

WINGS!

DECEMBER 1978

MAGAZINE





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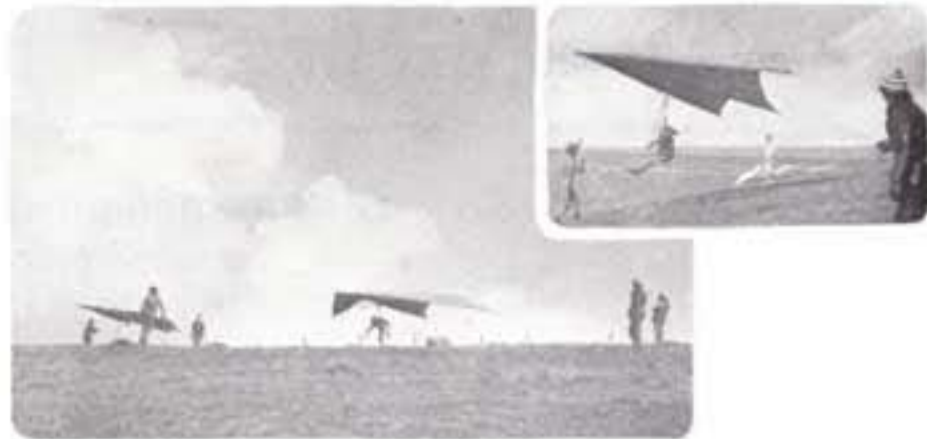
Joe Binns 360's his V-120 ahead
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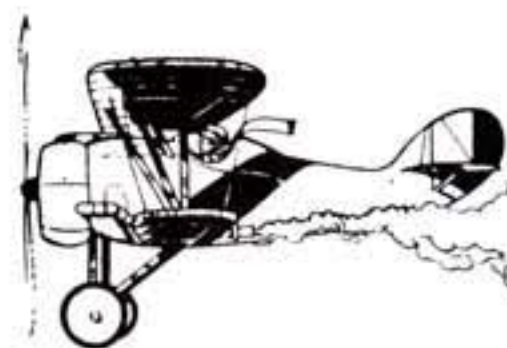
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It comes equipped with a dual range switch that provides a choice of sensitivities for mild and strong lift conditions. A super sensitive audio delivers the quickest possible response to lift. And, a damped visual dial permits easy reading and a slight averaging effect.

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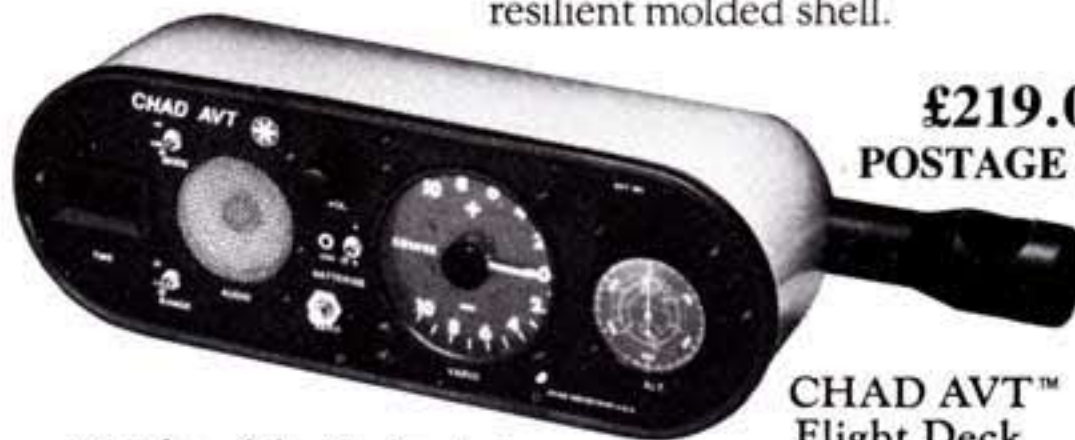
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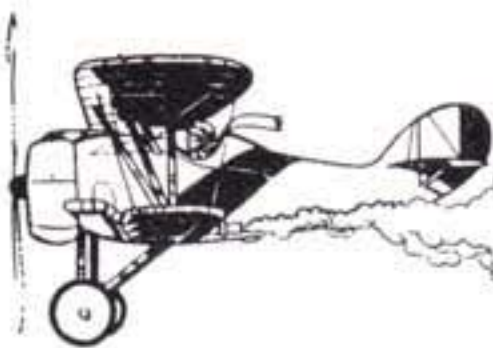
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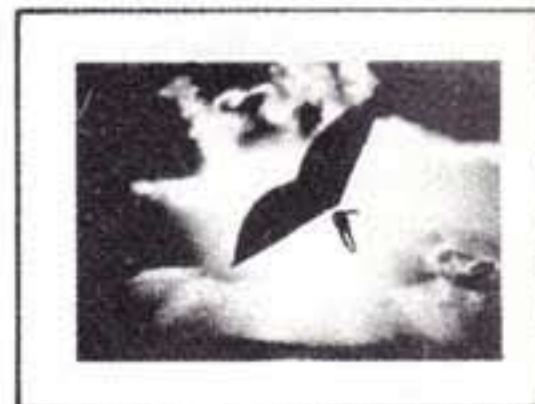
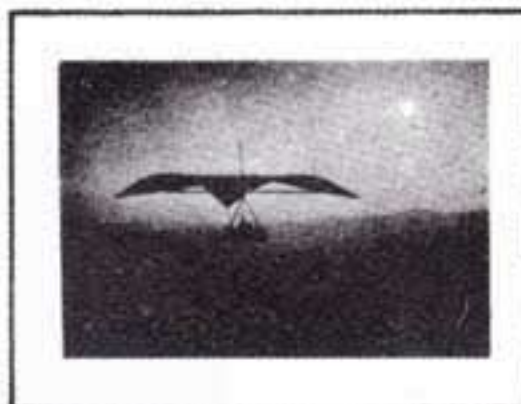
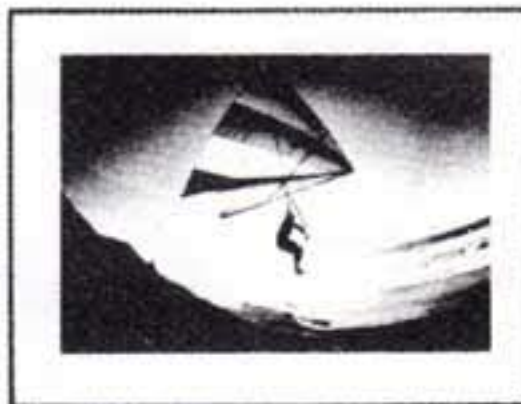
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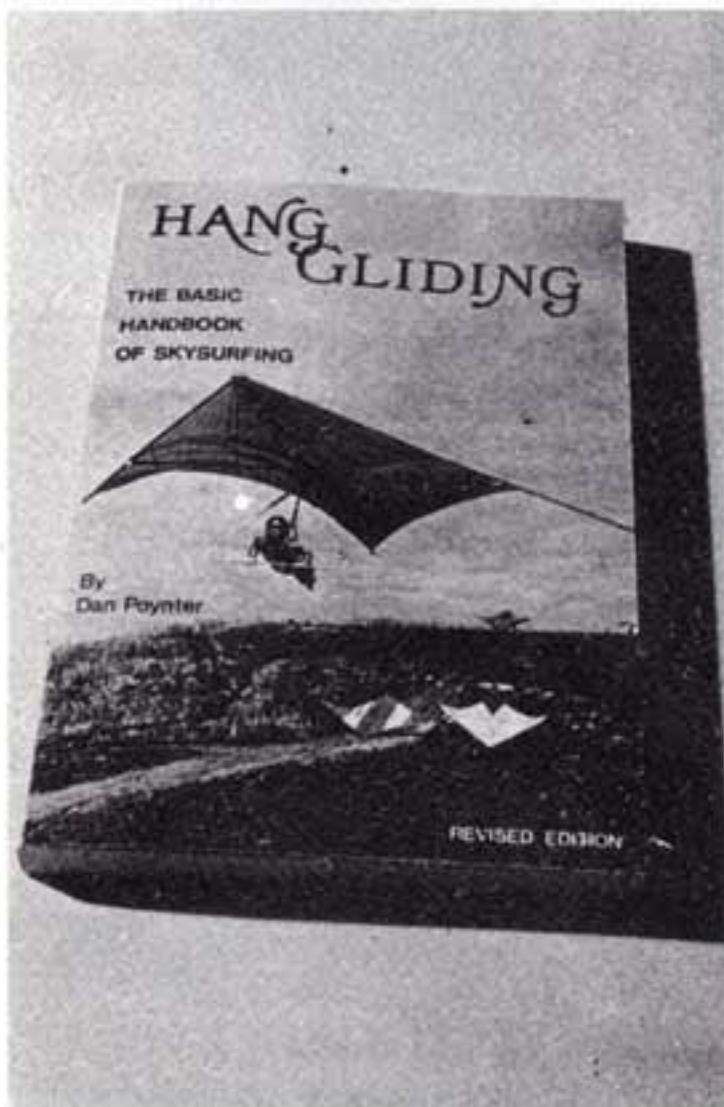
H 2035. Manufactured by Photo-Chuting Enterprises.

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KITE BAG

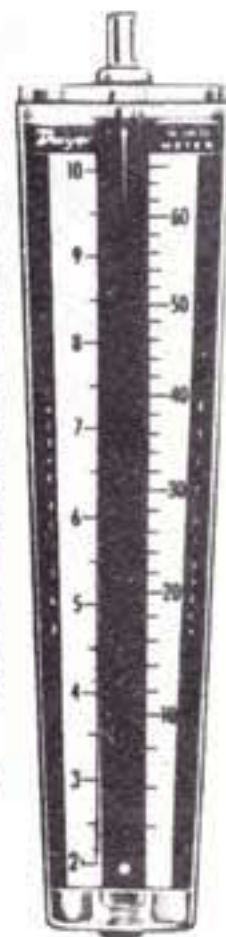
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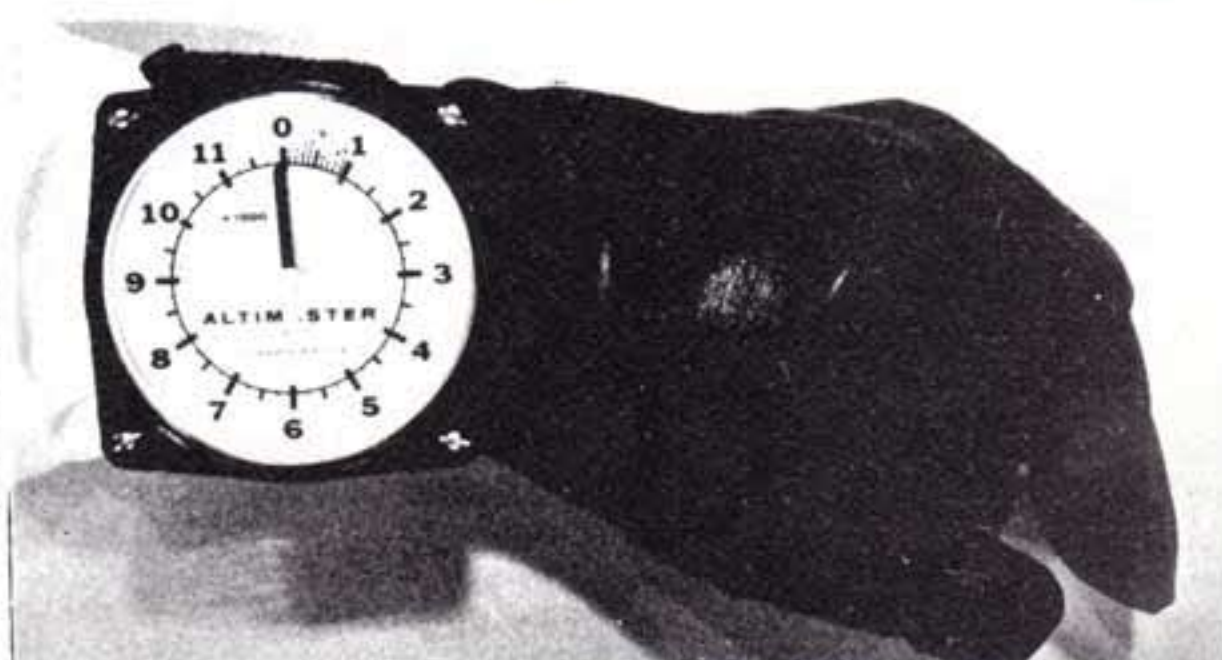
H. 2048. Manufactured by Dwyer Instruments, Inc.
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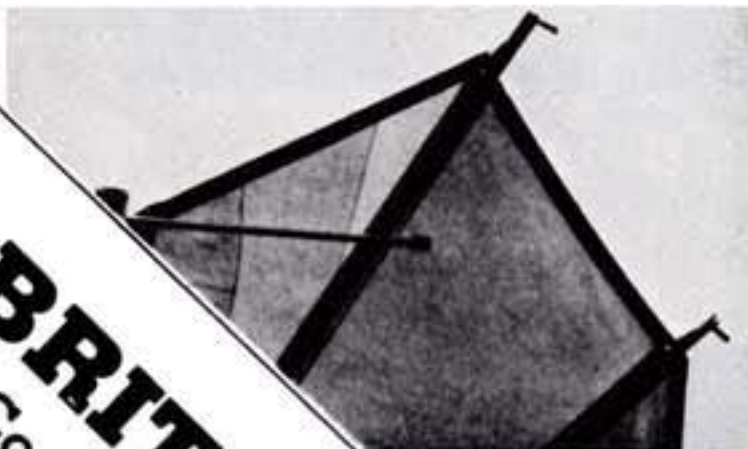
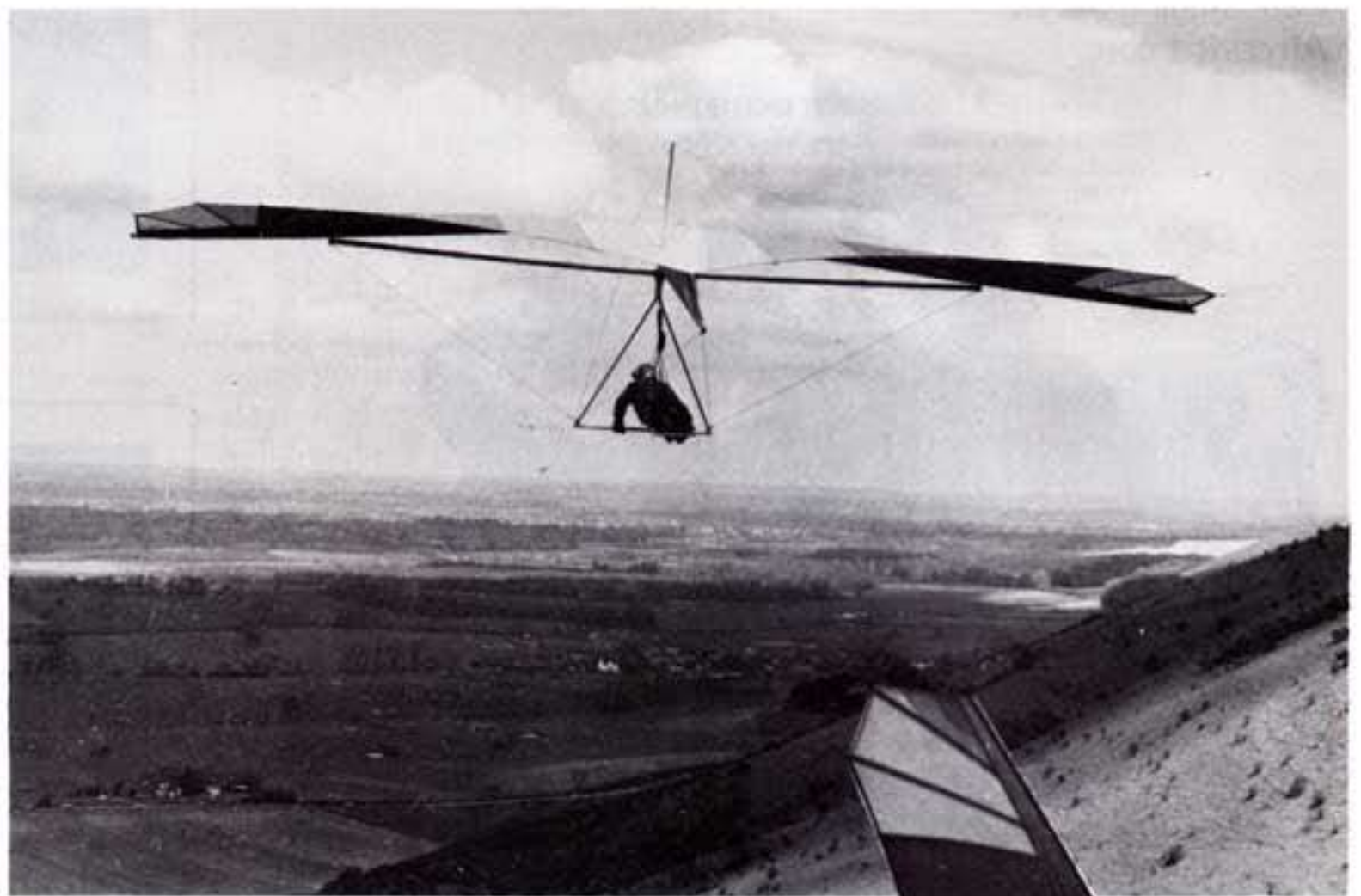
SUPER SCORPION

