week	£30.00
D60	£60 per week	£36.00

FOR COMPETITION PILOTS i.e. THOSE TAKING PART IN NATIONAL OR INTERNATIONAL COMPETITIONS OR THE LEAGUE — OR COMPETITIONS ABOVE CLUB LEVEL, UNDERWRITERS HAVE INSISTED ON THE ABOVE RATES PLUS 25%

FOR MANUFACTURERS, THEIR EMPLOYEES AND INSTRUCTORS PLEASE ADD 50% TO THE ABOVE PREMIUMS

No Proposal Form required, provided you are between 16 and 65, can warrant you are fit and declare any serious accidents or illnesses during past five years, we can normally give cover immediately we receive your NAME, ADDRESS, AGE, OCCUPATION, GLIDER DETAILS, BHGA OR CLUB MEMBERSHIP NUMBER AND CHEQUE.

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TOWING and/or POWERED Hang Gliding is NOT COVERED by any of the above, except by previous written authority. If in doubt, ring REGGIE SPOONER on 0983-292305.

7. There is absolutely nothing more valuable in hang gliding than practiced deployments, either static from a rig or 'live' on a still day.

Note: 'Live' deployment means that the bridle is held in your hand and the parachute deployed. As soon as the canopy opens the bridle is pulled from your hand and the parachute falls free. NEVER, EVER 'LIVE' DEPLOY WITH THE PARACHUTE ATTACHED TO YOUR GLIDER. THIS HAS ALREADY KILLED ONE OVERSEAS PILOT.

Note: An article on practiced deployment will appear in a future Wings.

8. Parachutes should be re-packed frequently, i.e. at least 3 times a year in England.

9. Parachute packing is easy. Everyone should learn to pack their own 'chutes and should never rely on anyone else.

10. Elastic bands can perish and break. Always replace them at each packing. Note: We are investigating the use of light shock cord and elastic band free deployment systems.

11. Parachute containers are best sewn along the top and bottom only. This prevents possible constricting and trapping of the pack or bridle if you were forced to deploy from the 'gorilla' position. If your pack is sewn all around it may be wise to remove the side stitching.

We are investigating the use of light shock cord and elastic band free deployment system . . . After further tests we now do not recommend that a security elastic is fitted on the WINDHAVEN CONTAINER PIN.

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Ex Large	6ft to 6ft 3in	46in to 48in

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Please state Chest and Height Measurements.
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**LET'S WIN
AGAIN
THIS
YEAR**

**SUPPORT
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BHGA
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633 HANG GLIDER SQUADRON?

Dear Editor,

Here is another missal from a Briforge member! I've been in BAOR for three years suffering under the peculiar conditions as regards flying sites in W. Germany. There are good hills in our area but the dispersion really limits the amount of flying that you can get in. I have had to fly as much as 60 miles to our "local" SWly site and 150 miles in the other direction to a good NWly hill. If you find the wind is off it may mean a trip of up to 70 miles to an alternative area. Jim Taggart told me recently that he has driven over 1,000 miles to various established sites without finding one flyable when he arrived. When I was based in Middle Wallop I used to complain that my nearest flying area was as much as 40 miles away and that area offered sites for most winds.

In England, you are very fortunate. Sites abound if you ignore the need to obtain permission to fly and the range of available sites expands with each new increase in glider performance. However, because of the reluctance of land-owners to give us permission, our growing numbers are saturating the established sites. This reluctance stems from the damage and nuisance that can be caused by flyers and spectators staying on a hill all day. It takes much good PR work to overcome this and usually results in a very fragile arrangement being made. The advent of towing will ease the pressure on the hills but hang gliding is concerned with flying with the minimum of kit and accoutrements and so I feel that the hill will always be a popular venue.

Is there a solution to this problem? I think not, at least not a complete one. However, from a Continental perspective and with no recent experience of UK conditions I offer an idea for discussion. Hill soaring has been our main means of support and will continue to be the best way of bringing on new pilots but the advent of thermal XC must change our usage of sites. By the time a pilot is ready for XC flying he should be a competent ridge flyer able to guarantee soaring a hill given a suitable profile and wind. Moreover, he should be able to assess this before taking off on a new site. My idea is that careful application of these skills will allow a few good pilots to fly these suitable but prohibited hills. The object would be to select a site on a soarable day that gives a good chance of thermal activity. A small number of pilots would make one take-off only, staying on the ridge until the right blob comes along. All cars and kit would need to be removed from the launch area as soon as the gliders had gone, thus the only ground activity on the hill should be a rapid set-up and take-off, avoiding having gliders, kit, cars and

people littering the hill all day. Pilots would be duty-bound to clear the hill and avoid landing anywhere near.

The main principle behind this system is the least disturbance possible, and applying it to as many places as you can will reduce the inconvenience to any one landlord. If this is a workable scheme, and the experts should be able to say, then it could be put to the land owners in the hope that a much lower site usage will be favoured with permission to fly. Failing permission being given, small raiding parties may be needed to test the idea. Reading this you have probably seen some basic flaws that I have missed but it may be worth printing to see what comments are provoked and if any other ideas are forthcoming. Whatever happens I intend to start investigating the possibilities when I return in late April/early May.

Dick Trickey
BFPO 106

NORTH NORFOLK NIGGLES

Dear Editor,

Visiting flyers, please note:

1. Flying over Mundesley to Bacton is prohibited as this area is in Coltishall ATC Control Zone.
2. Flying over Cromer town is forbidden.

Cromer is our most coveted site and we welcome visitors only if they approach us in the recognised manner and comply with our rules.

Graham Ives
Secretary
NHGC

GUATEMALA

Dear Editor,

I was appalled by the letter to the Editor written by a Mr. Joseph Cullen, of Glasgow, in the March issue of *Wings!* Even worse, the editorial comment of reference to Idi Amin shows a grave editorial bias. Mr. Cullen is wrong on several counts. It is not true that "since 1966 up to 20,000 people have been abducted, tortured and murdered by semi-official death squads in Guatemala". There has been political violence but it has been instigated by terrorist guerilla movements, sponsored by Cuba, whose end is to create chaos and institute a totalitarian Government.

The International Meet in Guatemala was organized by a private, civilian committee and was sanctioned by the Guatemalan Hang Gliding Association, an autonomous, sporting body. The Army helped with two transport trucks, one helicopter, soldiers to police the landing and take-off areas and radios for commu-

nication. President Romeo Lucas who, incidentally, is a constitutionally elected President, did us the honour of being at the opening ceremony. It is a similar honour to the one whereby Prince Charles gave Brian Milton an award for the winning of the American Cup. Guatemala is a very free country. There is freedom of the press, of commerce and industry, of travel and education. We are even free of Government intervention in hang gliding since our Association privately regulates it.

The Meet in Guatemala was well organized, all winners were paid their prizes from private funds, there were no politics and nothing but sports and clean fun. We hope the British team can compete at our next event and are sure that *Wings!* readers will not be swayed by partial opinions of people who do not know the facts about Guatemala.

Fernando Linares
Secretary
Asociacion Vuelo Libre
Guatemala

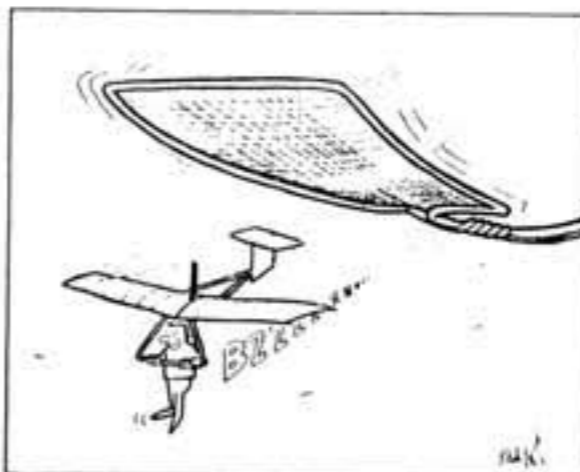
MODERATION IN ALL THINGS

Dear Editor,

A word of warning to all pilots who own a "Windhaven" parachute system. The other day I found that, whilst in my kit-bag, the velcro on the front flap of my 'chute had come half undone and so I decided to open the flaps completely and re-close the outer bag but when I pulled the rip-cord to open the front flaps, to my amazement they would not open. Even after a few quite hearty tugs, no way would the front flap come free.

The reason for this, I found, was the fact that the retaining pin had gone right through the nylon cord loop and, as the rip-cord was pulled, the eye of the pin had snagged on the loop and stopped the pin from coming out. Please ensure that the pin on your 'chute is through the cord loop only half and half and NOT ALL THE WAY. This simple observation could literally decide whether you live or die.

Ron Hicks
South Essex Skywing Club



MONEY CAN BUY ME LOVE

Dear Editor,

In view of the fact that hang gliding can do with all the friends it can get, especially in any area of "conventional" aircraft, might I suggest that the BHGA offer prizes (say £100) in a competition to find the best radio-controlled hang glider.

Model flyers come from all walks of life, as well as most areas of aviation, and spreading the word amongst them will be worth every penny. From talking with some "on the hill", it seems that they know nothing of our unusual construction or aerodynamics, nor of our unique features (billow shift, etc.). This "newness" to them is bound to make us interesting and the prizes will tempt the more adventurous into the contest. The result should be a large number of articles in modellers' magazines and more publicity than we could normally hope for from such a small sum. It might even start a hang glider model group amongst them, adding to our "respectability", and with them able to try new ideas cheaply and safely, our sport will benefit in the longer term.

Jan C. Walker
Bristol



ANOTHER CHURCHILL ADMIRER?

