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Paritech Nimbus 4D

<https://scalesoaring.co.uk/phpBB3/viewtopic.php?f=12&t=2476>

Re: Paritech Nimbus 4D

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by **Mike Francies**

Posted: **13 Feb 2019, 22:31**

Some more 3D printing done. This time I have printed two formers for the nose that will hold the two 5000mAh, 5 cell batteries for the power. These had to go as far forward as possible to mitigate too much additional lead to balance the model. Very pleased with the results as they fit really well. In the photo that shows the batteries in-situ, you can just make out the push/pull rod for the tow release as I would still like to do some aerotowing sometime.



It looks like some compromises will have to be made with cockpit detail as there is an awful lot of cabling and paraphernalia to try and get in.

Re: Paritech Nimbus 4D

by **Mike Francies**

Posted: **07 Feb 2019, 13:27**

Just a couple of photos to show the 3D printed servo mounts with brass inserts. The aileron servo mounts for the MKS 6130s also incorporate an additional ballrace to support the output. The bottom of the mounts have been left as open honeycomb to give a better key for glueing. I have used gorilla glue to fix the mounts in place. I have only just started using gorilla glue and I must say I am a bit of a convert. As long as you don't use too much, the results are excellent. I just hope I never need to remove the mounts!





The flap servos will be tricky to remove but I can just get a modified allen key to the screws.

Re: Paritech Nimbus 4D

by **Mike Francies**

Posted: **06 Feb 2019, 10:40**

Hi Roger, guilty as charged! 😊

Re: Paritech Nimbus 4D

by **Jolly Roger**

Posted: **06 Feb 2019, 01:25**

That fuselage plug looks quality Mike! Lovely work.

Hmmmm. Long shot this, but there was a nice thermal soaring design in the 1990s called the Optimist - was that yours? Your name rings a bell. 😊

Re: Paritech Nimbus 4D

by **Mike Francies**

Posted: **06 Feb 2019, 01:00**

Hi John, the pins themselves have the spring loaded contacts on them so there is some allowable movement within the socket whilst retaining electrical contact. I am pretty confident they will do the job. The outer wing panels have the six pin Multiplex plugs and sockets mounted in a similar fashion, but I needed a minimum of seven pins for the root connection.

Getting there slowly!

Re: Paritech Nimbus 4D

by **John Mcnamara**

Posted: **06 Feb 2019, 00:21**

Hi Mike,

If you look at Multiplex connectors or computer "D-Plugs", the pins have a small degree of movement within the insulator block. As a result, I have never had a problem hard mounting either of these systems in wing and fuselage, and getting 100% reliable connectoin.

So my question is, are the pins a tight fit in your insulator blocks or is there some slop? If its the latter, then I doubt you have a problem. If, the pins cannot move, then I would check the connection out by supporting the the finished model at the half span and " bouncing" it on its supports to represent gust loading, as well as carefully checking smooth servo movement at the same time.

Subscribed BTW.



John

Re: Paritech Nimbus 4D

by **Mike Francies**

Posted: **06 Feb 2019, 00:05**

Hi Peter, thanks for the feedback. I will keep an eye on the connectors. The huge, steel joiner is a fantastic fit in its wing tubes and affords virtually no movement whatsoever but your point has been noted, thanks.

Re: Paritech Nimbus 4D

by **Peter Balcombe**

Posted: **05 Feb 2019, 23:32**

Mike,

Some excellent engineering there & a lovely job.

Hopefully the much longer contact length will mean a more reliable connection at all times.

However, if you have ANY movement between wings & fuselage parts (even vibration) your system may still be prone to contact wear & resultant reliability issues over time.

The ideal with any two part connector system is to have one side slightly "floating" so that it can remain perfectly still with respect to the mating contacts.

Good work though.

Peter

Re: Paritech Nimbus 4D

by **Mike Francies**

Posted: **05 Feb 2019, 22:31**

This is my take on the problem of wing root servo connectors. The holders for both the pins and the sockets are 3D printed. You can just about make out the labelling for the five servos, positive and negative lines. The insulation and cable retention is done with hot glue gun injected into an aluminium mould. The moulds were cut on my home made CNC milling/router machine.





I am the world's worst solderer and I did not like the idea of soldering up a 9 pin din plug and socket so I made my own from 2mm bullet connectors. These are permanently fixed in the wing roots and make automatic connection when the wings are put together. The advantage of the 2mm bullets is that they have a much longer insertion than the din plugs, some 9mm compared with just 2mm for the dins.

The exposed pins are protected with a 3D printed protector.

Re: Paritech Nimbus 4D

by **Barry_Cole**

Posted: **05 Feb 2019, 14:07**

That looks great, and Brian will be proud of you.....



BC

Re: Paritech Nimbus 4D

by **Mike Francies**

Posted: **05 Feb 2019, 13:08**

I appreciate there is a little bit of resistance to so called 'cheque book' modelling and, to a large extent, I too am reticent. However, for me, this is a means to an end as I have also embarked on a large, scratch build project and the Nimbus can be construed as research. The scratch build is of similar dimensions and is somewhat larger than my largest thermal soaring models of the 1980s/90s. I will start another thread for the scratch build. My building and flying time is very limited due to domestic issues so I hope there won't be too much criticism 😊

Getting back to the Nimbus, I was very surprised to find the wing section was 16% thick throughout the span. This has made me think of the wing section for the scratch build as I was going for somewhere nearer to 11-12%. I have now decided that 14-15% would be okay, besides which, a thicker section also means a deeper spar.



Below is a sneak preview of the scratch build that will use many of the systems I am trying on the Nimbus.

Paritech Nimbus 4D

by **Mike Francies**

Posted: **05 Feb 2019, 00:15**

Hi,

I am putting together a 7 meter, Paritech Nimbus 4D that I purchased through John McNamara at Soarstream. John has been brilliant as there were one or two issues with the model which he dealt with very expeditiously. I will try to post as many photos and detail as I can but don't expect this to be a quick build, I am the world's slowest builder!!

At my local field, we do not have a suitable tug available so I have opted for a Schambeck AFT19 to haul the beast aloft so I can take full advantage of all possible flying days available to me.

I also bought the cockpit to fit and a Tailored Pilots, quarter scale pilot, which is brilliant. The Nimbus is at 1:3.75 scale so a 1:4 scale pilot should be too small. The pilot measures 375mm which, even at 1:4 scale, makes him a bit small at around five feet! However, putting him in the cockpit means I cannot close the canopy!! What is happening? I am presuming the cockpit has been made shallower to allow gear to be put under it. So how do I get my pilot in?

That is not the only problem with space as I also need to get in all the paraphernalia for the AFT19.

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