

Message started by CRASHman on 13. Dec 2009 at 16:10

Title: **Skylark 4**

Post by **CRASHman** on 13. Dec 2009 at 16:10

I like to think of this as the half way complete stage, only the fuselage, tailplane, fin, rudder, covering, painting..... to go and its finished! Um, may need to rethink that half way point >:(

Colin



Title: **Re: Skylark 4**

Post by **Steve Fraquet** on **13. Dec 2009 at 17:02**

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Well done Colin (nearly there). Incidentally your workshop is bigger than my house :(.....Excellent!!!

Title: **Re: Skylark 4**

Post by **sky man (Iain)** on **13. Dec 2009 at 17:28**

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I'll second that last statement Its to die for (if only i could get rid of the wife and kids i'd have the house to build in)  
Iain

Title: **Re: Skylark 4**

Post by **CRAshman** on **13. Dec 2009 at 19:52**

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With every move the sheds get bigger and the houses smaller!

Colin

Title: **Re: Skylark 4**

Post by **Robbie\_B** on **13. Dec 2009 at 20:57**

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Strewth Colin, this site's going to be breeding more Skylarks next year than it did Kites this year!

Very nice. Keep us up to speed on the fuz build.

Title: **Re: Skylark 4**

Post by **AndyM** on **15. Dec 2009 at 07:55**

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Looking good!

A fellow sufferer of Workshop envy.

Title: **Re: Skylark 4**

Post by **CRAshman** on **28. Dec 2009 at 22:29**

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After the plain sailing of wing construction have now entered what I sometimes think of as the doldrums of fuselage construction, I've not made things any easier by trying to fit 1/32" sheeting to the bottom rear section before removing from the board.

Even after steaming it to shape on removing the fuselage half from the board its trying to spring back straight, hence the jig to try and get it back into shape.

Should have followed the notes on the plan and fitted the temporary diagonal bracing. :(

Thinking ahead as I will soon have to build in the servos anyone like to suggest what size it will need for the elevator bearing in mind this is the 1:3.5 scale version.

Colin

 100\_0566.jpg (147 KB | )







100\_0572.jpg (159 KB | )



Title: **Re: Skylark 4**

Post by **chris williams** on **28. Dec 2009 at 23:35**

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Looking good Col, but if you're going to go to the trouble of building a jig you should build a 'Bridson' jig :)

The prototype had two standard servos for the elevator, but for reasons of redundancy rather than strength. I've never actually had an elevator servo fail so for 3.5 scale I'm going back to a single JR591

(Famous Last Words!)

The Skylark was the last model I used a snake for elevator too...

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 31.jpg (Attachment deleted)

Title: **Re: Skylark 4**

Post by **Robbie\_B** on **28. Dec 2009 at 23:59**

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.....and my 3F at 1:3.5 will have a standard servo on the elevator Col.

My M200, although at 1:4 was a whole lot of sailplane at just over 17lbs and could pick up its skirt and fairly hop along with the elevator servo coping without any problems - well, until a tow line got wrapped around the elevator and shredded the gear train, that is! Perhaps metal gears might have saved her. :(

Title: **Re: Skylark 4**

Post by **CRASHman** on **29. Dec 2009 at 10:30**

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Good quality metal geared servo it is then.

'Bridson' jig for the next one, bodge up this time was to get over a potential bendy fuselage problem.

Not to keen on the snake driven elevator, I was going to see if I could get a long length of carbon/fibreglass tube to use as a push rod with some intermediate supports.

Colin

Title: **Re: Skylark 4**

Post by **Elliot Howells** on **29. Dec 2009 at 11:21**

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Obviously struck a rich vein here, but if you ask me, on anything bigger than 1/4 scale, two elevator servos are a must - and below that it's a judgement call. Even two HS81mg's are better than one standard size servo - it's a cheap insurance policy if you ask me.

How many tugs do you see with just one elevator servo ?

isn't strictly scale either ;)

MTC, Ell.

Title: **Re: Skylark 4**

Post by **Keith** on **29. Dec 2009 at 12:58**

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Why not use a 1/4 scale servo they are not expensive, it's not as if you have don't have the room.

Keith

Title: **Re: Skylark 4**

Post by **Jolly Roger** on **29. Dec 2009 at 13:01**

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It is a rich vein Ell, and I feel I should chime in that I have had an elevator servo fail in flight (and you all know what happened next...). So now I fit two and split the elevator on any model big enough to hurt somebody or costly enough to make me cry if it crashed. Hmmm, pretty much everything except EPP parkflyers...

