

interests. Scotland has a wealth of hills as potential flying sites, granted some will be superior to others, which have never been flown and it could be in our long term interests to have a large number of small clubs rather than a few large clubs. By spreading ourselves about our impact on other interests and activities will be minimised. This brings me to my final point. Checking out flying sites and obtaining permission to fly takes a considerable amount of time and effort by a few people, i.e. secretaries, area reps etc. Members of the S.S.A. could assist the development of the sport considerably by looking out for sites and obtaining flying permission from the landowner and farmer. The more sites we have the better but your secretaries and area reps can not do it all.

Owing to our own particular difficulties at Tinto and membership restriction we will also have to restrict visitors to the club site. If you wish to fly at Tinto as a visitor do not just turn up on a Sunday morning and expect everything will be alright. A telephone call to Gordon Murray or myself the previous day or Sunday morning before 8.45 am will normally be adequate notice but we will have to restrict visitors to ten in number on any one day with a maximum of three kites. We are sorry if it appears that we are developing into a bureaucratic organisation but we wish to keep our flying sites not only for ourselves but for the benefit of all S.S.A. members. One final matter; visitors wishing to fly will require to take out a day membership for a fee of 50p. Apologies once again but unfortunately kites are not the only thing which is going up these days.

F.H.J.

UP YER KITE!

LOTHIAN SAILING CLUB

Well here we are again - Winter's here and all is not well - bad weather most weekends, rain and fog the other weekends. How about a compulsory fly in at the Bahamas every fortnight that every SSA member must attend. Worried about money? - no problem - this week put only half your wages into the Church collection box and make a vow never to break any kite spars or if that fails tie the broken bits with string (borrowed). A point to note here - the string should be of a very high quality to withstand the Bermudian sun's renowned string rotting characteristics.

Throughout the recent wave of tornadoes the Club has ventured out and managed to get some flying in around about the Biggar area. During one of these endurance tests we managed to write off our old faithful club kite again and are in the process of building her up for the third time with good quality gut from a decaying sheep found by our treasurer Ray Ford as he belly landed into its posterior (bum if you like).

The Club still meets every Wednesday in the Caiystane Hotel, Camus Avenue, Edinburgh, so if you've nothing to do or even if you have and you want to get away from the wife come and join us and discuss the misery of the previous weekend weather or forecast what miserable weather we can expect in the following weekend. Or, alternatively if you can't afford to buy us all a couple of drinks on the Wednesday night but fancy a day's flying with us, phone myself (031-556 1651) or Andrew Swanson whose number is 031-667 2164.

ALISTAIR MUNRO
Club Secretary.

Campsie Camikaze Club

The Constitution of the club has now been approved and details lodged with the SSA.

Office bearers are:

Chairman and Safety Officer - Don Sims,
Secretary and Treasurer - Colin Charles, from
whom membership applications forms may
be obtained at the following address:

43 Owendale Avenue
Bellshill
Lanarkshire

Annual Subscription has been set at £2.00, with day membership available to visitors at 50p.

Negotiations with land-owners are well established and members are soon to be issued with a reference map giving details of sites and any relative restrictions.

It must be stressed that the Campsie sites are not suitable for beginners, owing to:

- (a) Turbulence in landing areas.
- (b) Precipitous take-off points.
- (c) Restricted landing areas.
- (d) A maximum height limit of 2,000 feet due to the proximity of Glasgow Airport.

Recent visitors to the club were Ken Messenger of the B.P. Team, who soared for over an hour off the south face at Crow Road in their "Second Generation" Dragonfly gliders.

Colin Charles,
Secretary.