A worthy successor to the existing Scorpion, this is the machine for the serious cross-country and competition flyer. The 120° nose angle and low twist values of the wing make the Super scorpion a highly efficient glider.

Incredible min sink performance coupled with an ability to flat 360 in very tight spaces, make the Super scorpion the ultimate thermal eater.

Pitch is light but positive. A new aerofoil section allows extended glides at high speed – ideal for getting out of sink or hopping from thermal to thermal.

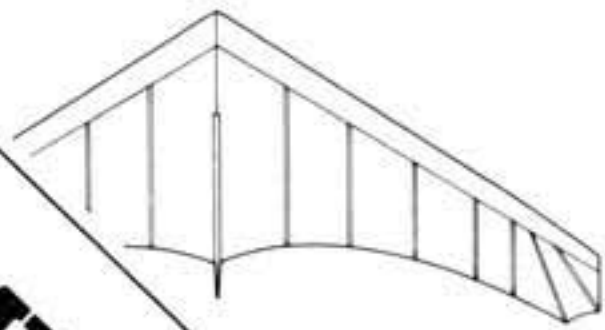
Super scorpion is equipped with two small tip struts. These struts allow the sail to ride as high as it likes when flying at low speeds, but ensure that at high speeds or radical attitudes the keel always has a higher angle of attack than the tips, thus providing quick dive recovery.



because the removal of deflexors, bottle screws and cables also means removal of the sleeving at the attachment points. Also, Super scorpion is lighter than its older brother because the short keel pocket is less cumbersome than the fin, full pocket and related hardware.

No wing wires and bottle screws means you don't have to be continually tweaking the cables to keep in tune. It's all in the sail, fully tuned and permanently tuned. No wing wires means there's less to go wrong, and the removal of all that clutter from the leading edges pays huge dividends in drag reduction.

The variety reduction of components is also reflected in the price of the machine. A supership at a reasonable price is now a reality.



Knockdown length	Area
12'3" (3.75m)	150ft ² (13.6m ²)
13'3" (4.05m)	173ft ² (16m ²)
14'3" (4.35m)	198ft ² (18.4m ²)
Strength rating	Span
1200lbs (545kg)	27'10" (8.5m)
1300lbs (571kg)	30'7" (9.35m)
1400lbs (585kg)	33'6" (10.2m)

BRITISH TEAM WIN AMERICAN CUP!
 Congratulations to Graham Slater, Robert Bailey and Bob Calvert who were placed first, third and sixth respectively in Super Scorpions.

In a competition that 'promised to be the most important hang gliding event ever held in the United States' — (Tracy Knauss, editor of Glider Rider), Hiway Super Scorpions dominated the field and demonstrated yet again that if you want the best in handling and performance — it's got to be Hiway.

Super scorpion		
A		
B	19'	
C	19'8"	
	Aspect ratio	Nose ang.
A	5.5	120°
B	5.6	120°
C	5.7	120°



WINGS!

The official magazine of the BHGA

Editor: Garth Thomas, Bole Hall Cottage, 15 Amington Road, Bolehall, Tamworth, Staffordshire. (Tamworth 65854)

Commercial Editor: Lesley Bridges, Yard House, Wentnor, Nr. Bishops Castle, Shropshire. (Linley 322).

Editorial Board: Jeannie Knight, Tony Fuell, David Worth. **Area Reporters:** Scotland: Ian Trotter, North: John Hudson, Eire: Roy Hammond
South West: Steve Moss, Wales: Rob Symberlist. Printed in Great Britain by Blackburn Print Ltd. Hove, East Sussex.

BHGA Council: President of Association: Ann Welch, OBE., Chairman: Reggie Spooner (Cowes 2305), Treasurer: Derek Evans (Sevenoaks 59995)
Brian Milton (St. Albans 55231), Jeannie Knight (Ashington 892770), Jeff Marvin (041 334-6892)

John Hunter (Hatfield 71027), Ashley Doubtfire (Marlborough 3021), Garth Thomas, Co-opted Members: Malcolm Honeychurch,

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

Training Officer: Keith Cockroft (Halifax 882883), Registration Officer: Terry Dibden

(Wimbourne 886464), Medical Advisor: Dr. Dunstan Hadley, BHGA Solicitor: Anthony McLaren (Halnaker 457)

Radio Communications Officer: John Westcott

Secretary: Chris Corston (Taunton 88140)

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

Cover: Keith Reynolds sets off on the Gryphon in the Welsh Distance KO. Photo: Keith Cronshaw

8 Council Matters

9 Volmer Jensen — “Genius” by David Cook

11 Chairman’s letter

12 Power Page

13 Hang Glider Photography by Alan James

14 The George Worthington Column

15 Information

16 Airmail

17 Keep It Safe!

18 Small Ads

20 At the Royal Aero Club

Council Matters

The Treasurer's report showed that there had been no need to use the £2,000 reserved from Association funds towards the 1978 International Competitions Programme. Council welcomed the release of this £2,000 back into the Association general funds as a result of the very successful financial result of the 1978 Competitions Programme.

Council re-affirmed that the BHGA would not promote, sell or allow to be advertised in WINGS! a Site Guide containing material not provided for general release by Clubs. In addition Council would listen to any proposals by Clubs or individuals, particularly Barrie Annette, for the production of a guide so that if they were in line with what the Clubs wanted Council could endorse them.

The Welsh Office had agreed to an informal hearing before taking further action over the proposed bye laws banning hang gliding at Mynydd Maen Common, Gwent. This was in response to the large number of objections that they had received. It was agreed that the BHGA in this particular case, should in principle pay the legal costs. In the absence of a budget it was agreed to allocate up to £200. The Welsh Federation should be asked to establish budget and submit it to Council.

The Bedfordshire County Council had given the Dunstable Club two weeks to sign a formal agreement to fly at Dunstable (under the bye law that permits authorised hang gliding) or to stop their activities. The agreement was totally unacceptable as it contained conditions that would make practical, safe flying impossible and totally ignoring the fact that flying activities were controlled by Air Law. The Club had decided that they could not sign the agreement as it stood and asked for support in seeking a new and workable one to which Council agreed.

Council endorsed the expenditure of £150 for the installation of an alarm system (provided by Mike Kerr, an Avon Club member) to protect the Taunton Office against intruders.

Several applications had been received in response to the notice in WINGS! advising the intention to recruit a Development Officer. Council set up a panel to handle recruitment. Members appointed to the panel were Reggie Spooner, Derek Evans, Brian Milton, and Chris Corston. The panels recommendations were to be submitted to Council for a final decision.

Congratulations were expressed to the Competitions Committee for the success of the British Team in the Americas

Cup. The event could not be called the Americas Cup in the U.S.A. because the name had copyright there. Following the study that indicated we should recoup the cost it was decided that £600 should be spent on advertising in "Glider Rider" and the USHGA magazine "Hang Gliding", that WINGS! was available on subscription at the time when there was likely to be considerable interest in the British Hang Gliding scene.

Council expressed a sincere vote of thanks to Dave Worth for his dedication and hard work as Editor of WINGS!

Malcolm Hawksworth had written to the Chairman saying that he would have to resign as a Council Member because he did not have enough time to get to Council Meetings but was prepared to continue working in an executive capacity.

A Disciplinary Committee was established on the lines of a paper submitted by Jeannie Knight. Its decisions were to be subject to Council ratification.

The Welsh Federation had expressed their support for the S.W. Wales Clubs request for the BHGA to finance Rhossilli as a National Site.

Council agreed to pay the rent for the Rhossilli site for a year from December 1978 if the S.W. Wales Club could agree the following four points.

Council Meeting of Sunday 5th November, held in London.

1. To allow BHGA Members to fly at Rhossilli without charge and to allow the Association to inform them of the arrangement.
2. To retain stewardship of the site and be responsible for its control as in the past.
3. To maintain the Clubs third party liability policy, as required under an agreement with the National Trust, for the whole of the year.
4. To sign the agreement with the Trust so that their requirement for agreements to be between local agents and local clubs is complied with.

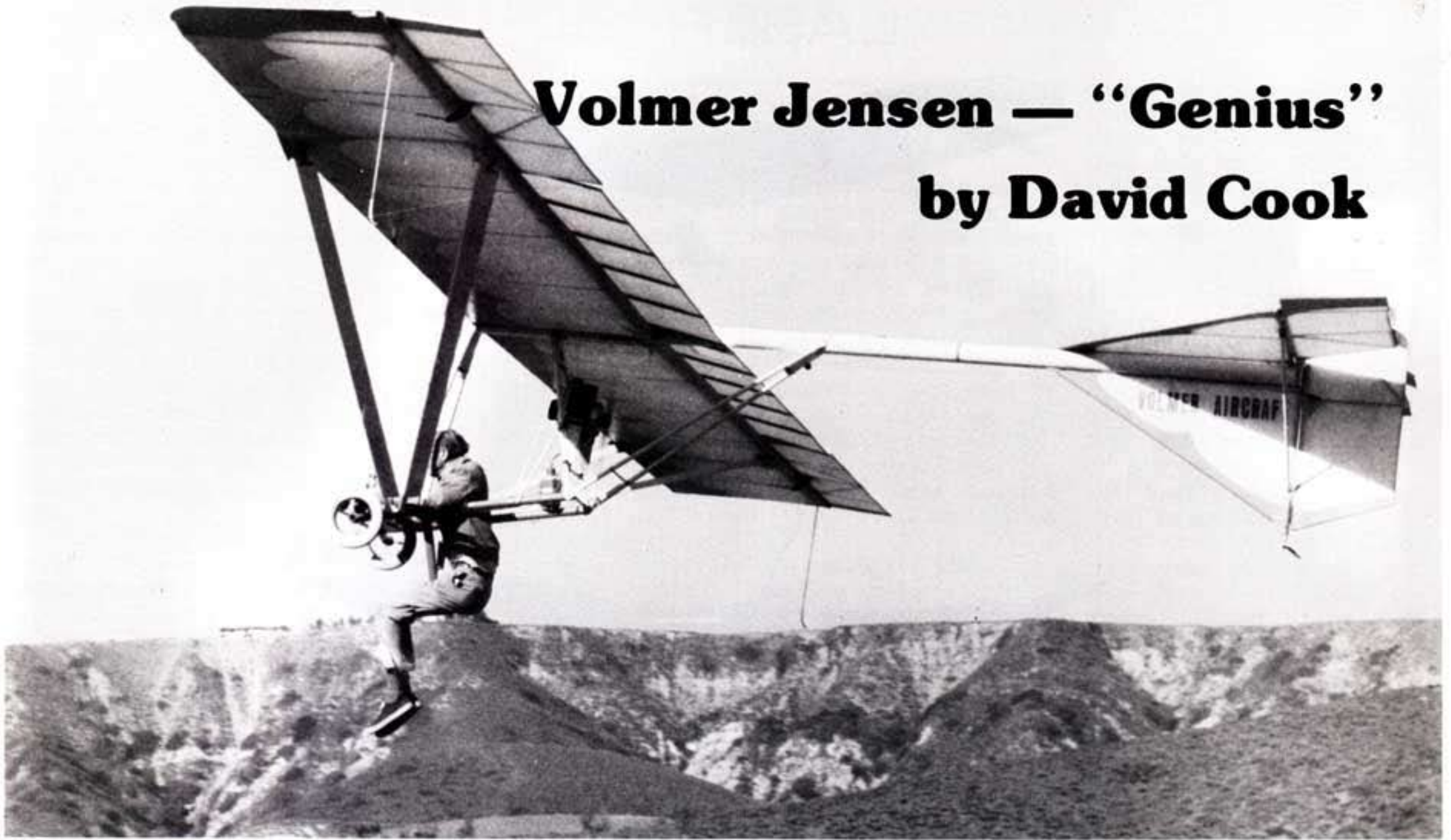
The offer was without prejudice to future offers or agreements concerning the payment of site rents to the Club or any other. This was a special case and because of the circumstances the offer had been made before Council had consulted Clubs or made any policy decisions about the financing of National sites. Rhossilli had been considered a special case because amongst other reasons flyers were attracted from all over the country and abroad. There were only about 13 members in the S.W. Wales Club and the rent was totally beyond their ability to pay.

