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Sleek Pod II — fully enclosed harness with integral parachute and ballast container, pockets for XC bag and camera, Velcro CB and camera mounts. Comes complete with front tow loops and deluxe zipped rucksack.

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Obvious choice for P1 pilot. Only £87.	Hang/back-up loops (Supertube)	
	10"	2.10
	14"	2.30
	18"	2.50
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Other equipment	XC bag	17.25
O-zee suits (Thinsulate)	Leather-sided sunglasses	15.00
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Twistlock karabiner	Inner chute container for Pod	15.00
Screwgate karabiner		
Everoak helmets, size 0-4		

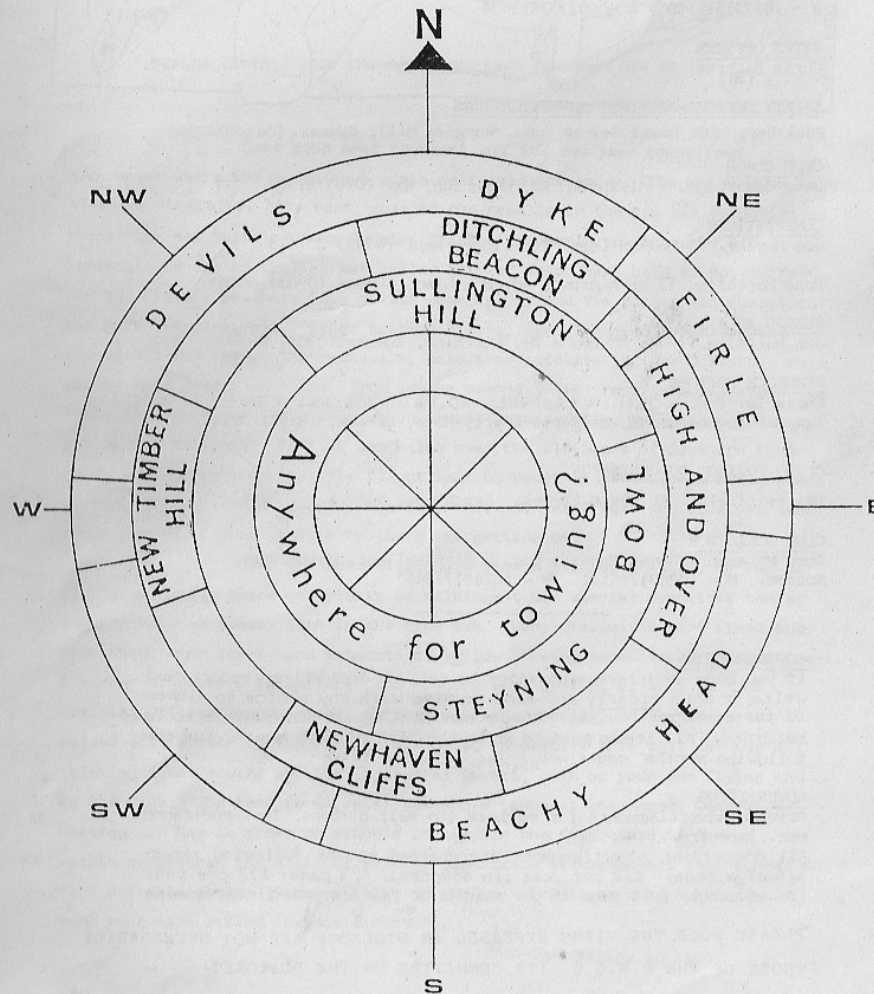
We also offer a full range of Lindsay Ruddock varies from £138.00 and are agents for Solar Wings. Ring Dave or Kelvin to arrange a test flight. All prices include VAT and free post and package for orders over £50.00.

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86



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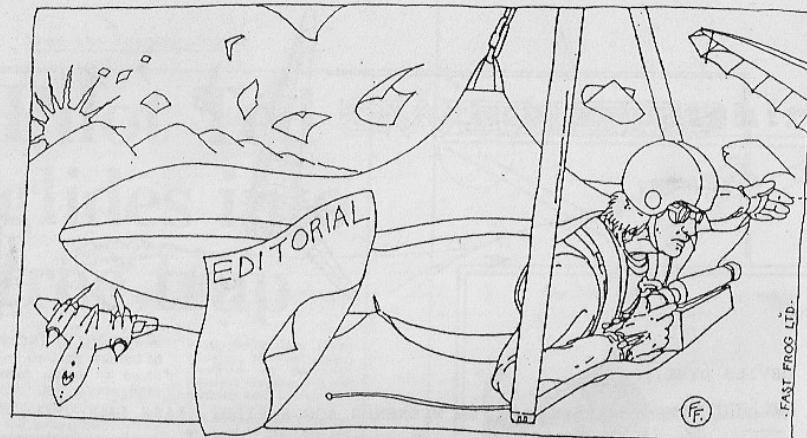
If you have an interesting story to tell or accident to report just write it down clearly and send or give with any photos to either of the editors. Please send a S.A.E. if material is to be returned. All items must be in by the 25th of each month, for the following months' magazine.

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).

PLEASE NOTE THE VIEWS EXPRESSED IN WINDSOCK ARE NOT NECESSARILY THOSE OF THE S.H.G.C. ITS COMMITTEE OR THE EDITORS.



Some good news to start off the new year comes from

Down Under where the Brits have again delivered the goods. Tim and Sheila Bardon, visiting Australia, have sent some of the results in the two big competitions there: the Mt. Buffalo Cross Country Classic (formerly sponsored by Blue Stratos) and the Australian Nationals, both of which were held at Mt. Buffalo.

