

# LEARN TO FLY !

with

## SKY SYSTEMS

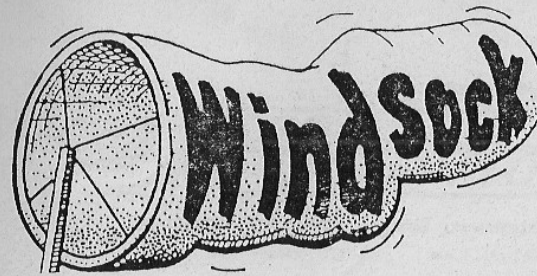
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COMPLETE TUITION PACKAGE FOR  
THE ENTHUSIASTIC ASPIRING FLYER.  
TO THE BEST BHGA P1 STANDARD.

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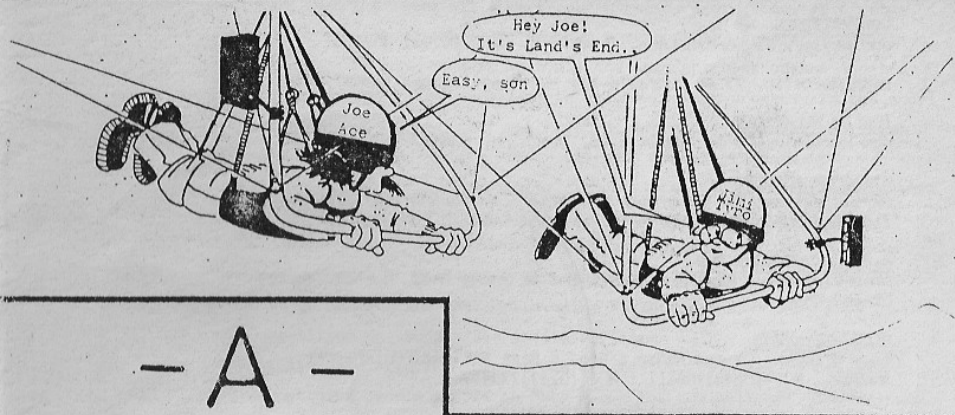
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FEB 85

# ' ADOPT '



- A -

# PILOT

---

## IN 1985

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If you have an interesting story to tell or accident to report just write it down clearly and send or give with any photos to any of the editorial committee. Please send a S.A.E. if material is to be returned. All items must be in by the 25th of each month, for the following months' magazine.

ADVERTISING

Private advertisements for members (to sell gliders, lost and found etc.) are free.

All commercial advertisements are charged at the following rates:  
1/6 of a page: £12 per year (in advance); 1/3 page: £22 per year (in advance); full page £5 per month, or £45 per year (in advance).



# Editorial

Mid-February already. Time flies even if we don't, or won't due to the severe weather lately. The Adopt -a- Pilot scheme gets off the ground this month after a slight delay while the Committee discussed at its January meeting how best to operate the scheme. It was generally agreed that the best way to initiate it would be to invite all newly joined pilots to join by contacting either the Club Coach Dave Rusbridge or the Club Secretary Adrian Whitmarsh. In fact, all PI pilots who feel they could benefit from being assigned to one or more experienced pilots are invited to join also. This idea the Committee hopes, will increase the general standard of Club flying and will encourage inexperienced pilots to approach and actively seek advice from their more experienced counterparts a lot more than happens at present. Equally, it's too easy for experienced pilots to forget that they were all once tyros, eager to learn, unaware of some of the potentially disastrous pitfalls, anxious not to appear ignorant or stupid or be laughed at, but longing to soar with all the apparent ease of the 'aces'.

So can we all try a bit harder this year to help each other progress in the sport by giving active support to the Adopt -a- Pilot scheme and by raising the level of consciousness in and about the air and in all that travels through it?

Which brings me on to airspace: the lecture given by Adrian Whitmarsh on Saturday 2nd. February was attended by about a dozen people at the Dyke. Perhaps I didn't highlight it enough in Windsock or perhaps people had prior engagements, whatever the reason, that is quite a low turn-out for such a subject. Club Nights will continue to be held on the Saturday evening following the first day of each of the Club Competition Weekends. See the Year Planner in the centre pages.

Talking about airspace brings to mind Cross Country flying: just to remind you that the XC competition season starts on 1st. March for the National, the Sussex, and the new Weekend XC Leagues. ( The Weekend XC League is not the same thing as the Club Competition Weekends ). Entry details for the National comp will be in Wings!. For our two XC comps, entry is free, rules as for the National League except that qualifying flights must be registered with Joe Hayler or his designates within one week. Last year there were 19 pilots in the XC competition and this year, with membership up so far to almost 170, I am looking forward to seeing some new names in the XC lists. No, it's not all a foregone conclusion! Just latch onto one of the experienced XC pilots and go with him on your first flight. Paul Moore's account in Wings! January issue is a perfect example of this and of how an Adopt -a- Pilot scheme can work. Read his article again.

There will be a special XC notice and retrievals board at the Dyke this

( continued )

Editorial ( continued )

season and short of having your own personal retrieve driver, it is up to each and every XC pilot to post information and arrange retrievals for each other as conveniently as possible. BHCA Chairman Percy Moss circulated a letter to all Club chairmen on the subject of Controlled Airspace infringements during the 1984 season; it is printed in full in this issue. Pilots should note the 1:250 000 scale UK topographical airmaps do not show airspace restrictions above 3000' ALTITUDE and should not be used in flight above that altitude. In that case the 1:500 000 scale airmap should be used.

The next Club competition weekend is on 2nd/3rd. March at whichever site is suitable on the day. The first one on 2nd/3rd. February was blown out on the 2nd., the only flying being possible on Newtimber Hill. On 3rd. the wind was barely soarable at Beachy Head and very few turned up to fly anyway. So keep your fingers crossed for the next Club weekend. Not all the year's competition weekends will be held on the first weekend of each month, as previously planned, because of clashes with other competitions. I suggest you take the year planner out of this issue and pin it up somewhere to remind you when Club events are on.