Ashley Doubtfire reported that the Powered Hang Gliding Club had been formed over the weekend of 28/29th October. He had been appointed to liaise between the Club and the BHGA Council. Club Chairman was Roy Beckett and Secretary Johnny Seccombe. Council decided that Regulations formulated by the Club for inclusion within the Code of Practice for Powered H.G. should be ratified by the BHGA Council. Council endorsed the definition of a powered hang glider as submitted by Brian Milton in his report to Council on the 7th May 1978 with clarification on point 6 which should read "The maximum power loading of a powered hang glider shall be 1 horse power per 15 lbs. (all up weight).

The Welsh Hang Gliding Centre, Crickhowell, was removed from the BHGA Schools Register. This was as a result of a visit by the Training Officer when it was found that some of the Schools Registration requirements were not being observed.



Volmer Jensen — “Genius” by David Cook



Volmer Jensen flies the Powered VJ-24.

At the invitation of Volmer Jensen I recently visited Glendale, California. It was a natural follow up really after having successfully developed a powered system for the VJ-23 and then flown it across the English Channel.

Mr. Jensen, I think, is quite remarkable. At 68 years of age he is still as fit as myself (I'm 30 years younger) and he regularly flies all his hang gliders, both soaring and powered. I was shown the VJ-21, VJ-22, VJ-23, VJ-24 and VJ-25. Volmer, I learned, is a genius at making things. For example, he made the model starship 'Enterprise' for the T.V. series 'Star Trek'. I admire any person who builds, designs and flies his own aircraft; Volmer seems to build everything from speedboats, airplanes to propellers — you name it, he builds it.

I was introduced to many of the current and past builders/designers/fliers of hang gliders and aeroplanes. Irv Culver was one person who backs up Volmer, technically. He is a retired Aeronautical Engineer from the famed team at Lockheed Aircraft. Volmer and Irv were telling me all about their hang gliding in the 1920's.

Between them they are enough to make anyone feel inadequate . . .

You may be interested to know that N.A.S.A. are currently working on a VJ-24 which is to have its wings covered with solar cells. The cells are to produce electricity to power an electric motor for the destined sun powered hang glider. I was told that the cells alone would amount to £50,000. I sure would like to work on that one. McCulloch power is super but so noisy.

One evening I was invited to talk to the Southern Californian H.G. Association at an auditorium. The very enthusiastic audience had many questions concerning the Channel flight of mine. Later I described the hang gliding scene in Britain and pilots were very interested in our B.H.G.A. League. I told them that we thought that not only were the best hang gliders produced in England but we also had the best pilots. The fruits of our highly competitive league would be seen at the *America's Challenge Meet in Tennessee.

The flying scene in California is very much dispersed compared to Britain. Nearly all the original site names familiar to myself,

like 'Escape Country' have been built on. The influx of people to this State is so great that very few areas around Los Angeles are usable for hang gliding. Sylmar is still there but the small landing area below this big site is full of hazards. To fly Volmer's powered hang gliders we all travelled for 1½ hours to a dry river bed. This site was surrounded by mountains and orange groves. It was very pleasant to fly in shirt sleeves at around 100°F. The heat seemed to be there however high one went. Characteristics of the Jensen 23 and my own were quite different but we thought these were due to my machine having a finer pitched propellor. They were all surprised that my 23 could take-off in no wind, i.e. zero zero conditions, and climb to 75ft. within 100 yards from the start of my run. Because of a particularly strong heat wave (well over 100°F) whilst I was visiting, there appeared not to be very much hang gliding activity. This was in September and in dry heat like that it is probably much wiser to stay at the coast or near an air conditioner. One flier had soared inland on a thermal only a few days before I arrived. Heli-

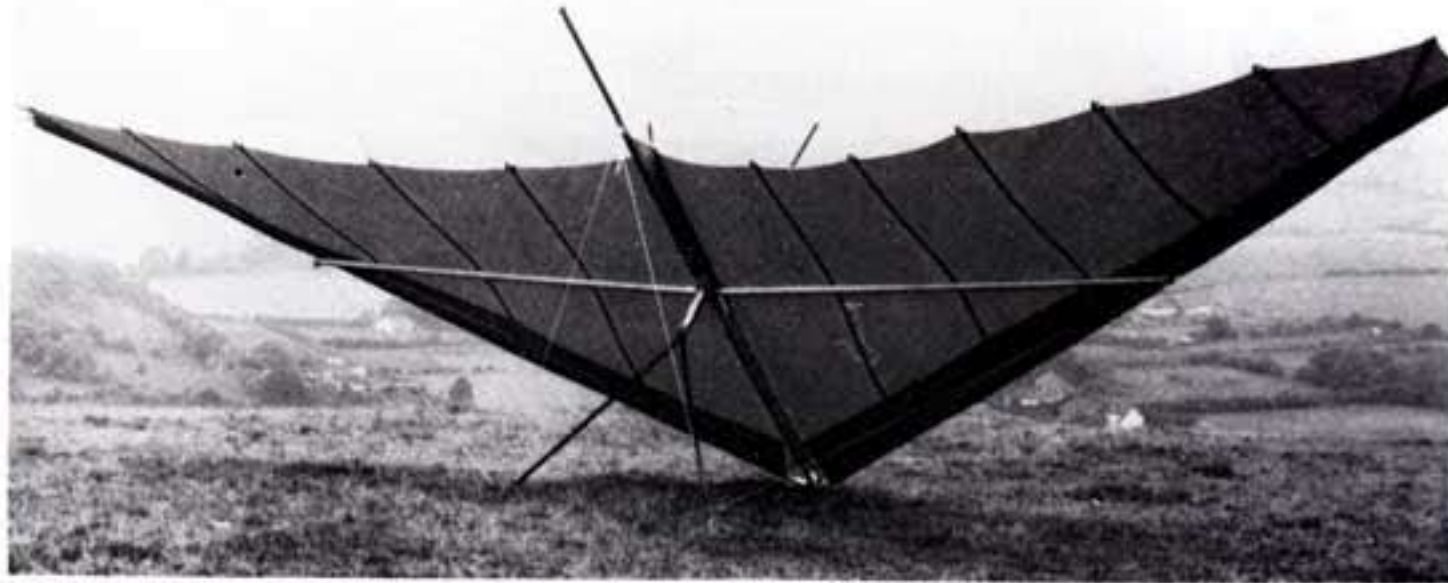
copters searched for him for 3 days with no success. It is said that without water in the desert one has two days only. Poor fellow.

Many of the 'treats' lined up for me by Volmer and John Underwood (the famous aviation author) are not really relevant to hang gliding so I feel Wings! shouldn't be filled with these events. However, I feel I must just say that the VJ-22 is a small two seat amphibian and after flying it off a runway we retracted the wheels, landed in the water at Catalina Island, lowered the wheels and taxied up onto the shore! Surely the most practical airplane in the world.

The U.S.A. must be, geographically, the most beautiful country. I wish everyone could visit California — the wine, the sunshine, the palm trees, the humming birds — it's really very lovely. I was treated like a lost son. Californians must be amongst the most friendly people on earth. As far as hang gliding goes, though, I do feel Britain has more in variation to offer pilots and any way our weather alone is a challenge in itself.

**Many thanks to the British Team who upheld my patronism and faith!*

LASER 190



LASER

A full bodied intermediate/advance glider for the pilot with ambitions, whether it be competition, cross country, thermaling or just plain ridge soaring "Laser" fits the bill.

Laser has taken us a full year to develop and this extensive work has produced at last an intermediate glider with good sink rate glide angle and *penetration* so that when the winds freshen you won't automatically be grounded. "Laser" slices through turbulence with its cambered fully floating battened sail (no wing wires) and its strong easy to rig airframe allows you the maximum time possible in the air. Beam on to a Laser and light up the sky. Laser is available in two versions, a full length glider and a breakdown version folding to around 3 mtrs, that's just 10 ft. for storage and transportation. As with all Wasp gliders Laser comes as standard with a fully anodised airframe.

Leading Edge	20 ft.
Keel	8' Effective
Area	190 sq. ft. 17.65 sq. mtrs
Nose Angle	120°
Aspect Ratio	6.2
Span	34'6"
Sail Billow	0°

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LASER, THE DIRECT PATH TO PERFORMANCE

Chairman's Letter

Our fourth Annual General Meeting commencing at 1400 hours on Saturday, 31st March, 1979, at the University of Warwick will be even more important than that historic meeting on 8 December, 1974 when the BHGA was born.

That is because hang gliding within the United Kingdom has grown to become part of our Social Structure, loved by many, hated by a few, often raising emotional rather than logical issues, but above all, because it has come to be a large, and enriching part of many peoples' lives.

There have been greater changes in hang gliding over the last year, than in the previous six years. There will be great changes still during this next year and I believe that it is for our Membership to decide which way hang gliding is to go.

At this moment the Constitution vests Government, Direction and Control of hang gliding in its Chairman and Council. That Council is called to account only once a year at our Annual General Meeting. In that short A.G.M. Council cannot assimilate all of the suggestions from its Members — and is almost free for a whole year to go its own way — subject only to censure at the next A.G.M. I know you elect it — I know you trust it, but . . . ?

I believe Council needs your Policy direction, before the event, and to that end this year's Annual General Meeting has been organized to give a full afternoon and morning for debate, so that ideas can be exchanged — the views of the membership properly aired — and consensus established — so that formal resolutions may be placed and voted upon to give policy direction to Council for the coming year.

Correspondence and discussion with Members and Club Chairman during the past year reveals many areas which concern us all. These I can only note in this short letter, the main object of which is to draw them to your attention — have you add your own, debate them within your Club — put forward formal resolutions before the A.G.M., so that these can be published in WINGS! in February and again in March — to be well-

BHGA AGM & CONFERENCE will be held at Warwick University on March 31st & April 1st, 1979.

aired, so that our Membership can express its views and direct the Council it has elected to achieve the rightful place that they want hang gliding to enjoy.

Some of the points that we must think on are —

Sites

There is a threat to our sites as a result of others taking the initiative and threatening to close them to us. Are we being active enough in that area? — who is going to volunteer to do the work? Looking ahead a few years, shall we always be tied to hill sites?

A National Site

Should we acquire a National Site and develop it? Need it cost much — what assistance might be given to us?

Site Fees

Many sites have to be paid for. Is there a case for the National subscription entitling one to fly from any site. What might be the effect on site rents if it were known that they were funded nationally?

Air Space

There is much greater threat to air space than is generally realized and it is important that we join with the British Gliding Association and others in the protection of that air space. The initiative, time and effort is needed and we must find people who both understand the problem and are willing to work on it.

Commercialisation of Hang Gliding

This last year we have seen a tremendous growth in our Income from sponsorship. This has had tremendous and beneficial effects. Properly informed debate is required so that all implications of this are understood by membership, so that they may decide whether the trend is to be developed, held at its present level, or to be reversed.

A Professional or Amateur Sport

At the moment hang gliding is basically an amateur sport. Many people do earn their livelihood as manufacturers, instructors or in other ways connected with hang gliding. Fundamental issues are raised. Does

our Membership want an Amateur Sport, a Professional Sport, or a mixture of both. Hang gliding will be an Olympic Sport. Amateur and Professional hang gliding are not necessarily mutually exclusive, but the implications of each must be understood — and we shall have to decide during this next year.

Accident Prevention

Ten people have died this last year. Just ask yourself WHY?

Role of our Member Clubs

Our Member Clubs represent the great majority of our members. They are formed organizations, generally geographic in their organization, in closer touch with their membership, than can be the Council. Is there a case for government and direction of the hang gliding affairs to be vested in the Member Clubs — they formally directing the policy which then be-

comes the responsibility of Council to execute. What should the responsibilities of those clubs be for Site Control, training of ab initio and other Pilots.

The Future

The foregoing will raise more questions than it answers — and is meant so to do. Hang gliding is of your future — that of your children. It is for you to debate it, guide it and control it. You have an opportunity that will never occur again, at the time of greatest change, to stamp your mark on hang gliding, to have it as you would have it.

