

# Scale Soaring UK

The forum for all your modelling requirements relating to scale gliders  
<https://scalesoaring.co.uk/phpBB3/>

## Slingsby T13 Petrel Build

<https://scalesoaring.co.uk/phpBB3/viewtopic.php?f=12&t=917>

### Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Page **1** of **1**

Posted: **31 Dec 2018, 20:45**

Hi Greg

The Petrel build went really well. It flies very efficiently even compared to my Dart.



I think that is because of the laser cut ribs as opposed to hand cut and badly sanded ribs of my Dart.

### Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **13 Jan 2017, 18:11**

Hi Gustavo

It's a great build and quite a challenge.

No there isn't a list as it depends on how you utilise you wood.

I buy my balsa from the importer here in NZ and in bulk and just grab a selection when my supply gets low.

I will say that the wood you use to sheet the wing needs to be 2 mm and as hard as you can get.

Stu

### Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **03 Jan 2017, 07:23**

More



photos

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **03 Jan 2017, 06:18**

Worked on the gull break today. I used the waste from the laser cut outs as jig templates to support the gull break for gluing.



They will also come in use for construction of the aileron and keeping the wing from twisting when it come time to complete the sheeting.

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **02 Jan 2017, 05:27**

I made a major change to my build philosophy with the wing. I have had the ribs laser cut instead of hand cutting them. But what a joy they are to work with.





The weather here is utter cr@p for summer with wind and low cloud, and now everyone has buggered off to the national competitions so it's a good time to head to the shed.

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **02 Jan 2017, 04:39**

I was surprised when I opened this build thread again to find that my last post was 6 months ago. Work and life has got in the way.

When I last posted I was having trouble with the fin. It was not solid enough for my liking, in that any side force could break off the front attachment of the fin. This was quite likely with the size of the amt. The answer was to make a box structure to spread the load of the AMT back down to the body longerons and support the fin. Unfortunately I don't have any photos.

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **18 Jul 2016, 09:23**

The Petrel is a pure glider. No power plant, as my son and I can fly any time we like at the local flying field less than 5 min down the road. It's not used much as it's a closed tip that has been grassed over and can't be used for sports.

The fire wall of the tug was cracked and broken out as was the next bulkhead back and the wing mounts. I didn't feel comfortable rebuilding it and it's an easy build.

This is my second build and my first gull wing.

[http://scalesoaring.co.uk/phpBB3/viewto ... f=30&t=402](http://scalesoaring.co.uk/phpBB3/viewto...f=30&t=402)

## Re: Slingsby T13 Petrel Build

by **iceman952**

Posted: **18 Jul 2016, 08:42**

Hi Stuart,

My name is Richard Helmich in Denver, Colorado, USA.

I had seen the RC Groups build and am intending to follow it in terms of the AMT support structure. Chris Williams is updating his current Petrel build about once per week as well...

[http://scalesoaring.co.uk/phpBB3/viewto ... 6&start=70](http://scalesoaring.co.uk/phpBB3/viewto...6&start=70)

I've been asking him questions regarding his building style in comparison to the build you referenced as well as the Turkish build profile I found...

[http://www.hobbyrc.com/forum/threads/44 ... trel-1-3-5](http://www.hobbyrc.com/forum/threads/44...trel-1-3-5)

There's definitely some differences and it's been nice to pick Chris' brain about his style and the methods others have used on his plans/design. Considering this is my second wood plane, I'm still learning a lot from the various forum builds.

Sounds like quite the catastrophe with your tug plane. Ploughing in at near vertical? Was there really anything left to rebuild? The air field where I fly has some power lines as well. I've come close to clipping one a time or two.

Were you planning on having your Petrel be purely a glider, or do you intend to add some kind of power? I'm probably going to add a motor pod above the wings near the COG. The RC groups build posted plans for one, but ended up not using it since he found a club with tugs. I'd prefer to have the power plant for the added ability to go around if necessary. This will be my first sailplane of this caliber, and I'll sleep better knowing I'll have more than once shot at a landing.

I might add some FPV gear as well. I have a 3m fpv plane that I really enjoy flying. Have to see how I'm feeling when the time comes to start building mounting points for servos and everything else.

Some touch and goes with my FPV plane...



