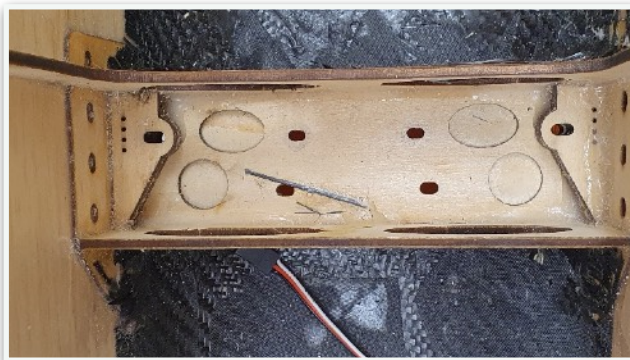


Peter Jenkins - B J Craft Anthem with TMCR, Part 3

Undercarriage

Now seemed a good time to install the main undercarriage. It's a lot easier moving the fuselage around without a pair of long u/c legs sticking out!

The u/c legs come pre-drilled with two fixing holes and an axle hole. The fuselage mounted u/c box, that I had reinforced with carbon fibre, has two elongated slots for sideways adjustment for the two 3mm u/c fixing bolts. There is no provision for fore and aft adjustment. The u/c leg has a straight edge at the front and this is used by B J Craft to key the u/c position fore and aft.



The u/c slot in the fuselage needed a small amount of relieving to allow the leg to enter flush against the front of the box. Once positioned so that the down angle of the leg was level with the fuselage it turned out that the bolt holes in the retaining ply plate and the u/c leg were aligned! I was amazed and very pleased!

Incidentally, it is the top row of holes in the photo above that are used. The two outboard holes have additional ply plates to increase their strength.

The next job was to fit the 3mm spike nuts to the underside of the attachment hole of the leg. I used the 3mm bolts to draw the nuts into the leg and then gave the nuts a dab of cyano to stop them dropping off when the legs are removed!

I also checked that the wheel flats on the legs were aligned fore and aft with the legs bolted in place and I'm pleased to say that they were! Full marks to B J Craft for this bit of precision engineering!

Not so good were the axles that were provided! A quick call to Chris at Bondaero had a pair of his axles that also provide for the outside of the wheel spat to be clamped to the axle. If you take the RCM&E magazine, take a look at April 2023 edition and Keith Jackson's article on page 68. (Incidentally, if you look at the photo on page 70 you will



see that I started out in aerobatic competition with a Wot 4!). There is a top hat section on the inboard end of the axle that requires a 6mm hole in both the spat and the u/c leg. The axle has a flat plate with a 10mm flat on the end of the axle which after adding the wheel and washers butts up against the top hat section.

The axle is hollow and threaded for a 3mm bolt. Once the bolt has been tightened up, using a 10mm spanner on the outer flat section of the axle to enable the bolt to be tightened, the last part is to use the 1mm bolt and snazzy red anodised washer to clamp the outside of the spat to the axle.

I won't bolt the u/c back on till I've almost done the build as it's easier to move the fuselage without the legs sticking out!



Wings

Next up were the wings. Relatively little to do here but first things first, get the servos in. Again, I'm using powerful mini servos for the ailerons as they have as much torque as my full size servo I would normally use for the ailerons.



As for the TP, the first job was to open up the aileron aperture in the wing and seal the covering edges down into the hole. The laser cut servo tray, as per the TP, is a tight fit in the servo aperture. The key thing to note here is that the servo is aligned fore and aft while the swept wing means that the servo arm must be aligned with the aileron hinge line – see photo.



Once that was sorted out, I could install the control rods. As noted before, B J Craft provide threaded rods with Z bends but the distance between the mini servo arm and the control horn hole was too small to get the provided rods to fit even with the 2mm ball link screwed right in. I tried to make a new Z bend but the wire provided is so brittle that it cracked when I used my Z bend pliers on it! So, I have had to order some 2mm threaded rod and will make up the links when they arrive.

Of course, the aileron servo lead had to be extended so that it emerged at the wing root with just sufficient length for plugging it into the aileron lead in the fuselage. The next task was to use a glue gun to deposit some hot glue inside the wing and press the aileron lead into it so that it was fixed in place and would not fall into the wing during transport!