Dear Editor,

Seeing a picture of Tom Peghiny's latest creation in the last *Wings!* reminds me of a glider I had in 1976. Designed to be considerably simpler and easier to build than Miles Handley's "Gulp" (although of poorer performance), it had a V-tail (like Tom's), one batten per wing and a stall speed of about 25 mph. I reduced this by incorporating what may have been the first totally free-floating keel (wing root). This was the Southern Gull "Skyship". It had some handling problems that I never completely ironed out before its consignment to the recycled raw materials shelf.

Everard Cunion
Camberley

EXTRA NEWS

FROM TONY FUELL Chairman, Southern HGC

May I use the magazine to thank everyone who assisted Paul Skeet and Chris Baker after their mid-air collision at the Devil's Dyke on March 9th?

I would particularly like to mention Carl Clarke and Tom Knight who performed mouth-to-mouth resuscitation on Chris, also another pilot who helped me while I was giving Paul external heart massage. (I must apologise to him — I asked his name afterwards, but the subsequent dealings with the police and the media caused me to forget it). I don't suppose the nurse who helped is a *Wings!* reader, but thanks go to her as well.

I enclose a copy of a letter I received from the consultant cardiologist at Brighton General Hospital. In it, he says that the action taken by the first aiders certainly saved Paul's life. It is my opinion that this goes for Chris as well.

This doctor runs training courses in Heart/Lung Resuscitation in Brighton. When the heart stops beating — and this can occur quite easily after a heart attack or a heavy blow on the head — the person loses consciousness in seconds. If nothing is done, the brain will be irreversibly damaged in three or four minutes . . .

A simple technique can be learned by *anybody* — you don't need any special knowledge — and it will keep the victim alive until the ambulance gets there. It takes **ONLY TWO HOURS** to learn it completely. *I went on one of these courses on the Wednesday before the accident!*

Dear Mr. Fuell,

I want to add my congratulations to those of Mr. Martin. It seems from your description of the events that the patient developed the less usual form of cessation of the heart beat called asystole. In this situation there is no cardiac activity at all, as opposed to ventricular fibrillation when the heart is working hard but in a disorganised fashion. We do know that asystole occurs after severe trauma and can prove fatal. External cardiac massage correctly administered can be the only treatment required to start the heart.

I am sure you will be glad to know the patient has now been discharged from hospital and is well.

I feel very certain that your action saved the life of this patient. This must be very satisfying to you, and it certainly encourages us.

D.A. Chamberlain
Consultant Cardiologist
The Royal Sussex County Hospital,
Brighton.



.. flight procedures will be marked on a Blackboard

If I hadn't done this, I very much doubt that I would have had the confidence to start resuscitation on Paul — and I have some medical knowledge already, being a pharmacist. The advantages of going on a course like this are obvious to anyone connected with hang gliding. Certainly all instructors should be familiar with the technique.

The Brighton Ambulance Service runs courses which are open to the general public on two evenings every week. I would be happy to arrange a group session for anyone who's interested, or if you want to go individually, write to:-

Heart Lung Resuscitation
Brighton Health District
Royal York Buildings
Old Steine, Brighton.
Tel: Brighton 23344

In other parts of the country, clubs could contact the St. John's Ambulance service, or the Red Cross, who would — I'm sure — be only too glad to help.

NEW SOUTHERN CLUB RULES . . . OK?

Following the mid-air collision on the Devils Dyke on March 9th in which 28 year old Chris Baker received serious head injuries, the SHGC committee has made the following resolutions about tightening up the air traffic control system on crowded days.

1. An ATC Officer — Flightmaster — will be in charge of all flying with a specific marked standpoint, next to an International Flying Control Symbol (yellow board with Black C) + windsock.
2. All the day's flight procedures will be marked on a blackboard.
3. The T/O and landing areas will be clearly marked.
4. 360s will, at the flightmaster's discretion, all be made one way within 1,000 feet of the main ridge.

Violations of the SHGC's code, which the club asks all pilots to respect, will be publicised in *WINGS*, and could also be forwarded to the BHGA Disciplinary Committee.

The new rules will apply, initially, to the Devils Dyke and Beachy Head.

With the result of the inquiry into the mid-air still pending, no definite conclusions are yet possible. But informed opinion locally is that, even if they above were in force on March 9th, it wouldn't have prevented the collision.

FURTHER FITS OF PEAK

Over the last few months there has been an increasing number of visiting flyers who have not been paying site fees. Our Association is always willing to welcome responsible visitors to our area, but please let it be understood that on all our sites, site fees of varying amounts are payable to the relevant farmers. If you are not prepared to pay for your flying then please do not come to the Peak District. Once again this is a minority of people who are causing the "aggro" but some of our sites are in jeopardy through this and our Association intends to clamp down in no uncertain manner on these "pirates".

John H. Clarke
Site Officer
Peak HGA

PILOT RATING SYSTEM ENTRY FOR COMPETENT PILOTS

You are by now aware of proposal 7 passed at the A.G.M. concerning the issuing of P.1. Here then is how the new new system will operate.

To be eligible for the Pilot entry system, the student must belong to a member or registered club, hold a valid B.H.G.A. membership card and have done at least 15 solo flights with a ground clearance of 40ft. (12m).

1. Must first obtain a Test Paper and Task Form from their club coach — charge of 50p.

2. Satisfactorily complete test paper in presence of club coach or flying officer.

3. Satisfactorily complete tasks under the direction of coach or flying officer with the exception of Task 1.

Task 1
Must be of at least 15 logged flights witnessed by an observer or club committee member.

Keith Cockroft
Training Officer

BLOWING IN THE WIND

Ian Trotter of Edinburgh asks the right questions (Letter, March issue). What he refers to as "shears and turbulence" are better known in the aircraft world as Gusts.

For aircraft design gusts are specified to ensure adequate strength and control for air-worthiness. An aircraft is required to have a specified "safety factor" on top of the Gust Loads.

The cases to be met are as follows:-

It is assumed that the aircraft is flying straight and level. Gusts are assumed to be met from (a) up or down normal to the flight path, (b) Horizontal normal to the flight path (in effect any quarter).

The speed of the gust is specified as 50 ft/sec. and it is assumed to increase linearly to its maximum intensity in a distance of 100 ft.

This figure has been arrived at from a mass of UK and US data, and might be expressed as the size of gust that could be met every 100,000 flying hours. Obviously this covers normal commercial type flying. Gusts of less intensity are met more frequently.

Fixed wing aircraft design requirements do not carry over directly to hang gliders, and the conditions of flight are different. In hang gliders one may be looking for gusts, but trying to avoid the big ones!

However, a few very primitive calculations would indicate potentially hazardous situations. Consider a gust from behind, with the hang glider flying at say 25 f.p.s. in still air. In 100 ft. (4 secs) a gust from the rear may build up so that the air relative to the glider is going forward at 50-25 f.p.s. In other words, the glider is flying backwards at 25 f.p.s! Obviously this would not happen as the glider would stall, fall and hopefully attempt to weather cock.

Similarly, a gust from below will produce positive 'g' and stall the hang glider, while a gust from above will produce negative 'g'. The question is whether the pilot can do anything in the few seconds to correct in any way. My guess is, not particularly, as the gust gradient is working against the pilot.

Gusts will produce what used to be referred to as "unusual positions". From these the glider must have some natural ability to recover. (See Peter Anstey's excellent article). For these conditions of negative 'g', and in other unusual attitudes, the design of 'harness' should be such as to make it impossible for the pilot to go through the control frame or to get caught on any rigging. This leads one to think in terms of semi-rigid harnesses, some sort of harness frame with a universal joint at the attachment point, and constraints.

If we don't face these problems we will continue to have accidents stemming from loss of control due to gusts.

Alan H. Duncan

Going Dual

By Kay Simpson

Kay Simpson was Kay Brier when she went dual on a Cyclone with Dave Simpson, and was hardly in a position to say no to a marriage proposal 200 foot up. They were married last month, so fears "he might have unclipped me or something" came to nothing. Kay says that going dual for someone who was floundering around at pre-pilot 1 stage "with puny biceps, as I was" was warmly accepted as a way of getting more than 10 feet off the ground.

Dave and Kay Simpson at Long Myndd

— Photo Nigel Huxtable

Howard Edwards had been taking novices off Dunstable on his Cyclone 185 for some months quite successfully when Dave Simpson suggested we borrow it for a week. It may have had something to do with my incessant pleadings to become airborne. The only modification Howard had made was to beef up the cross booms, which was fine for his purposes, but we thought other modifications were needed if we were to be comfortable during long flights. The night before we went up to Cumbria we had the Cyclone in pieces in the garden. Dave replaced the existing downtubes with 1½x12 gauge tubes, and exchanged the bottom bar for one 6 foot long to accommodate two people side by side. This, of course, meant the wing wires needed to be shortened so Dave made a completely new set. Meanwhile, I was slaving over a hot sewing machine making a hang strop. Howard had always flown with pupils using a single hang point, which has its advantages when you want to keep someone within your control, but we decided on separate hang points arranged in such a way that the harness carabiners were spread by 12 inches.

The first opportunity we had to rig was at Bewaldeth, a 300 foot south-westerly site near Keswick, with bags of top and bottom landing area. Dave flew the Cyclone solo first, to check its handling characteristics after our modifications, and then nominated Nigel Huxtable to be the first lucky passenger.

I watched the take off with my heart in my mouth. A mass of flailing arms, legs and stirrups rose slowly away from the hill and after a few beats we saw a tidy



A flailing mass of arms, legs and stirrups...

landing at the bottom. In next to no time I was clipped in with Dave giving me my final briefing — "RUN LIKE STINK". Dave picked up the glider in the normal fashion and I stood slightly behind and to his left with my eyes fixed firmly on the bottom bar peering under Dave's armpit (not a pretty sight). As soon as Dave shouted "Release" we both ran like things possessed and lifted away from the hill in a few paces. As Dave removed his left hand from the downtube I swung forward to grab the bottom bar and we both kicked into our stirrups. I was amazed at how easy it was and the whole take-off was certainly much more co-ordinated than it looked. Once in prone we could fly quite comfortably with our arms linked and after a flight of about 10 minutes we landed back on top.