I don't go so far as a weeny HS81's (their gears are made from Wensleydale cheese... little known fact) but HS85MG's have served me well. In addition to offering redundancy, a pair of 85's deliver more torque and more speed for less weight than a single HS625MG, and because they're slim, can often be fitted near the control surface for a lovely direct drive. But obviously every model is different, and the great thing is that everyone does it their way.

Sorry Col - hijack over. btw if you find a cheap supply of long (6ft+) composite tubes for the pushrod, please do tell. I do sometimes put proper big man's servos up front!

Rog

Title: **Re: Skylark 4**

Post by **Elliot Howells** on **29. Dec 2009 at 17:55**

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HS81MG's Rog, they use a mature cheddar for these and I've not had one fail yet, although I often pack crackers just in case....

:)

Now 635HB's... there's a whole 'nother story. :(

Title: **Re: Skylark 4**

Post by **CRASHman** on **29. Dec 2009 at 17:57**

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Just back from my local model shop with a Hitec HS 645 metal geared servo to find a change of opinion on the dual v's single servo front.... thanks chaps :)

I'll stick with single servo now, all my other gliders have been fine with just one ... fingers crossed.

Roger, I was going to use section from a cheap fishing pole that I got a few years ago at Rougham kite festival, each piece is about 1000mm long they do taper in diameter but I don't see this as a problem for use as a pushrod, also if a length longer than 1m is required they fit together tightly and could be glued.

Colin

 100\_0573.jpg (139 KB | )







Title: **Re: Skylark 4**

Post by **chris williams** on **29. Dec 2009 at 20:49**

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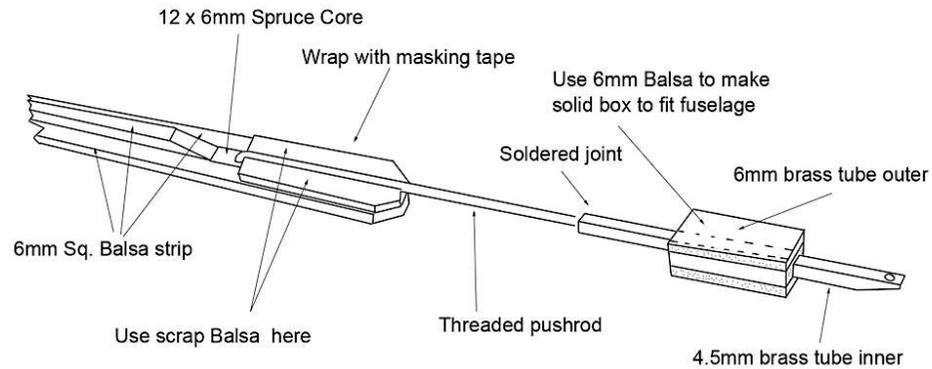
Colin, my current fleet runs to around 80 servos: if I had bought Hitecs, I would have had to sell the missus :( :(

I once had a bit of an issue with a CF pushrod in a glider on 35megs and have instead used 12 x 6mm spruce strip, laminated with balsa: rigid, light, and cheaper than CF anyway...

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## ELEVATOR ACTUATOR MECHANISM & PUSHROD



Title: **Re: Skylark 4**

Post by **CRASHman** on **29. Dec 2009 at 21:11**

Chris,

I think the tube I have is glass rather than carbon, probably not an issue as I am using 2.4 Ghz for new models.

Price of Hitec servo was a bit of a shock, but having got the guy in the shop to dig to back of the pile servo boxes thought it might have been rude to say How Much !!

I've just watched your video of the VGC meeting, good job I was concentrating on what the tug was doing and not looking at the gliders.....

Colin

Title: **Re: Skylark 4**

Post by **Jolly Roger** on **29. Dec 2009 at 22:35**

645MG? A fine choice! I bought a job lot from Steve Webb models a while back and am working my way through them. I know they're ye olde analogee, but I've had no probs so far. (Will post tomorrow to report loss of expensive glider due to failed 645)

control surface as you waggle the stick to check the servo's in full health.

And thanks for the composite tube tip - I just knew there was a point to fishing. I've used fishing rod sections for 2m HLG fuselage booms. Quite cheap, really.

