

Message started by rossco on 05. Oct 2009 at 14:02

Title: **40% piper pawnee build**
Post by **rossco** on **05. Oct 2009 at 14:02**

Hey guys well I got my 40% pawnee kid from Dave Brown at model draughting services a couple of weeks back and all I can say is.....WAW, a big mother, 160" span about 120" long and stands waiste height on her gear.

So tonight I set about lightening the formers with an 1 1/4" forcener bit around the major formers that have been cut from 4mm ply from the trailing edge of the wing forward and have cut the weight by almost half. So far so good and have now framed up the front formers from f1 back to f5, instantly the feeling of the magnatude of this project is coming to life. So tomorrow I'll be buying the timber for the fuselage stringers, and moving along from there, I'll take some pics at the end of the week, and we'll see where I'm up too....

Title: **Re: 40% piper pawnee build**
Post by **Chris Gordon** on **05. Oct 2009 at 19:53**

Look fwd to seeing the pics Rossco. Interesting stuff.
Regards from a chilly Hereford.
Chris

Title: **Re: 40% piper pawnee build**
Post by **crash** on **06. Oct 2009 at 12:51**

on ya Rosco, flight of the Pawnees next year I would say. Might have the Kruk done by then too!

Crash ;D

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **13. Oct 2009 at 13:40**

Well here you go guys this are the pics I took on Sunday. I still have to cut big lightening holes in the sides of the fuse and fill them with balsa before glassing with 3/4. but this will come after the strut mounts are fitted and reinforcing blocks in place.







Title: **Re: 40% piper pawnee build**
Post by **rossco** on **19. Oct 2009 at 13:57**

Hey guys well I got to do some more on the Pawnee tonight and made up two half formers to carry the wing stut mounts the pics will explain all, just have to buy a new camera the ex took the last one so bare with me...will have to pinch the gf's

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **26. Oct 2009 at 12:27**

hi guys I managed to some some more work done on the pawnee today and cut out huge lightening holes in the sides of the fuse that will be filled with balsa wrather than 5mm ply, so far I have managed to remove 500 grams in the sides alone plus the holes in the formers that equates to approximately 1kg removed or about 2.2lb in the old scale, so far so good!!

Title: **Re: 40% piper pawnee build**
Post by **John Greenfield** on **26. Oct 2009 at 13:06**

Rossco

I am a bit confused (not difficult) !!
You say in your first post that you are building a kit but I guess this must be some kind of prototype if you are having to do so much work to lighten it. Surely something should not be sold as a kit if it needs this amount of work to make it usable.
Please enlighten us. (pun!)

John

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **27. Oct 2009 at 13:07**

Hi there John the words kit probably shouldn't have been used but wrather a laser cut bits of fuselage formers and wing ribs, the rest is pure scratch building as it was scaled up from a 20% pawnee plan.

I hope this helps to clarify why there has been so much modifying to be done but may well end up being a complete kit in the future....

Title: **Re: 40% piper pawnee build**
Post by **John Greenfield** on **29. Oct 2009 at 07:46**

Ah, all is clear now !?

Good luck with the build.

John

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **15. Nov 2009 at 10:43**

time for some more updates, the new pics tell it pretty well up until this point but I have now also fitted the cabin roof and have fitted two 50oz tanks plumbed in series so 100 oz's of fuel for the thirsty DL 222 and should give approximately 30 minutes of run time with some reserve.





Title: **Re: 40% piper pawnee build**
Post by **Tinus** on **18. Nov 2009 at 23:15**

What do you expect the final weight to be? My guess would be 30-40 kg or so.

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **19. Nov 2009 at 01:19**

hi there Tinus this is my thoughts also, but I am aiming for 27-35kg it'll be interesting to see what the inspector has to say tonight cheers Rossco.