NAPIER HANG GLIDING CLUB

During the summer the club achieved considerable fame in the aeronautical art world with our sculpture in aluminium, nylon and steel wire, aptly named "write off". 6 months later we still have no kite as the insurance company seem very reluctant to become involved with us. (Who can blame them?). Moral: never insure with a broker who knows nothing about hang gliders. Due to this there has not been any flying to date although there is no lack of interest in the club and new members are joining at a steady rate. This interest was further stimulated by an excellent talk and film show by Brian Harrison and Peter Mayo. Things should start with a bang (pardon? in the New Year, as we should have received our allocation of money from our sports union and have our kite repaired. With the money it has been decided to get a two-man training kite and another single kite.

We would like to say "Bye-Bye" to Landale, who has graduated (cries of disbelief!). I am informed that this is a painless operation and leaves no scars. He founded the club and was its first instructor and El Presidente. In his shame he has moved to Aberdeen to try and start yet another club. (Mad dogs and).

Alfred Sludgepump

ATTENTION - ALL CLUB SECRETARIES!

Breen Hang Gliders have offered to put on a film show and display for any interested Scottish Club.

Rough details are as follows:

Saturday Night - Film Show: Approximately 1½ hours of films including the Lillienthal meet in California this year.

If the club concerned can arrange the room at a local pub then Breen Hang Gliders will foot the bill.

Sunday: A display of Breen gliders at one of the club's sites where it will be possible for club members to fly the kites and weather permitting tandem flights for anybody who 'fancies a go'.

Further information from: Breen Hang Gliders
New Road,
Crickhowell, Powys, Wales.

Tel: Crickhowell (0873) 810019

**FOR THE VERY BEST
HANG GLIDING EQUIPMENT —
BREEN HANG GLIDERS
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TEL. 0873 810019

INTENSIVE CARE UNIT, ROYAL INFIRMARY - ACHILTIBUIE

Dear Editor,

It was with some dismay that I read in the last issue of your magazine of the unfortunate exploits of your correspondent, Mr Abludd E. Twitt.

Having now been flying for some time (three days to be exact) I feel that I can put forward some experienced views on his flying exploits, and possibly point out where he is going wrong and hopefully preserve some flying sites for better fliers like myself, before they are lost by his inconsiderate actions.

In the first place, he seems to have more money than sense, as it is totally unnecessary to go to the trouble of actually buying a sailwing. I have built a reasonable replica of one for the mere cost of 72p, which was the cost of the necessary brass bolts to hold the bits together. The main poles are made from bits of bamboo, which I scrounged from a Pakistani carpet vendor in the Glasgow "Barras" at the end of a bit of haggling (which also gave me fifty-three square yards of genuine Indian type carpeting made in Tiawan at the modest cost of £87.00).

Quality of material was assured by the fact of it surviving such a journey intact. The control frame was made from three broom handles and bound with sticky black tape at the corners, which prevents any splinters getting into ones fingers except for the bit in the middle which I covered with garden hose to hide the glued joint. I also fail to see the need for all the unnecessary weight of wire cables on other machines of lesser design, so I used some of my mother's washing line which is very flexible and stretches well to accommodate the bendings of the frame. This is not only lighter but my mother has not missed it yet anyway.

As I am a no-good solderer, this meant that I could use knots, which also allows for quick repairs after crashes, and perhaps you could send me a diagram of granny and reef knots just so I can practice the right ones whilst I am still in bed.

The sail was a problem till I visited the "Barras" again where by Pakistani friend put me in touch with his second cousin who was able to supply me with ample material which he described as best quality knicker-nylon. I was doubtful at first till he showed me the super stretchy quality in very pretty colours, so I chose 100 square feet of assorted colours. You may well wonder why I only took 100 square feet but the stretchiness of the material makes up for the size and it only cost me two dozen shirts in the same material and all at a cost of £46, a bargain indeed!

Making up the sail was a problem, as I am a no-good sewer, so I used some of the

same sticky black tape for this job, and also bound up the back end of the sail with the same material to stop it flapping. The nose-plate things I have seen on other kites were easily made from an old cocoa tin which I straightened out before punching holes in it with a nail.