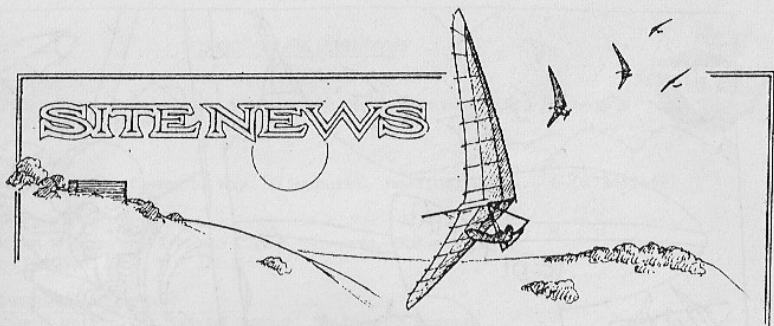
In the Classic Southern Club pilots John Pendry and Tim Bardon finished 10th and 15th respectively. Other British pilots, Jes Flynn and Robin Rhodes placed 9th and 11th. The Nationals, held immediately after the Classic, were won by John Pendry with Jes Flynn coming second. Tim reports some severe turbulence in the Buffalo area which almost inverted him, and although he was not in the Nationals he flew 165 miles over the flatlands of Southern Australia from a Tow Launch!! The flight took 6½ hours and is only 21 miles short of the Official World Record. Not bad, eh?! As yet I have not received news about how the flying Cattlin brothers are getting on.

Back at home things have been a bit quiet lately as far as flying goes, but there was plenty of talking at the special Committee towing meeting held on Sunday 19th in the Dyke pub. Many viewpoints were aired and discussed, with first-hand accounts of various towing experiences and techniques. A number of Dover & Folkestone Club members were present as well as BHGA Training Officer Bob Harrison. A report of the meeting and the issues it raised will appear in the February WINDSOCK. Hopefully this will set you all thinking about towing and its potential impact, both on your own flying and on the Club. The idea is to raise the whole issue at the Annual General Meeting in May in order to reach a policy for the future use of Towing within or without the Club. Of primary importance at the moment is the need to find suitable sites. Perhaps those of you who microlight over Sussex could keep your eyes peeled in this direction.

Good flying in 1986,

ICS.

SITE NEWS



DEVILS DYKE,

AS SOME OF YOU MAY KNOW, A FEW WEEKENDS AGO A PILOT CRASH LANDED IN THE TREES DIRECTLY AT THE BOTTOM OF THE HILL. THE PILOT CONCERNED HAD BORROWED A HIGH PERFORMANCE GLIDER. HE WAS A PILOT OF GOOD ABILITY BUT HAD BEEN OUT OF HANG GLIDING FOR SOME TIME. UNFORTUNATELY THIS PILOT WAS NOT A B.H.G.A. MEMBER OR A CLUB MEMBER. AS YOU WILL READ IN THIS WINDSOCK SOME CONSIDERABLE HASSLE WAS CAUSED TO THE FARMER (AND THE RESCUE SERVICES) AND IT WAS A MIRACLE NO ONE WAS HURT, (EVEN THE GLIDER WHICH WAS STUCK UP THE TREE ALL THAT NIGHT WAS UNTOUCHED) THE SITUATION MAY HOWEVER HAVE READ DIFFERENTLY. E.G.

"UNINSURED, IRRESPONSIBLE PILOT CRASHES INTO SPECTATORS AND SERIOUSLY INJURES WOMEN AND CHILDREN" I AM SURE I DON'T HAVE TO SPELL OUT THE CONSEQUENCES OF THAT TO BOTH THE PILOT (AND THE POOR SOD WHO LENT HIM HIS GLIDER). THEN THERES THE POSSIBLE CHARGES FROM THE RESCUE SERVICES, DAMAGE TO PROPERTY ETC ETC.

AS IT IS WE HAVE ENOUGH PROBLEMS AS A SPORT. PLEASE LETS NOT MAKE IT ANY WORSE. THINK BEFORE YOU LEND SOMEONE YOUR GLIDER, ARE THEY REALLY COMPETENT? ARE THEY B.H.G.A. INSURED AND ARE THEY CLUB MEMBERS? IT COULD SAVE YOU A LOT.

TOWING

WELL WE HAD AN EXCELLENT TOW MEET THE OTHER SUNDAY. WE ARE LOOKING AT AS MANY ALTERNATIVES AS POSSIBLE THAT INCLUDES 1/BUYING LAND 2/ LEASING LAND 2/ RENTING, AND SHARED USE. RAY SWINFELD WHO IS HELPING ME IN THE SEARCH AND APPROACHING ESTATE AGENTS, GAVE AN UP TO THE DATE RESUMAY OF INFO RECIEVED ETC AND THE POSSIBILITYS AND PRACTICALITYS.

SINCE THE MEETING I CAN NOW REPORT THAT WE HAVE THREE SITE POSSIBILITYS TO EVALUATE. ALL WE NEED NOW IS THE WEATHER!!

MANY THANKS TO THOMAS FOR DOING THE NEW ILLUSTRATIONS "EDITORIAL" ETC COMING NEXT MONTH, A NEW CARTOON AND "WORD SEARCH"?!!!!

From the Evening Argus:

Pilot Ted glides into tree trap

HANG GLIDER pilot Ted de Jong wanted to come down to earth with the usual slight bump yesterday.

But instead, his borrowed craft caught in a tree — leaving Ted dangling 40ft. up at Devil's Dyke.

Friends saw the Londoner land in the tree, about 100 yards down the slope from the Devil's Dyke Hotel. They alerted emergency services after Ted discovered he was trapped in his harness.

Ordeal

But his hour-long ordeal ended before firemen from Brighton and Hove arrived. A hang gliding colleague threw Ted a knife and he cut himself free.

He managed to clamber gingerly to the ground, uninjured and with only his pride slightly wounded.

Ted had borrowed the craft, which was today still stuck in the tree, from another Londoner, Colin Wills.