My Gemini 2, 3m FPV plane.

I'll continue to keep an eye out for your posts. I hope you're able to fix up your tug and get back to the Petrel soon.

Cheers,

Richard

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **18 Jul 2016, 05:42**

Hi Ice Man.

Do you have a real name. It is customary to use your actual name in this forum.

Its nice to see someone else build a plane of the same ilk.

My Build is on hold for a few weeks while I rebuild my Greenley Tug. My son hit a power line with it and brought the line down, and landed at 90 deg on the nose of the motor on the asphalt road.

The Petrel was doing OK with the rudder and tail plane installed, but i felt it had no critical integrity binding the tail plane bell-crank back to the body. so I dismantled it and that's as far as I have got.

Im looking at revising the attachment to something resembling this [http://www.rcgroups.com/forums/showthre ... 747&page=3](http://www.rcgroups.com/forums/showthre...747&page=3) post #39

## Re: Slingsby T13 Petrel Build

by **iceman952**

Posted: **17 Jul 2016, 19:26**

Hi Stuart,

I hope your build is going well.



I thought I'd share some photos of where I'm at with mine so far...

Richard

## Re: Slingsby T13 Petrel Build

by **Barry\_Cole**

Posted: **03 Jun 2016, 14:30**

Are there any daft things left for you to do?????????????

You seem to have covered most of them..



BC

## Re: Slingsby T13 Petrel Build

by **chris williams**

Posted: **03 Jun 2016, 10:32**

Stuart, I would strongly advise to abandon the Bowden cable for the AMT. A pushrod of 6mm spruce laminated on two sides with 6mm sq balsa will be much more reliable. (Or carbon tube) The problem with the cable is that at full up-elevator the wire has no support and is liable to bend under high loads, such as in a loop etc... (Ask me how I know!)

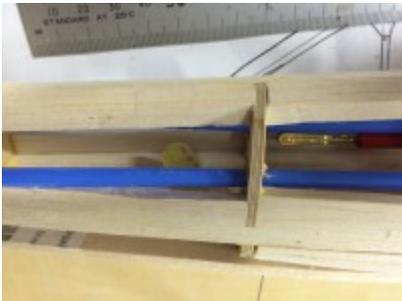
## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **03 Jun 2016, 10:17**

Did a dry fit of the tail plane bellcrank. All was going well until I offered up the commercial 48" cable.





It turned out to be an inch too short. 🙄

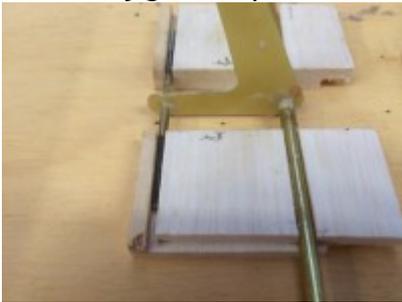
## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **01 Jun 2016, 22:32**

Next to be worked on is the bellcrank for the AMT. I made it from a sheet of fiber glass circuit board. This stuff plays hell with the saw blades.

I made a jig to keep the tubes square and straight while the glue dries,



and I will use this jig again to set the pitch for the tubes correctly into the AMT.

## Re: Slingsby T13 Petrel Build

by **B Sharp**

Posted: **31 May 2016, 18:27**

That's starting to take shape Stu, but the ply skinning is never an easy process. I totally agree with you about the servo trays by the way.

Brian. 😊

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **31 May 2016, 10:18**

I like to be able to service all the electronics on the glider. I don't trust servos to last for ever. I

have had one or two fail on the bench ,but not in the air as yet. So I like to be able to change them out if I want too.



View from the rear showing the rudder servo.



Front view showing the elevator servo.

With this in mind I needed construct the servo tray so that I could remove it. The tray slots under the two block at the rear on either side.

The front of the tray drops down and is screwed to the bulkhead.

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **31 May 2016, 09:58**

I know these photos are a little out of order with the previous ones, but here they are.



1/2 a roll of tape later!



I believe that screw are now acceptable!

Placing the turtle deck on scares me. Having to get it all clamped down tight within 30 minutes and keeping the frame straight and square is quite challenging.

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **31 May 2016, 09:28**

Thanks for you replies. I have now cut and planed the spar blanks to section "B"  
Here are a few photos of the process.