Hanging Comfy

The next chance we had to fly it was at the Long Mynd. There was a 22 m.p.g. westerly breeze and the lift was smooth — ideal conditions. Our first flight lasted over an hour, during which time we had ample opportunity to make ourselves comfortable. We found we were most relaxed with elbows resting against each other in the centre of the bottom bar and forearms resting on the bar itself. This left the opposite hand to grip the bar in the corner of the control frame. During this flight our average height above the hill was about 400 feet although at one stage we managed to reach 500 feet which, although not quite top of the stack, was above many quite experienced pilots in high performance gliders. At first we found gliders giving us a very wide berth, and some even landed when we took off, but as it became obvious that we were in control people came up and joined us again. We made a perfect stand up landing back on top and after a few minutes warming up people began asking Dave if he'd take them up.

It was after this long flight that we noticed the wear on our dual hang strap. Dave being much heavier than me had worn the stitching at the central hang point which, although it had not become dangerous, could do with a better design. The second strop we made had the central hang point offset to one side to compensate for the difference in weights. This has been most successful and has shown no signs of wear, and it also means that we hang at the same level.

Our next effort was up in the Lake District again and found us on Latrig, a 900 foot hill overlooking Keswick.* Goodness knows what possessed us to



Kay Simpson

carry the thing up because there was virtually no wind, but having reached the top we were certainly not going to carry it down again; it's quite a few pounds heavier than the standard Cyclone. There seemed nothing left but to practice our nil wind take-offs. Needless to say I was a little apprehensive, never having done any nil wind take-offs, and my only solo experience being 7 minutes soaring. Nevertheless I helped Dave to rig while I tried hard not to think about a sudden urge to go to the loo. We seemed to be running for ages before we eventually became airborne, but at last we were out from the hill and overlooking the A66. We were quite pleased with our clean take off and my anxieties had departed until Dave said "Of course you realise there's no wind at the bottom either." With a combined weight of 23 stone we knew we'd need all the flare we could get to stop this machine. It wasn't quite enough, however, and we came to a sliding halt on our bottoms among a flock of very bewildered sheep who were cowering in the corner of the field where we seemed to have driven them. No damage, so we set about de-rigging and trying to work out what we had done wrong. It wasn't until we watched the cine film that we realised on landing that we had both kept one hand on the bottom bar as well as one on the downtube; this of course limited the amount of flare we could get, but we got it right the next time. We went down to Devil's Dyke one very busy Saturday and after 15 minutes dodging

the other 18 gliders in the air, lost the lift and had to make a bottom landing. Again there was very little wind in the landing field so when we dropped out of prone I swung round behind Dave who took hold of both uprights and landed us both on our feet.

Nasty looking rocks

What? No bent arms/legs/downtubes/leading edges etc.? Well, not quite. The only nearly-nasty we had was at High Cliff on the Cornish coast. We had been proudly telling the local fliers of our machine and rigged to fly our first coastal site with the cine camera on the crossboom. Unlike other occasions Dave had the camera air release bulb in his mouth on take-off and could only manage a muffled "Release" to the wire man, which I did not hear. I was just a fraction of a second slow on the run up which had the effect of pushing Dave's wing into lift before mine. It was enough to loop us over and send us both careering into one downtube, bending it rather badly. No other damage but, had we taken off a few feet further down we would have probably had a close encounter with some nasty looking rocks some 600 feet below. One thing we learnt from that experience was that the take offs needed a lot of careful thought, something we had, perhaps, neglected, having had such success previously.

Perhaps I have not converted many people to try 2-manning, but we have proved over the last year that it is not only an invaluable teaching aid, but damn good fun too. When we first started I had only had a few hops flying solo. It was useful to feel what it was like to fly prone, to turn and stay in ridge lift, to do 360° turns, to top land and just to see how strange and flat the land looks from 500 feet above a hill. Now I fly my Vega solo but we still take the Cyclone up when it's good and windy; and anyway there are still lots of new things to try. For example, has anyone done a two man cross country? Or how about towing dual?

Editor's Note: Unofficial 2-man XC record, out of ridge lift, is about 3½ miles behind Winter Hill in the Dales, set at August 1978 League by Keith Cochroft and Andrew Hill. It's up for grabs.



Hang-glide newly-weds Dave and Kay Simpson

Marriage

By PETER MASON
MARRIAGE got off to a flying start for hang-glide enthusiasts Kay Brier and Dave Simpson. No sooner had they walked down the aisle at St Mary's Church, Hitchin, Herts, than they were heading for a nearby hill where Dave's specially-converted two-seater Cyclone glider was waiting.

Wedding guests watched a trifle anxiously as Kay, 24, still in her wedding gown, was strapped into a flying harness.

They knew the couple were due to fly on honeymoon to Florida but weren't sure how. . . .

But all was well. The bride was planning only a brief flight of fancy — and with the assistance of Dave and a friend was soon airborne.

Kay, an occupational therapist, and Dave, a 31-

is...
**A HANG
GLIDER
MADE
FOR TWO**

year-old design engineer with British Aerospace, have been flying for 18 months.

Dave popped the question during a dual flight with Kay over Shropshire.

Yesterday the couple were flying again—this time by scheduled air service—to Florida.

Pictures by John Rogers



Reprinted from Daily Express, Monday April 14th.

Flight Reports

XC A CINQ

by John Hudson

Sunday 9 March was an amazing day everywhere. Pilots as far south as Brighton and as far north as Cumbria reported great weather and lots of air time.

I arrived on our northwesterly site to find the sky full of pilots, 'blobbing' out 2,000 feet above take-off. The sight prevented me from noticing the mile walk to the launch and as soon as I was rigged I hopped off to join the others. Thermals were everywhere and like pilots, hard to avoid.

Around mid-day the lift died and two unfortunate flyers who were caught out ended up at the bottom of the 700ft hill. We all sat around chewing the fat and marvelling at the dual cloud street on each side of the hill, perhaps five miles apart. These were obviously suppressing the lift, but after half an hour or so we noticed cumulus forming about eight miles up wind, directly ahead of us. Bob Calvert made a B-line for his glider and stood poised on the edge in the windless conditions waiting for the cumulus to reach us.

Not being outdone by a mere Calvert four of us joined him, and as the cloud reached overhead John North lobbed off into the extremely light air. After a few heart stopping low passes he hooked lift, whooped with relief and started climbing.

Bob Calvert, Mark Southall (of Solar Wings, on a trade visit), Ian Rawson and myself following in quick succession, and within minutes were 500 feet up. The sky filled and the cluttered hill emptied of resting pilots.

Before long five of us circled together back over launch at 1,000ft climbing swiftly to cloud base. Geoff Snape and Paul Kavanagh were late in launching and flew together a mile behind us.

As soon as we were clear of the ridge our drift slowed enormously and it took great effort to be patient enough just to circle about in and out of cloud. I personally am still green enough on cross-countries to want to make distance and it took rational thinking to force me to keep diving back up wind to where Bob Calvert was, rather than tracking on down the street.

Flying was eerie, since there were five of us all within a few hundred yards and the clouds were continually forming around us as we played about at cloud base. We found the best lift right on the sunny edge of the cloud street and at times climbed up five hundred feet above the general base to around 2,500' above take off.

Having five pilots within close proximity is a little dangerous but the advantages were striking. We all searched out lift and those in sink could immediately see the better lift by others going up. I spent as much time flying up wind, back towards good lift as I did flying down wind.

After one and a quarter hours we all



suddenly realised that the street had not only ended but had dispersed completely and we were all flying in sink in a clear blue sky.

John North and I landed on the edge of the historical village of Haworth for a fifteen and a half mile flight, whilst Bob Calvert, Ian Rawson and John Bridge managed to work some light lift to push on down wind. Ian landed after sixteen plus miles, John after eighteen miles and Bob with twenty. Geoff Snape and Paul Kavanagh caught the tail end of the street and used it for ten miles plus flights.

This was Bob Calvert's second flight of the day since earlier in the morning Geoff Ball, Ian Rawson and himself found themselves 3,500 feet above take off. 1,000 feet above the general cumulus and heading down wind. Bob didn't talk about his distance, since it was below ten miles. Ian made about twelve and Geoff made an excellent and skilful flight of twenty four miles landing in Bradford.

All in all the day was brilliant and that cloud street gave seven of us an exciting and pleasurable flight. Put another way the conditions gave one hundred and thirty miles that Sunday. Where will it end?

An Extraordinary Incident

Lindsay Newbold is 26 years old, married, one 5 year old boy. He's been flying 4 years, is a member of the Long Mynd Club in Shropshire and he won the 1979 Club Distance trophy with a flight of 9 miles out of ridge lift. The XC 220 he flies was bought new in the middle of 1978, and never pranged. His harness is a new Air Stream, and he wears an Air Sport parachute with a BUS Mk 2 deployment system.



On Monday, April 7th, a Bank

Holiday in Britain, Lindsay spent the day windsurfing at Bala Lake in mid-Wales. At about 6 o'clock in the evening he rigged up his glider on Llangower Hill, overlooking the lake, a 500/600 foot hill, NW, with trees covering the bottom two thirds. Lindsay said later the take-off area was nice, but you needed a bit of wind to clear the trees. It hadn't been flown before. The wind was gusting 5-20 mph, but it didn't seem dangerous.