They were in a group of

hang gliding fans taking advantage of almost perfect conditions for the sport yesterday afternoon — a stiff northerly wind.

A colleague said: "Ted was not used to the craft and simply misjudged his landing. He was up there a long time because he could not release the safety harness and had to cut the straps to get free."

FOR SALE: Vario Monacor £40 ono. Phone Airtime.

FOR SALE: Secondhand Ball Vario 051 with Winter ASI & digital altimeter in metric. £299 ono. Sky Systems (0273) 423650.

FOR SALE: Johnny Carr's MAGIC 4 166. Orange mylar 1/e, yellow u/s, white 4.4 main body. £1100 ono. (0273) 423650.

Mark Woodhams is the Hiway representative in the south east, living at 60 Compton Road, Brighton. Telephone Brighton (0273) 501 043.

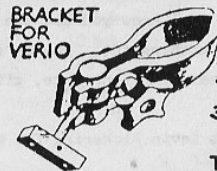
FOR SALE Hiway Vision only 1 year old. Immaculate condition. Rainbow u/s. Speed bar. Suit P1 right through to XC pilot. £800. Mark Woodhams on Brighton 501043. Fantastic Vision demonstrator available for demo flights.

club sweatshirts



NOW AVAILABLE FROM ALL COMMITTEE MEMBERS. ONLY £7.50 EACH (THEY MAKE GOOD PRESENTS). SIZES... SMALL, MEDIUM, LARGE AND X-LARGE. COLOUR IS LIGHT GREY WITH THE CLUB BADGE IN YELLOW AND BLACK. YOU CAN ALSO MAIL ORDER FROM JOHNNY CARR. ORDER NOW....

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SAFETY REPORT

Well, here we are at the start of a new year and already there has been an accident at the Dyke. All I know is that a pilot landed in a tree; I don't know how this happened because I have had no accident report. So whoever this concerns, please send me a completed report form. (If anyone has an accident and doesn't have a form, contact me and I will send you one.)

I have found that people don't like sending in reports of their mishaps (I don't know why) but there is no comeback on you; you may think 'well I didn't hurt myself or anyone else, so there's no need to report it'.

May I stress also that ALL pilots should belong to the BHGA and if flying Southern Club controlled sites they must belong to the SHGC. Without BHGA membership they are not insured. The reason I bring this up is because there was recently an accident where £1000 worth of damage was caused to somebody's house. As the pilot was insured for third party liability, the BHGA are paying the bill. So, please, if you are uninsured, GET INSURED. It's only £19.50 per year to belong to the BHGA (for existing members, or £24.50 for new members), £13 of which is for Wings! magazine, so the insurance itself costs very little for the cover it provides (up to £1,000,000).

Well, that's all I've got to say as things have been quiet because of bad weather.

Happy Flying & Safe Landings,

Paul Ray (Safety Officer)

P.S. I'm selling my Magic 3 166, £800.00, dark green l/e, light green u/s, aerofoil uprights & speedbar, V.G.C., ring me on Burgess Hill 47262.

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Weekend XC League 1985

The results of this club competition were printed in the November WINDSOCK. John Young noticed he should have been placed third. Investigations by Joe Hayler, Competitions Manager, found that one of the flights John thought he had entered was nowhere in Joe's records (28/4/85) and on another flight (58½ miles) no date was given on the entry for the flight.

I know you did the flights John but for competition entries you must leave nothing out. Having said that, perhaps Joe could have chased you up on the matter of the date, given the length of that flight. C'est la vie!

My apologies to Kevin Pickering for omitting to put him 'on the map', literally.

ICS.

Aerial Arts present

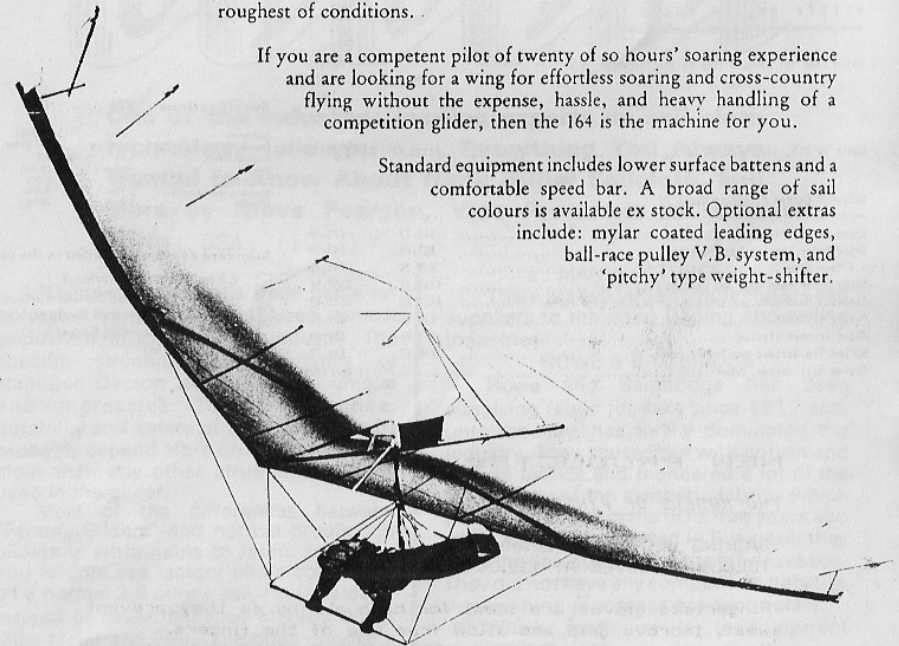
the **Clubman 164**

In response to demand by relatively experienced club pilots for a low cost high performance wing with reliable and predictable handling characteristics, Aerial Arts has produced the Clubman 164.

Using the same advanced design techniques which lead to the ultra-lightweight Clubman CFX on a glider of higher span, has resulted in a machine with a very impressive sink rate and the sort of handling that will iron out the bumps in the roughest of conditions.

