

Leek & Moorland Model Gliding Association

<http://www.lmmga.co.uk/>

June 2015



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Club Competitions

Just a reminder that there are only two competitions this year.

The first is the two day scale event which takes place on Sat.15th and Sun.16th August. The second one is the RAFMAA mix grill event (Fly for Fun/X country etc.) This will take place over the weekend of 11th and 13th of Sept. Please make a note in your diary. All club members are invited to take part ~ Weather permitting both events will be well worth a shout ether as a competitor or spectator

For Sale > Spectrum DX7 transmitter with box and instructions £50

Wanted> A 2M glider similar to a Vector 3

E mail Contact>> sharkey.1@btinternet.com

Front Cover It looks as though the model that Graham Gibbons did a kit review on in the March Newsletter is becoming very popular on our slopes. This photograph was sent in by Dave Gains taken at Edgetop. It shows two (Ospreys or Salangane it has two names depending where you buy the model from) . The guy on the right looks like Tony Gilbert, not sure about the other one

Rhönsperber. By Phil Clarke

History.

Gliding in the 1930s was a relatively inexpensive way of learning to fly and many great designs were produced in order to achieve this, particularly in Germany. However, many of the top performing sailplanes were of 20 metres wingspan and tended to be expensive so were only produced in small numbers.

In 1934, in order to increase the appeal of flying to the aeronautically minded, a new design was produced by an established designer named Hans Jacobs which was smaller at only just over 15 metres span and, therefore, correspondingly cheaper. He named this aircraft 'Rhönsperber' and it soon began to win competitor break records and was produced and sold in relatively large numbers.

'R/C Scale Aircraft Quarterly' (winter 1987 issue) published two articles on this aircraft, one relating to the full-size machine by Martin Simmons who says that a lady named Joan Price imported a single Rhönsperber to England in 1935 which she then sold on to a syndicate of three, one of whom, Christopher Nicholas, won the 1939 National Championships with a flight from Camphill in Derbyshire (not too far from where we fly) to Southend, 260 km.

The second article was by a Glyn Fonteneau who had produced plans for a 1/4 Scale model of the Rhönsperber based on another full-size machine, based down at Dunstable. Many parts of this aircraft had apparently survived WW2 (just) and after extensive refurbishing over the years by various owners, it finally found its way back into the air due to the efforts of a keen sailplane enthusiast named Rodi Morgan who tragically died in a gliding accident in 1980 just after the 'Sperber' was finished. As a tribute, this 'Sperber' now bears his name.

I immediately thought, 'Must build one of those'. M.A.P. had a small temporary office for the week on the campsite so I ordered the plans of the Rhönsperber there and then.

In 1988, on one of my holiday excursions to a modelling week at Primrose Valley near Filey Brigg, someone turned up with a big, beautiful model of a 'Kranich' which happens to be the two-seater trainer version of the 'Sperber'. (picture enclosed). Close friend and fellow modeller Don Robinson on the same holiday was given the sticks for a while one day by the owner whilst we were flying at the Brigg. The model flew beautifully and I immediately thought, 'Must build one of those'. M.A.P. had a small temporary office for the week on the campsite so I ordered the plans of the Rhönsperber there and then.



I'm not a particularly fast builder but you may be wondering what took me so long to build my version of the Rhönsperber; like 1988 is 27 years ago !. Well, over all those years I must have had the plans out twenty times (once a year is about right) to

scrutinize. Each time I figured that the amount of work involved was just too much. A short time later and after retirement, I then started on a much bigger and even more demanding project; the 1/4 scale Cessna Skymaster which occupied me for some years.

Having got that out of my system, two years ago I had yet another look at the plans and thought - 'the ailerons look to be the most difficult parts to build, I'll have a go at one to see how I get on'. After I had done one I just kept going. Like Glyn. I have chosen the 'Rodi Morgan' colour scheme.