"On take off it was a bit bumpy" said Lindsay, "but I got to 200 ft. above the top when I hit a really bad bump which almost inverted the kite. It dropped nose down, sail heavily deflated before recovering. I think then I bust the right hand locking tip."

He gave up the idea of soaring and set out for a bottom landing field, 1½ miles away, near the lake where he and his family were camping.

"About 300 ft. above the landing area, heading out over water, I had to turn" said Lindsay. "I made a gentle left hander but as soon as input went in, the wing dropped and I went into a falling vertical

dive. Two experienced pilots who were watching say that one locking tip actually fell off, just before the kite flipped."

Witnesses also say at this time that the kite began somersaulting, doing 2 or 3 forward tucks. Lindsay's helmet, which he says was tightly secure, was thrown off then, and G-force was stopping him getting to his parachute. He describes being thrown around as the kite flipped on to its back.

"Then I managed to get my chute, found a hole — I believe I was facing towards the back of the kite, which was vertical — and I threw it out. It partially inflated and stopped the kite tumbling" he said.

"About 2 or 3 seconds later, almost immediately, I hit the ground. My feet hit first, I tried to roll and was pulled on to my back-side by my harness. I groaned."

Lindsay was taken to Wrexham War Memorial Hospital where he was detained for only 2 hours. Doctors found 3 or 4 hairline fractures in the lower spine, a chip in his spine and shoulder blade, and he was "stiff all over".

The wreckage still has to be examined professionally, but

there are early reports: both leading edges were warped "inverted", the left wing is said to have broken in the air, 6 or 8 inches from the bolt, on the first somersault, and the sail is ripped as the A-frame went through it "when I landed" says Lindsay.

Llangower Hill hasn't been flown before, to Lindsay's knowledge, because air force jets normally use the valley for low-level exercises. He says his XC was a "hell of a glider", and it really shook him when he hit what he can only think of as really nasty rotor.

THREE WEEKS before this incident, Lindsay had a pulley wire go at 1,400 ft. in a big thermal. It was the bottom deflexor wire, and the effect was to turn the XC into a really stable glider which sank like a stone. IT WAS BECAUSE OF THIS EXPERIENCE THAT HE BOUGHT A PARACHUTE, WHICH HE IS CONVINCED SAVED HIS LIFE. He paid £120 for the parachute, second-hand, with a BUS Mk.2 deployment system, from one of Malcolm Hawksworth's instructors. Lindsay test-deployed before paying over the money.



As flyers we all know that each flight is different. The subtle mixtures of wind, turbulence, temperature, moisture content and site conditions all help to change the medium we fly in, and obviously these variations affect the way a glider performs and handles.

Like anything else, there are good and bad days for Test Flying a Glider. I have therefore tried to select the right day and have tried to complete each testing stage at a time. I have also repeated each test a few times so as to achieve a more accurate picture of what is going on.

On typical testing days my programme is as follows:

1. Rig and inspect the Glider — noting information for the first part of the Report. Draw diagrams and take photos.
2. After a brief flight check I take off and spend a few hours just flying for sheer selfish pleasure. All I want to do is to familiarise myself with the Glider's characteristics.
3. The real testing starts after I have acquired a feeling for the Kite. I don't execute the evaluation tests in any pre-determined order, because the prevailing flight conditions may favour one test and not another, i.e. light soarable winds on an average site will prevent me pulling on speed for any time to evaluate the high speed end of the Polar Curves. (I'll go down). However, it is suitable to explore min-sink and Gentle Stall characteristics. The most difficult exercise is processing the data and compiling the report.

I have attempted to fly each glider in as many different conditions as possible so as to achieve a more complete report of the kite.

GLIDER WHICH By Bob Harrison of Mainair Sports

INSTRUMENTATION

I have been using:

Skydeck (Ball 600) variometer — control frame mounted

Mackiki (pith ball) variometer — control frame mounted

Pedro (electronic) ASI — nose mounted

(Winter) (Mechanical) ASI — control frame mounted

Miniature tape recorder — recording information

Thommen altimeter (Skydeck)

Ingersoll stop watch.

The information for the Polar Curve has been read from the Skydeck vario and the Pedro ASI. Mackiki vario and Winter ASI have only been used as a checking yardstick.

The Pedro ASI is mounted on a stalk out and above the nose plate. It isn't totally out of the 'interrupted' airflow caused by the Glider and the results are probably a little higher than the true reading would be. However the positioning is constant for all kites so comparisons can be made. I have been recording the various sink rates obtained at certain air speed intervals, i.e. 10, 14, 16, 18, 20, 22, 24, 30, 35, 40, 45, 50 etc. I have double checked these results by taking speed readings at various sink rates.

A further check which I periodically do is to burn off a fixed amount of height at a constant bar pressure and time it on the stop watch. This provides a useful sink rate figure which can be compared to that shown on the vario.

When John Hudson and I first discussed the problem of describing handling characteristics on paper, my intention was to time the glider in and out of 360s at 45° banked turns, complete as many line crossings as possible in a fixed time, and measure the effort required on weight shift for such manoeuvres. I soon realised that familiarity with the kite conditioned the way I flew on that particular day, and affected the results too greatly. Consequently, I have had to approach handling aspects another way, which will become apparent in the first report.

PROBLEMS ENCOUNTERED WITH THE TESTING

The testing started about two months ago back in the New Year. I had two kites to evaluate — a Skyhook Silhouette and a Hiway Vulcan.

My first time out, with the Silhouette, was a beautiful cold, clear and sunny nil-wind January day. Nil-wind had been forecast — I was expecting a pleasant float down. As I was setting up, however, the wind increased and went off the hill. I waited for a lull, took off and had a bumpy sled-ride to the bottom. I learned absolutely nothing, and realised that glider testing was going to be a long and involved job.

Another day, two weeks later, promised to be an excellent light wave soaring day. After the extraordinary length of time it takes to rig the glider, plus all the testing equipment, the 15 mph wind had dropped off to 3/4 mph, just before I was ready to fly. A wave bar which had been situated just down wind of the ridge had moved up-wind, and removed any chance of soaring.

Despite a wait I was once again provided with a none-too-smooth sled ride to the bottom. The only thing I managed that time was a 360, stall, and cold feet from standing around too long.

I have finally got the act together. Whatever conditions best suit a particular testing stage I have my equipment sorted out the way I like it. There's no trouble now in begging, stealing or borrowing hang gliders to test and I have got a damned good assistant — she's my driver, load carrier, note-taker, photographer — she doesn't mind hanging around for hours. (*Paulette? — Ed.*)

Next month we start in earnest when we evaluate the Hiway Vulcan. There are a number of other kites in the pipe-line, namely the Solar Storm, Southdown Sailwings Sigma, Skyhook Silhouette, the Mouette Atlas, and the Super Scorpion 2. When I have waded my way through these there are still a large number of Kites to report on. It's a shame we cannot do them all at once! The Mainair Report on gliders will be published monthly in *Wings!* but I can't say the order in which they will appear. This will depend on weather conditions and the speed I can get them out.

THIRTY DEATHS IN EIGHT YEARS (28 UK, 2 ABROAD)

From statistics supplied to BHGA Council in April 1980, by John Hunter, BHGA Accident Investigation Officer

Name & Date	Cause
Admiral Best July 1974	On second or third flight flew alone in impossible conditions
Tim Proctor July 1974	Fractured pelvis on landing — on his insistence driven 100 miles to Bart's hospital, subsequently died, internal bleeding.
John Amor May 1975	Boots had eyelet hooks, caught in rigging wires, could not control aircraft.
John Smith Sept. 1975	Rigging wire failed on <i>Home Built</i> glider.
Alex Cowie June 1975	Attempted 360° turn too close to hill.
Barbara Jones July 1976	Complete beginner, conflicting advice given, took off with harness incorrectly fitted
Guy Twiss July 1976	Experienced pilot flying advanced aircraft, flew beyond his capability.
Dennis Irving Aug. 1976	American pilot on advanced American aircraft. Hang glider misrigged.

Tony Jones Oct. 1976	Attempted 360° turn too low. Hang glider modified and divergent.	Tom Gilbert Sept. 1978	Aircraft not properly maintained and prepared for flight. Perhaps lack of concentration Impacted into hill.
Alvin Russell Dec. 1976	Prototype glider stabilised into rotating dive.	Chris Reid Dec. 1978	Flying in turbulent conditions, stalled and dived into ground.
Roy Corbett Feb. 1977	Overstressing of aircraft whilst performing stall turns in turbulent conditions. Hang glider had been modified.	Paul Maratos April 1979	Experimental glider. Stabilised dive, structural failure. Parachute misdeployed entangling in wreckage.
Stephen Doel May 1977	Pilot was outside weight limits for aircraft he was flying.	James Payne June 1979	Hang glider was seen to whip-stall then tuck under. Structural failure.
Colin Bissett Feb. 1978	Used sash cord for hang point. It broke.	Lorraine Evans June 1979	Was turned into the hill whilst soaring.
Derek Bennett Feb. 1978	Stall and turned down wind.	Mark Hammond April 1979	Failed to maintain adequate airspeed whilst performing a 180° turn. Stalled and impacted into hill.
Paul Renouf May 1978	Flew over water — wind shift, forced water landing — drowned.	Peter Clostermann June 1979	Home Built hang glider. First prone flight, lost control, impacted onto beach whilst in a turn/side slip.
Nick Lawler May 1978	Powered hang glider. Full power stall into ground.	Les Osbaldstone July 1979	Stalled on take-off.
Garnet Taylor June 1978	Modified aircraft overstressed whilst recovering from a dive.	Alf Williamson Jan. 1980	Vertical dive into ground after encountering cloud and turbulence.
John Humphreys Sept. 1978	Stalled whilst on down wind leg of top landing.	John King Feb. 1980	Pilot failed to turn back into wind on top landing. Stalled in wind shear.
Robert Philips Sept. 1978	Stalled soon after take-off. Impacted into gully.		
John Randall Oct. 1978	Inexperienced pilot performing aerobatic manoeuvre and lost control.		