If you are a competent pilot of twenty of so hours' soaring experience and are looking for a wing for effortless soaring and cross-country flying without the expense, hassle, and heavy handling of a competition glider, then the 164 is the machine for you.

Standard equipment includes lower surface battens and a comfortable speed bar. A broad range of sail colours is available ex stock. Optional extras include: mylar coated leading edges, ball-race pulley V.B. system, and 'pitchy' type weight-shifter.

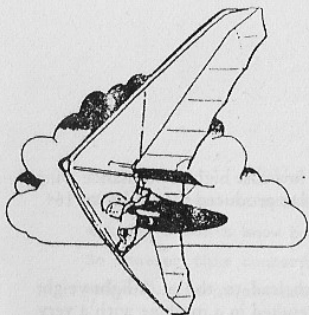


Contact Aerial Arts today to arrange a demonstration.

Specifications:-

Wing area	164 sq. ft.
Wing span	32.5 ft.
Max L/D	10.5:1
Minimum sink rate	180 ft./min.
Optimum pilot weight	145-185 lbs.
Empty weight	56 lbs.

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



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EXCLUSIVE SOUTH-EAST AGENTS
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MAGIC FOUR



GLIDER PRICES MAGIC IV

Valid From 1st January 1984 To 24th December 1984

	Retail Price	Retail Inc VAT 15%	Specifications	177	166	155
Magic IV 155, 166, and 177	£1114.87	£1281.19	Sail area	16.6m ²	15.8m ²	14.5m ²
			Optimum Pilot Weight	79-90 kg	70-79 kg	63-73 kg
			Aspect Ratio	6.95	6.8	6.72
			Span	10.6m	10.4m	10.0m
			Length	6.2m	6.0m	5.9m
			Breakdown Length	3.95m	3.8m	3.6
			Weight	30kg	28kg	27kg
Optional Extras Fitted to Magic IV			Standard Features included in the price.			
Speed Bar (filled)	£13.13	£15.10	<input type="checkbox"/> 4.2 oz. Main Body (White)			
Shiny Mylar Leading Edge Pocket	£37.68	£43.34	<input type="checkbox"/> Rainbow or Striped Double Surface			
4.4 Main Body	£39.24	£45.13	<input type="checkbox"/> Aerofoil Uprights and Kingpost			
Shiny Mylar Main Body and Leading Edge Pocket	£163.12	£187.59	<input type="checkbox"/> Breakdown Leading Edges			
Sandwich Main Body and Shiny Mylar Leading Edge Pocket	£326.63	£375.42	<input type="checkbox"/> Mk II Ball Tips			
Pitchy (filled)	£34.45	£39.42	<input type="checkbox"/> Nose Cone			
Magic Trimmer (filled)	£43.88	£50.46				
Spring Tip Battens and Tip Fairings	£48.63	£56.72				
Custom Sail design, Advertising Logos:		Prices on request				

NEW PRODUCTS:

THO MODELS OF FINGERLESS GLOVES

- SAILING GLOVES AT £8.00
- TELOGRIP GLOVES AT £12.00

Fingerless gloves are ideal for hang gliding as they prevent sweat, improve grip and allow free use of the fingers.

Used with the SKY SYSTEMS NEOPRENE BAR MITTS (£14), they are the ideal combination for today's pilot.

THO NEW SERIES OF FLIGHT INSTRUMENTS

THE FAMOUS BALL VARIOMETERS AND ALTIMETERS ARE NOW AVAILABLE FROM SKY SYSTEMS:

The world famous 651, variometer and digital altimeter, as used by most competitors, retails at £390. The 652 has an electronic air speed indicator as well and retails at £450. The wrist variometer M20 is excellent value for money at £180.

THE NEW FLYTEC SERIES, IMPORTED FROM SWITZERLAND BY SKY SYSTEMS

FLYTEC is the largest manufacturer of flight instruments for hang gliding in Europe and have gained their excellent reputation from beautifully made high precision products, backed by a professional management and back-up service.

Their range starts at £169 with the variometer AV-2002, with another variometer with crystal liquid bar display at £199, and 3 models of variometer/digital altimeters from £345.

SAIL CLOTH

(1)

One of the industry's leading experts on sail cloth technology tells you . . . Everything You Always Wanted to Know About Hang Glider Sailcloth, and More/by Steve Pearson, Vice President of Wills Wing, USA. (1983)

MANUFACTURERS

There are two large manufacturers and suppliers to the Hang Gliding and sailing industries.

HOWE & BAINBRIDGE

Howe and Bainbridge has been supplying fabric for sails since 1917 and, until recently, has totally dominated the industry. They started out with cotton and canvas fabrics and pioneered a lot of the technology of the synthetic fabrics which were introduced in the 60's. Ten years ago when Wills Wing started in business, they were the only supplier for the fabric we use. They did not have any competition because the finishing processes are proprietary.

Which leads us to their current competition.

DIMENSION SAILCLOTH

Dimension was started in 1977 by a group of talented, aggressive people from North Sails (a very large sail loft) and . . . you guessed it — Howe & Bainbridge. They are a very progressive, service oriented company and they have worked very hard and have been very successful at providing a high quality, competitive fabric line.