Rog

Title: **Re: Skylark 4**

Post by **MikeA** on **31. Dec 2009 at 13:02**

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Hi Colin

Watching this thread with much interest, your wings look fab. Needless to say my balsa is still in the Belair box. Decorating completed but now water leak in bathroom means new floor. It never rains but it does pour out of the loose cistern.. :o

I'm thinking about placing the elevator servo much closer to the tailplane itself, and accepting the extra weight at the tail end. HS645 MG good choice - I have some in my Let Ventus and they seem to do the trick.

Mike

Title: **Re: Skylark 4**

Post by **CRAshman** on **01. Jan 2010 at 22:58**

Hi Mike,

You can't let a bit of diy get in the way of the important work of model building :D although I must admit the weather of late has been more suited to model rather than house building.

I did think about putting the elevator servo at the back, the ideal location would be under the tailplane platform but the access hole would be right where the tailplane fixing bolts should be. Also I'm trying to keep the back as light as possible.

Colin



Title: **Re: Skylark 4**

Post by **CRAshman** on **04. Jan 2010 at 22:41**

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Staightened up and looking more like a fuselage.

Colin

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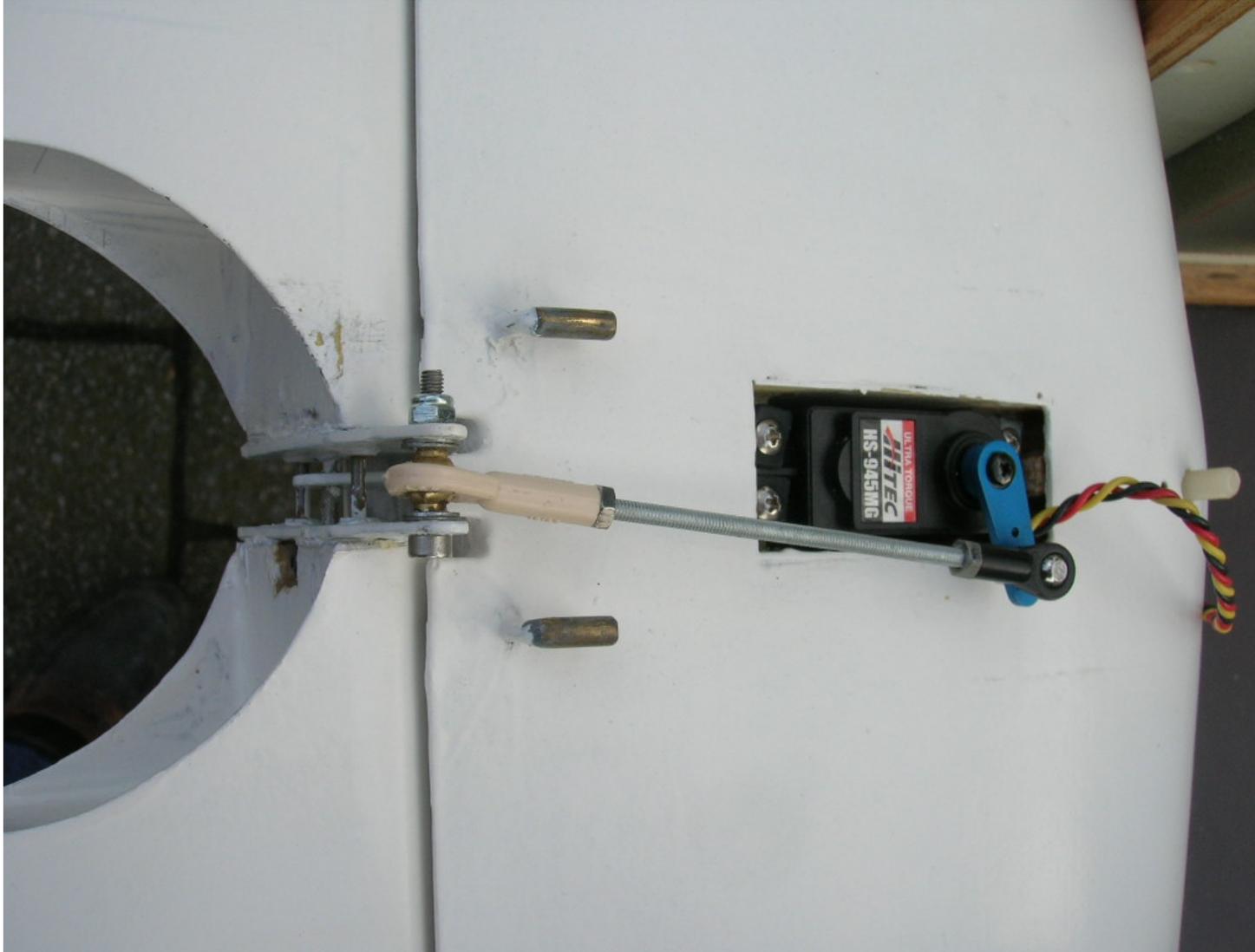
 100\_0576\_600\_x\_305\_.jpg (41 KB | )