Best of the Club Magazines

Not much chance of soaring today, you surmise as you drag yourself out to Beachy Head on the 'off chance'. Hardly a zephyr moves the tree tops, yet the seagulls pinwheel lazily around on nothing. You turn the corner at the junction and peer, just to make sure, but no one is soaring. On arrival a cluster of rigged gliders has formed just behind take-off point on the cliff take-off bowl. A full blown wind-up session is under way, as some lightweight is goaded to the take off ramp amid suppressed giggles, and assurances abound that he will not land at the bottom of the cliffs, but rather rise and soar, no one of course actually believing this, otherwise such courtesy in take-off allocations would not be displayed.

The unknown wind dummy walks his glider off the ground, and contrary to expectation, and almost to the horror of the wind-up squad he does indeed rise with staggering ease to about 6 or 7 hundred feet above take-off, nicely silhouetted against the blue sky. How nice of them to let me take-off first he muses, and wonders why everyone has suddenly remembered that their harnesses are locked within their cars, and are scurrying back to the car park. Soon the cliffs resemble for the most part, a wildlife film on vultures, concentrating mainly on their habit of circling en masse above their dying victim, in ever decreasing circles and increasing numbers.

Several weeks later, some of these lucky fliers will revisit Beachy Head. This time there is no doubt in anyone's mind about the soaring possibilities. After all the wind is blowing a good 15-20 knots, and the seagulls are soaring 'effortlessly' 100ft. above take-off. The sky is overcast and to those who may have noticed, the clouds are moving south, but then who cares, because the wind at take-off is blowing a steady south easterly. A check at Newhaven on the way will support this observation, if there were any lingering doubts.

After a frenzied rigging session a lucky pilot finds he is first rigged, how glad he is not having had to rig one of the new fashionable superships. He marches confidently to take-off point and demands front wire assistance from the nearest likely person. He takes off, not even bothering to take his sail-velcros, so good is the lift bound to be, but finds himself struggling to maintain take-off height, then plummets over the lip of the cliff with not so much as an upward lurch of the glider. 'The tide is in' he muses. Never mind, one beat along the cliff will suffice to retrieve the situation. Funny thing this, the wind is off to the west, never mind turn downwind towards the bowl end of the cliffs, he will gain height that way. No chance, the wind also feels off to the East. By now he has sunk below the field at the bottom, and now a chilling prospect awaits. Within two minutes of take-off he lands in the foaming sea, straddling boulders if he is lucky. No velcros

MAY THE LIFT BE WITH YOU

Mike Robertson gives us a possible solution for those strange days at Beachy Head cliffs, where, despite apparent good conditions at take-off point, a soaring flight is not possible.

either, oh dear! By now these two different days will have rung a loud and distinct bell in the minds of many of those reading this article. Why should this happen you ask? To the uninitiated the sequences simply do not 'seem' to match the conditions.

It should now be apparent that mere wind strength and direction are not the only factors governing the lift intensity. I have chosen Beachy Head as an example, because it is at this site that these phenomena are most pronounced. However these effects are apparent at every site on every day to a greater or lesser degree and will often change throughout the day, often within the space of minutes.

I will assume that the wind direction is blowing directly up the slope throughout the explanation, as this article does not concern the most obvious effects of direction change, unless specifically mentioned.

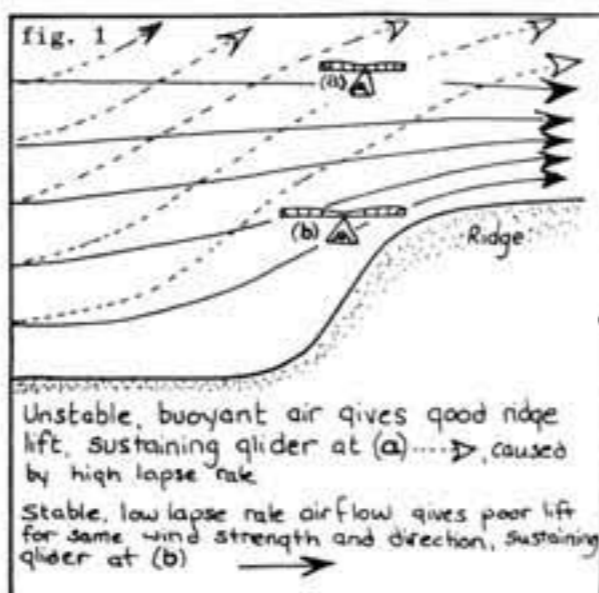
The most direct factor governing ridge lift for a given wind strength, is the lapse rate of the air, i.e. its reduction of temperature with increasing height. On a day with a high lapse rate the air will be accelerated upwards once the ridge has displaced it in the first place, independent of the convection and thermal generation which will be apparent at the same time. This is why on a good thermalling day the ridge will seem disproportionately good for the wind strength early in the morning before any blobs or thermals have started to form (fig. 1a) because the air does not resist upward displacement. Hence the first illustration deals with a good lapse rate day with very little wind but which in consequence forms adequate lift, this being exaggerated further by convection phenomena arising from the sea and any exposed rocks, pools and the cliff face itself. This represents an extreme example, where the lift is so good that you can hardly go wrong (Fig. 1a).

Conversely, a situation where the lapse rate is very poor, the wind will generate generally poor lift since the air is inherently sluggish and does not wish to rise any more than is necessary to clear the ridge (Fig. 1b). This condition can arise after a prolonged spell of hot weather associated with a persistent anti-cyclone, where the air temperature is high but a low inversion is present and the air is very stable, i.e. it does not drop in temperature with increasing height. The horizon will be indistinct, due to high concentration of smoke and dust particles present as it has probably not rained for several days, and there is no convection to carry these particles to a greater height, and disperse them. People will be flying in tee shirts and moaning about the minimal height gains being obtained, despite the 15-20 knot wind blowing. This represents the opposite extreme of the lift distribution above a wind blown ridge. The height gain difference for the same wind strength may show a 50-75% with the good lapse rate situation without assistance from the thermals present. Relating these effects to the Beachy Head example, other factors come into play. The lapse rate, and therefore the buoyancy of the air, dictates the way the air behaves when it meets the cliff face. Given a south south east wind with a high lapse rate and therefore buoyant air, the path taken by the wind would take it straight up and over the cliff face, without change in direction, as the buoyant air experiences no resistance to vertical displacement. The same wind direction with a low lapse rate or stable air resists vertical displacement and therefore deviates its path in an attempt to flow around the obstacle posed by the headland at Beachy Head, so that at the take-off point the apparent wind may be southerly (Fig. 2). I have exaggerated the deviation for the sake of clarity. This worsens the ridge lift in addition to



the reduction caused by the low lapse rate, and on take-off a glider will sink into the zone in the take-off bowl, where rotor formation is likely, (as opposed to the high lapse rate situation, where the glider rises effortlessly above that zone), so further worsening the chance of a soaring flight. The seagulls however may be soaring, since they can flap their way up into higher more usable lift band, and if we could actually join them we could also soar, but would not be very high.

In the summer, when the southerly wind is due to sea breeze, a similar effect will be noticed, but for a different reason. The sea breeze only exists up to a limited height, about 400'-500' and Beachy Head is too high for the breeze to rise over, and an even more pronounced deviation, a wind direction occurs, giving rise to the effect where there may be no sea breeze at the Head, when at the same time a moderate wind is blowing at Newhaven, and coming from the south east (Fig. 2). Further complications arise at the take-off bowl, since the air blowing along the face of the cliff will change direction on meeting the bowl, so giving the impression that the wind is blowing directly at the take-off point (Fig. 4) and due to the stability of the air, will form a rotor much more readily than it would be if it were unstable (Fig. 3) due again to its resistance to the upward displacement. A further clue to a stable situation, may be evident from low lying clouds moving in a direction markedly



Unstable, buoyant air gives good ridge lift, sustaining glider at (a) caused by high lapse rate

Stable, low lapse rate airflow gives poor lift for same wind strength and direction, sustaining glider at (b)