Finally the great day arrived when all was ready for the first flight. Not having a car (as I was banned by some fascist policeman for ten years) I loaded the bits on my bike and rode off to the nearest hill, which was a railway embankment. Soon after arriving I had my kite assembled, but noted that I had forgotten to bring all the bits of washingline. This problem was resourcefully solved by using some derelict wire hanging on the poles at the side of the line. I did not forget to do a pre-flight check as you have always stressed, but as I was confident of the superior construction of my kite, I just did not consider it necessary.

As my harness had fallen off my bike somewhere I again improvised by using a plank of wood from a nearby railway hut which I kicked off with my 'Bovver Boots' and tied on with some more of the copper wire which abounded along the line.

All was ready, so I ran down the embankment and jumped into the air, but soon came to earth as I had forgotten what you had said in the handbook about wind direction and was flying into the wind and I'm sure I read that one should take off with the wind behind to help get up speed, so I tried again from the other side. This was much better as I found myself being blown down the slope so hard that I really had to run hard and just managed to jump off the ground with enough height to clear the wires above the track.

Unfortunately the wind got on top of the sail and it fell through the frame and covered my face so that I didn't see the train coming out of the tunnel. The superiority of the construction of my kite was proved when the side poles touched the overhead wires - just think what might have happened if they had been made of dangerous metal - and bounced off without any harm to the kite, although the wires dropped off and hit the rails with a few sparks, I'm sure they were easily replaced later.

This also had the effect of stopping the train a few yards away from where I had landed, but the driver (who seemed to be suffering from a heart condition as his face was quite purple) did not seem to share my view of a near miss, and became quite incoherent when I pointed out how closely he had come to damaging my kite. It was only then that I realised what a bigoted prejudiced lot of sods the public

are, as he proceeded to set fire to the kite which was a bit rash, as I was still tied in to it at the time and suffered second degree burns.

I would be pleased therefore if you would claim on the insurance company for me for the cost of a replacement kite and ensure that my claim is attended to before that fool Twitts is even considered.

Yours sincerely, D.A.M. Tidiot

P.S. The driver said that you would hearing about this, so expect to receive a delegation from British Rail who will doubtless back up my claim for damage to my widdermaker kite.

DA VINCI'S GHOST

Ah, Leonardo -
If only you had known,
For you had enough bravado,
And the field was all your own.

No other fool was trying,
The skies were high and wide,
Only the birds were flying...
Perhaps that's why you tried?

But for all your string and parchment,
Your feathers and your glue,
This was the one department,
That baffled even you.

Yet now it often seems to me,
When I'm soaring all alone,
That your grey ghost sits beside me,
And I hear you gently groan:

"I had the right idea," you say,
"But my wings were much too small -
And I couldn't seem to find the way -
And those feathers ruined it all!"

Then, when you've done with crying,
Why! - your shade seems more at ease,
For now, at last, you're flying!
- Like a feather on the breeze.

BY B. LUMLEY

IMPROVE YOUR TECHNIQUETUNING ADJUSTMENTS

Rigging and load point adjustments are standard fittings on OSPREY Sailwings. All of these affect stability, the location of the centre of pressure developed on the wing or the point at which load is applied. The dihedral on the cross boom is fixed and is not adjustable.

Five holes are drilled on the top and bottom brackets on the rear end of the keel. The further forward the attachment point on the lower wires then the greater is the reflex of the keel. Increasing the reflex on the keel moves the centre of lift forwards on the wing and thus decreases the penetration. Thus to balance this effect the 'A' frame has to be pulled towards the pilot in flight to counteract the effect.

You will not be able to feel the balance of a wing in flight for some time until you are long enough in the air to gather whether a mean pull, push or nothing is to be exerted on the 'A' frame. Once you can feel this, correction to the load application point by moving the attachment on the 'A' frame bracket can tune the wing in such a way that it flies very well hands off.