Debate within your Clubs, form your Resolutions, put them forward to WINGS! urgently, so that others may consider and conclude — and above all, come to Warwick on 31st March, 1979. Momentous decisions will be taken on 1st April, 1979. (The Royal Air Force was born on that day in 1918 — it has not done too badly — let us set the same standards).

American Cup T-Shirts

In Tennessee recently our flyers won the First Annual American Cup against teams from the U.S.A., Canada and Japan. We all made it possible and can be proud of the team effort that showed hang gliding expertise in the U.K. leads the world. To mark the event we have produced a commemorative T-shirt. The design, in four colours, is by Bob England, one of the British team. The shirts are of high grade cotton-based material from 'DEEGEE', one of the U.K.s leading suppliers.



SEND £2.90 (inc. p & p.) AT ONCE TO AVOID DISAPPOINTMENT AS STOCKS ARE LIMITED, TO:
BHGA T-shirts, 167A Cheddon Rd., Taunton, Somerset. State size required -
30", 32", 34" (S), 36" (M), 38-40" (L), 42-44" (EL).
Don't forget to give your address. Allow up to 3 weeks for delivery. Make cheques/P.O.s payable to B.H.G.A.

The Power Page

The British Powered Hang Gliding Club are introducing a registration scheme for powered hang glider combinations flown by their members in order to encourage safety through knowledge of the performance of different types of combinations and to lay down standards incorporating known safety features as they appear in the

present state of the art.

Registration documents will be circulated to all members and they are requested to return them to the Secretary who will also handle any queries that will arise.

The Criteria for registration have been adopted by the BHGA council on 10th December 1978.

BRITISH POWERED HANG GLIDING CLUB

Criteria for Registration of a Powered Hang Glider

The glider must fulfil all the requirements of the following definition of a powered hang glider:

- D1 A hang glider is a heavier-than-air fixed-wing glider capable of being carried, foot-launched and landed by the energy and use of the pilot's legs.
- D2 A powered hang glider (PHG) is a hang glider, as defined in 1 above, fitted with one or two motors.
- D3 The maximum weight of a powered hang glider shall not exceed 70 kg. without pilot, but including the motor(s), fuel and instruments.
- D4 The maximum number of persons to be carried by a powered hang glider shall be two.
- D5 The maximum amount of fuel to be carried by a powered hang glider shall be three imperial gallons.
- D6 The maximum power loading of a powered hang glider shall be 1 HP for each 15 lbs.
- D7 The design of the powered hang glider shall be such that, if the motor is in operation upon take-off or landing, there shall be an additional hazard caused to the operator(s) by the running motor.
- D8 The design of the powered hang glider shall be such that it is possible to foot-launch and land the glider by the energy and use of the pilot's legs (as in 1 above) without the motor running.

The glider must have the following technical features:

- ENGINE:
- T1 The throttle shall be self-closing and there shall be no auxiliary throttle stop that gives any fixed lower opening to the throttle other than the tick-over adjuster on the carburettor.
 - T2 There must be an ignition switch or cut-out operable in flight. (It is preferable that the switch be operable without letting go of the A-frame especially if closing the throttle does not completely stop thrust from the engine being produced).
 - T3 The glider must be isolated from the engine to stop the transfer of excessive vibration (e.g. with rubber mounts).
 - T4 The complete mounting system must be protected against all conceivable failure modes (e.g. by fitting keep-wires in case metal/elastic bands break).
 - T5 The engine shall be effectively silenced (standards to be set).

GLIDER (+ ENGINE)

- T6 The glider (with or without engine) must be built and tested to the standards laid down in the BHGA Airworthiness requirements.

THE REGISTRATION CRITERIA OF THE BRITISH POWERED HANG GLIDING CLUB DO NOT IN THEMSELVES CONSTITUTE THE EXCLUSIVE REQUIREMENTS FOR AN AIRWORTHY POWERED HANG GLIDER.

AMENDMENT

There was a typesetting omission in the "Nationwide" Crash article on page 12 of the November issue. The last paragraph of the first column of Len Gabriels' report should read:

This represented 6.7 and 5 g's respectively for the 14 stone recommended max. pilot weight for this model. This is greater than the BHGA requirements. The glider stalled badly, possibly due to severe gusting, and the engine should have been cut at that point or before, etc.

I regret the error which made a nonsense of Len's item.

ED.

POWER INCIDENT AND ACCIDENT REPORTS.

April 1978. Olympus/Soarmaster Powerpack: Take-off aborted but power not out and kite ran on ahead. Pilot let go of airframe and right foot entered the propeller arc at maximum harness extension when A Frame is released use a restraint rope for take off and release it when airborne.

INJURIES. Two toes amputated.

May 1978. Wasp Falcon 4/Soarmaster Powerpack: Dived into the ground under full power. This accident is the subject of an A.I.B. investigation. It appears that the kite had been home modified to accommodate the power unit.

INJURIES. Fatal.

September 1978. Canadian Birdman/Soarmaster Powerpack: The pilot was flying in unsuitable conditions, lost control and dived into the ground under power.

INJURIES. Broken arm and nose.

November 1978. Skyhook Safari/Skyhook power unit: This accident is the subject of an A.I.B. investigation. The kite was being flown at a low airspeed in turbulent sink conditions. It appeared to bunt and broke up inverted under full power.

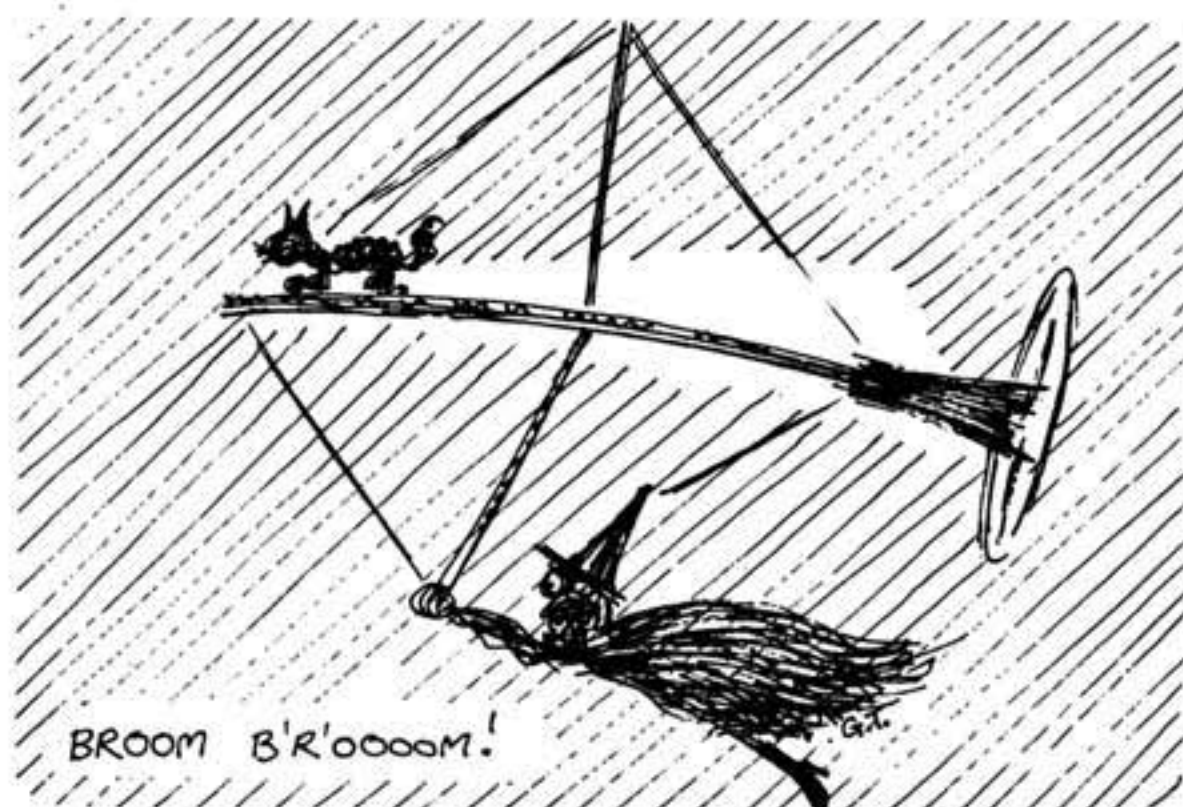
INJURIES. Broken shoulder.

November 1978. Moonraker 78/Soarmaster Powerpack: The powerpack shed a propeller blade in flight under power. In spite of severe vibration the only structural damage was a broken drive shaft. The power was out and the kite landed safely.

1. DON'T VIOLATE BASIC FLIGHT PRINCIPLES. THINK AIRMANSHIP.
2. IF IN DOUBT CUT POWER. DON'T FLY WITH MIXED THROTTLES.
3. USE YOUR POWER TO FLY AT A SAFE AIRSPEED.

All accidents and incidents should be reported to BPHGC Safety Officer:— John Long, "Emlyns", Hambridge, Langport, Somerset, as well as the other appropriate authorities. All publication of accidents will be anonymous.

REMEMBER: AN INCIDENT MIGHT BE AN ACCIDENT NEXT TIME SO TELL US ABOUT IT.



Hang Glider Photography

by Alan James

If you look at a few copies of WINGS! you'll find pictures taken by professional photographers, pilots, pilots' mates and spectators. You'll find great shots, shots, poor shots, and the rest! If some of your pictures fall into either of the last two categories, then I hope this article will help you to record your flying with good pictures rather than just a log-book. There's nothing as disappointing as seeing your mate take off in his multi-coloured Super Scorpion into a blazing sunset, grabbing your Instamatic, only to get overexposed and washed out colours with a little black smudge in the middle.

Let's look at the types of camera you're likely to use. A lot of you will own an Instamatic or something like one. There's no real reason why you can't take reasonable pictures. Just don't expect to be able to shoot the bloke in the Scorpion/Gryphon/Moonraker/Vortex (sorry if I left anyone out!) as he cranks up 2 grand over the Dyke. You can happily take landings, take-offs, in-flight shots (keep one in your pocket) and wider angle pix of soarers.

Some of you will have a 35mm 'compact' type. You obviously stand a better chance of getting a better quality picture (technically that is), insofar as it should be better exposed (most of them are automatic), sharper, and will give you a better quality negative to work from. But their main disadvantage is that they have fixed lenses, and so you are really stuck with the same picture limitations as an Instamatic.

For those of you with a 35mm SLR (single lens reflex) camera, you stand the best chance of getting good shots. The majority of serious amateurs have one camera body, a standard lens (50mm) a wide angle (probably a 28mm), and a telephoto (135 or 200mm). The scope you have with this equipment is considerable. The wide angle is best used for take offs — if you shoot from the front be careful to get out of the way in good time because the kite will look a lot farther away than it really is through a w/a lens! The standard lens has the same sort of uses, but will be more useful for landings when (hopefully) you'll be well out of the way. The most useful lens will be the telephoto. It is not, however, the easiest lens to use. Make sure you focus carefully. I know it sounds basic but I see a lot of unsharp pix by other pros. Use a shutter speed that is not slower than the reciprocal of the focal length of the lens you're using, e.g. if you've got a 200mm, don't use a shutter speed of less than 1/200th. Follow the kite in the viewfinder smoothly and squeeze off shots gently. A tripod is essential for anything longer than 200mm.

If you've just won the pools, or you're horse came in there are a few luxuries which open up all sorts of possibilities: motor-drives (they take a sequence of pix very

quickly); or perhaps a mirror lens (this is a very long focal length lens) 500 or 1000 mm, but is very compact — you could fill the frame with a kite from about 100 yds.

All this may sound very expensive, but an SLR with two lenses may cost about £150, and you could pay for the lot with the publication of one pic, which I'll mention later.

Now for the different kinds of pix you can do, and a guide to the best way to get good results. On the ground, nice effects can be achieved shooting through the wings into the sun, especially if the sail is multi-coloured. Close-ups of kites can be useful reference shots for beginners.

Ground to air pix are the ones most likely to cause disappointment. Cameras with automatic exposure facilities, including SLRs with in-built meters, are easily fooled by pointing into the sky. The golden rule to remember is that almost all meters try to give you an exposure that will reproduce everything as a mid-grey, e.g. if you had three sheets of card — white, grey and black — and shot them all with an auto camera or centering the needle in your SLR viewfinder, you would find the results would be all grey. What you must remember to do is if you point the camera at a predominantly white subject, (e.g. the sky or snow, is to open the aperture by about 1 stop or drop the shutter speed (i.e. the film must receive more exposure). The same applies to a very dark subject but is encountered less frequently. Try not to shoot near the sun. Apart from the danger to your eyes, unless you own high quality lenses you'll tend to get flare which will spoil the picture (unless used creatively like last January's cover!)

In-flight photography obviously opens up the best creative possibilities, but also introduces all sorts of technical problems. Any bracket that's built to attach a camera to a kite must primarily be **SAFE**. It should be fairly light, not too bulky, and must not interfere in any way with the natural flying characteristics of the kite unless fully understood by the pilot. Having securely mounted the camera onto a bracket there comes the question of where to put it. The two most likely places are out on the crossboom pointing back towards the pilot, where a 28mm lens or wider is best; or on the nose, especially with kites like the Gryphon, pointing back towards the pilot (wider than a 28mm if possible) or even pointing forwards for air-to-air shots and landing pix. After you've mounted the camera, check the focus (on the pilot's face is best) and set the exposure. You should have taken an exposure reading off the hillside or similar already. Double check for security and you're almost ready.