Enclosed are a few pictures of wing and fuselage construction with explanatory notes. After Cappuccinos and Half-pipes, when flying, it feels as though - I'm driving a Trent bus - but it's all mine.

Phil Clarke.





A.- Port outer wing panel with a batten clamped to the false trailing edge to ensure straightness as we are dealing here with an aileron 42" long and which, of course, has to rotate .



B. In the aileron recess and same jig will be used to drill aileron.

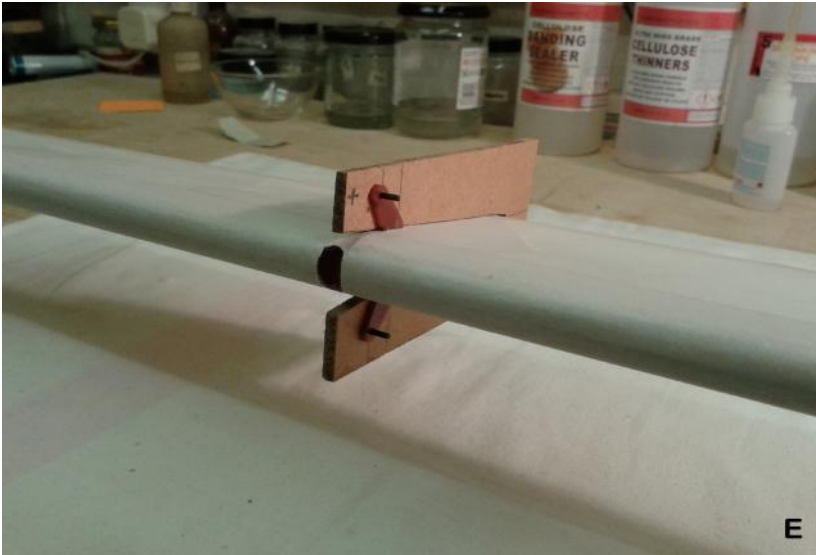
Hinge jig can be seen clamped in aileron recess and this will also be used to drill aileron.



C.—Again, using fuselage jig to support aileron with hinge jig in position ready for drilling.



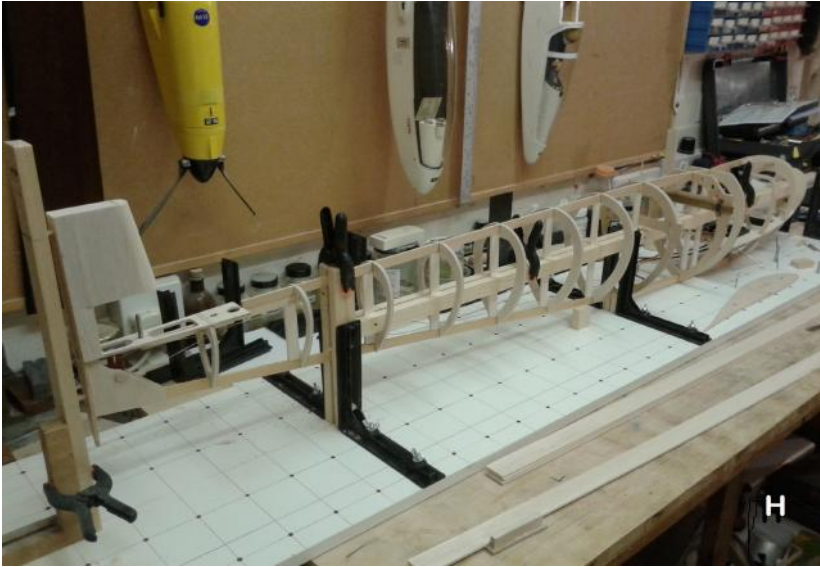
D. – How I stowed the aileron servo lead by wrapping it round a length of plastic tubing (this is actually the top of a felt pen—you can just see the clip). Double sided tape also works well..



E. - When driving an aileron with two separate servos it is important to keep the linkage geometry identical otherwise the servos will fight one another. I used a small pinned jig plate to ensure same alignment for all four aileron control horns.