Rough cut blanks



I love useing the hand plane

As I don't have any large machines at home so it's pretty much all manual labour.

## Re: Slingsby T13 Petrel Build

by **Tom Pack**

Posted: **15 May 2016, 04:17**

*Stuart Ward wrote:*

I've got my spar material. It a length of Kahiatia. Nz White Pine. It's a nice piece of lumber, dead straight and no knots. The question now is which way do I cut the spars. You can see the grain on the end of the timber and I have marked the two options 'a' and 'b'.  
Stu

"B"

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **15 May 2016, 03:08**

That's the



planking done

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **15 May 2016, 02:34**

I've got my spar material. It's a length of Kahiatia. Nz White Pine. It's a nice piece of lumber, dead straight and no knots.



The question now is which way do I cut the spars. You can see the grain on the end of the timber and I have marked the two options 'a' and 'b'.

Stu

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **09 May 2016, 21:18**

I thought it was a good idea to hold the frame straight while I glue in the truss work in the tail, and the planking in the front.



This will also help to eliminate any twist.

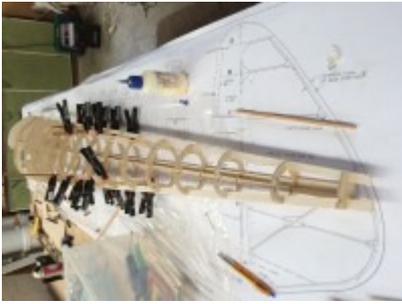
## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **08 May 2016, 09:25**

I had a full day in the shed today. I took the half shell off the plans. Then glued the formers on the second side.





It was Mother's Day today and she came to supervise while I glued in the longrons.

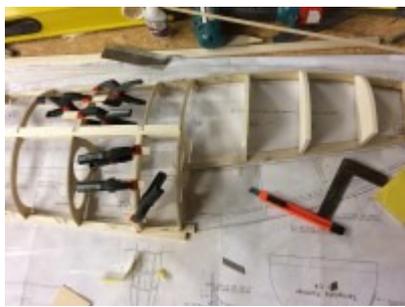
## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **06 May 2016, 20:37**

I have managed to find a bit of time to spend in the shed. We are having a long mild Autumn with temps in the low 20deg most days.

This is a typical CW type build with hull built in two halves.



I'm finding that as the templates are originally hand drawn, printed on a home printer, stuck to the wood, then hand cut, there can be some variability in the sizes of the formers. But hand fitting is half the enjoyment of the project

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **06 May 2016, 10:23**

I'm making a little progress

## Re: Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **27 Apr 2016, 21:31**

**B Sharp wrote:**

Well done Stu. Have you got your timber problems sorted? Just take your time and enjoy the build - you have a long NZ winter to get it built ready for next season - no pressure then!

Brian.

Hi Brian.

Just some background to the question:- Spruce in long lengths is very hard to come by here in NZ, and I have only found one place that has any in stock. They happen to be the builder of 100% size de Havilland Mosquitos. Needless to say, they protect their timber with a premium price. (1.5m x 6mm x 50mm = \$50)

I have found an alternative supply of timbres for spars and trailing edges though. The options are Kahikatea, Yellow cedar(used on my Dart spars), Western Hemlock.

I'm leaning towards the Kahikatea as it is light , supple straight grained and glues well.  
[http://www.rosenfeldkidson.co.nz/specie ... x?r=3&s=43](http://www.rosenfeldkidson.co.nz/specie...x?r=3&s=43)

Stu

## Re: Slingsby T13 Petrel Build

by **B Sharp**

Posted: **27 Apr 2016, 18:26**

Well done Stu. Have you got your timber problems sorted? Just take your time and enjoy the build - you have a long NZ winter to get it built ready for next season - no pressure then!  
Brian.

## Slingsby T13 Petrel Build

by **Stuart Ward**

Posted: **26 Apr 2016, 21:34**

When I first found this forum several years ago I made a list of gliders and tow planes that I would like to build.

First on the list was the Petrel, but my building skill were not up to that level. So I built a tow plane and the 1:3.5 Dart, and now it's time for the next challenge.



I look forward to your comments, banter and support on the build log  
Stu