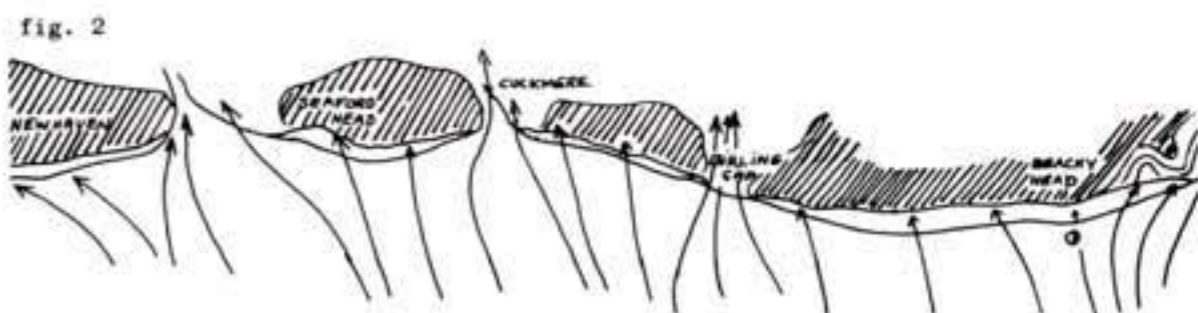
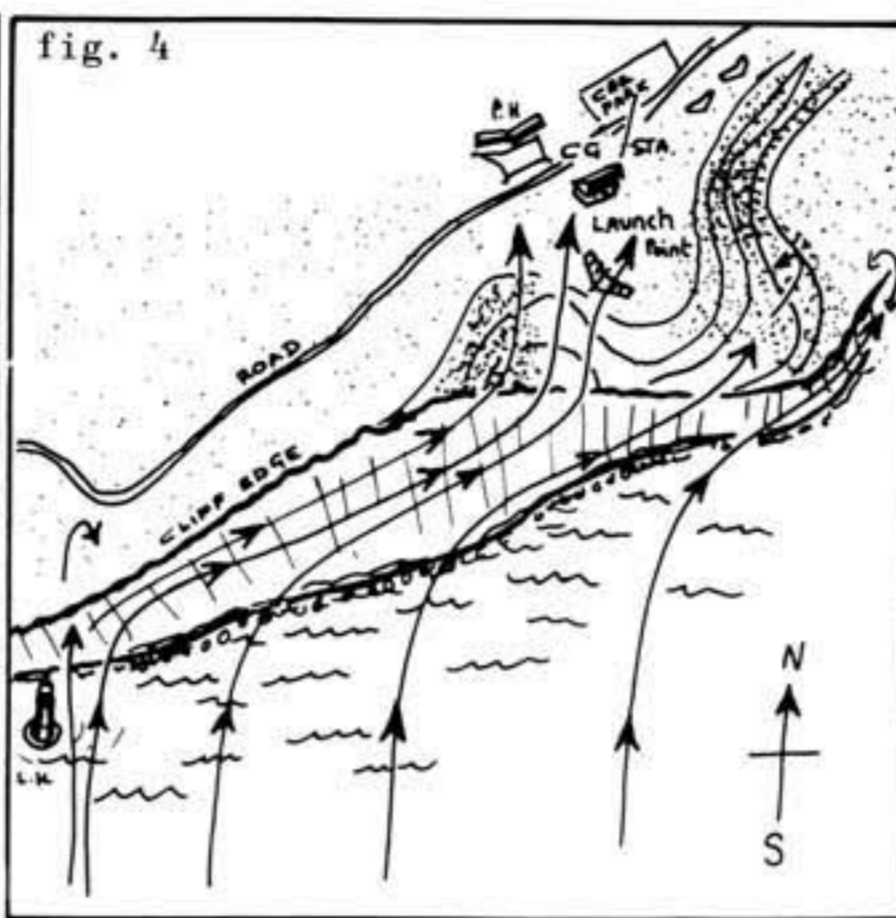
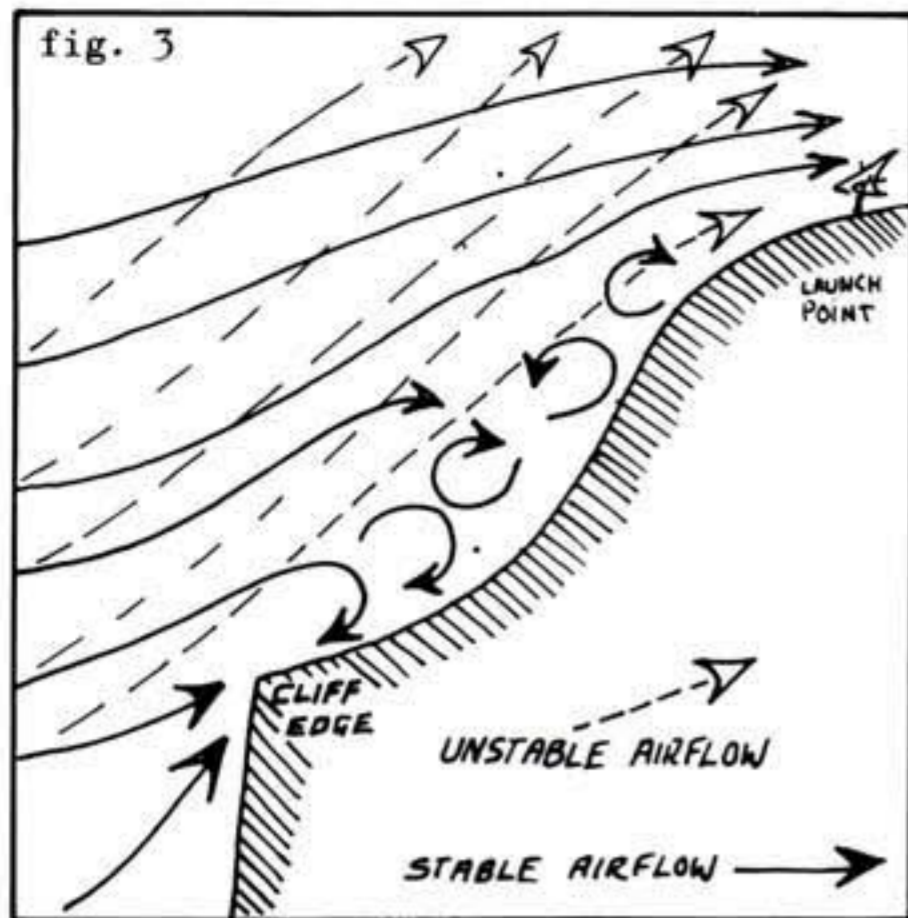


fig. 2



different from that of the observed wind direction at the surface, due to the 'squashing' effect in the stable situation of the layers of air. In the unstable situation, the same direction change would occur over a much greater height.

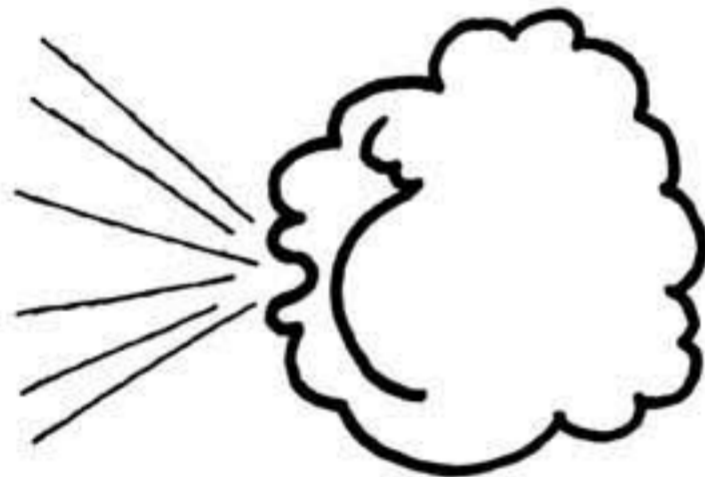
I hope readers will take these factors into account, and by observing the overall situation before, and on arrival at Beachy Head, be able to recognize the nature of the lift conditions likely to be encountered, than would otherwise be the case, and gain an improved understanding of lift conditions at other sites.

MAY THE LIFT BE WITH YOU

Reprinted from SHGC Sites Guide, 1980.

SURVEY, 1979 WIND STATISTICS

Roy Butterfield, guest editor of the George Caley Club, kept statistics all last year on various wind factors, which he published in the club's newsletter. Taking away the comments on how the winds affected certain sites, it's worth republishing his figures for those in other parts of the country to make a comparison . . . the George Caley Club flies in the eastern part of England's biggest county, Yorkshire.



Flyable days — those with a light or moderate breeze blowing — 57%

Wind Directions	Overall	Flyable Days
South West	33%	35%
West	18%	21%
North West	11%	13%
South East	9%	10%
Light and Variable	8%	—
South	7%	7%
North	6%	6%
North East	5%	6%
East	3%	2%

Wind Speeds

Light and Variable	7 %
Light	24%
Moderate	33%
Fresh	29%
Strong	4 %
Gale	1 %

Academic Interest — strong, gale, storm statistics

42% were south westerlies.
 26% were westerlies.
 11% north easterlies.
 11% south easterlies.
 10% southerlies.
 —no gales from north, north-west or east during 1979.

LET'S BE BLUNT

When flying the high cliffs at Filey
 You might just bump into George Smiley
 He's catching a spy,
 Who's learnt how to fly
 A mole who is ranked rather highly . . .

Roy Butterfield

ACCIDENT REPORT — COLLISION WITH YACHT CLUB HOUSE, FILEY

Pilot: Roy Butterfield.
Site: Filey.
Date: 10th March 1980.
Wind: 14 mph SSE decreasing (not gusty), with a little rain.
Glider: Skyhook Mark IV — seated.
Impact: Straight into back wall of yacht club building at 10-15 mph. Hit wall from chest downwards rest of body above top of building.
Injuries: Badly sprained and bruised foot and ankle. Sprained wrist. Badly swollen knee plus minor cuts and bruises to legs and body. No injuries above chest.
Glider: 1 upright badly distorted, bottom bar bent and twisted, other upright slightly bent. No other damage apparent from initial inspection.
Cause: Bad judgement and pilot error.

I shall set aside my crutches, try and forget the throbbing pain in my leg, and write out my report:-

I was really keen to fly after missing a good day at Cayton a couple of days earlier. Wind was 22 mph bang on when I arrived. Nobody else there at all. By the time I had rigged up it was raining a little and wind had dropped almost to 14 mph and veered a little to SSE.

As no-one else had turned up I persuaded my wife to launch me, something she had never done before. As the cliff was wet and muddy she stood on the edge to launch me at same level as me. As I launched I failed to

get a good push forwards and drifted up a couple of feet with the glider wanting to swing left. I pulled in hard to try and get the glider going away from the edge but only succeeded in moving slowly out and then dropping quite quickly parallel to the slope and a few feet above it. Pulled in again to gain full airspeed but the close proximity of the ground prevented me from picking up full flying speed and I continued down in a stalled or semi-stalled state. By the time I realised I could not clear the building I was very close to it, and struck it from the chest downwards almost full on at about 10-15 mph.