The method of shutter release is likely to cause a few problems. Unless you have a

motor or winder on the camera, you're really stuck with one shot per flight, so make it a good one! If you have got a winder, there are several methods of release. Some have electrical sockets, and a wire can be taped along the tubing to the A-frame. Ordinary cable releases are too short but air releases are available, although a little tricky to use in flight. One of the most common problems with shots from the wing towards the pilot is that, if it's sunny, the ground below is in sunlight while the pilot is in the shadow of the sail, unless he's doing wing-overs! To counteract this, get hold of a gelatin neutral density filter and cut it in half. Then tape it behind a UV or skylight filter over the lens, but make sure it is at the right angle to cut out some light from the ground. This should achieve a better balance of exposure.

On the subject of filters, nice effects can be obtained in black and white by using an orange or red filter to accentuate the clouds and deepen the tone of the sky. In colour, a polarising filter will darken the sky background but only successfully at an angle of roughly 90° from the sun. 'Starburst' filters can make interesting patterns shooting into the sun.

In general, fairly fast, i.e. sensitive, films will be the most useful. For B & W, HP5, Tri-X, or FP4; colour negatives, Kodak 400, Fuji 400 or Kodacolor II 100 asa on bright days; for colour transparencies, Ektachrome 400, 200, 64, or Kodachrome 64 in decreasing order of sensitivity.

If you have available to you some printing equipment (or a friend with a darkroom) some very creative effects can be done by printing skies into B & W shots, putting two transparencies together, changing colours etc.

Making cine films is really more complicated than stills so I won't go into too much detail. When 'panning' a shot you'll find it better to use a speed of 24 frames/sec. rather than the usual 18 — this will stop the jerky effect you may have experienced previously. Always use a tripod, and try to override the auto exposure to give 1 stop more exposure for reasons already explained.

If you happen to get a particularly good shot that you think you might like to see published (other than in WINGS!), be very careful. There are a lot of people in the photographic and advertising business who would like to use a nice sharp dramatic hang gliding shot for something or other, and the chances are you'll get nothing like what the pic is really worth in payment. If there are any pilot/advertising agents reading this, I'm sorry to sound cynical, but I've experienced this sort of thing often enough.

I hope this will help to avoid some of the disappointments you may have had, and encourage more WINGS! readers to try their hand at getting some really good pictures.

The George Worthington Column



What is the longest cross-country flight for a British female hang glider pilot? Has a female pilot ever made a cross-country flight? Do the female pilots of Great Britain know that if one of them made a 10 mile cross-country flight, or a 1000 foot altitude gain, or an out and return flight of 5 miles each way, and authenticated these flights, that she could claim **THREE OFFICIAL WORLD RECORDS**. What an opportunity! The Guinness Book of World Records! A Diploma of Record from the World aviation body, the Federation Aeronautique Internationale. There are, to my knowledge, no known claims to world record hang glider flights by female pilots, as of this date. This is regrettable. We, in the U.S. have a number of excellent female pilots and not a single one has made a serious attempt so far as I am aware, at obtaining a coveted World Record in hang gliding. It would seem, now that the British men have so convincingly defeated the best pilots in America at the American Cup, that the British female pilot would want to start the ball rolling, in sort of an individual world competition, by grabbing some World Records. It would cost practically nothing (especially compared to the costs involved in the American Cup). It would give British women some important recognition. It

would help the cause of women hang glider pilots everywhere. It would begin to halt the 100% coverage of "men only" in the hang gliding publications of the world.

The numerical figures of 10 miles, 1000 feet, etc. quoted above were just picked out of the air. Since there are no women records to date it would logically follow that any properly verified distance or altitude, no matter how small would qualify. And remember this — once a record is accepted by the FAI, it is never taken away from you. It might subsequently be exceeded by another pilot, but it will forever be a World Record, if not the *current* World Record, when and if it is later exceeded.

And now let me tell you about one particular woman pilot who I happen to know personally. She is Page Pfeiffer, a 22 year old blonde San Diego hang glider pilot.

Page has been flying hang gliders for about two years. She is married to a very ambitious and experienced pilot who this year (Summer of '78) flew flights of 70, 75, and 81 miles at Cerro Gordo. It looks to me like the husband Rich is the "driving force" which got Page into the sport. When they are both at Torrey Pines, Rich is always in the air, and often the only pilot who will fly the cliff on certain days when the lift is very, very marginal. Page, on the other hand, flies far less and far less aggressively. There may be a reason for this. Page has twice (that I know of) made hard landings which have thrown her arm painfully out of socket. Each time, it has taken Page a month or so to recover.

On July 30, 1978 Page took off from Cerro Gordo at about 2.40 pm in a U.P. Firefly. By the time she had landed, about 2½ hours later, she had covered a straight line distance of 51 miles. I took off only 20 or 30 minutes earlier than Page, and the very best I could do that day at Cerro Gordo was 25 miles.

Unfortunately, Page did not own, borrow, or carry a barograph with her on her historic flight. And because of that fact (no barograph), her flight could not qualify for an official world record.

Here, in her own words are some of the comments Page made to me after her flight:

"The wind at take off, about 2.40 was blowing up mountain at about 10 to 12 mph. I had noticed that two of the other pilots, who had launched 20 to 30 minutes ahead of me were really having a tough time. They were 5 miles out in front of take off, over the desert, and very low. So I evaluated my chances of a long flight to be very slim."

"I took off and my pessimism regarding the weak lift began coming true. I couldn't find any thermal worth turning in, so I had to continue straight out toward the valley as the others had done. I found myself a bare 700 feet above the Valley floor after losing about 3200 feet in a 4 mile straight glide. It appeared certain that I'd have to land at Keeler (3500 feet) and about 2 miles straight in front of me. But suddenly I got a nice surprise. The vario was registering 200 feet/min. up. I began circling and gained about 1000 feet in 10 minutes. The thermal became stronger and I was climbing at 500 ft/min. The excitement mounted as I climbed 9000, then 10,000 and finally to 11,000 feet. That one thermal had given me an altitude gain of 6000 feet. I was getting cold and the lift levelled off to include patches of sink. So I turned North up the mountain range. The air for the next 20 miles contained a lot of zero sink and consequently I did not lose the altitude that would normally be expected. At the end of those 20 miles I still had about 8000 feet. I found another thermal and climbed to 14,500. This time I really got cold. In fact I felt forced to leave the thermal and head North again because I was so uncomfortable from the cold.

I had on ski gloves and a ski jacket but they weren't enough in the air which was below freezing at 14,500 feet. Another 10 mile glide found me just South of Mazurka at 10,000. I had covered 30 miles. It was then that I bumped into my third good thermal, and I began climbing. Again I started freezing and at 14,000 I again headed out of the thermal and flew North. It was about that time that I had my worst fear of the flight. The control bar was suddenly wrenched out of my hands by extreme turbulence. I went weightless. I was tossed up near the front keel and the front flying wires. I grabbed the wires and worked my way back to the control bar. I had flown out of the severe turbulence and was flying normally again. I didn't encounter any turbulence that severe again for the remainder of the flight."

"As I passed the huge bulk of a mountain that we call Mazurka, I noticed that the lift conditions seemed to be deteriorating. I was no longer encountering thermals or zero zink. I was losing altitude fast. Ahead of me to the North lay the 10 mile gap in the mountains known as Westgard Pass. I felt that to continue North and try to cross this pass would end in my landing about 3 miles from any habitation. The prospect of a 3 mile walk in the desert was uninviting. So I headed West toward a town and the highway. Upon landing I secured 2 witnesses who had seen me land. They signed a paper to that effect. I knew I had an unofficial World Distance Record."

This flight was about the 7th or 8th flight that Page had made from Cerro Gordo. Next year she will have a barograph and will try again.

Now I want to again encourage or challenge the women of Great Britain to go for an official World Record. If you do it soon enough, you have a super chance. But be sure to read and follow the Code and carry a barograph.

Information

MERE '78 TROPHIES

Will the following fliers please contact the Editor so that the tankards awarded as Mere '78 prizes can be delivered to them: M.Stainer, M.Sylvester, D.Thomas, A.Williams, M.Gregory.

"Mainair" apologises.

We would like to apologise to those customers who suffered a four week delay recently because we were unable to supply materials for Flexi-form glider kits: delay was due to material rejection at the manufacturers but we appreciate the frustration caused by delivery dates given and then broken.

John Hudson,
Mainair Sports

STEYNING BOWL

Mr. Langmead, the owner, has made it known that this is closed for hang gliding as from 1st January 1979. If a basis for agreement to re-open the site can be found we will notify you in this column.

THANKS

Thanks to the members who phoned/wrote/called to offer the help I asked for in last WINGS! Will the lady who phoned me from Cromer (I think) offering help (I think!) please try again on Tamworth 65854. The Robophone in the office "scrambled" her message!

WING TIP by Bob Calvert

Gliders with folding cross booms (to derig, that is) often suffer from the crossboom getting scratched. So, if you slide off the crossbooms, put the battens in the crossbooms and roll them into the sail the problem's solved.

S.E. WALES CLUB

The new Secretary of the South East Wales Hang Gliding Club is Martin Hann, 6 Church Hill Close, Llanblethian, Cowbridge, South Glamorgan. Telephone: Cowbridge 2953 or Aberdare 872515.

MEMBERSHIP RENEWALS

Membership numbers 9181 to 9552 are due for renewal on 1st January 1979.

Kernow Club

John Westcott has moved from the area and the Club Chairman is now David Bazeley, Borlasvath Manor Farm, St. Wenn, Bodmin, Cornwall. Tel: St. Columb 483. Secretary is Roger Full, St. Dominic Cottage, Norway Lane, St. Ives, Cornwall. Tel. (day) St. Ives 7651.

APOLOGY

The photo on page 26 of November WINGS! was wrongly attributed. The photographer was NOEL MANCHEE.

First Delta Silver

"The world's first Silver C badge to be earned in a hang glider has been awarded by the FAI to Ernst Reichholt of Salzburg, Austria, according to *Flugsportzeitung*, which calls it a

Delta Silver." says an item in *Sailplane and Gliding*.

"The pilot made his distance and altitude legs on April 2 (1978) across mountainous country on a good thermal day. Starting at 13.45 from the Wildkogel mountain station near Neukirchen by the Grossvenediger, 2100m asl, with the intention of making a local flight, he sank to 1800m then caught strong cumulus lift to 3100m, then at 3350m decided to go off on distance. He overflew Zell am See, 38km from the start, but then began to feel cold and limited his climb to 2800m. Finally, "fully frozen through", he landed beside the local doctor's house, having covered 55km in 2½ hrs. It was some time after this that the opportunity came to fly the five hours' duration leg. Reichholt flew an American type Class 2 Seagull with a gliding angle of 1 in 8, in which the pilot lies horizontally on his stomach (sic). He carried a variometer, altimeter and ASL."

when only the very best is good enough...



VECTOR

Medium*: A.R. 7.3. Span 35 ft. Area 170 sq. ft. £540 inc. VAT & Bag.
Large: A.R. 7.4. Span 36.5 ft. Area 170 sq. ft. £550 inc. VAT & Bag.

*27 miles G. Snape (NSHG) Sept. '78. 1st L/D Knockout, A. Williams, Mere, Aug. '78.

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Airmail

LAST LAUGH

Dear Garth,

The Americans got the last laugh on us. The picture of the British flag upside down on the front cover of last WINGS! speaks for itself!

Peter Day

Richard Kenward took the photo: Graham Slater flew the kite: who flew the flag we don't know. We'll try to organise things better next year! ED.

EDITORSHIP

In reply to Tommy Thomson's letter in last WINGS! I would like to point out that Council appointed Garth as Editor giving him total responsibility for content and layout. It might also be of interest for you to know that Garth was the only member to express interest in the job. If T.T. was that concerned about editorial freedom and independence he could have offered to do the job, or could have written to see who had applied! At least we still have a magazine in which he can express his views.

Chris Corston,
BHGA Secretary

TONY FUELL'S CRASH

Dear Editor,

Tony Fuell's report on his own accident (and I hope he recovers fully and returns to flying soon) makes two points which, if we all need them, should prevent future similar incidents. These are the necessity of proper pre-flight checks every time and the avoidance of distractions.

He makes another point however, which is more debateable, regarding T/O methods, and it seems he's about to abandon the method he's used successfully for three years, not because it doesn't work but because it doesn't highlight the primary error of failure to check the harness. You wouldn't fly wing-overs in turbulence to check that the wing-nuts were tight Tony, now would you? A take-off is a take-off: it's not a substitute for a pre-flight check.

I know of no way to guarantee that pilots check harness and glider properly before T/O - I wish I did, for I've failed

myself more than once, though with much less serious consequences than Tony's. Keeping flying and alcohol in that order must help though. Since my second-last bent upright, I won't have so much as a half-pint before flying, though my attitude to driving is rather different. Even as little as one pint, even for people who can handle the stuff, can make you casual; casualness before and during take-off is a killer.

Ian Trotter,
Edinburgh

I have received a number of letters from fliers of all capabilities criticising (roughly equally) Ian Trotter's loose straps type of take off and Tony Fuell's negligence in not carrying out a full pre-flight check. Space restrictions have prevented me from giving more space to the pros and cons of the Trotter method in this issue, but it will be covered in the next issue. ED.

TOW PLANE

I would like to add my 2¢ (American) to the excellent article on Lee Waves contained in the October 78 issue of WINGS!

The occurrence of lee waves in nature is rather frequent. Flight by a hang glider in a lee wave is extremely rare.

Sailplanes regularly fly lee waves in certain parts of the world. 99.9% of these sailplanes, in my judgment, enter the wave while on tow and release in the wave. The other .1% manage, through skill and luck, to use thermal and other lift sources to enter the wave. Sailplanes have L/D's of from about 30 to about 50, as compared to the hang

glider L/D which is about 8 or 9. Because of this fact, sailplanes have a "range" of nearly 7 to 1 greater than hang gliders and consequently can reach areas of lift to a far, far greater degree.

If sailplanes, with their far greater degree of power, speed, and range, manage only very infrequently to encounter wave lift, without being purposely towed up into it, then you can imagine the chances available to the hang glider pilot. He doesn't even have the advantage, which all sailplanes have, of being towed up 2 or 3 thousand feet above the take off area and released in the most promising area of lift locally available.