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **01. Dec 2009 at 12:10**

Hey guys well so far so good I've now added the remainder of the side stringers and have had new rear formers cut from 5mm ply with a 20mm wall section all round as I found the 3mm light ply ones to be inadequate... definately a much better option! For better purchase and adhesion to the formers I have drilled a 2mm hole just inside the arrow shaft stringers and bound them to the formers with high strenght dress makers cotton thread and thin CA....very tough indeed and will vanish from the outside once the fabric and strengthening tapes are added.

I am having a dilema over the best way to drive the elevators... one thought is to use square sectioned tube inside the 20mm thick alloy tubes that the tailplanes will be made up from and drive both halves together like the real thing as the stabs are too thin to fit servos in and have them plugging into the fuse and be driven via a short pushrod.

Any thoughts??

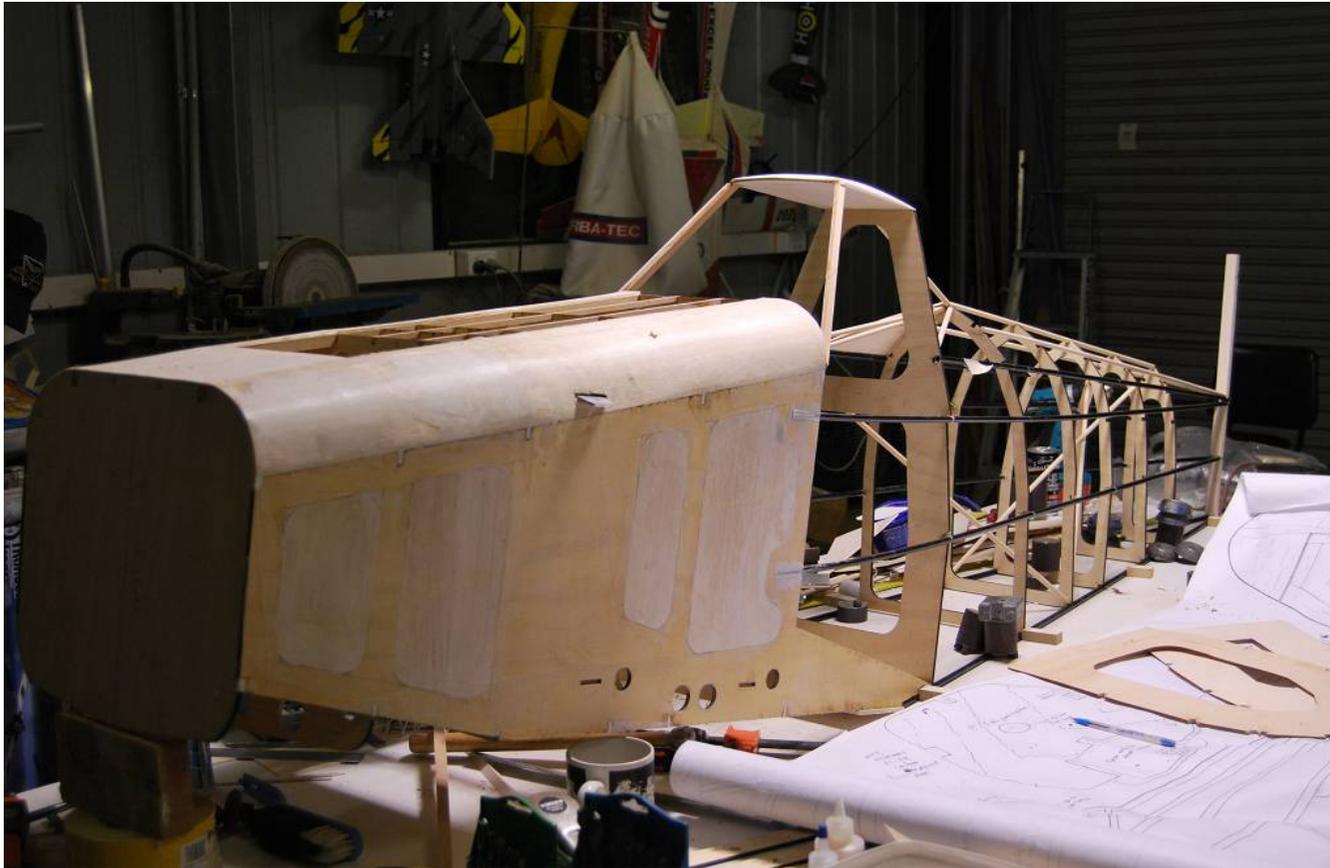
Title: **Re: 40% piper pawnee build**
Post by **rossco** on **08. Jan 2010 at 12:56**