Title: **Re: Skylark 4**

Post by **Noël Rumers** on **05. Jan 2010 at 23:05**

This is what I did in the K13. The trim servo is a standard one. 1/3 scale it is. I have good results with the HS 645 and the HS 5645 dig and HS 5625 dig. Be aware that the digitals will pull till on the stop. This means any friction on hinge points, would have a whistle noise because not coming to its end. Very annoying >:(  
Noël



Title: **Re: Skylark 4**  
Post by **flyingseale** on **06. Jan 2010 at 22:11**

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Hi Chris. Regarding your elevator actuator mechanism which is indicated on my Bergfalke plan too...

...coming from a world where minute levels of play in a linkage can lead to catastrophic flutter/failures, I can't help but think there has to be some degree of movement in this linkage where the rod passes through the brass oval hole. So would I be correct in thinking that at these scales and flying speeds it is nothing to worry about?

Mike

Title: **Re: Skylark 4**  
Post by **chris williams** on **07. Jan 2010 at 20:38**

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Worry ye not, Mike... With care, the slop will be minimal and have no measurable effect on pitch control.

*I once had a bit of an issue with a CF pushrod in a glider on 35megs*

Interesting, I note that Multiplex make specific references to carbon fibre pushrods in their 2.4 M-Link installation notes

Title: **Re: Skylark 4**  
Post by **CRASHman** on **07. Jan 2010 at 21:30**

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Ah.. dismiss one area of concern, but introduce something else to worry about.

Thanks :) :)

Colin

Title: **Re: Skylark 4**  
Post by **Martin Tigg** on **08. Jan 2010 at 14:16**

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Interesting, I note that Multiplex make specific references to carbon fibre pushrods in their 2.4 M-Link installation notes

Hi Chris, I have just read the book for the MPX 2.4 rx. and it says "If the models fuselage contains conductive material [e.g. carbon fiber] the arials must be installed in such a way that the active part of the aerial [approximatley the last 30mm] is located out side the model". This refers to the fuselage its self as placing the rx. inside a conductive box will sheild it. As long as it is away from any metal or carbon components and not in line with them it should be ok.

There is far more of a chance your problem was caused by static build up. This is a problem we had with early carbon helicopters where we had to bind all conductive components.

Keep building in wood and using your steam radio and all will be ok.

Martin

Title: **Re: Skylark 4**

Post by **Noël Rumers** on **08. Jan 2010 at 17:38**

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Hi Martin,

This is what Weatronic tells you to do with the last 30 mm antenna ends if you have carbon fuselages.

Noël

Title: **Re: Skylark 4**

Post by **CRASHman** on **08. Jan 2010 at 21:33**

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I'm sure everyone is way ahead of me on this one, I've just found another use for cable ties ::)

Colin

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Title: **Re: Skylark 4**

Post by **Robbie\_B** on 08. Jan 2010 at 21:59

Colin,

Great idea!

What's the best sequence. Temporary clamps on the longerons, apply the ties and then release and re-adjust the longeron clamps?

Title: **Re: Skylark 4**

Post by **CRASHman** on **08. Jan 2010 at 22:13**

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Robbie,

I steamed the panel first to get the shape roughly right and then butted it up against the panel that is already on ( at the back of the photo), pinned and glued to the longeron with a combination of pva and cyno. Then applied pva to the rest of the formers and longerons, pulled ply round and put on cable ties over former positions, last job was to put clamps on front longeron in picture.

Colin

Title: **Re: Skylark 4**

Post by **CRASHman** on **06. Feb 2010 at 23:42**

Given whats left to complete, now thinking of this as the 50% complete stage.



Title: **Re: Skylark 4**  
Post by **crash** on **22. Feb 2010 at 02:17**

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Yes I know the feeling, when you think it is almost done and then it goes on and on and on :-)

Title: **Re: Skylark 4**  
Post by **MikeA** on **09. Mar 2010 at 12:50**

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Hi Colin, just about to commit balsa to plan at last. This could take some time. Thought I'd start with the rudder and work forwards.

