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How to make Flanges

So you want to cut a piece of fiberglass and make it a removable feature in the future.....say put a access door in the cowling. Piece of cake.

Obviously mark with a sharpie pen where you want the door and cut it out. Make the cuts as pretty as you can since you will be reusing all the parts. We use the Fien saw most of the time. After you cut it out use tongue depressors with hot glue (remember hot glue is not warm) and glue the door back in place.

Flip the whole piece over and put duct tape where the flange will overlap onto the door. Use 2 layers of duct tape. You see the duct tape is your release agent. The fiberglass won't stick to it very well.

Over lap the duct tape onto the panel and the door by 1 inch on both, lay up 4 plys of bid over the 3 sides where flange will be. I have found all 4 sides of your door need support. So in this case 3 sides are flanged and the 4th is where the hinge goes. Also put 4 plys where your hinge will be attached but not touching the 3 other sides. You'll see why later.

After it cures get the fine saw back out and cut the glass between the door and panel where the hinge will be, only where the hinge will be. Now you can push loose the door. A puddy knife under the glass and between the duct tape and glass works well. Be careful, the glass remaining will bite. Poof, you have a flange. De lethalize the opening so only a maximum of 1 inch flange is remaining.

Take one half of your hinge and flip it over and reinsert the hinge pin. This will allow the door to open. Now it's ready to rivet. Put nut plates where you desire on the flange. You used 4 plys of bid so you can counter sink the rivets holding your nutplates and hinge area.

The reason you used 2 layers of duct tape was for paint an primer build up on both parts.