

Fit the centre rib to the leading edge using fast cyano. Hold it in place vertically with the LE stood flat on the work surface and use a set square to ensure it is exactly at 90 degrees. Cut all the ribs as rectangles. The tip ribs are from 1/4" and all the others from 3/16" firm balsa. The tip ribs should be an inch longer than needed so you can cut a 1/4" square hole to receive the trailing edge. Make up the trailing edge from 1/4" sq. spruce and light 1/4" balsa. Do not cut it to length at this point. Note the scarf joint, it's very necessary and strong. Spot cyano the tip ribs squarely in place and then slot in the trailing edge, threading it through the holes in the tip ribs. Now view from the rear. If any warp is visible twist it out, if necessary cracking the spot gluing of the tip ribs.

When fully square, drip fast cyano onto all joints and fit the 1/4" gussets to the tips and rear centre rib. Cut a 1/2" gusset and fix to the inboard centre rib/leading edge joint. This gusset helps to make the whole engine area really solid and will avoid power loss through engine vibration. These .19 diesels need to know who's in charge! Trim the trailing edge to length; add the remaining ribs and then taper to the correct profile using a hardwood template. Slice from front to rear to avoid the blade trying to follow the grain. Now complete the wing construction, adding gussets to remaining ribs, installing the controls and tips and fitting the fibreglass tank.

Sand the whole model and, if you wish, radius the hardwood trailing edge. It saves some weight and looks better! The tanks from Mick Lewis or Harry Walker are both excellent. There are full instructions for making fibre glass tanks on the CFA website if you want to try making your own. Note how the tank bay is lined with soft 1/8 balsa to make for easy removal for re use or repair. Also don't forget the small ply bell crank stops. These avoid the bellcrank digging into the centre rib causing the model to go out of trim.

Turn to the pod. This needs to be really solid. Use 3/8" by 1/2" beech bearer, which is standard procedure. Laminate with 1/32" ply and a doubler of 1" soft balsa. Two pieces of 1/2" will do if you wish. Check the shape of the doubler that allows access to the bolt heads. (This idea was stolen from Frank Smart) It's

not fully necessary but will of course allow you to easily move the engine forward if you need to change the CG. Fit the hard balsa spacer between the bearers with the grain vertical.

At this stage you can drill the engine mounting holes. Use an undersize drill so that you have to screw the bolts in. Whichever engine you use it should be mounted about 1/8" in front of the leading edge. If you have any worries about the overall weight of the model then move it forward about 1/16". With the pod still a complete rectangular block, and again using a bandsaw, remove the area between the bearers to accept the wing. Now, very carefully, nibble away the hard balsa spacer to fit the leading edge. Make this a very close joint. Lastly, drip thin cyano over the spacer. Watch out for your eyes, as it will give off copious fumes!

Soaking into the end grain it will make the balsa rock hard and add to the solidity of the engine mount. Now saw and carve the whole pod to a streamline shape and give several coats of dope, which is how it can be left. I always cover my pods with nylon, which is a bit of a fiddle but one of my trademarks. Some people use glass cloth and others smear with epoxy.

The elevator is often damaged in mid air collisions and as such needs to be as bullet proof as you can make it. Cut from light but stiff quarter grain balsa if you can find it. Recess a small rectangle of 1/8" hardwood where the elevator horn is to be. This will stop the wood squashing when you do the screws up tight. Make a good joint and soak with thin cyano. Sand to streamline shape and then give a couple of coats of dope. Next cover with 25g. glass cloth and finally nylon using dope as adhesive for both layers. It sounds like a lot of work but these crucial parts stay in one piece even in the event of major collision.

Lastly glue some 1/32" ply pressure plates top and bottom where the horn is to be. Don't even think of using a commercial plastic horn if you are going to use the model in anger. Either make one from mild steel or, like myself, acquire some titanium and use that. They simply won't break although drilling is no fun! I fix mine with self-tapping screws threaded into the titanium.

I still cover my models with nylon. I have

tried all the other fabrics but always come back to the traditional technique. Using dope in the winter in the UK is difficult when there is high humidity because blushing frequently occurs. Luckily I use a dehumidifier in my house during the winter months and manage to sneak everything inside when 'er indoors is not indoors! Many people are allergic to the smell of cellulose dope and can get quite ill with it. Luckily it doesn't seem to have had any effect on me over the years (you might beg to differ!) I use it almost with abandon.

The wing should be given two coats of full strength dope and lightly sanded. Now fit the pod including engine in place. It should be offset outboard a couple of degrees. When you are sure that it is in the correct position pencil mark around the pod and remove it. Cut two pieces of lightweight nylon oversize with small holes for the tank vents and pushrod exit. Give yourself plenty of space. Soak one piece of nylon for five minutes in warm water and then wring out and partially dry on a clean cloth. Lay the nylon over the bottom of the model and gently pull it out. Lift one half of the nylon up and lay it over the other. Coat the revealed wing with full strength dope and drop the nylon back into place pulling out any wrinkles.

Now do the other wing in the same way. Check that there is plenty of dope on the tips and trailing edge in particular. This should avoid it pulling away when it dries. Leave this to dry naturally for several hours after it has shrunk up. You can now trim all excess nylon back to the wing outline but allow some overlap on the trailing edge. Make sure you have plenty of sticking area on this, as it is quite narrow. Now do the top in the same way.

When fully dry dope about half an inch around the excess nylon and allow to dry. It is now easy to cut the spare nylon off with a sharp blade or scissors. Allow a good quarter of an inch overlap all around and dope this into place. As the balsa frame will still be damp, allow it to dry for at least twenty-four hours, preferably in the airing cupboard! The covering should now be evenly tight and ready for dope. The first coat should be only slightly thinned. I always stop doping short of the trailing edge extension for the first coat. When the front is dry, then do the little bit over the balsa trailing edge.