That's all for now, so may I wish you throughout this season:

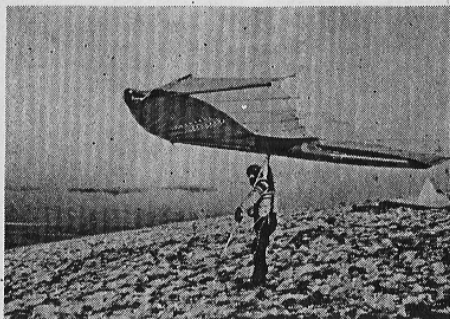
SAFE take-offs,  
SILKY thermals,  
THOUGHTFUL approaches,  
and HAPPY landings. (miles away!)

Ian Carrington Smith.

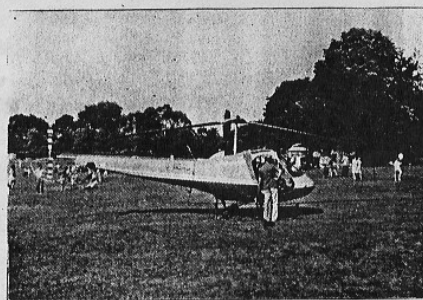
\*\*\*\*\*  
\*\*\*\*\*  
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And what, all you budding P3's, is the difference between ALTITUDE and HEIGHT ?

By Gilly! It's been cold lately....



....old bean!



S.H.G.C. XC retrieval vehicle for 1985. Fat wallets only.....  
(Fully maintained by Kevin Pickering)

## S.H.G.C. CALENDAR

ALL EVENTS TAKE PLACE AT THE DEVIL'S DYKE PUB.  
Okay, diaries out, ballpoints to hand; here we go.....

### **MARCH** A LECTURE BY **Dr Dunstan-Hadley**

**2nd**

**7pm**

AUTHOR OF "AIR MEDICAL NOTES FOR HANG GLIDER PILOTS", on PILOT HEALTH and WELFARE both on the ground and in the air. Brush up your FIRST AID as well. This very IMPORTANT subject should not be missed by anyone. Do you know what the effects of hypoxia are ? Can you spot a person suffering from exposure or shock ? Would you know how to resuscitate someone ? Come along and refresh yourself. Light buffet available.

\*\*\*\*\*

### **APRIL** Johnny Carr & Ian C-Smith present **Home-movie night**

**6th**

**7pm**

Come and have a good laugh at some CRAZY people doing CRAZY things on top of hills. Vintage hang gliding films ( Gulp! and more...) of the S.H.G.C pioneers in full colour action, no stunts barred..... plus stalls by familiar faces and other pretty pictures!

\*\*\*\*\*

### **MAY** And THIS IS THE BIG ONE..... **Tony Hughes** **17th** Twice EUROPEAN CHAMPION will be demonstrating the art of **Aerotowing**

**7pm**

with a lecture and video films. DON'T MISS this opportunity to see where our sport might be headed in the years to come!! After all, sailplanes have been launching like this for years. Why can't we ? Find out the state of the art in this exciting new branch of hang gliding. Be there!

\*\*\*\*\*

### **AUGUST** **SUMMER BARBEQUE**

**17th**

CLUB COACH REPORT

by Dave Rusbridge.

Pilot Adoption Scheme

In the six months I have been Club Coach, I have noticed, along with many other pilots, a distinct lack of interest or reluctance on the part of new P1 pilots to come forward and make themselves known to us on the hill. This is very concerning as over the last few months there have been some very stupid accidents, which luckily have not resulted in any serious injury.

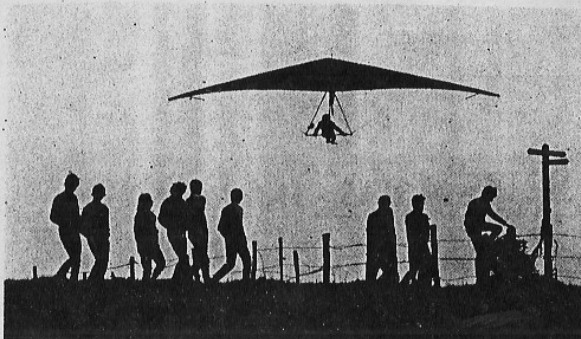
These accidents would not have happened if the pilots concerned had taken the time before they launched to work out a flight plan with someone experienced.

The S.H.G.C. Committee have drawn up a list of some 50 pilots of various experience, but all of whom have the ability to give sound advice to new pilots. The pilots on the list will be split up into groups living in the same area. Therefore any pilot wishing to be adopted will be given the names and addresses and telephone numbers of a few pilots in their area, which they can use to contact their adoptors for weather information etc. in the morning. They can then make arrangements to drive to the site together or to meet on the hill, where they can then get some coaching.

This scheme will work very well if we get a good response from new pilots; so anyone wishing to be adopted should contact me, Dave Rusbridge on Worthing 31204, or Adrian Whitmarsh on 0625-5055, or have a word with any of the Committee members you see on the hill.



\*\*\*\*\*



Left: the classic dilemma which faces all P1 pilots sooner or later: how to land next to the pub without i) hitting the fence, (ii) hitting a sightseer, or (iii) hitting the pub! (Don't laugh, join the scheme or you could be next.)

# BRITISH HANG GLIDING ASSOCIATION

The Governing Body of Hang Gliding within the United Kingdom - founded 1974



CRANFIELD AIRFIELD, CRANFIELD, BEDS. MK43 0YR  
0234 751688

IMPORTANT NOTICE

Please note that the Malvern Hills are CLOSED to all hang glider pilots until further notice. This is due to a NON BHGA member and visiting flyers breaking 3 of the bylaws.

