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|| Making Glassfibre Tanks || By Nick Lewis

HI-TECH TANK

Made to measure fuel tanks - in glassfibre...

Having used mutant and stuff to tanks and tanks in tin plate, brass, aluminium and ply, the latter has been covered in a couple of layers of fine glasscloth, I found them to be nothing but trouble. There is nothing worse than to find that on the very first test flight, the motor goes sick and the whole outboard wing has taken on the guise of an enormous fuel receptacle. When this happened to me no less than three times with brand-spanking new models, I decided that enough was enough. The next time you are facing only down because you lost the argument and the wife's new fridge freezer has been delivered, instead

of your new chimney, all energy, all darling powerplant, take heart, for lurking within that huge box will be a ready supply of mould-making material. Use open the box, shove the fridge/freezer to one side and fix your eyes on all that lovely white foam (photo 1). I used to cut the foam using a hot wire, but the fumes are so obnoxious that an alternative method was imperative. I now use nothing more hi-tech than a cross saw (a chainsaw even uses the same principle - but then he is a butcher!). Before you start doing your foam, decide upon the dimensions of the tanks that you intend to make (see sketch). If making them for combat, set out the foam to the required thickness

of approximately one inch, then draw the plan view on the side of the foam using a template and cut this out making quite certain that all the corners are right angles. If they are not - begin again and learn your lesson "more haste less speed" (photo 2).

The next step is to cover the mould in clear packing tape - NOTHING sticks to this stuff! - unless you know different? so you will be able to remove the tank from the mould easily when it is cured (photo 3).

Now that we have our moulds covered, we must consider how to hold them while we apply the glass cloth. Draw into the scrap box and surface with a piece of 2mm steel

of bars about 12" long and 2" wide. Then, I can measure and metric with the best of them! Cover this with some of the parcel tape that you will happen across through the tubes to attach the moulds with their fronts downwards (photo 4).

The glasscloth can now be cut to size. Use a simple cardboard template. Three pieces per tank each one being 12 inches square all intend to give an overlap on the corners of the completed tank (photo 5). Overlapping the corner is what gives the tank much of its fielded strength. These rectangular pieces are also required to cover the edges. I always use Chama Selection CT101 resin with their slow hardener, which lasts in 1

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PHOTO 1: Foam packaging - ideal for tank moulds



PHOTO 2: Shape the tank moulds so that sides are square and flat



PHOTO 5: The glass-cloth pieces are cut to size (Some of the strips are needed).



PHOTO 6: The glass-cloth is applied using small plastic strips.

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NOTE: Mike uses flow tanks in all his CL models - and has never had one fail!



NOTE: The foam mold is wrapped in clear parcel tape.



NOTE: The moulds are mounted onto the tape covered wing base piece using self-tapping screws.



NOTE: The tank is easily removed from the mould.



NOTE: Make up the pipes to the right shape and length.

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PHOTO 9: Small pieces of fibreglass are soldered to the pipes at the points where they pass through the tank.



PHOTO 10: Fibreglass sheet is used to form the head seal.



PHOTO 11: The front of the tank is closed using three layers of wetted cloth.



PHOTO 12: The scales don't lie. The complete (100ml) tank weighs just 14g (less than half an ounce!)

"In use I've found these tanks to be the dogs' danglers and there is no way that I would ever return to the burnt-finger days of plate and solder!"

the bottoms of recycled yogurt pots, using strips of plastic cut from the sides of margarine tins, don't forget to put these items on your stock but and build up a good stock before starting work! Originally, I used four layers of CT500 (25gsm) cloth, but on being supplied with CT501 (40gsm) cloth when CT500 wasn't available, I subsequently found three layers of the not only to be superior, but also less work into the bargain. I've often heard it said that all three layers of glasscloth need to be applied at once, or re-orientation will be a problem. Likewise apply each layer separately and have near me the problem in any of the hundred or so tanks I've made. Make quite certain that each layer is thoroughly wetted and allow to cure fully (24 hours) before applying the next (photo 8).

Remove the tank and mould from the latex holding strip - no need for any flexure here as your main job is to remove the foam mould cleanly

like in photo 9) using a flat blade screwdriver, or something similar. A razor saw is my preferred tool for removing the finishing and then a little sanding makes it ready for adding the closing side, after the pipework has been installed.

Reinforce the fuel feed and air vent tubes to the required shapes (photo 8) taking care not to clamp them and drill the holes when they will pass through the tank body. At the points where they will pass through the fibreglass, solder on small pieces of fibreglass at right angles to the tubes so that these will be along the outside of the tank (photo 9). Glass over these with a couple of layers of cloth to form very strong fuel tight joints, also attach the tubes to the internal points of contact with the tank and glass over these for added strength (photo 10). If you are making tanks with fuel head caps, now is the time to fit the cap side. I make these from fibreglass sheet and glass over the parts with three layers of cloth (we have all

seen tanks with their baffles floating about inside them!) The cap has two lines fitted drilled at its front end to let the fuel in and is then complete.

The tank is now almost finished, it just remains to close the open side. Cut three pieces of cloth to give an overlap all round of approximately three and lay these down on top of each other on the parent tape-covered piece of latex. Mix up some resin and wet the cloth thoroughly, place the tank centrally on the cloth and turn up the edges to form a seal all round, put a small weight on top (photo 11) and then put the tank aside until completely cured.

Any rough corners may be removed by very careful sanding - it's quite easy to go clear through, so easy does it! The tank shown in this piece weighs just a mere 14g! (photo 12).

I test each tank by SIGHTLY inflating it using a bicycle pump and holding it under water, it's very rare to find a leak, but if you do just

apply a small glass patch and re-test it. In use I've found these tanks to be the dogs' danglers and there is no way that I would ever return to the burnt-finger days of plate and solder. I've sold many of these to combat flyin, so they are obviously good. Why not give them a try they are certainly worth the effort. ☺