The next job was to fix the 4mm spike nut to the inside of the wing to accept the wing bolt. B J Craft give the option of placing the bolt either in front of or behind the wing tube. I opted to have it in front of the tube. The provided ply discs were a bit too thin for my liking as the spikes went right through them. So, I cut a piece of 4mm ply, drilled a 5mm hole in it and installed the spike nut. Gluing this onto the inside of the root rib required a dab of Vaseline on my finger to anchor the spike nut before inserting it into the wing and positioning it lined up with the pre-drilled access hole. I used Uhu glue for this as it gave time to position the nut and then tighten up the wing bolt to hold the ply with the nut in position till the glue set.

The final critical job on the wing was to cut and fit the front carbon wing tubes but I decided to leave those until I had installed the fuselage mounted incidence adjusters.

Making your own Servo Lead Extensions

Many years ago, I took up making my own servo lead extensions. The advantage is that you can make the lead to exactly the length you want. However, like everything in life, you must have the right tools!

This photo shows what's needed.

Firstly, you need a wire stripper and the orange coloured set of pliers is just that. You need to strip about 3mm of covering off the wires and this tool allows you to see how much you will strip and do all 3 servo wires simultaneously.

Next you need a pair of needle nosed pliers. You need these to close the "wings" on the wire crimps that hold the wire and the insulation.



Finally, you need a pair of good quality crimping pliers. You must buy the sort that is suitable for crimping servo wire and aim for an automatic action i.e. one that you can press home fully and that will then crimp to a set pressure and then release itself and spring open when you release the pressure on the handle.

You must also buy the plastic plugs and crimps but those are readily available. You can get Futaba style plugs with the little flat that provides correct orientation or JR style plugs that don't have these little flats. If you cut off the flats on Futaba style plugs you can use them on JR sockets and, of course, you can use JR plugs on Futaba sockets but the onus is on you to get the orientation correct.

So, having got all these bits, this is what you do next.

First, strip the wire using the stripper pliers. The photo shows that I'm making the plug with the male connector.



Next, separate the 3 wires. I find making a small cut with a sharp modelling knife to start the separation process is very helpful if your nails aren't particularly strong! Then twist the ends of the wires together to stop them spreading out.



Then, work out which way up you need to have the 3 wires to attach the crimps. The signal wire, white here, must always be on the left with the crimp positioned as shown in the picture. This will keep the wires in the correct configuration and the bar across the crimp at mid section will be locked into the socket when inserted.