Because of these flyers actions there is a good chance that this site may be lost permanently.

Percy Moss  
BHGA Chairman

19.2.85

1974-1984 10th ANNIVERSARY

# BRITISH HANG GLIDING ASSOCIATION

The Governing Body of Hang Gliding within the United Kingdom - founded 1974



CRANFIELD AIRFIELD, CRANFIELD, BEDS. MK43 0YR  
0234 751688

TO ALL CLUB CHAIRMEN.

## CROSS COUNTRY FLYING.

It has been alleged that during this year quite a number of cross country flights have infringed Controlled Air Space and at the same time some have not complied with V.F.R. rules.

If any of these flights had been proven to be actual infringements, the consequences would have been disastrous for the sport, as some of them would have involved a Civil Airport of some consequence. Just imagine the situation if an airline pilot had filed an air miss with a hang glider.

The B.H.G.A. Council is seriously concerned that if nothing is done then the risk of this happening next year will be high.

It is my request, as your chairman, that each club should arrange lectures or seminars during the next few months on the reading of air maps, navigation and V.F.R. rules.

The area which should be particularly covered is the ways and means by which a pilot can know where he/she is at any one time during a flight. This could be done by marking out on maps the landmarks which are identifiable from the air on down wind paths from all the sites within your control - and even those of other clubs which are regularly flown by your members - so that any controlled air space within these paths can be correctly avoided.

I cannot stress strongly enough the need for this action. The pilots involved in the alleged infringements stated that they did not know where they were (if they did then their action was grossly or even criminally irresponsible).

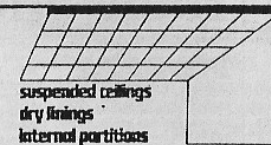
Therefore, I am sure that you will respond to this need to retain our freedom to fly by passing on to your members the responsibility they must accept during cross country flying, and to assist them in this by arranging the necessary instruction for them.

Many thanks. Fly well, fly safe,

Percy Moss  
Chairman.

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KENT TN9 2AH (0732) 359128



The Editor,  
Windsöck.

18th. February 1986

### Club Competition Weekend

After all the planning, enthusiasm and effort by a lot of people all of this was wasted because of the weather, but look on the bright side, who really expected our weather to be good? We hoped, but it just didn't work out. You're not going to give up, are you? Next time it will possibly be Cross Country weather on 2nd. and 3rd. March and we will give it another go. If the weather is in order we will be alright.

Once again I see our boys have done well, this time in Australia. S.H.G.C. climbs above the rest yet again. Over the last few years we have sent a lot of good pilots and never got anywhere. Then they asked the S.H.G.C. and look at the results. This is only the beginning of a great season. Just read about our Club and feel proud.

See you on the 2nd. and 3rd. March, Club Competition Weekend.

Good flying,  
Joe Hayler.

We belong to the



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NEW LOOK

DEVIL'S DYKE

Public House  
and Restaurant

(Sunday lunches our speciality)

Come and See us  
NOW!  
Even Satan would be  
impressed.

Tel: POYNINGS 256



From the Evening Argus recently:

## Hang-gliders land on target

TWO Brighton-based professional hang-gliders have set a new British record.

Michael Carnet and John Pendry competed in the Australian national competition earlier this month and created the record in the Distance to Goal event.

Competitors had to esti-

mate where they thought they would land, and Michael and John, flying closely together, came closest to their target — 140km. away.

Michael, 24, of Loder Road, also came second in the Australian national championship, while John, who is 26 and lives in Gladstone Terrace, came fourth.

French-born Michael said: "I am very pleased, but now I'm waiting for the world championship which is going to be held in Austria this summer.

"I beat the current world champion in Australia, and that has given me a lot of confidence for the future," he

said.

Michael won the British championship last year, and came second in the Hungarian national the year before. He and John, who holds the world record for the longest cross-country distance flown, are members of the Southern Hang-Gliding Club.

## SMALL ADS.

FREE TO ALL FULLY PAID UP MEMBERS BUT FOR NON MEMBERS A FEE OF £1 PER ADVERT WILL BE REQUIRED

### AIRTIME SALE

FOR SALE: Typhoon 3c medium new bay '84, low airtime, 1st. class condition, mylar 1/e, sweet handling, now only £225 ono. Phone B.J. Harrison on 0273-696906.

24 ft parachute Windhaven (Hainair) secondhand £175. S/h stirrup harness £30. Cocoon harness; suit pilot £8ft or over, only £45. Selection of secondhand varios from £35.

FOR SALE: MAGIC 166 green mylar 1/e Flies like a bird going "cheep". Call John Young on 6958-71706.

FOR SALE: Magic 3 177 black 1/e with gold u/s, well maintained throughout '84. An excellent buy for those over 12st. £300 ono. Contact Kevin on 0293-885757

FOR SALE: MAGIC 3 166 yellow mylar 1/e, ball tips: superb handling, well maintained, a snip at £850. Phone Pepe on Worthing 68780

FOR SALE: Lindsay Ruddock Mk V Digital Vaio. Latest update, just serviced £110. New Drogue 'chute £10. New French Connection f? Eddie 01-884-7427.

FOR SALE: Atlas medium all light blue, ideal P1 glider, with famous Atlas handling. £450 ono Phone Paul Ray on 0293-37182.

FOR SALE: Magic 3 166 black 1/e, light blue u/s with dark blue chevron; speedbar & faired kingpost, new bay '83 but only 10 hrs airtime in '84 (honest!). Excellent condition. New ship in pipeline, hence £795 ono. Call Dave McRobert on 0292-662306, after 2/3/85.