I'm tweaking the plan a bit to make it a bit more true to scale. My old man had a share in one years ago and is a stickler for detail so the top shape of the fin needs rounding and also the fuselage forwards of the canopy will also need a tweak. Apparently the forward section of the fuselage was fibreglass on the full size, so this shouldn't be too difficult.

I do realise that it is a heinous offence to alter a CW plan.

Mike

Title: **Re: Skylark 4**  
Post by **CRASHman** on **09. Mar 2010 at 12:55**

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Mike

If your starting at the back, have a good look at how you are going to hinge the elevator, I didn't and am now looking at some surgery to get the hinge line right. Apart from that I'm not far of being ready to invest in a very large amount of solartex.

Colin

Title: **Re: Skylark 4**  
Post by **CRAshman** on **09. Mar 2010 at 12:58**

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Mike,

Just a thought, the part share wasn't in this was it ?

<http://www.youtube.com/watch?v=MnLSkxAu8jw>

I've been trying to track down some pictures to copy the colour scheme.

Colin

Title: **Re: Skylark 4**

Post by **Barry\_Cole** on **09. Mar 2010 at 16:47**

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Given whats left to complete, now thinking of this as the 50% complete stage

And given that mine looks about the same, only 4 years left to finish it.

8-) 8-) 8-) 8-)

BC

Title: **Re: Skylark 4**

Post by **MikeA** on **09. Mar 2010 at 17:24**

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Thanks Colin, all points noted, and what a great video. Apparently the elevator trim was pretty evil - you could loop it if you weren't careful!

Dad's old 4 was this one:

..now to find some black and white paint ;D

Mike

Title: **Re: Skylark 4**

Post by **CRASHman** on **08. Apr 2010 at 21:43**

Casting around for an easy way to secure the canopy shut I remembered the childrens magnet toy craze of a few years ago, each of the link pieces has two small magnets. Using three pairs may have been overkill, should be interesting to watch as unsuspecting fiddlers fingers are caught in the mouse trap like closing action





Title: **Re: Skylark 4**

Post by **chris williams** on **08. Apr 2010 at 21:54**

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*I do realise that it is a heinous offence to alter a CW plan.*

I had this e-mail from the owner of the full-size '4 upon which my plan was based a few says ago...

'Re skylark 4 - 739. As the owner of the real version I was impressed by your model it looks very realistic. Even the wing flex viewed from the cockpit is similar. Not sure low passes are recommended in the real thing - its getting an old lady! You must have photographed it at some time or other, a lot of people do and it is good to see somebody carried their threat to model it through

one question - Having gone to a lot of trouble with the detail why only airbrakes on the upper surface? Scaling limitation? Other than that it looks accurate down to the tip skids.'

Hah! (Good to see you guys making progress, but you'll have to be quick if you want to get there before the Wookie)

Title: **Re: Skylark 4**

Post by **CRASHman** on **03. May 2010 at 17:42**

Too cold and windy for flying today, so some pictures of progress to date.

Colin





Title: **Re: Skylark 4**  
Post by **chris williams** on **03. May 2010 at 18:31**

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Looks excellent Col... :)

Title: **Re: Skylark 4**  
Post by **MikeA** on **05. May 2010 at 10:56**

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Indeed, it's looking great Col. Any chance of some cockpit close-ups? Been off work sick for a few days so fin/rudder finished. Learning the lesson of laser cutting in that if the plan has a wobbly line on it then the part comes out like that as well.

I'll put my somewhat meagre build photos up when yours is complete.

Mike

Title: **Re: Skylark 4**  
Post by **CRAshman** on **05. May 2010 at 21:03**

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Mike,  
I'm afraid this is the best I can do for cockpit close-ups my camera does not seem to like the fluorescent lighting in my workshop. The sliding vent in the canopy was a real fiddle to fit, good job they supply plenty of the small brass screws used to fit the rails. In case you haven't found it yet there is a set of full size photos on the main part of the web site <http://www.scalesoaring.co.uk/Gallery/Gallery.html>  
Trouble is every time I look at them time gets lost on adding extra details like the trim tab mechanism that I spent last evening making instead of getting on and covering the fuselage >:(