So, hang glider pilots are disadvantaged in the respects mentioned here - but the disadvantage could be greatly reduced if hang glider pilots had one item which is available to the sailplane... a tow plane, specially designed and built for towing hang gliders.

This is a favourite cause of mine which I have been espousing for some time (3 years). It would be extremely practical and feasible to build such a tow plane. The capability exists. All that is lacking is the necessary degree of vision, desire and money.

Larry Haig, an American designer, has stated that the following predictions can be made as to the performance and physical characteristics required:

Static thrust required	150lb to 200lb.
Stall speed	16 - 20 mph
Tow speed	25 - 35 mph
Wing loading	1.5 - 1.8lb/ft ²
Wing area	200 - 250 ft.
Empty weight	130 - 150lb.
Gross weight	325 - 375lb.

If hang gliding had a proper tow plane, the possibility of flying longer, further and higher, in a far greater (almost unlimited) area of the earth's land surfaces, would be increased by a phenomenal degree. the requirement for hills or mountains from which to launch would be eliminated and would become an "option".

Some pilots will argue that just adding an engine to a hang glider will create the same effect. I am not "anti-engine", per se. But, there is a vast difference between (1) being towed up 2 or 3 thousand feet and then "soaring" and (2) being delivered to the same area by your own glider - mounted engine-driven propeller. When a rogallo is to be towed, only a beefed up control bar would have to be added to most kites. The overwhelming majority of hang glider pilots don't have or seem to want engines on their machines. The ratio is currently about 100 to 2. Also the L/D of an engine driven hang glider suffers significantly when the engine is turned off, as compared with the normal hang glider. The engine and propeller cause extra drag and extra weight and added complexity to a machine already relatively low in soaring ability as compared with sailplanes.

The British have been in the forefront of so many, many aeronautical advances. I am hoping that somewhere in Great Britain this "Tow Plane" idea will catch on, and that the British will be the first to build and to prove the worth of a hang glider tow plane.

George Worthington
4028 Camino Calma
San Diego, Calif. 92122

PEACHY

by HARDMAN



KEEP IT UP ~~CLEAN~~ SAFE! by Bob Harrison

Remember your first days of acquiring the basic skill of physical movement around your loved one. You pushed, pulled, twisted and moved your body about her as she responded to your awkward thumbling movements. Do you recall how she groaned as the two of you ground yourselves a little deeper into the grass on a quiet hillside.

Then slowly after a little time your thumbings turned to well controlled and deliberate actions and together you both became one, united and a part of each other. The undesirable sensation of pleasure then lasted not for seconds, but for minutes and later, hours as you rotated higher and higher towards the summer clouds above.

Hopefully your early knockings didn't do too much harm to your loved one, but perhaps, to make sure you had better give her a good looking over; naked as well as clothed, just to make sure she has stood up to your advances. I didn't mean a quick glance and feel before you jump on her, but a long lasting inspection into every nook and cranny — surely these long dark winter evenings are the ideal time to do so.

We, at the Dunstable School for the Better Things in Life, are exceptionally concerned about your partners. We get a large turnover of 'loved ones' in all shapes, sizes and ages and, to be honest, they have proved to be eye openers. The school's inspection of them is second to none of course, and experience has shown that there are at least 3 main problem areas. Obviously the younger your partner the less time she has had to catch the diseases likely to do harm to her health and welfare and

ultimately yours, too. However the greater her maturity (and there are a lot of oldish birds on the market now) the greater the chance of her developing these little nasties.

These 3 problems can be associated with the cancer family of the medical world.

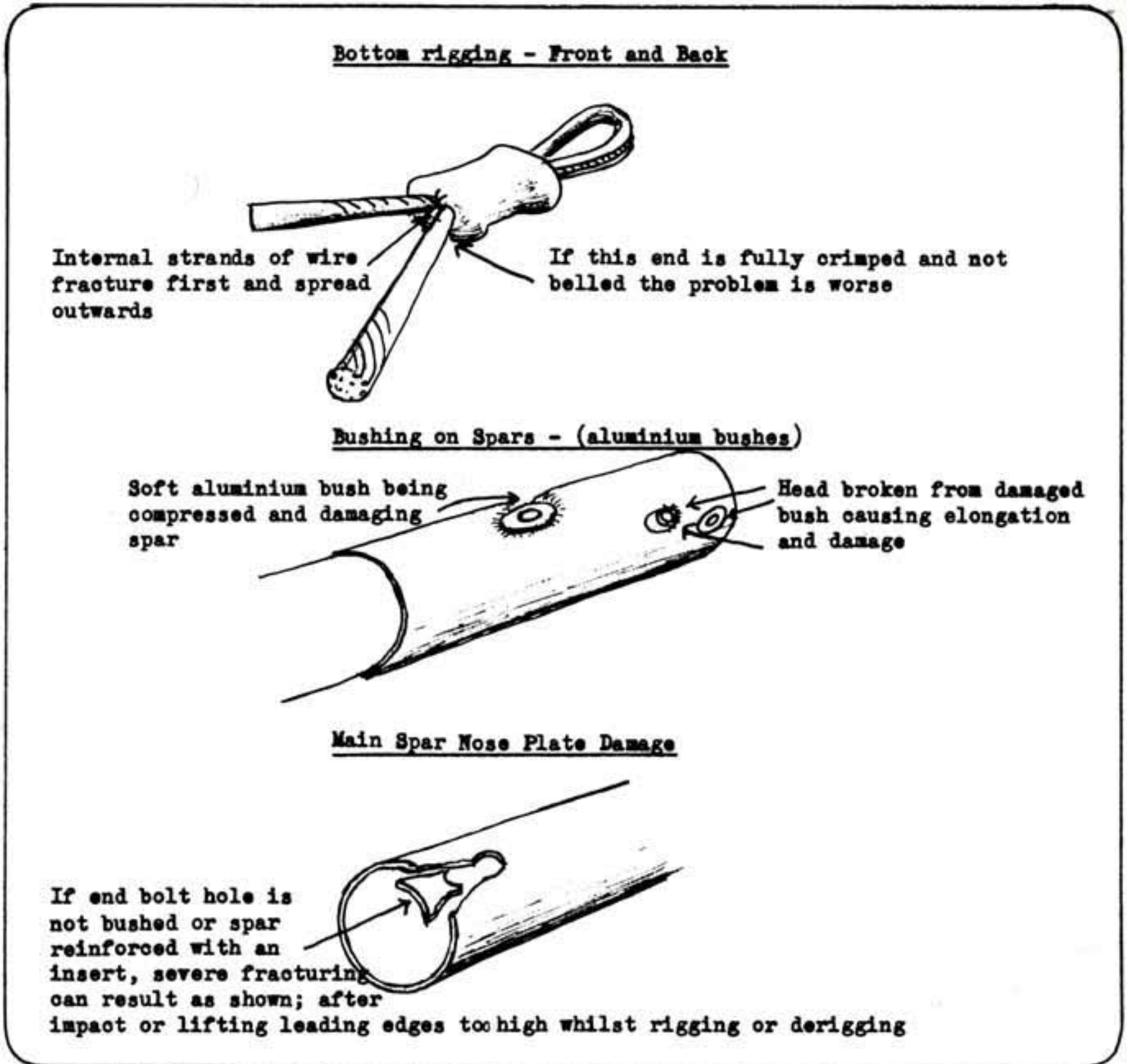
They are

- (a) All undetectable until it has developed (and then its too late)
- (b) Malignant, i.e. it gets worse in time (a lot worse)
- (c) Killers.

So what are these elusive nasty little killers? Well, they're not new, they are not even rare,

on the contrary, as time goes on and the loved ones become older, then the problems are going to become common place and so too the consequences.

As pictures speak a thousand words let them finish this article, written admittedly in a light hearted manner, but I hope you will take it more seriously.



Safety & Hang Gliding — A Re-appraisal

Anyone who flew standards at the start of their flying career is well aware of the startling changes that have occurred, both in flying skills and equipment. I think the time has come for a re-appraisal of attitudes towards the safety aspect of our sport.

With the accent on a good public image, we have been gently steered towards the idea that hang gliding has passed through

the phase of irresponsibility to the calmer waters of an acceptable risk sport. So it should be if we are to develop, and statistics from insurance companies and the BHGA would seem to bear this out. This attitude is O.K. for the public and punters in general, but it seems to me that we are losing sight of the fact that hang gliding is DANGEROUS.

Before anyone starts to leap up in arms, let us look a bit more closely at what we are doing, and be honest with OURSELVES, the pilots.

If someone is introduced to hang gliding, and he comes out to club meets fairly regularly, how long do you think it would be before he would see a crash (not a dink, shunt, prang or other diminutive, but CRASH)

resulting in pilot injury? Not long, I think.

When was the last time you saw someone pile in, to the cheerful amusement of his on-lookers waiting for the inevitable bent aluminium? Look back on accident reports and see how little aircraft damage there is compared to the horrific injuries

Continued on Page 20

small ads

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.

All small ads should be sent to Lesley Bridges, Commercial Editor, Wings, Yard House, Wentnor, Nr. Bishops Castle, Shropshire. Ads sent to any other address will be redirected and therefore delayed.

Small DYNASOAR Helmet, colour blue £12.

WASP Seated Harness
£5. Both unused.

ICARUS V plans £10.
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GRYPHON III. A Gry-
phon was first in the
League Entry Compe-
tition. This excellent
model is green, white,
with red tips. £575 ono
Contact Mario 0536
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SUNSPOT 7 months
old. Red/white/blue.
Never bent, good condi-
tion. Reason for selling
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will haggle. Greg Stokes,
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old. Gained sponsor,
hence need new glider
in sponsor's colours. I
did 7 miles cross
country after only 6
flights on this bargain
Gryphon. £560 ono.
Phone Northampton
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SST 110B. All white
sail. Immaculate condi-
tion triple wires,
etc. Got me two 5
milers in my first
season. Giving up for
winter. Bag. Bargain at
£325. Ring Lancaster
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WASP GRYPHON III
for sale. Flies really
nicely. Beautiful clean
sail. Selling to buy a
powered job. £450 ono.
Phone Peter Robinson
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CUSTOM KITE 17ft.
Bright coloured sail
with seat, bag and
training wheels. £80.
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HI-FLI De Luxe 18ft.
One owner. Good con-
dition. Rigs prone or
seated. With fur lined
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Suitable 8-10 stone. One
of the best. £170 ono.
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WASP FALCON 3.
Excellent kite for E.P.C.
to intermediate standard.
Soaring comes easily
whether you're seated
or prone. Includes

seated harness and
waterproof zip-up bag.
Only Phone
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**The perfect Christmas
present** for the hang
glider pilot. **KING-
POST!** Years subs (4
issues) £2.50 inc. p&p.
sample copy 50p. Send
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treat yourself to a kite
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small. Absolutely immac-
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sail must be the
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intermediate around.
Suit pilot about 10 st.
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As new. Offers. Martin,
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22ft SUNSPOT, flies
beautifully. Red, blue,
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pocket. Only 5 hours
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All white sail. Very
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WASP CB240, with bag
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sails, one used, one
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Large SUNSPOT -
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heavy pilot, flies beauti-
fully. Well maintained,
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PHOENIX 8 JUNIOR
in good condition with
excellent handling
characteristics. This
hang glider has spent
many hours soaring the
Cornish coastline and is
truly a superb machine.
Price £475 including
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1 year old. Full history
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cared for in excellent
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best thing to a '78!
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As new, never crashed.
B bar, seated harness,
£370 ono. Chesterfield
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flies seated or prone.
£150 including bag and
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WASP FALCON IVB -
superb performer - as
new beautiful multi-
colour sail - really
immaculate - never
pranged. For quick
sale - emigrating soon.
Best offer secures.
Tel: Cardiff 0222
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small. All colours with
a B bar & seated har-
ness. Good condition.
£450 ono. Fareham
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SUN SWIFT 'B',
American intermediate
glider, up to 14 stone
pilot. Smooth dacron
sail, bolt on battens,
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22ft SPIRIT, 6 months
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**SKYHOOK SUPER
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Only 15 flights and 17
hours flying. New kite
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£425 ono. Can prob-
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SCORPION B. Beautiful
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sale. £350. **HIWAY**
"seated package" - B
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MIDAS SUPER E,
instructors personal
kite, low hours, superb
condition. Sail colours:
Dk. blue, lt. blue, orange,
gold, white. A really
nice machine to fly -
urgently need the cash.
£395 or any reason-
able offer. Glenn
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CLODBASE 21ft
De Luxe, excellent
condition, can be flown
seated or prone, com-
plete with seated har-
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Phone Middlesborough
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120. With fairings for
cross-tube and king-
post. Only two months
old, excellent condition
and has a very nice
spectrum colour scheme.
£390. If interested
phone Northampton
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Diesel, fridge, toilet.
Taxed, M.O.T. April
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SUPER SUNSPOT -
by popular demand I
offer this beautiful kite
for sale again, 6oz sail,
can be rigged seated or
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An ideal Xmas gift at
£395. Derek Austen, 17
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shades of blue. Ideal
beginners Kite. John
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condition, beautiful
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Suit up to 10½ stone
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£420 inc. bag. Ring
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Green and yellow. High
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**For near the price of
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mediate glider?" "I
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keep the handling
mellow without loos-
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give them a ring to find
out more, let's see
where is the number,
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WASP CB240 with
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all in good condition.
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Bennett B.U.S. Mk 2 A
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£199 Airstream 2 Har-
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Hiway Super Scorpion
'C' give us a ring you
may be lucky. - End
of Season Sale - Cirrus
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mounted in plastic
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Under 12 months old.
Excellent condition.
Clean flutterfree white/
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**New CHARGUS VEGA
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Immaculate condition.
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White and red sail,
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Seated harness and
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SCORPION B, dacron
sail, triple deflexors,
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New February 1978.
£400 ono. **HIWAY
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flies as well as it looks.
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ECLIPSE for sale at
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Contact Bill Arkle at
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fully battened multi-
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Graham Wilson, Lind-
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SPIRIT - 22ft -
yellow, green and black
with pulley system, in
good condition. £200.
Ring Leeds 673861.
SUNSPOT (small), suit
pilot up to 10½ stone,
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Seated or prone. £350
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Low mileage. Perfect
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A4 Wings! You will
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in a dark walnut simu-
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£2.95 for A4 (Hang
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SPIRIT, VECTOR,
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gliders is right for you.
Contact us first, for
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for someone? - Beauti-
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are now available in
the U.K. Surprise him
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vario mounting stalk -
fully anodised "kick-up"
feature - secure and
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don't be fooled - buy
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Factory checked-out.
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WASP CB240 in superb
condition. Only 2 flights
from new. Complete
with carrying bag and
ventimeter. £300 ono.
Robert Stovell, Weald
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**HIWAY SUPER SCOR-
PION "C" PLUS**.
Blue/white sail, as new
condition. £480. Tony
Fuell, 74 Eldred Av.,
Brighton. Tel: Brighton
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SUPER SCORPIONS
now in stock, also very
good condition Super
Scorpion £465, Scorpion