FOR SALE: Southern Airsports Cocoon II deluxe harness, blue, yellow flash. Lifepak cover, faired ballast cont., camera pocket. Excellent cond., very comfortable £95 ono. Mark Fisher, 01-393-0768.

FOR SALE: Shadow 100 orange sail with white mylar 1/e. Very good condition and handling - £550. Call Michel on 0273-505692.

FOR SALE: Magic 3 134 gold leading edge with gold undersurface. Perfect condition, great handling & performance, £850. Phone Karen on 0273-505692.

FOR SALE: Atlas 16 med as new, all light blue packable into 7 ft. Very good condition, 10 months old, £650 ono. Call Sky Systems on 0273-505692.

Mark Woodhams is the Hiway representative in the south-east, living at 60 Compton Road, Brighton. Telephone Brighton (0273) 501-043. Excalibur 177 for sale. Rainbow undersurface and stinger, £900. Fantastic Vision demonstrator available for demo flights.

Thinking of buying a Vario?

-ASK WHAT BATTERIES IT NEEDS, HOW MANY AND HOW LONG THEY LAST. NOW THE WELL PROVEN LINDSAY RUDDOCK

**MICROVARIO MKVA**

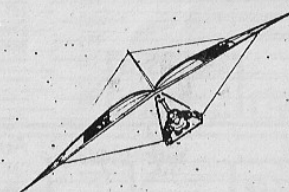
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DEC 85

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1985 Year Planner

SHGC + BHGA COMPETITION CALENDAR

January

1T	
2W	
3T	BUFFALO
4F	(AUS)
5S	
6S	
7M	
8T	
9W	
0T	
1F	AUSTRALIAN
12S	
13S	
14M	
15T	NATIONALS
16W	
17T	
18F	
19S	
20S	
21M	
22T	
23W	
24T	
25F	
26S	
27S	
28M	
29T	
30W	
31T	

February

1F	
2S	1st. Club Comp
3S	
4M	
5T	
6W	
7T	
8F	
9S	
10S	
11M	
12T	
13W	
14T	
15F	
16S	
17S	
18M	
19T	
20W	
21T	
22F	
23S	
24S	
25M	
26T	
27W	
28T	

March

1F	
2S	2nd. Club Comp
3S	
4M	
5T	
6W	
7T	
8F	
9S	
10S	
11M	
12T	
13W	
14T	
15F	
16S	
17S	
18M	
19T	
20W	
21T	
22F	
23S	
24S	
25M	
26T	
27W	
28T	
29F	1st LEAGUE (PENNINE)
30S	
31S	

NOTE: THURSDAY START

April

1M	
2T	
3W	
4T	
5F	
6S	BASANO (ITALY)
7S	3rd Club Comp
8M	
9T	
10W	
11T	
12F	
13S	2nd LEAGUE (LAKES)
14S	
15M	
16T	
17W	
18T	
19F	
20S	
21S	BHGA AGM
22M	
23T	BLERIOT CUP (U.K.)
24W	
25T	
26F	
27S	
28S	
29M	
30T	

May

1W	
2T	
3F	
4T	BHGA TOW. MT.
5S	
6M	
7T	
8W	
9T	
10F	
11S	3rd LEAGUE (NEW TOWN)
12S	
13M	
14T	
15W	
16T	
17F	AERODWING LECTURE
18S	
19S	4th. Club Comp
20M	
21T	
22W	
23T	
24F	
25S	
26S	
27M	
28T	WORLD'S
29W	
30T	
31F	

June

1S	
2S	
3M	
4T	
5W	WORLD'S
6T	
7F	
8S	
9S	
10M	
11T	LARIANO TRIANGLE (COMO)
12W	
13T	
14F	
15S	
16S	
17M	
18T	
19W	
20T	
21F	
22S	
23S	5th. Club Comp
24M	
25T	
26W	
27T	
28F	EGER CUP
29S	
30S	HUNGARY OWENS

July

1M	EGER CUP
2T	
3W	
4T	
5F	SCOT. OPEN
6S	OWENS VALLEY
7S	
8M	
9T	X-C
10W	
11T	
12F	
13S	6th. Club Comp
14S	
15M	U.S. NATIONALS
16T	
17W	
18T	
19F	
20S	
21S	
22M	
23T	
24W	GROUSE MOUNTAIN
25T	
26F	
27S	
28S	
29M	
30T	
31W	

August

1T	
2F	
3S	
4S	4th LEAGUE (GLENSHEE)
5M	
6T	
7W	BARBEQUE
8T	
9F	
10S	
11S	7th. Club Comp
12M	
13T	
14W	
15T	
16F	
17S	U.S. MASTERS
18S	
19M	
20T	
21W	
22T	
23F	
24S	
25S	
26M	
27T	CZECHO-SLOVAKIA
28W	
29T	
30F	
31S	

September

1S	
2M	
3T	
4W	
5T	
6F	LEAGUE FINAL (DALES)
7S	
8S	
9M	
10T	
11W	
12T	
13F	
14S	8th. Club Comp
15S	
16M	
17T	
18W	
19T	
20F	
21S	
22S	
23M	
24T	
25W	
26T	
27F	
28S	
29S	
30M	

October

1T	
2W	
3T	
4F	
5S	
6S	9th. Club Comp
7M	
8T	
9W	
10T	
11F	
12S	
13S	
14M	
15T	
16W	
17T	
18F	
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21M	
22T	
23W	
24T	
25F	
26S	
27S	
28M	
29T	
30W	
31T	

November

1F	
2S	10th. Club Comp
3T	
4M	
5T	
6W	
7T	
8F	
9S	
10S	
11M	
12T	
13W	
14T	
15F	
16S	
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22F	
23S	
24S	
25M	
26T	
27W	
28T	
29F	
30S	

December

1S	
2M	
3T	
4W	
5T	
6F	
7S	Xmas Party/ Club comp
8S	
9M	
10T	
11W	
12T	
13F	
14S	
15S	
16M	
17T	
18W	
19T	
20F	
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24T	
25W	
26T	
27F	
28S	
29S	
30M	
31T	

TEMPERAMENTAL BEACHY

by Peter Polton.