SAILCLOTH

The individual characteristics of different styles of cloth which are significant, and which you should be familiar, can be classified as follows:

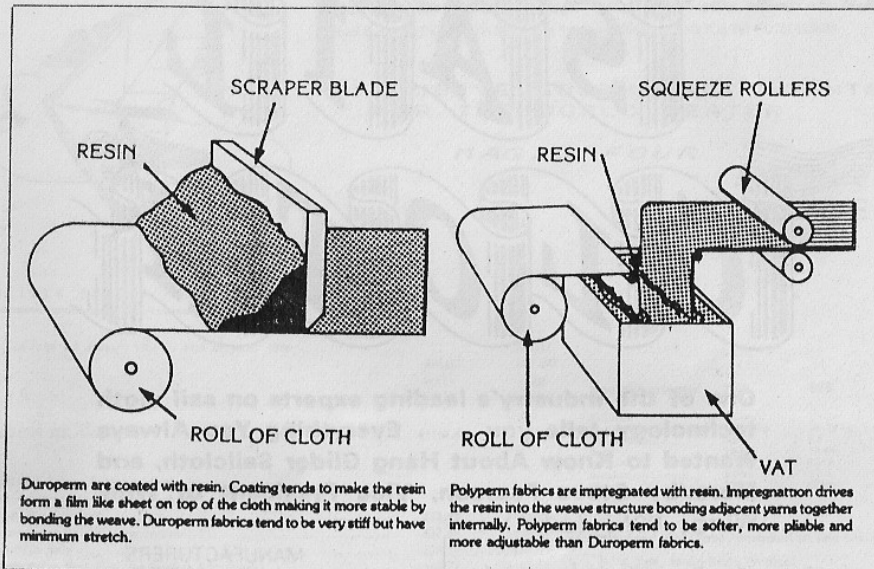
- 1) Stretch

"Dacron" is Dupont's trade name for polyester yarn, which is used almost exclusively in the sailcloth industry. The specific structural characteristics of stabilized Dacron fabric are very unique and impressive. The performance, durability and safety of the gliders we fly probably depend more on this remarkable cloth than any other structural material used in the glider.

Most of the differences between "Factory Gliders" and normal production gliders is attributable to fabric selection. You seldom see factory pilots competing on a normal 3.8 ounce sail. I said seldom, instead of never, because at Wills Wing, Mike Meier and Rob Kells often choose a stock 3.8 ounce sail. I usually prefer a Mylar sail. The point is, we choose a fabric for a specific set of flight and performance characteristics.

There are dozens of fabrics on the market that are suitable for hang glider applications and they vary quite a bit in strength, price, durability, and weight; four things which are important to you. To a certain extent you can participate in the fabric selection. The material presented in this article is intended to help you make an educated selection.

Before I get to the fabrics themselves, I am going to give you a little history of the products, suppliers, and the different procedures involved in manufacturing the fabrics.



- 2) Durability
- 3) Weight
- 4) Finish
- 5) Tear strength
- 6) Cost

All of these are related, but I shall try to keep the explanations simple. The following explanations apply to 100% woven fabrics.

The *Stretch* is primarily determined by:

- 1) The *Weave Density*. Measured in thread counts in two directions: the "fill" and the "warp." The fill is short axis of the cloth and the warp is the long axis.
- 2) The *Yarn Size*. The size of the individual threads in the fabric.
- 3) The *Finish*. How much and what type of resin is applied to stabilize the cloth.

Each company has testing procedures used to evaluate the performance of these fabrics. Every time H & B or Dimension runs a dye lot (typically 2000 yards or more) they test the fabric by cutting long rectangular strips from the fill, warp, and bias directions (typically +/- 1" by 20") and load testing them. The data is typically plotted on a graph of load vs. stretch. The stretch is measured in 1/100th of an inch increments. In addition they test samples which have been fluttered (whirled around

for 30 minutes to simulate abuse and wear).

For a given weight of fabric, a denser weave with smaller yarn size will generally perform better for our applications. The stretch along the warp and fill axis may not be better, but the stretch on the bias (diagonal) will be less. The bias direction is always the weakest in woven fabrics. The performance of a fabric in this direction is very important to us.

A discussion of the factors affecting *Durability* would include the weight of the fabric, the type and amount of resin in the finish and the fabric style.

Generally, conventional woven fabric styles, in heavier weights, with medium firm to firm (normal to slightly stiffer) finish, live the best. Most of the more exotic fabrics are more fragile. They often have poor abrasion resistance, tear easier, and, in the case of Mylar composite fabrics, are sometimes subject to delamination and/or have poor ultraviolet resistance. However, depending on the care they receive, they can perform well for years.

Fabric Weight is a large percentage of the total weight of your glider. The difference in weight between a sail constructed out of 3.8 ounce and 5.3 ounce cloth would typically be four to

seven pounds.

The types of *Finish* on sailcloth can be divided into two different categories:

- 1) Impregnated
- 2) Coated

Impregnated finished fabrics are permeable. The resin is applied to glue the thread together in the matrix in which they are woven to "stabilize" the fabric. All of the general purpose and colored fabrics on the market have this type of finish. Two examples of *Coated* fabrics are H&B "CYT" (conditioned yarn tempered) and Dimension "Duroperm." These fabrics are coated on one side with a layer of very tough, very low stretch resin. They have excellent structural performance, sometimes even better than the mylar fabrics, but are very stiff and hard to handle. They also have poor tear strength.

Tear Strength is usually a cut-and-dried straight tradeoff. Better performing, lower stretch fabrics usually have poor tear strength often requiring extra doublers (reinforcement "patches"). This is because the firmer finishes hold the threads in their woven matrix so they are torn one at a time. The softer finishes allow the cloth to deform a little to form a multi-thread ripstop effect.

Cost depends on many factors such as

availability, popularity, manufacturing techniques, and weight. Generally, heavier fabrics and tighter woven fabrics cost more.

The following is a brief discussion of most of the fabrics used in hang gliding in the past few years. Fabric is generally specified by its weight and finish. The weight is measured on a sailmaker's yard: 36 inches by 28½ inches.

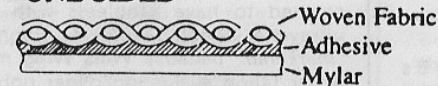
3.0 OUNCE

Available in colors, or at least it used to be, most standard rogallas were made out of this fabric. It is not stretch resistant enough for most applications on today's gliders.