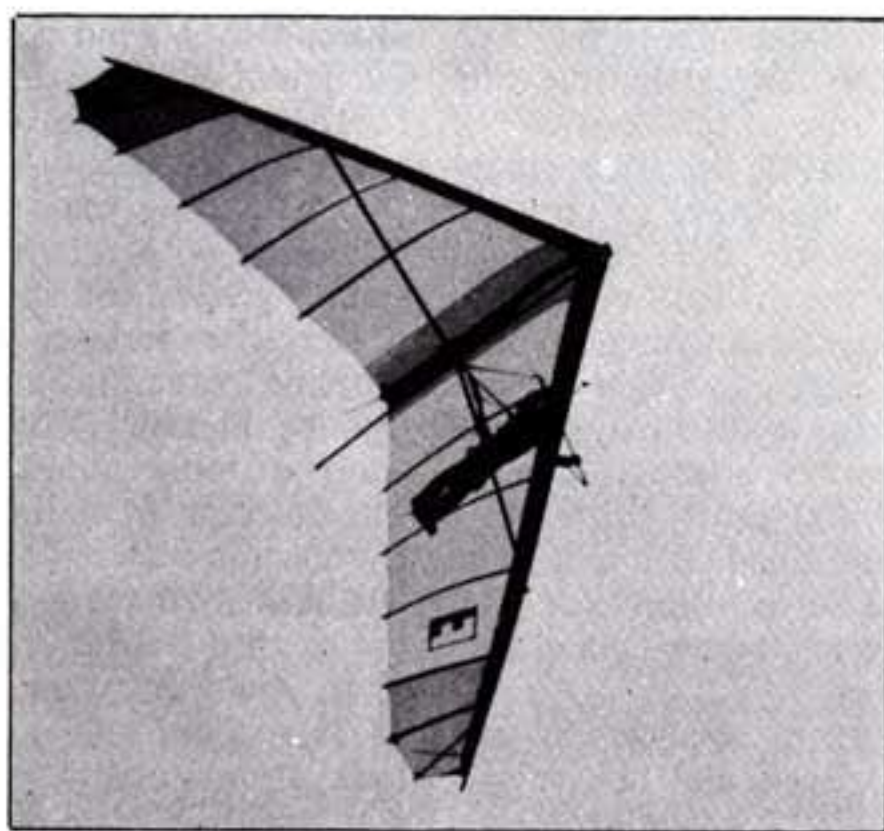
'C' Dacron with rainbow
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many other good con-
dition gliders in stock.
Hiway prone harness
£30. Contact Bob Calvert,
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WILLS WING - Colver
Soaring Variometer and
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- Price prone harness
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Mainair Sports - Shaw-
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Wills Wing Accessory
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PÉLLET VARIOMETER
- We are the U.K. agents
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4in x 5½in and weighs
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AMPLIFIER aerobic
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140° nose angle, 26"
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Also **SIMPLIFIER**
standard 40p, or one of
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SKYLINE

- simply better -



Skyline	small	medium
Aspect Ratio	6.4	6.4
Area	170 sq. ft.	175 sq. ft.
Span	33'	33' 8"
Keel	8'	8'
Weight	46 lb	49 lb
Pilot Weight	8 - 10 st.	10 - 12 st.

Skyline	large	super large
Aspect Ratio	6.0	5.9
Area	195 sq. ft.	215 sq. ft.
Span	34'	35' 6"
Keel	8' 6"	9' 6"
Weight	53 lb	54 lb
Pilot Weight	12 - 14 st.	14 - 16 st.

£475

FLEXI-FORM SKYSAILS
Tel: 061-707 1389

incl. VAT
& Bag.



The Skyline has no wing wires, just a simple rugged airframe and a carefully cambered sail. Low weight and advanced sail technology give a superbly light 'inertia free' feel to the handling - so important when flying close to the hill or thermalling. Roached tips, short keel and high aspect ratio contribute to the performance whilst mellow slow speed characteristics add to the pleasure.

At the Royal Aero Club

by Jeannie Knight

Our hanggliding achievements seemed minute compared with some airport activities recognised at the annual Royal Aero Club presentation of awards in London on November 28th. But we did have a Royal mention when HRH Prince Charles, President of the Club, described his first contact with hang gliding.

"I think the people who do this are incredible. They are completely mad — but then so were the first aviators. I saw one old Etonian *thank you, Chris Baker!* try to take off a 6,000 ft mountain close to where I was skiing. He slid along on his stomach and split open his harness. "Off the Alps is not my way of flying," he said.

Hang gliding was well represented at the presentation, both by the British and the Americans. From the U.S. there was Bettina Gray, renowned for her marvellous hang gliding photographs, and Tracy Knauss, editor of "Glider Rider".

Bettina was delighted with the splendour of the occasion, and with the informality as Prince Charles mingled with the guests afterwards. Tracy found an opportunity to pass on personally to the Prince, an invitation from Presi-

dent Carter for Prince Charles to visit America for the 2nd American Cup event next year.

Prince Charles had a lengthy chat with Graham Slater, and apart from asking if Graham had ever had an accident, showed an interest in teaching techniques used in Britain.

At the beginning of the evening, Prince Charles had been welcomed by Mr. W.I. Scott-Hill, Chairman of the Royal Aero Club who said that 1978 had been a great year for achievements by Britain in the field of air sports. Awards were usually presented for feats in the previous year, and on that basis he was sure there would be no shortage of nominations next year.

During 1978 some of the achievements had been so outstanding that he outlined them.

For hang gliding, he said there was nothing to report on the FAI scene, but told everyone that in a private venture the British had beaten the Yanks at their own game on British machines.

But as far as the 1977 awards were concerned, the famous Britannia trophy went to the British Airways 'Big Apple' team for their achievement with Concorde.

Prince Charles admitted that although he thought Concorde was a magnificent achievement, he was about the only member of the Royal family who hadn't travelled in it.

"I would like to award myself a prize, for I managed to fall out of an aircraft with a parachute this year," said Prince Charles. He recalled the moment he found most amusing—when he hit the ground a little man rushed up, tore the parachute off his back, packed it in a case and disappeared with it to the Royal Aircraft museum.

"A similar sort of thing happened when I first flew a Chipmunk. When I finally depart this life, I'm sure that I shall be stuffed and placed in a museum," he laughed.

Everyone then followed the Prince's advice to have a 'jolly good drink'. Red and white wine flowed in abundance, though the food tended to be more elusive, being whisked by on silver trays. My only distinction of the evening was to tread accidentally on the Royal toe whilst in pursuit of Quiche Lorraine...

We distinguished ourselves as a group in typical fashion—by being the last to leave. 'We' consisted

of Reggie Spooner, Derek Evans, Brian Milton, Fiona Campbell, myself, Tom Knight, Roy and Wendy Hill, the Fack brothers, Graham Slater, Keith Reynolds, Mick Evans, Chris Johnson, Mick Mayer and their ladies, plus Graham Hobson and friend, and of course Bettina Gray, Tracy Knauss and an unknown Canadian girl, whom I'm told is usually seen with our Training Officer!

That was not quite the end of the evening, for we all retired to a Greek restaurant. A large number of us crammed into Roy Hill's VW van for the trip from Pall Mall and were treated to some incredible 360's in the middle of a busy one-way system in Piccadilly, at the end of which Chris Johnson was found with his head buried under the seat and eyes tightly closed — as Roy assured us it was easy to deal with London traffic when you knew how!

Continued from Page 17

or death suffered by the pilots—then remind yourself of the bent or broken 'A' frames you have seen recently! How long ago was it since your feet touched the ground after a hairy flight with you breathing a quiet "Thank God!" Remember that the difference between a good landing and a crash in difficult conditions is mainly good luck!

The schools system of training, with better equipment and teaching, has only taken the initial risk out of the sport — beginners are well cushioned! The dangers to intermediate fliers that follow have been well publicised, but not appreciated by the people they are aimed at. These individuals tend to put themselves in the class above or below the one they belong to, i.e. tending to think of themselves as utter beginners or experts — the dividing line becoming very narrow. Let me elaborate.

For a beginner starting on a

standard three years ago to reach ten hours air time, he would have taken innumerable top to bottom plummets, and the same number of five and ten minute soaring flights over a period of some twelve to eighteen months. All these flights would have encompassed an awful lot of different flying conditions, and consequently the pilot would have gained a hell of a lot of experience. He was therefore in a good position to take advantage of improving machinery — indeed it was "chicken and egg" — if the pilots did not progress, neither did the kites (the SAFARI prototype was flying about two years ago but was shelved, being nicknamed the "Twitchy" — pilots just weren't up to it). Remember indeed the advanced "hairy" machines of two years ago suitable for "advanced" pilots only? They are now "obsolete" hacks used for training!

Nowadays, once a novice has reached E.P.C. standard he can buy just about any machine he desires, and sitting above

any of the big coastal sites can quickly notch up ten hours, but not much experience. When these pilots start comparing flying time with some of their older brothers, they see themselves no longer in the unpleasant role of the "novice" or "intermediate", but have caught up. They may have in terms of time, but are not capable of handling the difficult conditions found when scratching round a titchy ridge in light winds waiting for a thermal. If you want real experience, then go and fly that grotty little ridge in all conditions. You will be in more of a position to react instinctively when conditions turn rough.

The main obstacle to safe flying is, was, and always will be, the over inflated ego, and I'm afraid that the ONLY time it really comes home to you what you risk when your feet leave the ground is an accident where you are physically hurt!

This article was prompted by a bum day a couple of weeks

ago, when three pilots — including myself — landed in the rotor behind a sharp ridge. It has always been a difficult site to top land, made even more difficult by a wind coming from a different direction than normal. I escaped because of experience and a lot of luck. My friend of three years wound up concussed with smashed, blood-stained glasses, and another pilot of lesser experience wrote an airframe off, fortunately not injuring himself. This was in a wind of only about 14 mph. The moral is, of course, NEVER fly in non-shatterproof glasses, and ALWAYS treat rotors with the greatest respect.

If you think you are above all this doom and gloom, then look at how many well known and "invincible" pilots known to you have gone in and been seriously injured, or worse, in the past two years. If you think you can hack it better than them, think again.

Mick Pollard
Safety Officer,
North Wales HGC

NEWS FROM Birdman

Birdman Sports is one of the pioneer glider manufacturers in the U.K. We have wide experience in all aspects of hang gliding. We are unique in being able to offer under one roof everything a hang glider enthusiast or beginner may need, from basic schooling to the purchase of gliders, harnesses, parachutes, instruments etc. etc.

SPARES SERVICE

We operate a fast and comprehensive spares service. Each Thursday we deliver spares to our local main station Red Star service. These will be ready for the customer to collect at any British Rail Red Star office on the mainland by Friday midday. Alternatively, our agents will have some spares available.

AGENTS

Birdman Sports do not appoint agents lightly. Each one deals exclusively with ourselves ensuring a good standard of product knowledge. Each one is a dedicated hang gliding enthusiast. This means you, the customer, will get good service, good advice and follow up help and advice to your purchase.

In Scotland contact: David Squires 33 Whitehurst, Bearsden, Glasgow, G61 4PF
The North contact: Trevor Birbeck, Hambleton House, Clothholme Rd., Ripon, Yorks.
North Wales contact: Birdman Hang Gliding School, 186 Bryn Place, Llay, Wrexham, Clydd.
South Wales contact: Ewart Jones, The Quarry, Crickhowell, Powys.

CONGRATULATIONS

To: Bob England and Johnny Carr (2nd and 4th respectively) for their tremendous performances on the Moonraker '78 in the highly competitive Class II at the European Open Championships Kossen against the best that Europe, Australia, America and Japan could muster.

To: Rolf Nossen and Brian Wood (1st and 2nd respectively on Moonraker '78) Class III at the Midnight Sun Cup, Norway.

To: Rolf Nossen (Moonraker '78 again) for his 1st place in the Norwegian nationals making him the 1978 Champion.

To: Mike Bundock and friends who scored a resounding 1st, 2nd, 3rd and 4th places on Moonrakers at the '78 South African Championships.

To: Johnny Harris for the first balloon release in Ireland last year and also for his more recent release using a Moonraker '78 for the first time.

To: Paul Beukers (Holland), who has the first powered '78 (courtesy of Gerry Breen and Soar-master). The glider is turning out to be very suitable for power having such a strong airframe.

To: Eleven out of the fifty or so regular competitors in the British National League fly Moonrakers. If you are an experienced pilot and want an all out performance glider for competition or cross

country flying the Moonraker '78 has got to be your choice.

The "Cherokee"

The "Cherokee" is a new intermediate/expert pilots glider. Built to our usual high standard of construction and finish. Because of its mellow handling characteristics it is suitable for new E.P.C. holders right through to expert pilots who want performance with a relaxing easy to fly glider.