I arrived first at Beachy Head on Sunday 11th. November at about 9.30 and guessed that everyone else was still recovering from the AGM the night before.

The Telecom forecast was for freshening southerly winds, increasing force 4 or 5 and backing southeasterly by mid-afternoon, so I went over to the southerly bowl to do a wind check. It was 12 mph SSE at the top of the bowl but, remembering that wind strength is only half the story at Beachy, I tried to assess whether it would be soarable or not.

The pressure at Shoreham was average - 1013 mb, so it was unlikely to be unstable although the forecast was for a fine day and some weak convection lift might be possible. As I toyed with the technicalities of sea thermals and so on, I walked over to the pub to get the top landing area flags out and the site log-book ( being the first pilot to arrive ), and spotted a couple of models soaring the SE bowl. This was confusing since you would expect the wind to spilt at the point on a stable day, making the ridge 45° out of wind and probably unsoarable.

Next to arrive were Howard Heade and Peter Rolinson who had some enviable stories to tell about 1000ft height gains here the previous Wednesday in convection lift and cloud suck. They reckoned it was definitely worth a try as there were by now several crows soaring on the cliffs. After laying out the landing flags we rigged. Next to appear was "little Alan", the man who flies Beachy in his lunch break; if he can't soar it today, nobody can, I thought. As it happened, he was also the first rigged and he took off from the SE bowl. Presumably he didn't fancy walking all the way to the southerly bowl, and flew round to the cliffs instead.

He stayed up okay and was soon joined by Peter on his Magic. They gained about 200ft while I finished my preflight check and hang check, helped by Richard Rolfe.

Since I hadn't flown the cliffs before, or done any cliff soaring at all, I thought carefully about an escape route. The tide was in and the lift didn't look all that good, so I had to be sure I kept enough height to make it back round the spur to the landing field, although I would have to set off heading away from it initially. I walked my trusty Rithner Atlas over to the edge of the bowl and got ready for take-off. The inevitable crowd of punters gathered nearby, eager to witness this cliff-hanger! I made my run and took off, losing a lot of height in the light wind, and it was not until I was above the sheer drop to the beach that I found lift. Confronted with the 500ft high white cliffs and the lighthouse below was spectacular and I was soon back level with take-off and still climbing. At about 120ft ato I found time to look around and was able to watch Alan's top landing approach carefully as I knew I would have to attempt it soon for the first time.

( continued )

Temperamental Beachy ( continued )

I was enjoying the flight as the views were great even though it was a misty day. I had been in the air about 15 minutes and began to rehearse my top landing approach mentally. ( This is excellent stuff but P1 pilots should be aware that top landing at Beachy requires P2 ability. Ed.) I would have to fly downwind parallel to the ridge, turn back into wind above the ridge, then track in from about 50ft. Howard took off on his Magic just then, so I turned back towards the lighthouse to give him some room. On my next beat back Alan took off again and the lift died. We did a couple of beats in front of the southerly take-off point but it was no good; it was time to head for the bottom landing field.

I was well below the top with Alan below me. We had to fly around the outside edge of the cliff spur to avoid the rotor behind it. We both landed okay but if we'd left it much later it would have been very tricky. Peter and Howard on their hotships were still soaring the cliffs but were now stuck with not quite enough height to top land. It was another ¼ hour before Peter landed and another ¼ hour before Howard came in. Meanwhile, back on terra firma, Les Chapman had arrived and was ready to be wound up. Having been his wind-dummy enough times in the summer (and gone down), I was amused to watch him take-off when Howard, I'm sure, was praying hard for more lift. They both top landed and, as Les said, when there are so many people watching you just have to get it right!

There were by now about 30 gliders parked on top of Beachy but the owners didn't realise that the day's best flying had been and gone. The force 4 or 5 wind never showed its face, the wind for the rest of the day being SE 10 mph and definitely not soarable. This started off a craze of slope landings with Les achieving his first ever. Well done Les! A certain League pilot had insisted on rigging his glider in the top landing area while the cliffs were still being soared, and apparently someone who didn't know him assumed because of this that he must be a novice and put a red streamer on his kingpost. It looked funny to see a hotship being slope landed with great precision with a streamer on the kingpost. The wind began to pick up about ¼ an hour before dark and it was just possible to stay level with the top of the hill, but it wasn't soarable in the conventional sense of the word, as another well-known pilot (who shall remain nameless) proved. He went for a shot at the cliffs and disappeared from sight. After frantic searching he was found, having landed on the beach below the lower cliffs which had just become exposed by the tide.

A possible highpoint of the day for Peter and Howard was soaring higher than a jet airliner which flew by about ¼ a mile out to sea at around 300 ft ASL.

It was identified as a British Airways 737. Was it in trouble? Does anyone know anymore about it?

(Okay Steve Botham and Bob Marshall, own up! That's a pretty unusual approach into Gatwick isn't it? Ed.)

\*\*\*\*\*????????\*\*\*\*\*

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## Know Your PARACHUTE

The following article has been extracted from a longer article written by Chris Price, a well-known and experienced US pilot, in July 1979 in "Hang Gliding". In the intervening years, changes in technology have occurred and our experience has increased. However, the basic thrust of the article and the "tips" he offers, are as relevant today as they were 5 years ago.