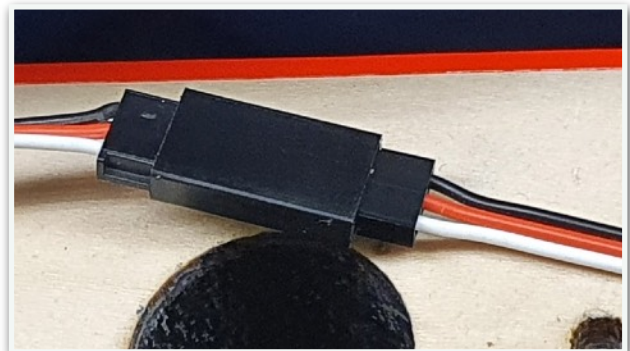
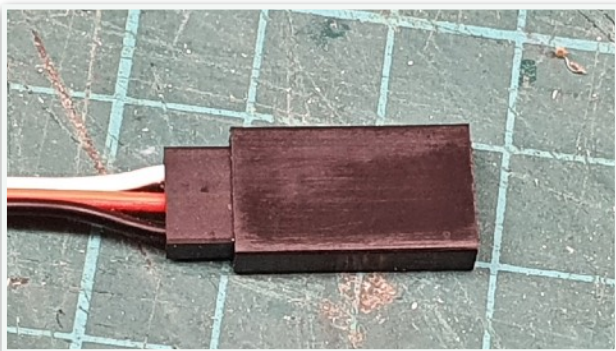
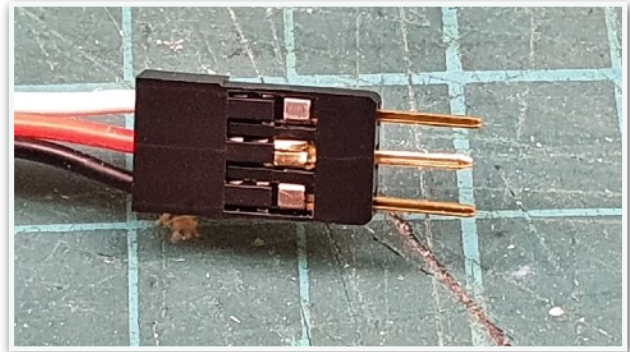
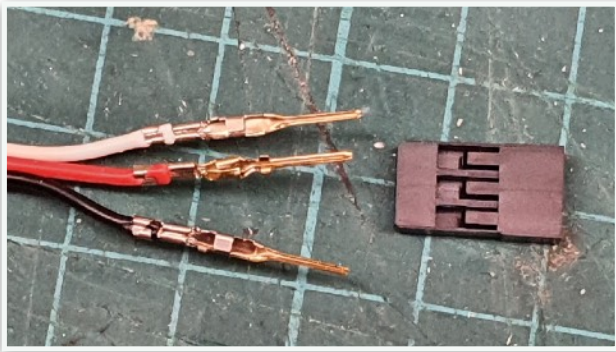
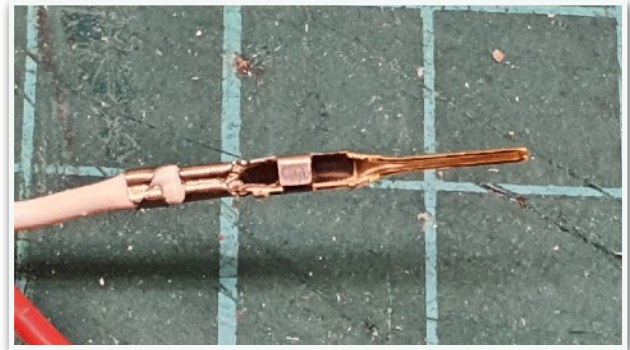
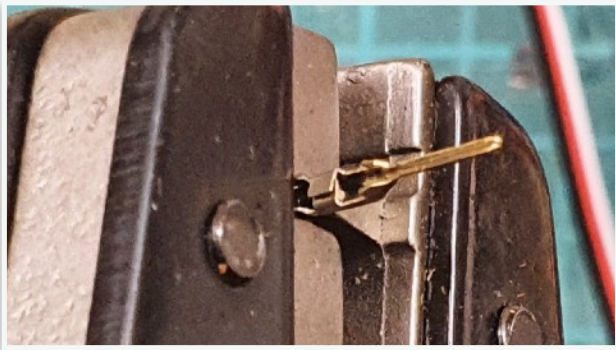


Next, squeeze the 2 "wings" on the left of the crimp in the photo. This is the slightly fiddly bit! You need to hold the wire and crimp with one hand and use the needle nosed pliers (small non needle nose pliers are OK) to squeeze the "wings" together as in the next photo.

If you don't do this, the next part of the operation becomes decidedly iffy as the crimp falls off as you touch it with the crimping pliers! I learned that the hard way early on!



Finally, apply the crimping pliers making sure that you don't cover the bar across the crimp as that will destroy it! Close the pliers completely till you hear the click signifying that the correct amount of pressure has been applied and the crimping force has been released. Then allow the handles to open and remove the perfectly formed crimp! Well, it might take a few dummy runs to get it right but learning how to do this is a great help when you want to avoid a large amount of wire cluttering up a small space.



The photo sequence above shows the assembly of the plug, the addition of the cover and finally shows a servo plugged into the socket. This happens to be the wing aileron servo and the extension lead that will remain in the fuselage. The servo plug is on the left in the last photo and is a Futaba type as you can see the flat on the side of the plug.

It's worth having a go but you must buy the right equipment to make life easy! Of course, you can just continue to buy servo extensions commercially and put up with the excess wire that usually results. In my case, I am also conscious of the weight of the extra wire that can build up when dealing with the 5 servos that are needed on these models, not to mention the possible extension to the ESC!

< End of Part 3 >