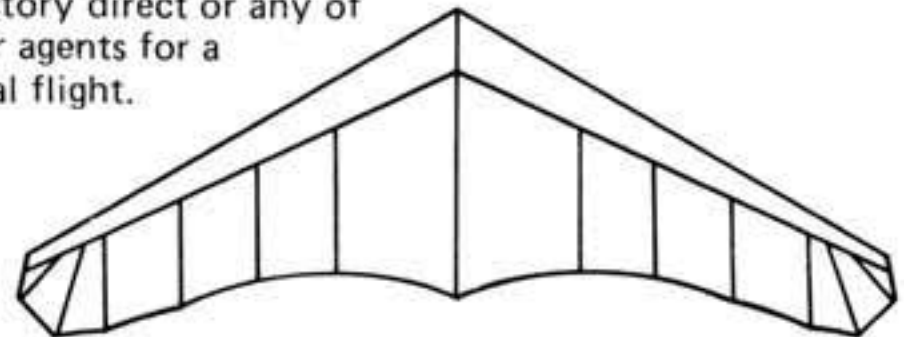
With the "Cherokee" Birdman Sports have utilised all the latest techniques and knowledge accumulated from our wide experience of all aspects of hang gliding. We are the only manufacturer to exclusively use Howe & Bainbridge Dacron. It is obviously more expensive than other sailcloths but we maintain that it pays to use the best materials available. The "Cherokee" sail is built in 3.8oz material with 6oz reinforcing panels where needed. It is fully cambered and is the result of our constant R & D programme in the pursuit of higher performance and better handling.

The air frame is in 1 3/4 x 18G HT30TF aluminium, inner and outer sleeved where appropriate. Control frame is 1 1/8 x 14G and folds with the removal of a single button pin. Our usual centre box system is used to allow quick easy rigging.

The glider breaks down as standard to approximately 12 feet. It can be flown seated or prone. Available in two sizes to cover a wide pilot weight range.

Basic specifications are as follows:-
"Cherokee" 170 Nose 120° Span 30.5 ft.
Aspect ratio 5.47 ft. Area 170 sq. ft. Root chord 10.5 ft.

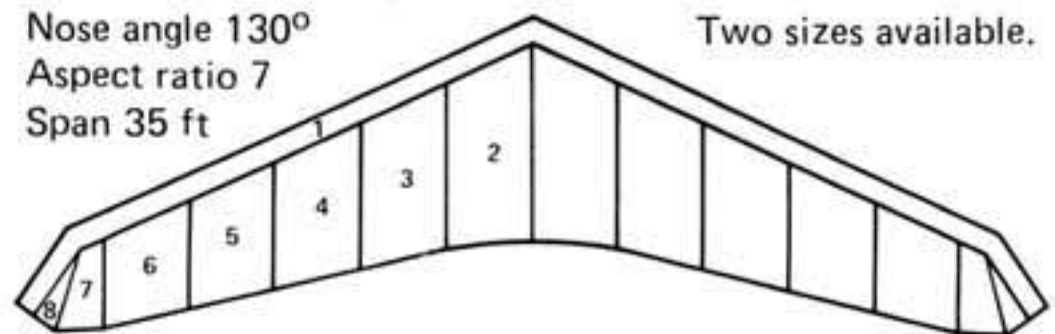
If you are seriously interested, contact either the factory direct or any of our agents for a trial flight.



Moonraker '78

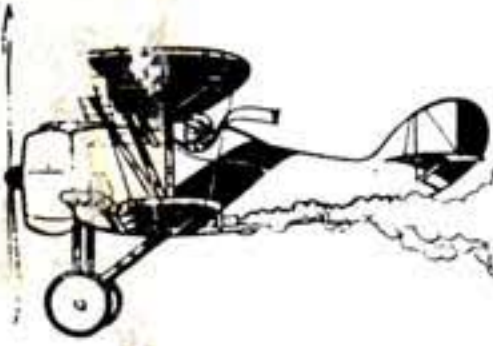
The glider for experienced pilots who are looking for maximum performance. In the right hands the '78 is extremely competitive when matched against the best hang gliders built anywhere in the world. Our competition successes prove it. Very strongly built with a 2" O.D. x 18G airframe, Bainbridge sail beautiful finish.

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Span 35 ft



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The back up systems are designed for hang gliders in emergency situations to safely land both pilot and glider.

The deployment system is, in our opinion, superior to any other and offers the pilot, faced with structural failure, mid-air collision or loss of control, an excellent chance of an injury free landing.

The deployment is so designed that inflation of the canopy will not occur until full stretch of bridle and suspension lines, by which time the parachute will be well clear of the glider.

24ft. CONICAL (£159)

This system incorporates a bag deployed 24ft. conical parachute of 20 gores and 20 lines weighing 6lbs. The gores are of solid block construction. The design limitations are 300lbs. combined weight at 100 m.p.h.

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We would suggest the return of your system every six months for repack.

The above quoted prices are very competitive and must be regarded as introductory. We will hold them for as long as possible.

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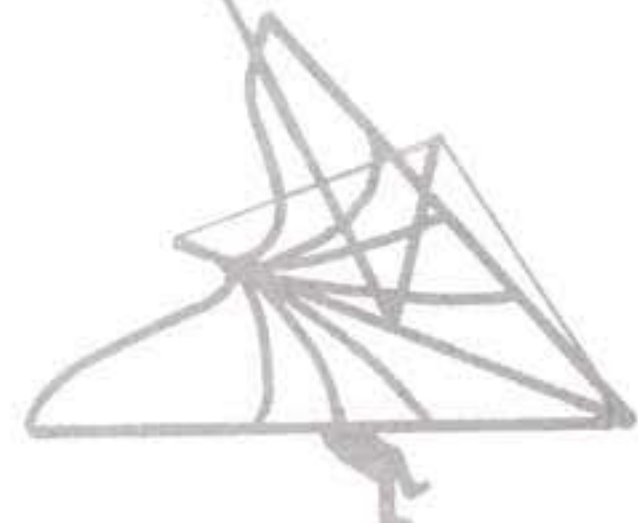
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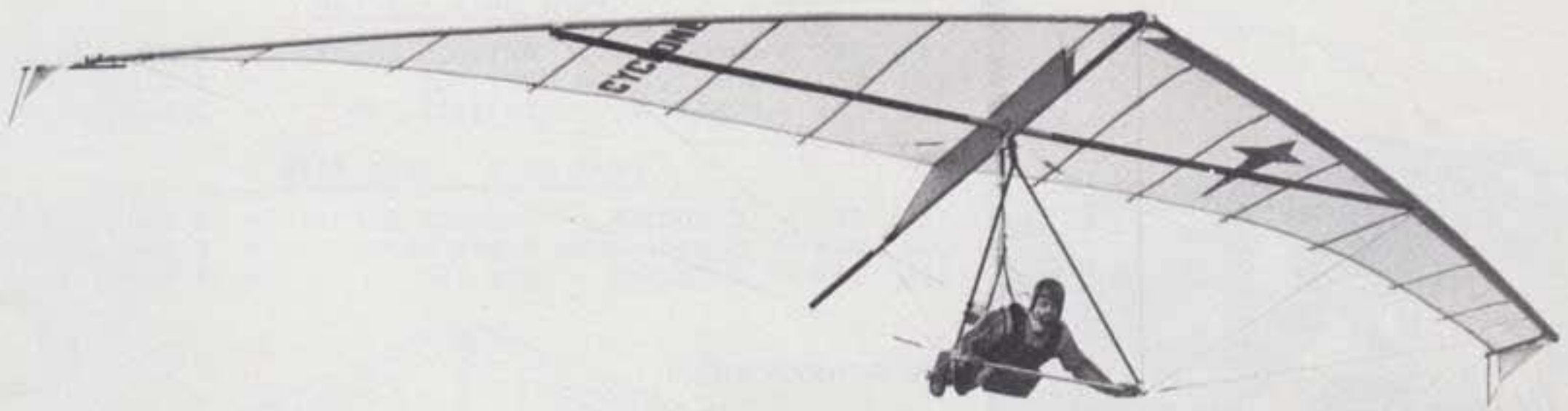
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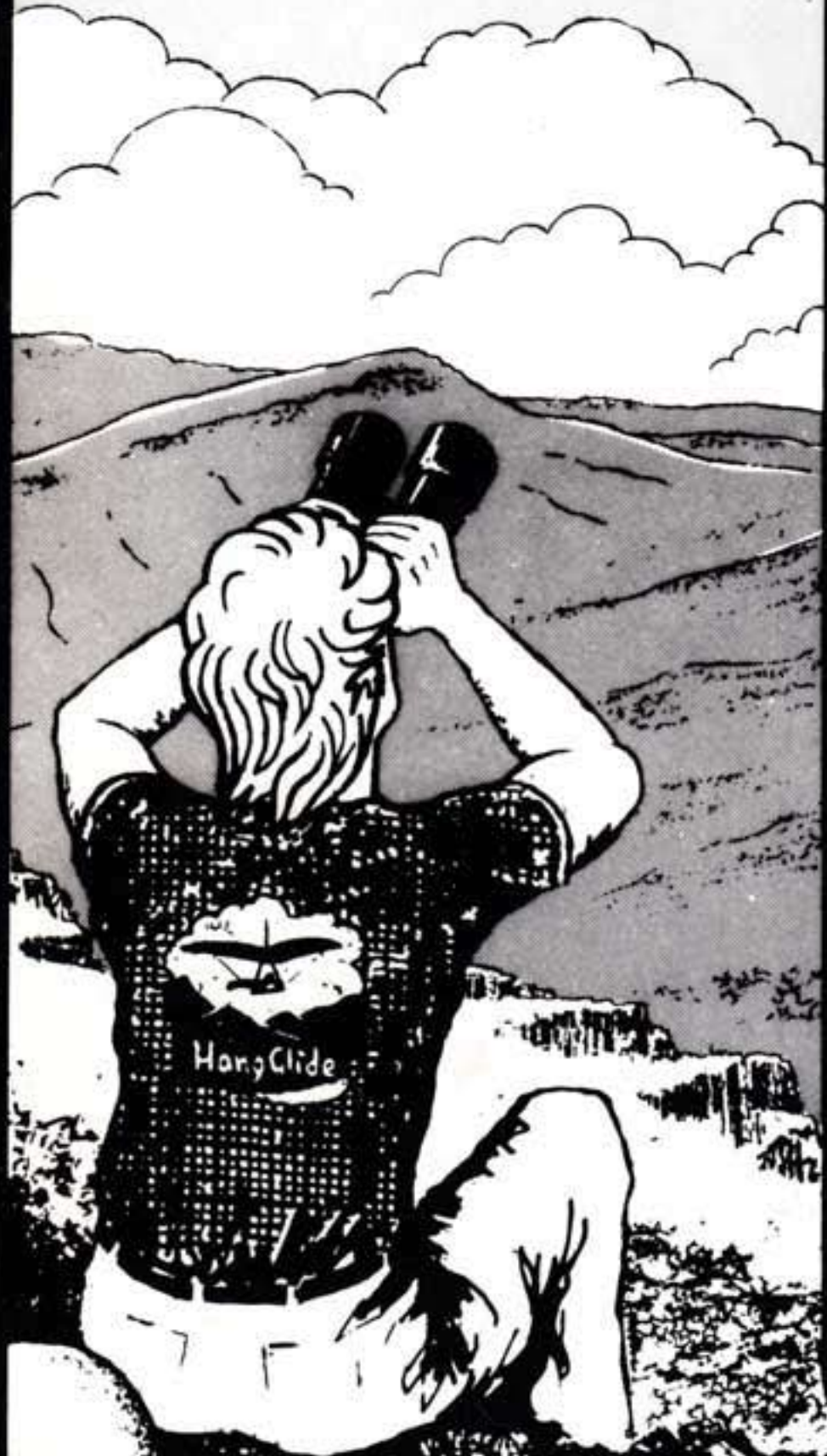
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4



AMERICAN CUP SUCCESS

HEAT NO 1 - SPEED

1st	GB	- G HOBSON	- SKYHOOK SAFARI	- 2 min 9 sec
2nd	CAN	- A Starkey	- Seagull 10m	- 2 min 42 sec
3rd	USA	- G Pollack	- Oly 180	- 2 min 46 sec

HEAT NO 2 - SPEED

1st	GB	- G HOBSON	- SKYHOOK SAFARI	- 2 min 45 sec
2nd	CAN	- W Walker	- Oly 180	- 3 min 13 sec
3rd	USA	- D Rodreguez	Moyes Maxi (US Masters Champ)	3 min 22 sec

HEAT NO 3 - OPTIMUM TIME 15 MINUTES

1st	GB	- G HOBSON	- SKYHOOK SAFARI	- 3 sec dev.
2nd	USA	- S Dever	- Moyes Maxi	- 52 sec dev.
3rd	CAN	- J Duthie	- Lancer 4	- 1 min 47 sec

HEAT NO 4 - OPTIMUM TIME 5 MINUTES

1st	GB	- G HOBSON	- SKYHOOK SAFARI	- 2 sec dev.
2nd	USA	- M Jones	- Sirocco 2 (Moab Champion)	- 54 sec dev.
3rd	CAN	- D Chernoff	- Phoenix 8	- 1 min 5 sec

HEAT NO 5 - SPEED

1st	GB	- G HOBSON	- SKYHOOK SAFARI	- 2 min 7 sec
2nd	USA	- G Pollack	- Oly 180	- 2 min 21 sec
3rd	CAN	- A Starkey	- Seagull 10m	- 2 min 29 sec

HEAT NO 6 - SINK RATE

1st	GB	- G HOBSON	- SKYHOOK SAFARI	- 8 min 1 sec
2nd	USA	- D Rodreguez	Moyes Maxi	- 5 min 4 sec
3rd	CAN	- W Walker	- Oly 180	- 4 min 44 sec

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