### WHEN IN DOUBT, WHIP IT OUT

When pilots practice deploying their chutes they do some stupid things. At the SCSHG seminar we asked a pilot to throw out his reserve into the only clear air, which was designated to be behind him. John Lake and I grabbed his control bar and pushed it under him until he was standing on his head, simulating a straight-down dive. The pilot tried to grab at the control bar to get himself into a level attitude before throwing out his reserve. He had forgotten what the priorities are. The number one priority is: "When in doubt, whip it out!"

Price's article recommends a 6-step procedure to successful deployment. It is vital that all pilots have these steps firmly imprinted in their brain, so that if the worst happens and you have to deploy, your body will function automatically, leaving your mind free to plan ahead and sort out any other problems which may develop.

### STEPS 1 & 2: LOOK/REACH

When flying with your reserve, after having been checked out in a simulator making a number of practice deployments, you should, each and every flight, practice the LOOK/REACH segment of the deployment. After making sure you will not fly back into the hill or get into a midair, you should look down at the reserve handle, reach, and think about pulling it out. By practicing this every flight, when the day comes you will have firmly imprinted into your brain the LOOK/REACH part of the parachute deployment sequence.



Assuming you have the time and altitude to figure it out, and the glider is not in a spin, throw the chute to clear air, downwind (the relative wind you are flying or falling through) to the horizon. If the glider is spinning, throw the chute straight down. Most pilots who have broken their gliders in midair and have spun to the ground have walked away without a chute. If a pilot throws the chute out to the side, in a spin, the glider will just come around on the next turn and grab it, preventing it from inflating. In a spin the chute should be thrown straight down, into the center of the spin, giving the chute the best chance of getting all straightened out and inflated before the spinning glider gets to it. Once it inflates the bridle should stop the glider from spinning before the chute can be messed up by the glider. Once the chute inflates, even if it does get caught up in the glider, it will create some drag to slow the glider down.

### STEP 6: REDEPLOY

All hang glider reserves on the market today have some kind of staged deployment. Rather than letting the chute deploy in any random order, they all try first to achieve bridle stretch, then line stretch, then canopy stretch and finally inflation. In order to achieve this 4-stage deployment sequence they have rubber bands or elastic loops that break or let go in the proper order. If a pilot does not throw the bag hard enough, or for any reason one of the rubber bands does not let go, he must try to redeploy the chute. He would also want to redeploy if the chute had become lodged in part of his glider. One pilot threw his reserve into his rear wires and never tried to redeploy it.

Price is making the point here that you have to first look for the handle, because if you are twisted in your harness, the handle may not be where it is normally.

### STEPS 3-5: PULL/PUSH/THROW

When flying with a reserve a pilot should maintain a constant check on his altitude. If a pilot is close to the ground and something should happen (midair, for example), he should LOOK/REACH/PULL and then push the broken glider out of the way for a clean throw as quickly as possible. If a pilot is at 3,000 feet and he is still attached to the glider, he has as much as a minute before he will hit the ground; with that much time the pilot can afford to wait until he can throw the parachute clear of the glider. The best guess going is that below 600 feet, deploy immediately. Speed is the only hope. For every 100 feet above 600 feet, a pilot will have one second to fool around and look for clean air. When in doubt about altitude, LOOK/REACH/PULL/PUSH/THROW and then redeploy immediately.

In a freefall dive from straight and level flight the pilot will only fall 64 feet in the first two seconds. After that the altitude really starts to rack up. If a glider does something weird under 600 feet above the ground don't wait to see if it will pull out. If the glider is not going to pull out the pilot's only chance is to get the reserve out immediately.

Redeployment is not something a pilot waits to see if he needs to do. Immediately after throwing the chute find the bridle and start pulling the chute back in. The easiest way and the only sure way to find the bridle is to look and reach for it at the carabiner, where the harness and chute are hooked into the glider. When redeploying, grab as much bridle as possible and jerk it back in. The jerk will break any rubber bands that did not let go and will speed the chute up, causing it to have a higher air speed and inflate faster. Odds are the chute will inflate before a pilot will get it back into his arms. Some pilots who have used their reserves have jerked on their bridles but did not get the parachute back into their arms before it inflated. If a pilot should get the whole thing back into his arms he should throw it back out again.

### POST DEPLOYMENT

Once the chute is out, try to get the glider back under control. The chute will let the glider down at about 10 to 12 miles per hour. If the glider has any shape left to it at all the pilot can climb into the glider and effectively control the glider with about a one to one glide angle. Once the pilot has figured out how much control he has he should fly the glider upwind or downwind to determine wind drift and look for a landing spot clear of rocks, power lines, and tall trees. The softest landings have been into tall brush. Just as the glider hits the ground he should try to flare. If he cannot control

( continued )

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### Know Your Parachute (cont)

The glider he should climb up into it, keeping as much of the glider as possible between him and the ground. Then as he hits the ground he should keep his ankles and knees pressed together with his legs slightly bent, leg muscles taut to absorb the shock of the landing. He should not stick out his arms to break the fall.

#### CONCLUSION

You have practiced deploying your chute on the ground and know how it works.

You have practiced the LOOK/REACH/THINK ABOUT PULLING sequence on every flight.

You keep track of your altitude at all times.

Your number is up and you have to use your parachute. Your glider is tumbling 600 feet above the ground:

**LOOK** You look at the handle. Since you are tumbling the harness is not on your body in the same place that it usually is. You would never have found the handle unless you had looked for it.

**REACH** Easy.

**PULL** The bag is out of the container.

**PUSH** You push the mess of the glider away from you in order to get the best possible shot at clear air.

**THROW** Everything is a blur as you tumble end over end except for one clear area off to the side. Throw. The chute speeds for clear air. You see bridle stretch, line stretch, and the bag comes off.

