

Those who are interested in fiberglass body construction will want to know how to repair...

# FIBERGLASS

## Bodies at home

**M**ANY articles have been written extolling the glories and virtues of fiberglass body construction. These articles tell you about the *difference*, in cost, between designing and fabricating the body yourself in your garage or backyard, and paying a metal man to pound it out for you.

They (the authors of these articles) tell you also, about the beautiful design of the cars you can build and how light it will be and how strong the fiberglass is.

It has also been said that the material is extremely easy to work with, and no previous experience is necessary. Either enamel or lacquer can be used on the glass to achieve a mirror-like finish of any color desired. There is actually color that can be mixed in the resin that is used to fix the glass mat or cloth so your color would be a permanent part of the material.

Furthermore this wonder material, fiberglass, is impervious to fuel and acid.

In case of fire, the glass, like metal, will not burn but would probably melt if the fire got hot enough.

But, supposing you get your car all designed, finally build the body and mount it on the chassis, then you enter your new fiberglass pride and joy in the Pebble Springs road race. On the first sharp turn you get a little crossed up and ding your shiny new fender on a hay bale. It is possible you know, and what happens then?

You can't take your jewel to the local fender bender and have him weld up a rip in the fender or lead in a dent. There are no shops, yet, that specialize in fiberglass body repair. Contrary to what you might be thinking, this does not leave you holding the proverbial bag.

I've been curious about this prob-

lem for some time and feeling sure that any of our readers who have become interested in fiberglass body construction would also like to know what to do, we called on Bill Campbell at the Hollywood Plastic Products Company in Burbank.

Bill's experience with fiberglass dates back several years to the time when he applied the first layer to the bottom of his boat. This practice, of applying fiberglass over the hull of a boat, is becoming very popular.

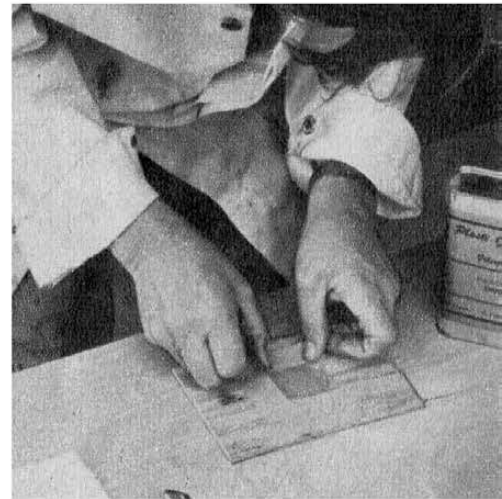
It not only makes the hull waterproof but will strengthen it, and make it more resistant to breaking when striking objects in the water. To get back to the subject at hand, which is glass automobile bodies, not boats, you should know what to do after you build the car.

In order to illustrate to us the method for filling a hole in fiberglass, Campbell knocked a hole in a piece of plywood, with a hammer. Making no attempt whatsoever to smooth up the hole, or finish off the edges he proceeded to demonstrate to us how it is done.

This method, even though demonstrated using a piece of plywood will still be applicable for a glass body.

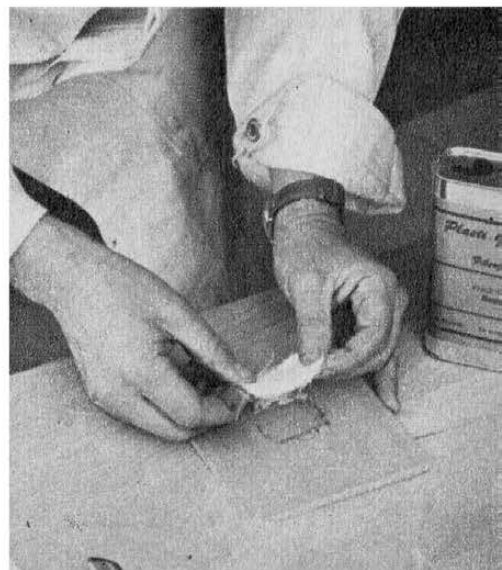
Materials needed for the job are: a small brush, approximately 2 inches wide, some wax paper, masking tape, resin, catalyst, glass mat, and a surface grinder. The brush should be a fairly cheap one and can be cleaned with acetone.