F - Wing construction complete but to facilitate handling, inner and outer panels were not joined until covering had been applied



H. - Plan designed for two halves keel construction but I added $1/8 \times 1/2$ temporary verticals to the keel at each former station, sandwiched that between two battens mounted vertically on fus. Jig, Full formers were then added and planking applied, a piece at a time on each side to balance the applied strain produced by the curvature.

When sufficient rigidity, battens and verticals were removed.

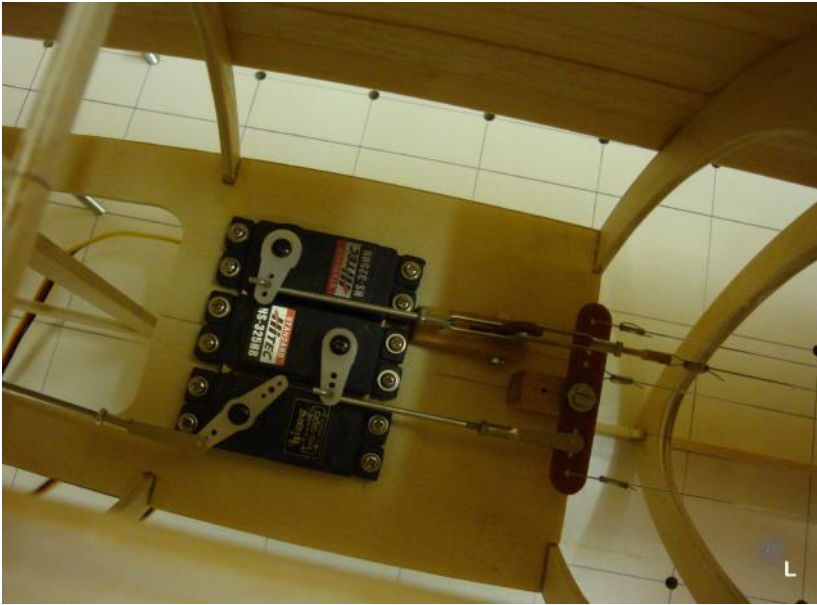




J. - Tailplane and Fin & Rudder mounted. Lots of tedious work in both.



K. - Had to make special hinges for canopy because hinged edge is curved so each hinge pivot has to stand proud of fuselage edge.



L. - Servos installed in lower cockpit area with closed loop cables to both elevator and rudder. Third (lower) servo is for cable release in case I ever have the nerve to try an aero tow



M. - The hole in the mahogany noseblock is access to the cable attachment and release mechanism. Plugged it during painting and not yet removed.

Finally, a word about logos and lettering.

Club member Brian Lee had kindly helped me in the past with a big vinyl logo for my K.K.Falcon power model and then another friend put me on to someone relatively local in the Derby area who has a Dolls House shop at Sawley Marina. His side line is doing logos for the boating fraternity so I paid him a visit to see if he could help me with the Rhönsperber. He was most helpful and had a computer program allowing him to 'doctor' individual letters like the capital 'R' which I hadn't been too happy with initially. If you need anything doing like this he is on-line but it is worth having a word:-

Dollshouse Cottage Workshop - 01159 465059



Wanted for the Newsletter Your tips ~ advice ~ moans and groans
Photographs with captions ~ Your modelling anecdotes, Kit reviews ~ et
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Email to i.bradbury2@ntlworld.com



In the last newsletter (March) there was a letter plus a couple of photographs from a guy in Sweden. This guy and a few of his friends flew there models from what appeared to be a really rough shard heap.

In the letter I said the site looked so rough that I didn't know how they could possibly land their models. This picture (which came from Sweden after our March newsletters had been sent out) shows how they do it



This is Mark Ollier's Vega {a 10'4" scale model design by Pat Teacle} The photograph shows it flying over the sea at the Great Orme Llandudno' This was its last flight because a few minutes after this photo

was taken Mark's TX stopped talking to the model and the Vega flew out to sea as straight as a rod and landed with barely a splash some two to three hundred yards from the shoreline. The model disappeared without a trace

The photograph was taken by Graham Gibbons on the 1st March 2009

The lift generated from a coastal slope is usually so good and smooth that it outweighs any danger of a land-out.