I thought I was a goner when I saw the wall coming up. How I escaped without broken legs I'll never know but if the wall had been three foot higher I would have taken the impact in the face.

A classic case of looking for an accident.

Some of my mistakes:

1. Eagerness to fly (almost desperation) after weeks without a flight and missing out on a good day at Cayton.
2. Flying alone without other pilots around to help and advise.
3. Not letting the decreasing and veering wind stop me from flying.
4. Letting an inexperienced person launch me — possibly in the wrong attitude.

Enthusiasm to fly must be one of hang-gliding's greatest dangers. It certainly made me take risks I would not normally have dreamed of taking. Needless to say that enthusiasm has now evaporated.

Even relatively minor accidents hurt (a lot).

Are YOU looking for an accident like I was?

They are not difficult to find.

SNAGS AND GLIDERS

Found I laughed at this after four readings, which is the test of talent. If

you actually try playing the game, you'll find you can't win, because sometimes going up brings you down two snakes and three retreat orders to

start again. Landing on 35 to finish, for example, drops you to square 8, which drops you to 6, which orders you to square 1 . . . see attached.

(from SOAR POINT, MERCIAN HGC)

Squares and Snags:

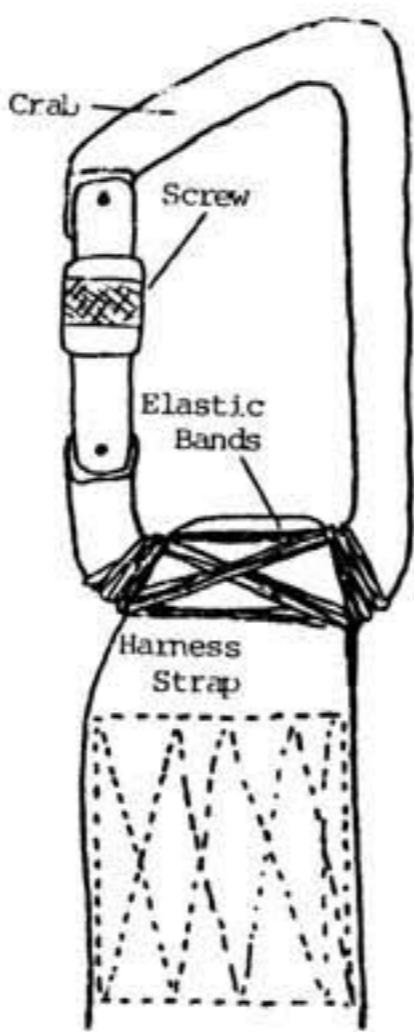
- 1: Graduate from training school with Pilot 1.
- 2: Join Mercian Club Buy Chairman several drinks Go on 4 spaces
- 3: Get married. Have Red Bird as best man. Start again on grounds of diminished responsibility.
- 4: Attend B.H.G.A AGM Seen talking to Brian Milton Go on 4 spaces
- 5: Forget to set deflexers go back 3 squares
- 6: Go to Club Stag Night. Stay sober go back to Sq. 1.
- 7: Buy Soar Point editor several drinks go on 20 spaces
- 8: Park car in naughty place on club trip go back to sq. 6
- 9: Have article for Wings! rejected.
- 10: Win Club Competition without cheating much.
- 11: Buy same type of kite as Club Chairman go on 3 spaces
- 12: Buy Reggie Spooner's old kite
- 13: Get lost in cloud at Rhossili Miss a turn
- 14: Land on top of Robin's new kite. Go back 4 spaces for laughing.
- 15: Write boring story in 97 episodes for Soar Point.
- 16: Look after Brian Milton's kids at A.G.M.
- 17: Keep on top of stack all day Miss a go for head swelling to subside.
- 18: Pay club subs without reminding go on 4 spaces
- 19: Miss good flying day to take wife out. Go back 17 spaces twit.
- 20: Bend A frame in nonk landing miss a turn for repairs
- 21: Stall on take off. Miss 3 turns while plaster sets
- 22: Caught tree felling at Meon go back 10 spaces
- 23: Call of nature on cold day Miss 4 turns searching
- 24: Top Land at Castlemorton Naughty!
- 25: Fail to penetrate miss 2 turns to replace leading edge
- 26: Forget to hook in. Miss 3 turns looking for kite.
- 27: Write nasty letter to Wings! about anything or anybody Go back 2 spaces
- 28: Land in trees on club trip.
- 29: Break left on converging course Go back to Sq. 1 to learn rules
- 30: Forget to wear long johns miss 2 turns for frost bite
- 31: Write article for Soar Point go on 4 squares
- 32: Go on club trip. Forget harness
- 33: Go on club trip. Forget harness
- 34: Go on club trip. Forget harness
- 35: Go on club trip. Forget harness

SAFETY THOUGHT ON CARABINERS

Reg Latimer, from TVHGC, has a good idea about MOUSING carabiners. A spring gate "crab" is strongly recommended for coastal flying, yet should the "crab" rotate out of the vertical position — and it may well do on take-off or in turbulence — then you may only be supported by the strength of a sixteenth of an inch diameter steel pin under sheer load.

Think about that . . .
Now
Do something about it.
Even if you use a screw gate — left undone when you coastal fly — get your harness OUT NOW and MOUSE the carabiner to the harness with elastic bands (see sketch). It will only take about ten minutes and it may well save your life.

Put on enough elastic bands to prevent the carabiner slipping through the harness, but not too many or you will foul the gate hinge.



"MOUSED SCREW GATE CARABINER"



XC TIPS

Circuit approaches — or getting it into a small space

From a lecturette by Commander Mike Collis M.B.E. R.N.

By and large we're used to landing in big fields with fairly clear approaches. What we don't do well is getting down onto a spot. Can you remember the last time you actually got down onto the exact place you originally intended before you took off? You don't? You should feel ashamed of yourself!

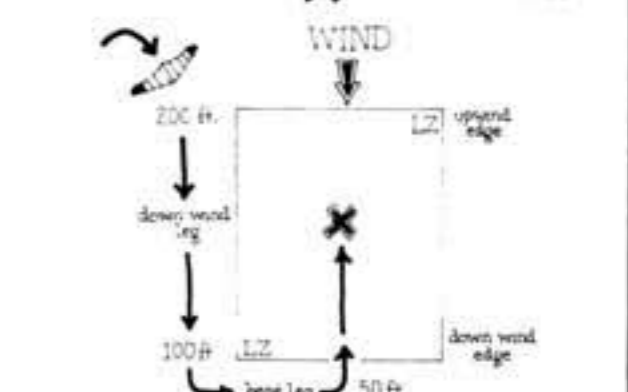
Here's some pointers you should know when you go off on your cross-country flight. Practice them every time you fly, so you're prepared.

Getting into a strange LZ (Landing Zone to civilians)

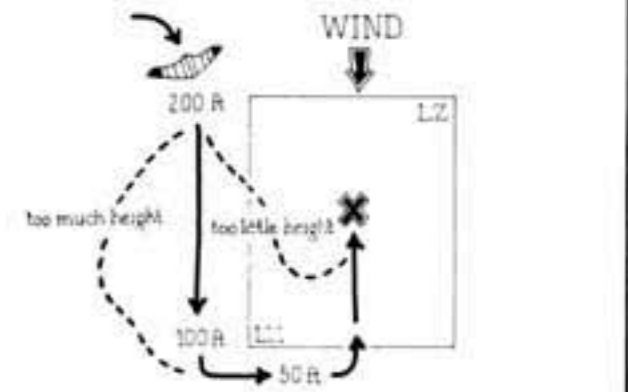
1. Examine the ground below you for possible LZs either side of your track so that, in the event of sudden sink, you know without thinking which way you're to turn.
2. Know the wind direction — yours and that at the LZ. Yours, by letting your glider nose into wind. When the landscape doesn't move away either side, you're dead into wind.

The LZs, by watching: smoke, grass or crops, dust off the ground, from cars, wind gusts etc., washing, flags or litter, other fliers just landed, they and you should park nose to wind

to act as wind markers.
3. At 200ft. you must decide where you're going to land. You have just sufficient height to make a circuit approach and entry to the LZ safely.
4. Now make a Standard Circuit Approach. If you circle to lose height, do it over the upwind side of the LZ. The wind will carry you downwind.



At 100ft. turn onto your Baseleg.
At 50ft. turn in to the LZ and spot.



If you've too much or too little height during your downwind leg, you can compensate by flying off course.

Index of Articles

Appearing in Wings! from January 1979 to December 1979

By Tony Keefe

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B B.H.G.A. Matters	M Meetings etc.	S Safety and Medical
C Competition	p Parachutes	T Technical
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SMALL ADS.

All small ads should be sent to Silvia Howard, Commercial Editor, *Wings!*, 4 Somerwood, Rodington, Nr. Shrewsbury, Salop. Ads sent to any other address will be redirected and therefore delayed.

For your own safety, if you are purchasing a second-hand glider, check that it is a registered BHGA model, see it test flown, test fly it, and inspect it thoroughly for damage or wear to critical parts. If in doubt seek advice from the Club Safety Officer.

Gerry Breen London to Paris replica **SUPER-SCORPION** C+/SOARMASER, two months old, everything latest spec; undercarriage (prone take-off) power-muzzler, alloy prop etc; used 2 displays only, fully tested and sorted. £1,300, might split. (Going rigid!). Bill Allen, 0242 24498/28989.

McBROOM ARION. Suit beginner with stable and forgiving handling. Red/blue sail with bag. £100 o.n.o. Going 2nd generation. Tel: Chris Tame, Horsham 57314.