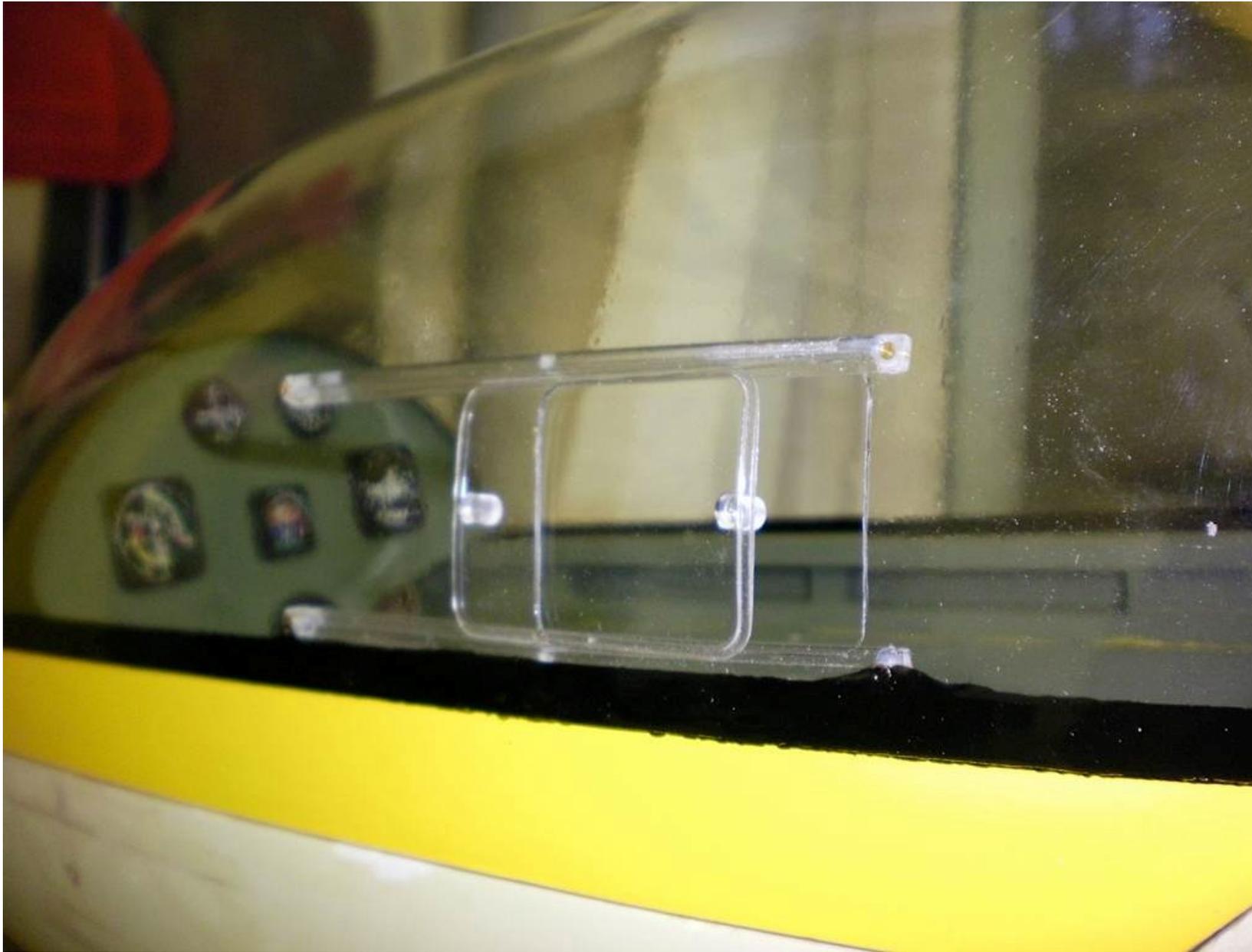
Colin

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Title: **Re: Skylark 4**  
Post by **mark70** on **05. May 2010 at 22:35**

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Where did you source your seat harness?

Thanks

Title: **Re: Skylark 4**  
Post by **CRAshman** on **05. May 2010 at 23:35**

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The harness, vent and instruments came from <http://www.topmodel.fr/>  
the postage was a bit pricey but I couldn't find a UK supplier that had all three items.

Colin

Title: **Re: Skylark 4**  
Post by **MikeA** on **06. May 2010 at 10:37**

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Again Colin, it looks fab, I particularly like the sliding window. I'm also toiling over a working trim tab at the moment. I've got lots of photos now so lots more attention to detail..oer this could take forever.