An Ancient Modeller's

By B. Smith

Tale About Tails

Have you noticed that as you get older, the actual time you spend flying on the slopes seems to get less and at the same time, the time you spend reminiscing about "The Good Old Days" gets longer. This is particularly true for the members of our over 65club

It was during one of these ~~ "Do you remember the time when multi-channel radios were just coming onto the scene and most of us were getting carried away with the increase choice of model designs available now that our single channel trannies were gathering dust in the attic?"

A favourite topic at the time was tailplanes: > Was a 'V' tail better than a 'T' tail? Was an all-moving tailplane better than a conventional tailplane and what about those lifting sections for tails;; were they better than symmetrical sections? At the time, I thought the choice of tail feathers was becoming a bit like ladies fashion with the flavour of the month being led more by what the so called top pilots of the day were flying and writing about rather than performance.

My old mate Charlie Darwin had this theory about tailplanes. He reckoned that if a 'T' tail stood out as being much better than any of the others; it would be "Good Night Vienna" with all the 'V' tails and the rest in less time than it takes to shake a stick. 50 odd years latter I'm still flying models with 'V' tails and the rest.

Undoubtedly the performance/design of models have improved beyond belief since those early balsa bashing days but I reckon 99% of that improvement has been the result of new materials and better radios than with the choice of tailplanes, elevators and fins.

My very first lesson in aerodynamics was when I was in the next to the

top class at Chell Elementary School (all boys) although at the time, aeroplanes were the last thing on my mind (I was 12yrs old)

It was one of those rainy dinnertimes: The teacher had popped out to the staffroom for a crafty fag and had let us stay in the classroom because of the heavy rain.

Some kids were playing draughts, some dominos. Me and the lad in the

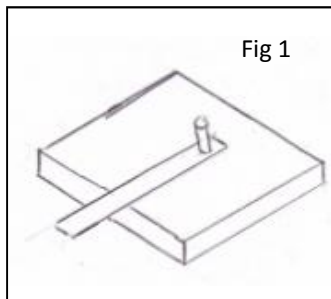


Fig 1

next desk had come up with a brand new game. It was bombarding the domino guys with pieces of chalk and plasticine fired from our own made medieval sling (See fig 1)

The sling consisted of one of those 12inch wooden rulers (30cm long) placed on top of the desk with one third of it overhanging the edge. A piece of chalk/plasticine was placed on the other end of the ruler and the overhang was struck with our fist as hard as we could. The direction of the missile was OK but the range was a bit hit and miss.

Our ammunition soon ran out, We'd only got three bits of chalk and two pieces of Plasticine to start with. For some unknown reason, after the last of the chalk had gone, I put a sheet of paper on the ruler and gave that a hefty whack. (Fig2) I'd no idea what would happen; maybe the paper would parachute down on the domino guys? What I didn't expected was the ruler to snap as clean as a whistle while the sheet of paper hardly moved.

Unfortunately for me, Sir had come back from his crafty smoke and had seen the last of the missiles being fired as well as the disaster with the wooden ruler.

Sir's index finger seemed to grow twice the

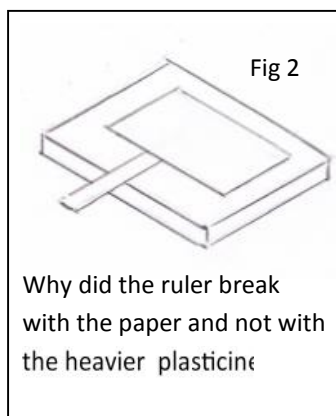


Fig 2

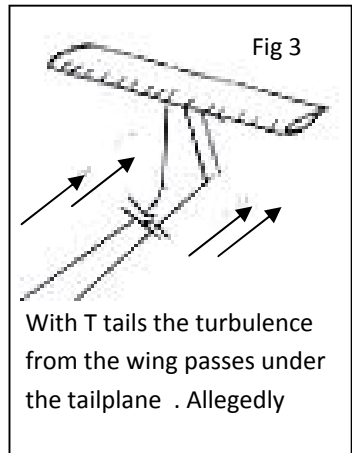
Why did the ruler break with the paper and not with the heavier plasticine