3.8 OUNCE H & B

Probably the most common white fabric on the market, it has a fairly balanced construction between the fill and warp which gives good all around performance. They have made some compromise in the weave construction for economical production. It is available in a variety of finishes from medium firm through CYT.

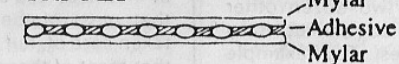
ONE SIDED



SANDWICH



TRI PLY



Top, the most often seen laminated fabric with one side cloth and the other Mylar. Top Right, a sandwich of Mylar between two panels of cloth. Bottom, a scrim of loosely woven cloth with panels of Mylar bonded to both sides.

Sailcloth (cont'd)**3.9 OUNCE H & B**

This is the colored version of 3.8 with some minor differences in construction. It does not perform quite as well and is available only in a medium firm finish.

3.8 OUNCE DIMENSION

Dimension's version of 3.8/3.9, it is available in two finishes called "Polyperm" and "Delwin" of which Wills Wing uses Delwin exclusively. The Polyperm is too soft and stretchy for most of our applications. The Delwin is slightly firmer than H & B medium firm.

3.8 OUNCE H & B CYT and NYT

These are the coated versions of 3.8 ounce. They are hard to handle but perform very well. Wills Wing usually uses mylar fabrics when we want the structural characteristics these cloths have to offer.

3.8 OUNCE DIMENSION

This is Dimension's "CYT" or coated finish.

4.4 OUNCE H & B

This is H & B's premium woven fabric. It is simply the tightest, best performing fabric they can make. They describe it as, "Weight for weight the strongest filled non-Kevlar fabric in the world. Tight fabric. Strong bias." It is available only in white, but a variety of finishes.

4.5 OUNCE DIMENSION

This is Dimension's version of H & B's 4.4 ounce fabric. Both of these fabrics cost about one and a half times as much as the normal 3.8 ounce fabrics.

There are at least two dozen other fabrics which these two companies make in these weight ranges. For example Bainbridge makes their 3.8 fabric (which they call BSDS) in 2.2, 3.0, 3.3, 3.8, 4.5, 4.75, 5.5, and 7.25 ounce weights. All these are called "Genoa" style. They also

make "High Aspect Mainsail" and "High Aspect Genoa" and "All Purpose" styles, et cetera. Of course each fabric is also available in a wide variety of finishes. This does not even include any of the Mylar, Kevlar, experimental, or other exotic fabric styles available.

The other popular fabrics you have seen are the Mylar composites. They are a combination of one or two layers of polyester film (Mylar is Dupont's polyester film) bonded to one or two layers of woven substrate of Nylon or Dacron. When these fabrics were introduced most of them were constructed of two layers of thin Mylar (1/2 mil or less) bonded on either side of a woven substrate for tear strength. This caused the severe delamination problems Bill Bennett experienced on the Phoenix Six series gliders, which were probably the first time these fabrics were used on hang gliders. It was a good progressive idea but it backfired. Incidentally, that particular fabric was manufactured by Noah Lamport, I think, and later came to be known as "Garbage Bag" in the sail industry. I was not implying that the other sailcloth manufacturers have not had problems. The next time these fabrics were marketed on a production glider they had other problems. All the Ultralite Products "OVR" 1's turned yellow and generally seemed to have problems with severe ultraviolet degradation. I emphasized "marketed" because Wills Wing made a Mylar fabric evaluation glider right after the Harrier was introduced, and did not have any problems with ultraviolet degradation... it just started delaminating at all the seams after six months. It seems that most of these problems have been taken care of, but one thing to remember is that most of these fabrics are designed for sailboat racing, and usually are not used for more than one season. No one has enough experience to guarantee their service life for our application.

Sailcloth (cont'd)**H & B SCRIM**

Similar to Triply, Scrim has only one layer of Mylar bonded to a layer of scrim.

One final point on all these exotic fabrics which is important to consumers. None of the Mylar composite fabrics on the market have been used long enough in hang glider applications to establish their service life. They perform (structurally) great, but I hesitate to recommend them to someone planning to keep his glider for a while, even if he does not mind the flight handling disadvantage. That is one of the reasons Wills Wing is cautious about recommending them.

Most of this article has been about the structural characteristics of cloth. For the most part, I have left hang gliders out of the discussion. Now comes the recommendations.

By now you know: the stiffer the finish, the lower the stretch of the cloth (comparable raw greige goods to begin with). Resistance to stretch allows for higher sail tensions. Higher sail tensions provide lower twist and therefore higher performance. For the same reason; the stiffer the cloth, the stiffer the handling of the glider. If I were to design the optimum hang glider fabric, I would make it about the same stiffness as a medium firm 3.8 ounce, but 100% elastic up to an ultimate strength as good as a 2 mil Mylar fabric. In other words, a lower modulus of elasticity, but an ultimate strength as good or better than today's high performance Mylar composites. You might be able to do something like that with a Nylon film composite. The closest fabrics to that ideal are H & B 4.4 ounce or Dimension's 4.5 HP. They also turn out to be the most durable in terms of tear, abrasion, and overall abuse resistance. If you do not mind stiff gliders, and you normally get a new glider every year or so, you should consider Mylar. If you are on a tight budget, or cannot live without color, consider a white trailing edge out of 4.4 or 4.5 HP.

Today's fabrics usually have one layer of Mylar to avoid the "I beam" effect of two layers, which was most responsible for the delamination problems. They also have a higher percentage of Mylar film, usually 1.5 to 3.0 mils thick. The Mylar film is responsible for 90% of the superior stretch characteristics of the cloth. The woven substrate is only added to improve tear strength or abrasion resistance.

Mylar fabrics are very stiff. It takes high loads to deform them. They also have very low elongation to failure, which is one reason they tend to tear easily. It is also the reason Mylar sail hang gliders tend to be a lot harder to turn. The fabric does not participate in the dynamic, flexible, asymmetric twisting of the wing.