hey all....havn't posted for a while, been too busy building... so here you go. Since these were taken I have now added the sheeting to the turtle deck including glassing and started to dry fit the tow release and fitted the tailplane mounting tubes.









Title: **Re: 40% piper pawnee build**
Post by **rossco** on **10. Jan 2010 at 12:41**

Hi all well model has just had it's first Giant model inspection today and passed 100A+.... now to close it all up and build the wings!!

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **27. Jan 2010 at 12:47**

next couple of weeks.

 pawnee_and_me.jpg (21 KB |)







Title: **Re: 40% piper pawnee build**
Post by **rossco** on **01. Feb 2010 at 12:16**

Hey guys well I have cleared the work bench and have made a start on the wings tonight scarfing the 1/2" square spars and adding some of the root ribs. So far so good, I can see this is going to be a quick build with my aim being to build a wing a week and have them ready for covering shortly there after. I have decided that even though the leading edges will be sheeted with 1.5 mm obeichi veneer that I am going to glass them also to avoid hanger rash and make them a little sturdier when handling. Once ready for sheeting I'll take some more pics.

Title: **Re: 40% piper pawnee build**
Post by **Elliot Howells** on **01. Feb 2010 at 15:23**

he doesn't look like he's got his ppl !

:)

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **06. Feb 2010 at 11:03**

Hey guys well I'd forgotten how much work is in these built up wing thingies...so needless to say after spending most of the day and in fact the week on the model I've almost got all of the top sheeting done and have had to stop.....need a break for tonight anyway so for the first time ever the right wing was offered up and B****r me, it fits!!

pretty swish hey....

So last but not least for the night I have fitted the rib doublers in light ply to where the servo plates will be fitted, two servos per aileron and one per flap, I've decided hitech 645mg's will do the job nicely as I they won't be doing any wild 3d movements just general stooging around and looking big!

Anyhow tomorrow I'm aiming to get the servo mounting plates fitted and capstrips in place for the top side before I can turn the wing over and fit the strut mounting plates. Then onto the next wing and copy what I have made up for the first....

Oh yah this is Cassie my Australian Kelpie pup.









Title: **Re: 40% piper pawnee build**
Post by **Chris Gordon** on **06. Feb 2010 at 11:17**

Great work Rosco.
Keep the pictures coming.
Chris
:)

Title: **Re: 40% piper pawnee build**
Post by **Graham Stanley** on **06. Feb 2010 at 16:30**

Hi Rosco

Great model, I look forwards to seeing the in flight pics.

If you see John G on his travels, he can tell you about his scrape with Ems big tug. On a dive back down after a launch, one servo gave up. I don't know if the arm broke or how it failed, but when it did the model became uncontrollable and was set to re kit itself until the servo on the other side gave up too. With both flaps loose (err flapping?) the model was brought under control and John landed it safely.

The servos were quite beefy, and despite John's considerable experience didn't last.

Hope your experience with the 645's is good.....

Graham

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **07. Feb 2010 at 01:14**

Hi there guys thankyou muchly, Graham so far all of 645mg's have worked flawlessly but murphy is out there lets just hope nowhere near me....

Title: **Re: 40% piper pawnee build**
Post by **John Greenfield** on **07. Feb 2010 at 05:49**

Rosco

Posting this from a campsite in sunny New Zealand. I could not stay away from the forum as I needed my "fix"

align the pushrod over the servo output shaft when the flaps were down to provide the best mechanical advantage and not to put a load on the servo motor or gearbox. Incidentally they were not 645's, they were 9 series digital of 25 kg torque as I do not consider 645's nearly powerful enough for a model of the size of the Decathlon. I would respectfully suggest that single 645's on your Pawnee will not be nearly enough for the flaps especially if you intend to use them to restrict speed on steep descents. I would suggest a pair of 805's would be closer to the sort of power to give you safe operation. Remember that if one flap comes down just slightly more or less than the other the model will roll and this may cause problems as you reduce speed to land and the aerodynamic forces on the model change due to airspeed.