length of a normal finger as he beckoning me to come towards him.

He glared at me for what seemed ages and then surprisingly said "Smith! What day is it?" "Friday Sir" "Well Smith! You've got until Monday morning to tell me why the ruler didn't break when it slung a heavy piece of plasticine yet broke when you tried to sling a much lighter piece of paper. If I get the wrong answer, there will be two strokes of the best waiting for you on Monday morning as payment for the broken ruler.. Now go and pick up your missiles and put them in the bin".....

I did quite a bit of research over the weekend but on Monday morning I found out that a coalmining father doesn't know sh!t about medieval slings.

If some beginners to our hobby listens to the (experts?) on the slopes talking about any aerodynamic issue they will probably end up more confused than ever. Take the 'T' tail for instance; Some sing its praises because they say it fly's in cleaner air than conventional tails and therefore it performs better, (the turbulence from the wing passes underneath it) Others say they're crap because they are more prone to fuselage damage just in front of the fin with anything but a perfect landing and with only having a small area for the tailplane to sits on (top of the fin) it's more inclined to get damaged when transporting it in the car to and from the slopes.

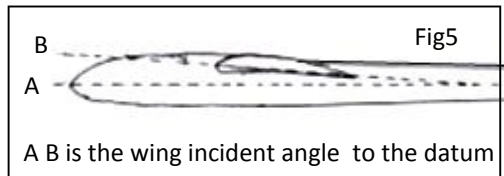


Anyway back to Monday morning at Chell Elementary:

"Well Smith! Have you found out why the ruler broke?" "Yes Sir, it had already got a crack in it so it was weak in that spot" "Nice try boy but

if that's the best you can do it looks as though I'll be needing my stick." He then went on to explain how with the plasticine only having a very small cross sectional area, all the ruler had to do was to move the plasticine's weight where as to move the paper it had to move all that air above the paper as well as the weight of the paper and the ruler wasn't strong enough to displace all that air at the speed I'd hit the ruler so it broke. "Now do you know why the ruler broke lad?" "It's like a tail on an aeroplane, it holds the plane steady to pitch" "Yes Sir" I nodded, although at the time I hadn't the foggiest idea what he was talking about with words like cross sectional area, pitch and displacement. It wasn't until I started to make aeroplanes with balsa wood a couple of years later that I saw the similarity that a tailplane on the end of a fuselage had with that piece of paper on the end of a ruler. It was then I realised that Sir wasn't so barmy after all ::

Over the years I've noticed a couple of things modellers tend to get confused about with tailplanes: one is the importance



of lining up the tail fuselage and wing correctly to get the right incident angle to a datum line (some call it angle of attack). Unlike in the DIY only days, it's less of a problem now with all these Ready to Fly models on the market. It's only becomes a problem if the RTF model's fuselage breaks and as to be realigned