**REDEPLOY** Reach for the bridle behind you at the carabiner.

The chute jerks open. You get the glider under control by climbing up into the control bar and leaning to one side. You turn into the wind and effectively steer the glider between two trees and power lines and do a stand-up landing by using the glider to help you flare.

If you do not have a chute, buy one. And every night after you have kissed your loved ones good night and said your prayers, say to yourself: "Look, reach, pull, push, throw, redeploy."

Finally, it cannot be stressed enough how important PRACTICE is. All pilots should practise deploying regularly whilst hanging from a tree, a beam in the garage or whatever. An assistant should jolt you (or the A-frame, if available) around so as to simulate, as far as possible, a pitch-over, spinning etc. Also, as Price recommends, pilots should practise the LOOK/REACH steps every time they fly.

Dear Windsock,

Technical Bulletin 9 Feb 85

### AERIAL ARTS

Hang Glider Manufacturers  
30 SILLWOOD ST.  
BRIGHTON BN1 2FS  
Tel (0273) 727033

It has recently been drawn to my attention that a couple of local "experts" have grossly misunderstood the engineering of the A-Frame top/keel junction on the Clubman etc.

Good engineering design requires the achievement of the best compromise of numerous interrelating (and often conflicting) parameters. The basic requirements in this case were for the simplest, lightest and cheapest way to join two A-Frame uprights to a partially cantilever load-bearing keel tube with total reliability. Also needless to say, the materials selected had to be easily available.

To cut a long story short, the end result was to bolt the uprights one to each end of a steel pin passing horizontally through the keel tube. In the interest of reliability this pin was designed to be stronger than the weakest link in its particular chain; in this case the A-Frame uprights, with the Microlink<sup>®</sup> pin being approximately double their strength.

The material chosen was 316 S16 Stainless Steel (EN58J) for two main reasons: it is a highly ductile material, and bends out of shape when overloaded, way below the load at which it would break, and it is highly corrosion resistant, needing no plating or special finishing. Thus it will outlive the other major components of the glider and if it is damaged, such damage is easily visible to the untrained eye.

For the purposes of Stress analysis the worst possible cases are assumed (for example, that all the lift force is transmitted through the uprights, which of course it isn't - but that's another story).

So, the uprights: we use 1.125" 16g - not that we need to for strength, but we can't easily get thinner, lighter material at this time -. This gives a Second Moment of Area of:

$$I = \frac{\pi}{64} (D^4 - d^4)$$

$$= 0.0301275$$

(Yeah, that's right we use inches!)

The material is HT30TF, and a good safe value for Young's Modulus is  $9.7 \times 10^4$ .

Thus the load at which an upright will fail in buckling is:

$$F = \frac{\pi^2 EI}{L^2}$$

$$= 704 \text{ lbs.}$$

Just to make really sure we'll round this up to 750 lbs., and also pretend the uprights are both vertical and parallel.

( continued )

*Aerial Arts* present

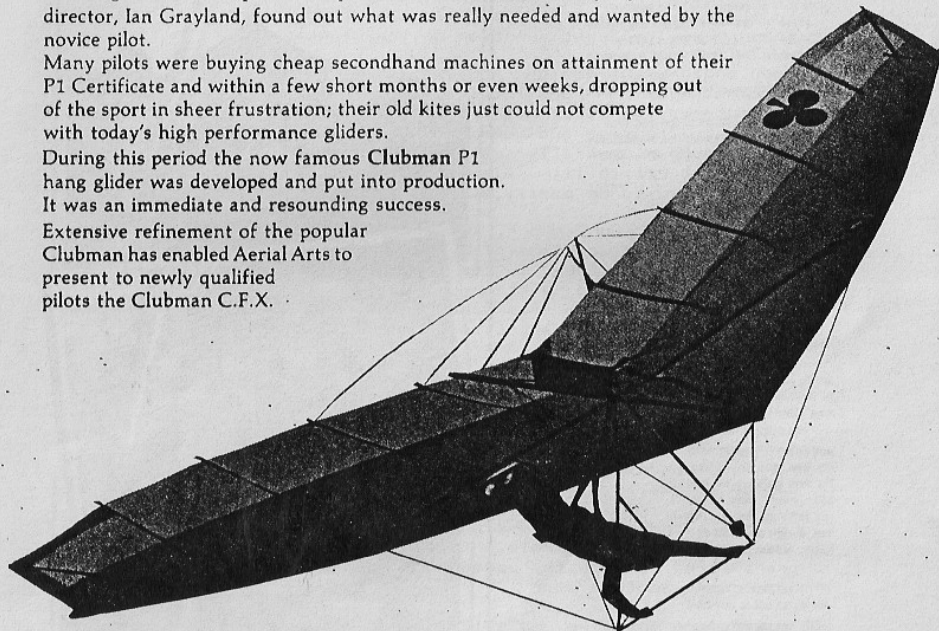
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Working with trainee pilots in a professional school for nearly a year, Aerial Arts design director, Ian Grayland, found out what was really needed and wanted by the novice pilot.

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Optimum pilot weight (in socks)	110-150 lbs.	140-180 lbs.	170-210 lbs.
Empty weight	46 lbs.	47 lbs.	52 lbs.

*Aerial Arts*, 30 Sillwood Street, Brighton BN1 2PS Tel: (0273) 727033

### Technical Bulletin (cont)

Now let's take a look at the Microlink pin. Its diameter is 0.5" and the cantilevered length at each end is 0.6875". Thus the Maximum Bending Moment is:-

$$M=750 \times 0.6875 \\ =515.625 \text{ inch lbs}$$

This gives a Maximum Bending Stress of:-

$$S_{bc} = \frac{10M}{D^3} \\ =41,250 \text{ lbs/sq.in.}$$

The Ultimate Tensile Stress of the material used is 67,200 Min. giving a safety factor of well over 1.5 over the strength of the uprights which could never sustain anything like this load in flight in any case.