Regards

John

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **07. Feb 2010 at 08:25**

Hi there John interesting point you make regarding having enough power, will have to give some more thought here but I figured the flaps on a pawnee are pretty small and with 10kg of torque with mechanical advantage should be up to the job but as they're not fitted and I have the room why not....thanks for the input.

cheers Rosco.

oh I managed to get the cap strips on the top side of the wing.....not much else though in the shed.....too bloody hot!!

Title: **Re: 40% piper pawnee build**
Post by **crash** on **08. Feb 2010 at 12:36**

Hi Rosco, I have 10kg servos on my flaps, with an aircraft your size I would go at least that.

cheers

Crash :D

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **10. Feb 2010 at 13:00**

Thanks guys with your feedback taken into account and having consulted some of the greatest minds in modelling, I've gone with 15kg Hitec HS 745mg's on each flap...

thanks for the feedback, it helps to lower the anxiety and help the blood pressure!

Post by **rossco** on **20. Feb 2010 at 11:54**

Hey guys well over the last couple of days I have had some time on my hands and have now comenced building the left hand wing. On the Right hand wing I have left the bottom sheeting off so as to copy the details for the left hand wing.

So yesterday I glued up all 4 main spars and fitted the ribs last night with todays effort making the carry through doublers for the front joiner tube and glueing them all inplace along with the joiner tube with Devcon 2 ton epoxy. This will be left till the morning to fully cure.

Tomorrow I'm going to focus on glueing in the rear tube and doublers as well as make joiner boxes in the fuse from 9mm ply as I have decided to try and transport a 4.4 meter model home in one peice due to alloy to alloy tubes buring over is just too high a risk. So instead I will be boxing the joiners in 9mm ply and wrapping the box in carbon toe as well as tong and grooveing the box sides and finally with hardwood triangle stock on the inside and ribs on the outside to give structural integrity. To remove the chances of a stress riser in the centre of the box where the two ends of the joiners meet, I will be adding inside the tube a socket of solid glass rod extending 6" into each wing tube half thereby reducing the load in the middle.

Title: **Re: 40% piper pawnee build**

Post by **crash** on **20. Feb 2010 at 12:16**

Pictures Rosco Pictures

:-* :-* :-* :-* :-*

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **10. Apr 2010** at **13:02**

some more pics....







Title: **Re: 40% piper pawnee build**
Post by Noël Rumers on 11. Apr 2010 at 23:07

Hi Roscco,
This looks nice, a bit big for me but still a nice project and plane!!!
See under the below site my system for the wing spars and all around it.
<http://www.rcgroups.com/forums/showthread.php?t=980686&page=6>
This I used since the late 1980, it is strong and unbreakable in the air :D
Looks much work but is fast and strong.
Noël

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **12. Apr 2010 at 13:29**

hey thanks for the idea Noel I use a similar method on my glass wings. I'll be using your idea on the next model though, but for now I'm going to keep plugging away and get this one finished....famous last words but I have ordered the motor so now I have to get it done!!

Title: **Re: 40% piper pawnee build**
Post by **John Greenfield** on **13. Apr 2010 at 07:59**

Roscco

Just been looking at the pics of your build and noticed that in the second pic above the wing joiner tubes do not seem to be very well supported at their outer ends. If I am looking at the pic correctly the ends of the tubes (Grey pieces) only go through a quite thin rib 1/8" thick (?) and are not tied back to the spars.
If this is the case, I would respectfully suggest that more support is needed here to lock the ends of the tubes to the spars to stop them breaking out of the wing under bending loads.