You will find that as your flying experience increases, the balance of the wing is influenced by the ambient conditions relating to particular slopes and wind speeds. For early flights leave the rigging adjustments in one fixed position. - They are arranged such that you cannot put negative reflex on the keel (i.e. centre up and ends down). Adopt the centre loading points on both the keel reflex and the 'A' frame bracket for initial flights.

Note that the attachment of the fore/aft top rigging wire is fixed to the aft end of the keel fitting for maximum reflex and the forward end for minimum. The remaining required adjustment is available on the rigging screw, to tension the rigging.

WHY HAVE KEEL REFLEX?

It may not appear obvious why there should be reflex built into a wing - after all good high lift aerofoil surfaces are shaped in the opposite way - perfectly true. If the keel were reflexed with the centre up and the nose/aft end down the lift co-efficient for the wing would go up but at what penalty? - pitch and speed stability?

Reflex can be considered as a lifting surface located at the rear of the keel as indicated in Figure 1.

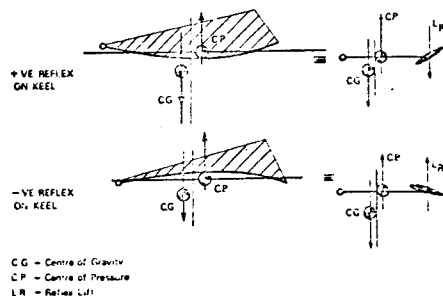


FIGURE 1

The centre of gravity is placed forward of the centre of pressure and gives a pitch force couple tending to pull the nose down thus decreasing incidence and increasing speed. (Do not contemplate having the C of G behind the C of P). This couple can be considered as constant for flight at normal attitudes. The force couple induced by +ve reflex (which can be considered as a surface at the tail giving a downward force) increases with the square of the air speed. Thus as the speed increased the reflex force increases and produces a couple which will neutralise the nose down couple induced by the Centre of Gravity being in front of the centre of pressure of the wing. If this force balance is arranged such that the wing will balance at ideal flying speed then we have a wing which is stable and flies 'hands off' with minimal pilot control force.

Consider the case of negative reflex, the force couple induced by the reflex then assists the C of G couple which will cause the nose to drop, decrease incidence to the point of zero lift and then 'tuck under' - a highly dangerous condition.

Thus fly a wing with near zero or negative reflex at your peril. Remember the most serious undesirable characteristic of Rogallo wing is a luffing dive and negative reflex will create just that! Accept the penalty of slightly reduced lift in return for the safety of pitch and speed stability.

CHOICE OF SLOPE

The choice of slope for early flights may prove to be an almost impossible task. Even if you find a slope of the correct gradient, difficulties like Roads, fences, telephone wires, railways, power cables, rivers, boulders, hills, trees etc. suddenly appear. It doesn't seem much to ask - a slope with nothing on it and a clear area at the bottom, but you try to find it! Local knowledge, a good pair of walking boots, a 1" ordnance map and a lot of patience provide the only means of solution if you don't have the benefit of knowing someone who has already found a suitable site.

The slope must be between 1 in 3 and 1 in 4 for your first attempts, no more than 50 feet high with as clear a distance to windward as absolutely possible - The forward clear distance required is related to the size of the obstacles to windward which will induce turbulence. Flying in valleys is not recommended as the wind direction frequently varies with distance up the slope and turbulence may be severe.

The wind must be blowing directly UP the slope (yet another difficulty) not across it or down it. Take extreme care, if you select take off from the lower part of a large slope, that the wind-speed is not much higher further up - you must not soar on your first flight. Because of 'wind shear' - a phenomenon mentioned later in the text, the wind speed 20 ft up may be considerably greater than on the surface.

There can be no substitute for help from an experienced pilot in finding a suitable slope. Remember don't fly off anything from which you are not prepared to fall uncontrollably and what goes up must come down - not necessarily in the same place - so make sure a good landing area free from obstruction is available. - Beware of 'Wood Magnetism'.