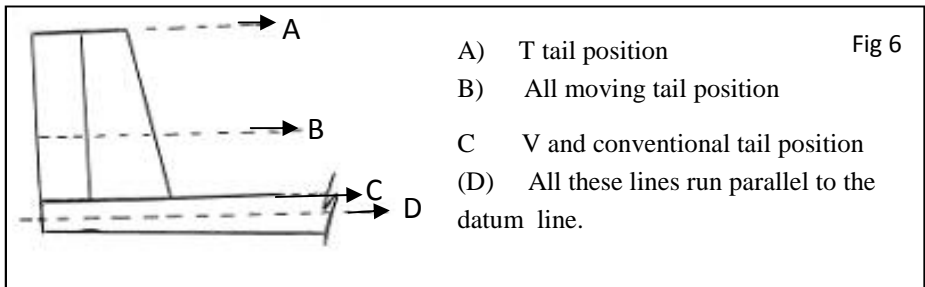
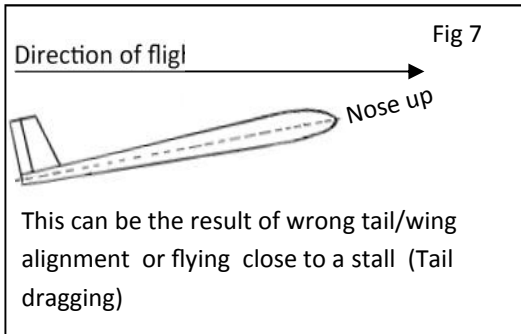


Fig 5 shows the angle (degrees) of the wing to the datum line. The datum line is an imaginary line that runs down the centre of the fuselage. The tailplane sits on a line that runs parallel to the datum and the wing sits on a line usually between 0° to 2° positive to the datum depending on the wing section see Figs 5 & 6 All our speed merchants and those who ride pushbikes know all about drag ~ it's the wind that always seems to be



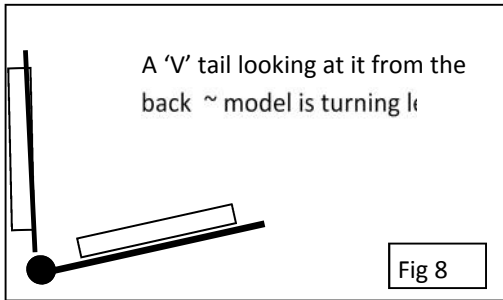
against you holding you back ~ the faster you go the stronger the wind. What a good model designer tries to do is to reduce this drag to a minimum particularly parasite drag. (The drag that doesn't contribute to lift and

efficiency, Fig 7 is a case in mind) What some don't realise is just how much the drag is affected by speed.

In the formula for working out the coefficients of drag; speed is squared. This means that drag in the equation for a biker traveling at 10mph is $10 \times 10 = 100$ Double the speed to 20mph = $20 \times 20 = 400$ Doubling the speed as increased the drag four fold. Take a look at Fig 7 again. I think most of us are guilty of flying too close to a stall in marginal conditions. If so, all that you've done is to increase the angle of attack of the wing (More drag less efficient) and increased the frontal area of the fuselage (More drag less efficient) If your model is losing height at neutral trim its because there ain't enough lift ~ don't make it worse by tail dragging;

Finally: Rudders on 'V' tails:: If I had a pound coin for every time I've seen the rudders on 'V' tail models set up with the wrong throws, I'd have

enough money to buy myself one of these all carbon top of the range dream machines. So here we go; 'A Beginner Guide to Rudders on V' Tails.



Look at the model from the back. Turn the model so that one half of the tailplane is vertical see Fig 8. Now think of the vertical part as an ordinary fin/rudder ~ Left turn :: rudder swings to the left ~ right :: rudder swings to

the right. Do the same with the other half; OR if you are really smart, twist the model back into a flying position and when the tranny says turn left, the left half goes down and the right half goes up.

PS: > By the way; I didn't get the promised two strokes off Sir..



On the Left :: Rex Collier with his 'Wicked Wing XX' from Hobbyking and Brian Lee with his 1½M 'Fire Blade' ~ a glass and carbon model



There was a good turnout at Edgetop on Sunday 10th May ~ Julian Bayley in the foreground checking the throws on his model before giving it the big heave-ho

Danny Cattell taking it easy. It's nice to see him with a glider in his hands again. Not seen much of him this year. By the way Danny! Tough guys don't blame the weather for not turning out



Looks like Bez is doing a running repair job on his wing

And I thought he liked me