John

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **13. Apr 2010 at 08:22**

Hi there Graeme the joiner tube travels through 3 x 3mm ply full ribs with 6.5mm doublers joining to both spars and ply sub ribs and are boxed with 6.5 mm ply on the back face of both joiner tubes. Incidentally the 25mm tubes are glued into the ribs and slide into ply boxes inside the fuse, this is in addition to the structural wing struts.

Tell me what would you do differently all ideas are welcome.

Title: **Re: 40% piper pawnee build**
Post by **John Greenfield** on **14. Apr 2010 at 07:41**

Your description of the support at the outer end of the tube sounds fine, its just that from the photo it was unclear. as long as the outer ends of the tubes are tied to the spars you will be ok.

Happy building.

John

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **16. Apr 2010 at 12:06**

No problems John big models are very deceiving...

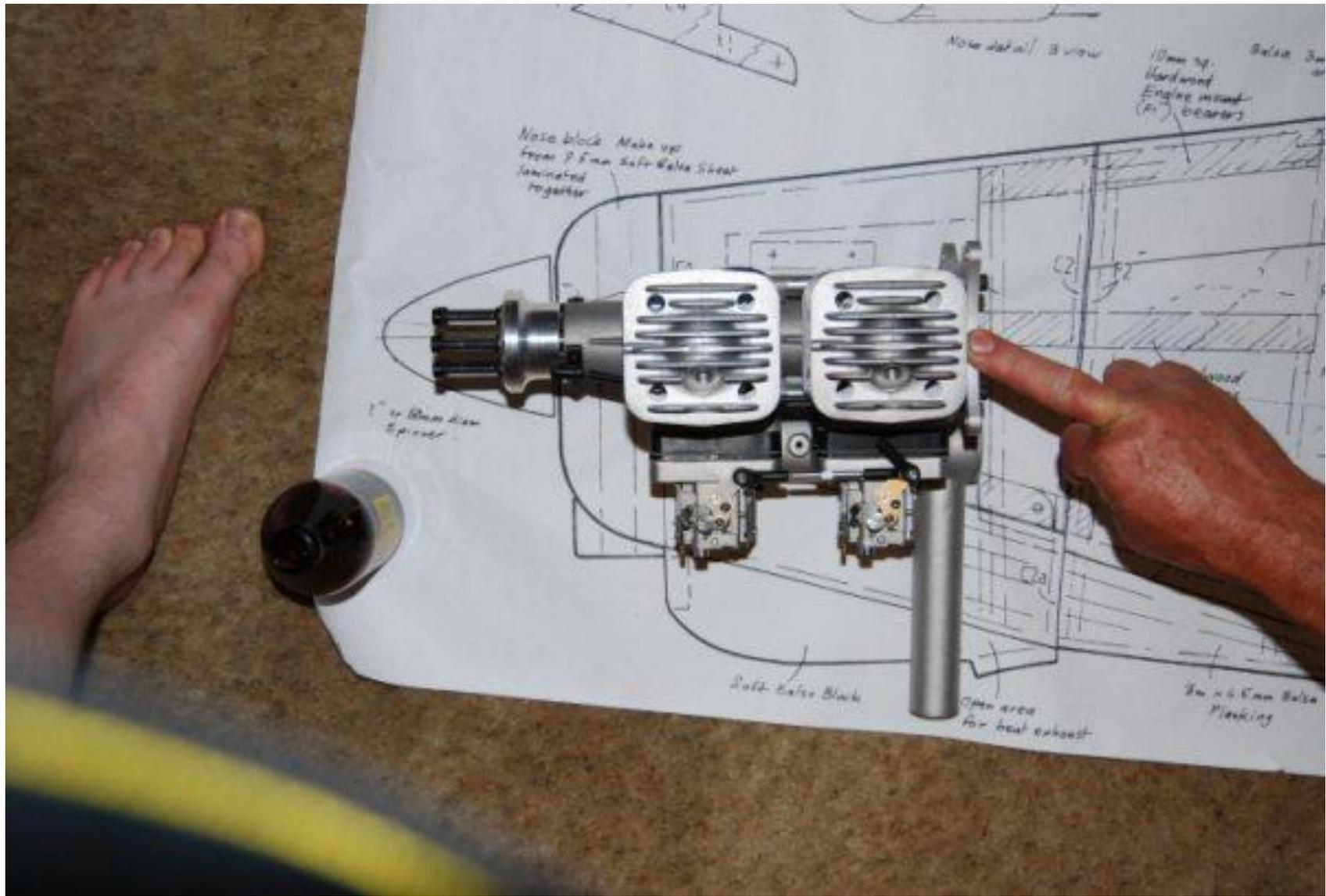
Title: **Re: 40% piper pawnee build**
Post by **rossco** on **18. Apr 2010 at 13:07**