CATTO 15 picture in March issue of *Wings!* £1,800 o.n.o. Tel: 0900 3503, Cumbria.

MOONRAKER 77. Late model. Good condition, clean; multi-colour sail. £275 o.n.o. Ring: Frank, Gloucester 23542.

MIDAS SUPER E. Absolutely as new condition. Attractive colours. Only 5 hours airtime. Very good performer. Owner must sell as reluctantly giving up flying. £195. Offers for Willis Vario, Airstream Harness and other sundries. 04585 737.

SPIRIT (Large). Good all round condition, incl. seated harness, very distinctive sail colours. Further details, Huddersfield 659038.

CHEROKEE 185. A perfect example of this truly exceptional machine. Beautiful condition. Well cared for. Bargain at £445. Tel: Howard Rockcliffe, Thornbury 413029.

CHEROKEE-200. Very low airtime, good condition and perfectly tuned. Vulcan forces sale. £440 o.n.o. Phone John on Bristol 684904.

PARACHUTE SEMINAR 7.30 p.m. at the Devils Dyke Cafe on Saturday 31st May. All are welcome. Possibility of live parachute deployment demonstration (weather permitting). For more information contact Vince Hallam, Brighton 24151 Ext. 171.

VOLKSWAGEN Caravanette. Elevating roof, sleeps 2 + 2, fridge, gas heater, stereo, rebuilt engine. Outstanding and ideal Hang Gliding vehicle for £1,950. Bill Allen, 0242 28989/24498.

ATLAS Medium. Nice condition, very clean. 16 and 24 miles already this year. Only reason for selling — too heavy, getting a large one. Tel: John North, 0772 725943 (day), 0772 311288 (evening).

Large SPIRIT, in bag, multicoloured sail; excellent flyer; suit beginner to intermediate pilot; with seated harness and helmet. The lot for just £300 o.n.o. Ring Nick on 061-748-5306.

WASP C4. Excellent beginner's kite; with seated harness and bag. £110 o.n.o. Bideford 5180.

ATLAS 16. 'Genuine' domestic reason forces sale of this as new glider, 4 short flights only. £700 o.n.o. Ring Brian, Accrington, Lancs., 35793.

QUAD POD instrument system. Visual Vario, Airspeed, Altimeter, Compass, Bracket & Pod, 1/2 kg. £70. Few only. V. Hallam, 18B Queens Road, Brighton. Tel: 24151, Ext.171. Also B size S. **Scorpions** available, and wanted.



Announcement

We have recently negotiated financial facilities for **Hang Gliders, Equipment and Parachutes**

Please contact us for further details:
MAINAIR SPORTS,
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 Telephone: Rochdale (0706) 55131



Sky Bird Stunter Kite

Advanced Design. Dual Control Hang Glider Stunter Kites.

* Stunts * Loads * Fully Aerobatic * Lightweight * Strong * Easy to Control

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 9ft. w/s 5 panels, £7.30 9ft. w/s 7 panels, £7.80
 11ft. w/s 9 panels, £10.80. P&P 20p per order.

Price includes controls/line. Dispatch within 3 days. Extras if required: 50ft. tail 30p. Cloth bag 20p. Send Cheque, PO, Access or B'card No. to: SKYBIRD KITES, 8 CHEQUERS ROAD, MANCHESTER M21 1DY.

NEW FROM WINDCRAFT CO: Cocoon Harness £75.00. Flight Designs lightweight 'chute 4 1/2 lbs., £195.00. Economy Altimeter, £15.00. Combined electric digital Altimeter/Vario 8 in. x 4 in. x 3 in. Backpack for all flying gear, with padded shoulder straps. Vol Libre lightweight cutaway helmet, all sizes and colours in stock. Brochures, prices from Windcraft Co.Ltd., Sion Lane, Clifton, Bristol. Tel: 0272-37870.

FANCY HANG GLIDING in the Alps? Chalet apartment to let in Kitzbuhel, Austria. Sleeps four, with breathtaking views over mountains and valleys. Christian Steinbach, 1977 World Champion, runs hang gliding school and factory in Kitzbuhel. Further details, phone Bagshot 73262.

SIGMA in the Southwest. Contact Bill Allen for full details and test flight. 0242 24498/28989.

£100 REWARD for the recovery or information leading to the recovery of my Skyhook Cutlass, stolen from Home Farm, Ilam, on 13th April. Red leading edge, keel out white, yellow, orange, gold, red, blue, white and white. Phone: Nottingham 295725 or Peak School of Hang Gliding, Burton-on-Trent 701130.

Camera found at AGM. For details contact Chris Freeman, Coventry 416841

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SUPER SCORPION B. Dacron sail, v.g.c., superb handling, attractive colours, B-bar available, some spares, never pranged. Bargain at £450. Phone: Gordon Jago on Cardiff (0222) 390630 - day-time.

CHEROKEE 200. A very good performer, excellent condition. Must sell because it flies too high! £430 o.n.o. B-bar available for seated conversion. Phone: (evening) Reading (0734) 772423, Graham Leason.

FALCON III. Excellent condition, white and sky blue. Factory checked and tuned. Spares, seated and prone harness. £200 o.n.o. (01) 388 4362, evenings; (01) 486 4488, ext. 325, day-time.

SKYHOOK 3A. Complete with seated harness, helmet etc. Ideal for beginner. £75. Tel: Gateforth 442 (Selby area), ask for Andy.

EMU. Large. Immaculate condition. Never crashed, flies perfectly. All red sail. Reason for sale - have bought powered hang glider. Must sell quickly. Bargain at £285. Tel: Loughborough 63536.

VORTEX 120. Green-yellow-white. Good condition. Large A frame. Prone only. Fairings. No prangs. £350 o.n.o. Mike, Winslow 2586.

HIWAY 220. Orange and white sail. Ready to fly, has seated rig. Suitable for beginners. £110 o.n.o. Gary Phillips, Clarence Hotel, Esplanade, Tenby, Pembrokeshire, Wales. Tel: (0834) Tenby 2705.

FALCON IV, damaged. Has red, white and blue sail, prone rig, complete with bag and harness. £190. Gary Phillips, Clarence Hotel, Esplanade, Tenby, Pembrokeshire, Wales. Tel: (0834) Tenby 2705.

Large SAFARI. 13 stone plus. Immaculate condition; a cared for wing; will make a faithful pet; pilot just needs a change. £425. Would consider exchange. Jim, Hull 505888.

CYCLONES - Two works maintained machines to latest 1980 specifications, choice of 165 and 180. Both in perfect tune and with tip modifications for light handling. Sponsored Cyclone forces sale. Tel: Ickford 244 (office hours) to discuss.

YUGOSLAVIA is an exciting hang gliding country. I own a cottage in the north-west corner of it where Alps dominate the scenery. I am local, will be there to help advise and translate and will let the place to two or three people at a time besides myself, June to September. Many breathtaking sites within minutes, nearest one on the spot. I live in London over winter so more details from P. Husak, 81 Sirdar Road, London, W11, Tel: 01 727 1912 - phone, write or call.

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SCORPION C. Non-standard factory competition kite. I kept it a second season. B-bar also available. Offers to Bob Fisher, Reading 864066.

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MIDAS E. Good condition. No prangs. Including B bar, prone and seated harnesses, bag. £225 o.n.o. Ring Romsey, Hants, 517321.

Large EMU. Good condition, multi-coloured sail. Excellent sink rate, nice to fly, great in blobs. Can be seen in S. Wales or S. Downs. £450. Tel: Bury (Sussex) 678 (evenings).

CHARGUS VEGA IIB. Good condition. Flies very well. Ideal P1 beginner/intermediate glider. Blue, white, yellow. Some spares. £225 o.n.o. R. Mathews, 01-407 7525 (work).

SCORPION B. Ideal for new P1s, B-bar, seated harness. Must sell. New glider ordered, thus £200. Tel: (day) Preston 633333, ext. 194, Ian Hefher.

SST.100C. Very good condition. Flies well. Beautiful sail. Suit 9-10 1/2 stone pilot. Ideal P1-P2 machine. £295 o.n.o. Shoeburyness 6222.

SOUTH WALES HANG GLIDING CENTRE, 67 Cardiff Road, Troedyrhiw, CF48 4JZ, is pleased to offer bed and breakfast at £4 per night to keen flyers. Tuition arranged for beginners and advanced students. Tel: Ynysowen 690787.

NEW PARACHUTES. Strong, compact, low sink rate, single handed "throw away" deployment. Competitively priced. Phone or write for details. Skyhook Sailwings Ltd., Vale Mill, Chamber Rd., Hollinwood, Oldham, Lanes, OL8 4PG. Telex 667849; Tel: 061 624 8351; 061 681 5045; 061 681 5369.

WASP Stirrup Harness for sale. Hardly used, excellent condition. Size medium. Make me an offer! Tel: Chris, 01-540-5479 (Wimbledon).

HOLIDAY job wanted in hang-gliding, any time between July and September inclusive, for mechanical engineering student with Pilot 1 and some technical knowledge. Ideally in R & D but open to offers. Phone: Simon, Reading 67425.

WILLS SWALLOWTAIL. Ideal for beginner. Complete with seated harness. £130. Phone: Alloa 722793.

SPIRIT Large. Excellent condition, beautifully set up, distinctive yellow and black sail. £225 o.n.o., including bag and spare upright. Tel: Shepshed 4483.

MIDAS SUPER E. Nice colours, minimal airtime and no prangs. With bag, seated harness and helmet. £200. View Dunstable. 01-889-8379.

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Business Ads - 12p per word, minimum charge £3.00.

Personal Messages from BHGA members carried free.

Send to Commercial Editor, Sylvie Howard, with a crossed cheque or postal order for the correct amount, made payable to the British Hang Gliding Association.

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