These are the most common Mylar fabrics on the market. We have made sails out of each of them except "Triply" which is very similar to "Scrim."

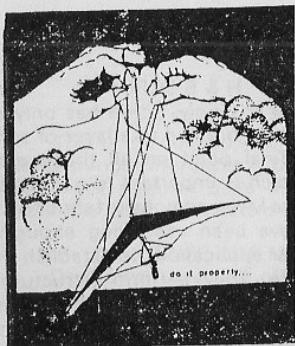
3.7 OUNCE H & B TEMPERKOTE

This is probably the oldest and most versatile composite on the market. It has undergone a lot of changes since its introduction. This particular weight has a two mil film of Mylar bonded to a woven substrate on one side. It is also available in various other weights with one to three mil films of Mylar and different weights of substrate.

Dimension makes a similar fabric to Temperkote, but I am not sure what is currently available in this style.

H & B SANDWICH

Right now, this is the most popular composite fabric for hang gliders. It is available in two weights. One has two mils and the other three mils of Mylar, sandwiched between two lightweight woven layers. Sandwich owes much of its popularity to its conventional look and feel. The 2 mil weighs over five ounces, but does not have any better structural performance than 3.4 ounce Temperkote.



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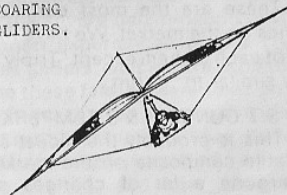
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Venturi type ASIs

The Venturi type ASIs in common use on microlights and hang gliders have some interesting characteristics worthy of note.

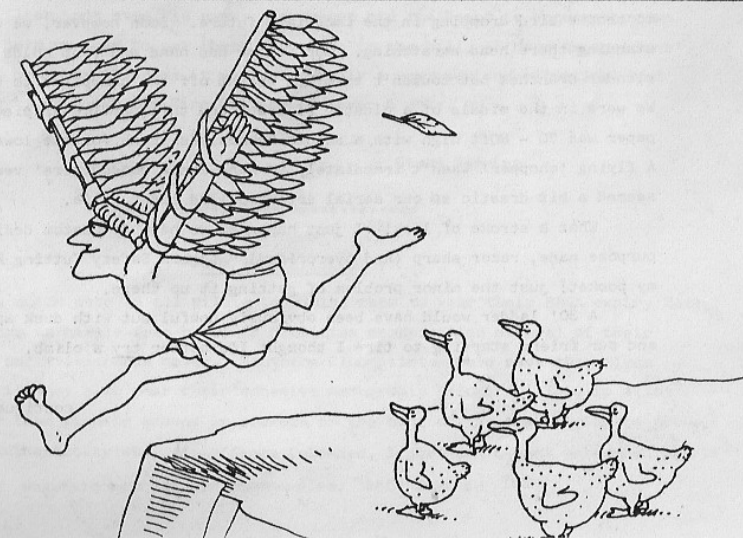
Firstly, it is easily observable that these instruments produce wildly different readings for any given airspeed when used in different weather conditions. More particularly the readings, especially at the high end of the scale, are typically very low in wet weather.

Of greater importance is the effect that occurs in even the mildest icing conditions. The ASI will cease to function altogether - that's right, the venturi ices up, even before the first hint of icing from your engine. The result is a fixed reading of your airspeed at the time of icing. Dive or stall, do what you will, there is no change in reading until you get clear of the icing layer and the ice disperses.

In extremis, I have noted on several occasions that the ASI did not indicate zero until some minutes after landing!

So, don't rely on your ASI, or if you need an ASI on your particular type of aircraft, buy a real one.

Ian Grayland.



BIRDMEN LIKE FLYING - NOT SITTING IN TREES

Friday, 27th December started normally, after seemingly weeks of South Westerlies the wind shifted to the North, so grab the gear and go Dyking again.

Arrived late as usual - about 12.30, to see half a dozen flyers enjoying the best of the day at 1000ft ATO (as usual). Nevermind, the air's crisp and flying good - a couple of Truleigh runs are great after a six week break. A two hour flight and my new Supp's still comfy, notable after 8 years in the painful stirrup, but enough is enough for the day. Family harmony is as finely tuned as any 5th generation supership, and was dependant on a dose of shopping on the way home.

Soon after landing at 3.15pm, I noticed a kite flying low and close across the face of the West bowl, in a series of left/right oscillations. The thought "strange place for those sort of antics" briefly flashed up and passed away until a couple of minutes later an overhead flyer shouted "Kite down in the trees!" This just about reached the attention threshold of a couple of fellow deriggers and after a few casual glances around one soul meandered to the edge out of curiosity (normal sort of Dyke day?).

Sure enough at the bottom of the bowl a kite was daintily spread across the uppermost twigs of one of the tallest trees around! Now there's bad luck and BAD LUCK, but how did he manage THAT ??

With a growing sense of occasion, two or three of us scrambled down the face and with initial relief found our sparrow friend unhurt and unlikely to become bird dropping in the immediate future. Soon however, we were standing there head scratching. Our fellow had hand and foot holds on the slender branches but couldn't take his weight off the hangpoint to unclip. We were in the middle of a cluster of trees and this particular piece of fly paper was 70 - 80ft high with a smooth branchless trunk for the lower 20ft. A flying 'chopper' wasn't immediately to hand and a woodcutters' version seemed a bit drastic so our aerial artist called for a knife.

What a stroke of luck! I just happened to have my custom designed, purpose made, razor sharp (and overpriced) "Riggers Safety Cutting Knife" in my pocket; just the minor problem of getting it up there.