Mike

Title: **Re: Skylark 4**  
Post by **CRAshman** on **28. May 2010 at 22:56**

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On the home straight, just the radio installation and few other bits to sort out.  
Weight without batteries is 7.4 Kg, not sure if this is good or bad as I've never built anything this big before.  
In attempting some forward planning the nose was built up with lead and car body filler, this has not worked out exactly as expected as the C of G is about right without the addition of Rx batteries :-[.  
Any views on using a 7.4v Lipo with a regulator as I don't need to add anymore weight in the nose.

Colin

P.S for the other skylark builders, one 10m roll of Solartex is just enough.



Title: **Re: Skylark 4**

Post by **chris williams** on **28. May 2010 at 23:27**

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Now that looks really nice, Colin: makes me want to build another one, as I can't seem to find mine :)

As a matter of interest it's very unusual for a leaded-up nose cone to attain the CG. Having said that, the Topaze turned out nose-heavy, and the battery now lives between the wings!

Title: **Re: Skylark 4**

Post by **sky man (Iain)** on **28. May 2010 at 23:38**

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hay!!!!!! CW, if you can't find something that big then you must have some big / BIG storage space to keep your toys. ::)

CRASHman that looks to be one cool toy ;D

pity it don't have a V-tail though ::)

Title: **Re: Skylark 4**

Post by **CRASHman** on **28. May 2010 at 23:52**

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Maybe ratio of 90% lead to 10% filler was too high :)

I'm sure in the pictures of the last meeting at MW there was a skylark with the same colour scheme as yours ;D

Title: **Re: Skylark 4**

Post by **Robbie\_B** on **28. May 2010 at 23:53**

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Colin,

That does look good! Fred would be well pleased.

What's the paint?

Title: **Re: Skylark 4**

Post by **CRASHman** on **09. Jun 2010 at 23:31**

No more excuses left, she's ready to go.

Now weighs in at 8.1Kg my previous concerns about putting too much lead in at nose building stage were unfounded, two 320g Rx packs went into the nose to get the C of G correct. I am hoping to test fly this Sunday if weather and tug pilot are willing, if not then maybe a trip to MW the week after.

Colin



Title: **Re: Skylark 4**  
Post by **Robbie\_B** on **09. Jun 2010 at 23:59**

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Good luck Col!

Title: **Re: Skylark 4**  
Post by **B Sharp** on **10. Jun 2010 at 09:04**

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Looks good Colin, and should look the part in the air. I am going down with a bad dose of workshop envy by the way.  
Brian. :)

Title: **Re: Skylark 4**  
Post by **Jolly Roger** on **10. Jun 2010 at 10:08**

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*B Sharp wrote on 10. Jun 2010 at 09:04:*

Looks good Colin, and should look the part in the air. I am going down with a bad dose of workshop envy by the way.  
Brian. :)

... a highly contagious condition. I've caught it too. :P

Title: **Re: Skylark 4**  
Post by **Tony Woods** on **10. Jun 2010 at 12:00**

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If that's the workshop what is the house like? :o

Tony

Title: **Re: Skylark 4**  
Post by **CRAshman** on **10. Jun 2010 at 19:40**

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*Tony Woods wrote on 10. Jun 2010 at 12:00:*

That's a good question. I've not been in the house since I was a child.

Tony

After two years still a long way off being finished :(

Title: **Re: Skylark 4**

Post by **CRAshman** on **13. Jun 2010 at 21:45**

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First flight nerves overcome, don't know what I was worried about no problems at all.  
Just need to move one of the Rx batteries back a bit as it trimmed out with about 10mm of up trim other than that nothing required on rudder or ailerons.  
May regret not building in top and bottom acting air brakes, after the barn door stopping power of the K8 brakes they seem a little lacking.  
Short video on youtube of first take off and landing here <http://www.youtube.com/watch?v=KXM8FhLwKrU&feature=channel>

Colin

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Title: **Re: Skylark 4**

Post by **Robbie\_B** on **13. Jun 2010 at 22:12**

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Congratulations Col, it's worth all that work i'nit!

Title: **Re: Skylark 4**

Post by **chris williams** on **13. Jun 2010 at 22:20**

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Well done Col, mucho-relief-o at Williams Towers, as yours is the 1st example I've seen fly from this plan.  
I look forward to seeing you both at Middle Wallop...