This brings us to the keel tube. The contention here seems to be that since the uprights are attached at the sides of the keel, instead of underneath it, only half the keel tube is carrying the load. This idea is fallacious in the extreme.

When you apply a bending load to a tube you get equal tensile and compression stresses on either side of the tube, in line with the applied force, in this case the top and bottom respectively. This leaves very little load indeed around the horizontal hole through the tube.

Conversely, if the bolt is placed vertically you have massive stress raisers (technical term for no aluminium!) at the points of maximum stress. To say the least, a highly undesirable state of affairs.

The Microlink set-up is thus considerably stronger than the typical keel/A-Frame set-up. In fact even if you leave off the top rigging and king post and hang a 1500 lb. pilot off the hang-point of the now totally cantilevered keel (yep, we left the keel pocket off as well!), it still stays in one piece - even if we forget to sleeve it too!

Needless to say, the production Clubman cfx has a very substantial sleeve at this point as well as a king post and top rigging. We even throw in a keel pocket!

The end result is a more than adequate safety margin. - Just to make sure, I have personally proof-loaded every component used in the Clubman, as well as the machine as a whole (I fly them too, see!)

The Clubman has been thoroughly tested on the BHGA Test-Rig, which was unable, even running flat out, to damage the glider, despite making many runs at over 70 mph.

I trust the foregoing has clarified a few points, as well as giving an insight into our design methodology. If you'd like any further data or a chat, contact me at Aerial Arts: we welcome any constructive criticism from any source, and will fully answer all enquiries.

I hope you continue to get as much fun out of your flying as I do.

Ian Grayland

## THE MK 1 EYEBALL - A PILOT'S MOST VALUABLE ASSET.

Vision is the pilot's chief sensory asset. Eagle eyes are so often associated with flying that some pilots are embarrassed to be seen carrying, or, even worse, wearing glasses. Good visual acuity, that is, sharpness of vision is essential in hang gliding; even more so in XC flying when landing approaches have to be set up in new territory. Failure to spot a telegraph wire or power cable can have near-disastrous consequences, as some people know from experience at the bottom of the Dyke! Landing is itself a visual-motor skill in the use of depth and peripheral perception but for detecting other aircraft and avoiding them, good visual scanning matters more than good vision. The eyes, however good they may be, are not as reliable and objective as we like to think. We can explain this by looking briefly at the construction of our eyes, followed by a couple of experiments which you can do.

The eye is made up in such a way that definition is greatest at a small area near the centre of the retina onto which the eye's lense focusses the image at the back of the eyeball. This area is called the fovea. It is packed with acute vision receptors called cones, at a density of nearly 100 million per square inch. There are about 125 million receptors in each human eye, but only 5% of these are cones. The rest are of a different type called rods which are less good at discrimination but much more sensitive to dim light. So the eyes are in fact designed to see rough outlines, light and shade, and movement, but relatively little colour or detail outside of the area of central vision in the fovea.

Most of us believe that we can see with more or less uniform clarity over a field of view at least 45° either side of straight ahead, and that although the picture is less clear still farther to either side, we can still recognise things there. This is the result of the excellent job our brains do in making a visual image out of piecemeal information supplied by the eyes. The field of sharp perception is really quite narrow as can be shown by a simple experiment.

Look at a white surface such as a sheet of paper, on which you have drawn a small black dot. Cover one eye. Now slowly move the open eye, or your head, so that the dot travels towards your nose. At a certain point, well before it reaches your nose, the dot will vanish, though you will still see the white paper.

If the dot is much larger you would still see it, though less clearly than if you look directly at it. This happens because rod vision is not acute enough to pick out a small dot. Even people with "good" peripheral vision find it difficult to see small distant objects (like another aircraft or glider) unless they are moving, but for another reason.

No one is conscious of the quite large blind spot in each eye that

( continued )

## The MK 1 Eyeball (cont)

corresponds to the part of the retina where the optic nerve leaves the eyeball to carry the visual messages to the brain. This is partly because, with both eyes open, there is no gap in the field of view: each eye supplies what the blind spot in the other eye misses. But even if you cover up one eye you still don't see the blind spot; the brain supplies a patch of neutral colour, perfectly camouflaged, to fill the hole.

You can find your blind spot by using a technique similar to that already described in testing your peripheral vision. Place an object about the size of a golf ball a couple of feet away. Look straight at it and cover one eye. Now let your gaze travel horizontally again, but this time so that the object moves outward across your field of vision towards the side of your head. At a certain point the object will disappear, replaced by an indistinct haze. Continue further and the object will re-appear; it is coming out on the other side of the blind spot. This blind spot is not small; it is nearly 200 times the size of the moon's image on the retina, and will obscure a rather large object.

Once you realise there is an invisible hole in your visual field, you will be better prepared to accept that colour peripheral vision, colour vision in darkness, and good visual acuity (sharpness) anywhere but in the center of your field of view - all things that we tend to believe automatically - are more or less illusions.

So, next time you are soaring the ridge in a crowd of other pilots, keep your head moving to check where your nearest companions are. Never assume that because you have seen him, he has seen you. Take avoiding action early on, checking first that you yourself are not about to cut somebody else up in the process. ALWAYS look before you turn.

For XC pilots, the main thing is the potential danger posed by light airplanes ( anything bigger and there's a good chance you shouldn't be there). When thermalling scan the horizon above and below for any planes. A light plane's biggest blindspot is under his nose-end usually, so if you find yourself in this spot, keep a close eye on what he is doing, especially if you are climbing.

Above all, keep your eyes on the move and try not to get too fixated on ground objects. Airplanes that are likely to be a real threat are probably going to be at or near to your own height.

Be seeing you,

Ian Carrington Smith.

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