A 30' ladder would have been obviously useful but with dusk approaching and our friend starting to tire I thought I'd better try a climb.

continued

BIRDMEN LIKE FLYING - NOT SITTING IN TREES - cont'd

A quick change from a flying suit to a monkey suit worked wonders and I somehow managed to squirm my way up to the first branch, realising en route just how unfit I really was (or just getting old - I used to enjoy this sort of thing).

I don't know this trees' name or parentage but it was not a nice tree. It did sprout a few branches but lots were dead and detached themselves readily; the upper limbs got very thin and we swayed about most unpleasantly in the dying breeze. But the knife was duly transferred. Unfortunately, the first five seconds of use proved too much and it promptly snapped in half! (can I apply for a refund, mon ami?).

Eventually, a carving knife was borrowed from the neighbours and a fellow flyer managed to scale an adjacent tree and pass it across.

The rest was all downhill (sorry) but the last 20ft was too much for our exhausted friend (he'd been hanging on for an hour and a half) and he accelerated rapidly according to ancient laws and ended up in a heap in the scrub across a barbed wire fence. But with only a scratch he hobbled off towards the road and we groped in the dark back to the top. The kite was left in the tree for the night - how did we get it down?

The Brigade had by now arrived in force with all blue lights flashing, but dispersed after picking their way up the track to the adjacent farm house.

In the heat of the moment I'd forgotten to ask any details of our lucky flier, not even his name, and no-one had the heart to enquire how on earth he'd managed to get there, so close to the hill. I hope an accident report has been filed as it was potentially a very serious situation, and having to call out the Fire Brigade is never a joke.

Steve Marpier

GOT YOUR STICKERS ?

Just a quick note to all pilots to remind them to wear their BHGA expiry date stickers as hassle-free proof to Committee members (and others) of their third party insurance cover. Southern Club pilots could save themselves aggro if they also wear their adhesive membership stickers. This is a lot easier than fishing around in pockets or the boot of the car trying to prove your authenticity etc. No offence intended, I just don't want uninsured pilots flying anywhere near me, or anyone else. Safe flying, ICS.

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<p>SOMEBODY lost a set of Lightning batters on the Dyke in early November. They are waiting for their owner to collect them at Sky Systems 0273-423650.</p>	<p>LOST: On 24/11/85 at Firle. Gold signet ring with a diamond in the center. Engraved on the inside is "Kevin" and "7-6-80". If found please ring Kevin Turner on 01-518-6410 and the drinks will be on me.</p>	<p>FOR SALE: Magic 1 165 As new, dark green, gold & white. Vert little airtime kerpt dry indoors, has not flown for 2 years (baby). Bargain at £645 ono. Tel:(0273) 505892(H) 423650(W).</p>
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<p>LOST ON THE DYKE 2/11/85 Sky Systems Stirrup harness (dark blue with 2 lighter blue stripes on chute cover) and Life-Pak parachute. Ron Steadman, Redhill 65510.</p>	<p>FOR SALE: Hiway Vision. 1 year old. Immaculate condition. Rainbow u/s. Speed bar. Suit P1 right through to XC pilot. £800. Mark Woodhams on Brighton 501043.</p>	<p>FOR SALE: Magic 3 166 Two tone green, aerofoil uprights & speedbar. Excellent condition, £975 ono. Phone Ian (0273) 775114/423650.</p>
<p>FOR SALE: Typhoon S4 white mylar l/e, speedbar + two uprights. Red undersurface, £850 ono. Phone Ron on 01-462-8434.</p>	<p>FOR SALE: Thommen Alti £55. Voice activated Talkman 2-way speakers (size of cig packet) PP3 batteries £40. Ideal for hang gliding, hiking etc. Eddie, 01-684-7427.</p>	<p>FOR SALE: Clubman Single Surface Glider 140. The Ideal First Machine. Golden Yellow Sail. 1½ yeras old. £550 ono. Phone Chris Jones: 01-407-6021 Ext 239 (Work Number Please Be Circumspect).</p>
<p>FOR SALE: Magic 3 166 Yellow l.edge, green undersurface, speedbar. V.g.c., recent Sky Systems overhaul, £800 onvo. Tel. 0273-202316.</p>	<p>FOR SALE: Magic 3 166 Dark green l/e, light green u/s. Aerofoil uprights + speedbar. V.g.c. £800 ono. Paul Ray, 04446-47262</p>	<p>FOR SALE: GYR 188. Very good condition, low airtime. Red, orange & yellow sail. Owner going abroad; £475. Tel. 01-948-5606, Gordon.</p>
<p>FOR SALE: Secondhand 24' parachute, never used. Complete with new Lifepak outer bag, £169. Tel: Sky Systems (0273)-423650.</p>	<p>FOR SALE: Immaculate Magic 4 177 with all extras. Call Tim Bardon on 0273-609925. £1001.</p>	<p>FOR SALE: (Pod type) Integral harness. £100 ono. Tel. Ray 0273-699097.</p>
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AIRWAVES MAGAZINE

In February Airwave Gliders will be publishing Airwaves, the magazine for owners & potential owners of Airwave gliders. We have engaged the services of Simon Murphy, a well known scribe and Airwave's best U.K. dealer to be editor. Airwaves will start as a 16 page, A4 size, quarterly magazine. It will be available to anyone who subscribes at the appropriate rate and the first issue will be free to those who buy a one year subscription. There will be a free one year subscription to all those who buy new Airwave Gliders from now on and one free issue to the new owner of a used Airwave Glider.

Airwaves is intended to communicate to owners of Airwave gliders news and information about their glider (new or old), their dealer and the Airwave company.

Topics to be covered in the Airwaves are as follows: Product News, Airwave Gossip, Technical Section, Maintenance and Modifications, News from Dealers, Tuning, Dealer Spotlight, Interviews, Travel Section, Events, Letters.

To Encourage contributions to Airwaves the Magazine is offering free hats, T shirts, Sweatshirts, and even a FREE GLIDER, see the first issue.

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