As promised here are the latest pics. tonight I managed to hinge both tail plane halves with 6 robart barbed hinges per side in two sets of 3 per tail kind of in the scale position...well near enough for me.

I have also included some pics of a friends DLE 222, thanks for the assistance of your pointer Mick!







Title: **Re: 40% piper pawnee build**
Post by **rod** on **19. Apr 2010 at 11:50**

Looking good mate!!!

remember to keep those back cylinders cool with good baffling.

:)

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **19. Apr 2010 at 13:38**

will do hows things Rod?

Title: **Re: 40% piper pawnee build**
Post by **Barry_Cole** on **19. Apr 2010 at 19:28**

Rossco,
I hope you are going to replace those "silencers". We ran a DLE111 here yesterday with those on and the noise was terrible.

>:(>:(>:(>:(

BC

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **20. Apr 2010 at 13:10**

hahaha, Why would you want to muffle that gorgous angry volkswagon sound?? The silencers that come with the motor is in two cylinders per side, but there will more than likely be a collector barrel combining all 4 pots and hopefully giving a throaty v8 rumble as the pawnee I am modelling is powered by a 6.5 litre chevy V8, a very impressive bit of kit with loads more power than the standard lycoming motor and about 1/6th of the cost to rebuild or replace and the same run time of 1500hrs before replacing any pots. A friend of mine flies it at the Benella Gliding club.







Title: **Re: 40% piper pawnee build**
Post by **rod** on **20. Apr 2010 at 13:11**

rossco wrote on 19. Apr 2010 at 13:38:

will do hows things Rod?

Not bad mate. Well it took me a while after Jerildere 2008 but I managed to get a 4 Meter scalie going. Now it has snowballed into a stupid amount of gliders and tugs.

See you at Lamaroo??

Hows things your end?

That tug is going to be the bomb!!!

Hey dude we might have a new in the box LET Models Ventus 6 meter for sale within a week, could you put the word around?

Rod

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **20. Apr 2010 at 13:26**

Lets hope it doesn't make any holes in the ground, but al least it will be easy to see in the sky!!

Title: **Re: 40% piper pawnee build**
Post by **crash** on **21. Apr 2010 at 12:20**

Ah yes Lameroo. here is the go.

September 10th 11th and 12th

Friday lunch time start through to Sunday.

Details for more info, just contact me.

Might want to pass onto Danny Hales as well.

Cheers

Lameroo Event Organiser :P

Title: **Re: 40% piper pawnee build**
Post by **rod** on **22. Apr 2010 at 09:52**

Lameroo event organiser with the name crash.

This will be a whole lotta fun!!

Dan the man is on it.

Title: **Re: 40% piper pawnee build**
Post by **rossco** on **19. May 2010 at 12:56**

Hi guys the realisation that the pawnee will not be ready for Sheparton due to time and a lack of motor not having shown up has set in and as such the pawnee is being shelved till after the Sheparton momoth scale meet in September. Therefore I have decided to finish off my 85% built Schweitzer 1-30

cheers Rossco.

Title: **Re: 40% piper pawnee build**
Post by **Roberto Alonso** on **19. May 2010 at 19:04**

...and it will be about time you finish it! that's one sweet looking plane you got there. 8-)

Roberto,
master procrastinator ;D