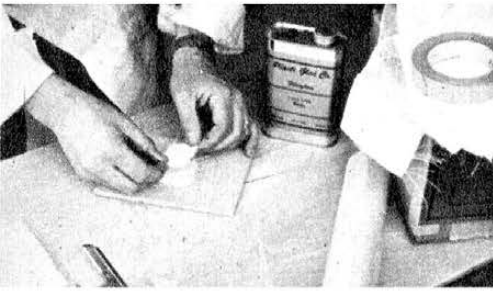
On a flat surface, such as this, preparations for the repair are fairly simple: Compound curves would complicate the job of repairing but is mostly a matter of getting used to the material. If the person that is to do the repair job, is the one who built the car in the first place, not many problems will



Step 1. The board is turned over and a piece of wax paper taped over hole

Step 2. The board is right side up now and Bill is fitting glass to the hole.





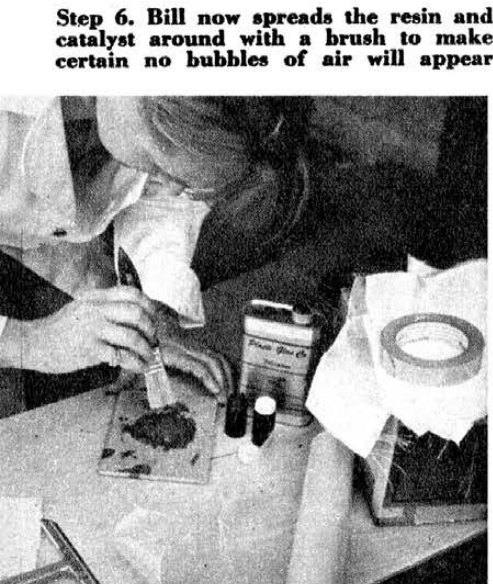
**Step 3. Glass mat is cut to right size and layers are being added to achieve same thickness as that of the board.**



**Step 4. Resin and Catalyst are being thoroughly mixed in clean coffee can**



**Step 5. Mixture is then poured on mat**



**Step 6. Bill now spreads the resin and catalyst around with a brush to make certain no bubbles of air will appear**



**Step 7. Within 15 minutes after last step the resin is set up hard enough to smooth out. Bill is using a disc sander because of hardness of resin.**



**Bill demonstrates how fiberglass and resin has adhered to plywood only 30 minutes after start of demonstration**

arise on this score because he will be used to handling the material.

First, Bill turned the piece of plywood over and laid some wax paper over the hole. He then secured the edges down with the masking tape.

Turning the piece of wood right side up again we see that the bottom of the hole is covered by the wax paper which will be removed after the operation is completed, but in the meantime gives a backing surface for the glass mat and resin that will be used to fill the hole.

Next, Bill cut some glass mat to fit the hole and built up the layers to the proper depth. In this particular case it took four layers of mat to equal the thickness of the quarter inch plywood.

With the glass mat fitted to the hole in the wood, Bill started mixing the resin and catalyst, using a clean coffee can to mix in. Any clean container will do for the job.

The amount of resin to be used will have to be judged by the person doing the job. A little good judgment and horse-sense will be very helpful here. In this particular case,  $\frac{1}{8}$  of a pint was deemed sufficient and as it turned out, it was.

The mixture of resin and catalyst is then poured directly on to the glass mat in the hole, until the resin comes up to the surface of the material. (In this case it is the wood.)

Now the brush comes into play and is used to brush the resin until all bubbles are worked out and the surface is smooth.

Different resins will require a varying amount of time to cure. This is not only dependent upon the brand of resin but the amount of catalyst that is mixed in with the resin. The catalyst is the heat agent that causes the resin compound to set up hard.

Bill mixed in a little more catalyst than would ordinarily be used and the total cure took 14 minutes. After this time had elapsed it was hard enough to be sanded down smooth. Actually, this whole demonstration for Hop Up's camera took only 31 minutes from start to finish.

The reason for the grinder now becomes evident. When this resin has set up it is next to impossible to cut with ordinary sandpaper. Even the grinder (disc sander) has to have a heavy grit disc on it for the resin will fill up a fine grain paper almost immediately. Some resins and catalysts can be sanded with ordinary paper mounted on a sanding block, of wood or rubber.

Before starting the grinding operation it is a good idea to wear a shirt with long sleeves, have the collar buttoned up and wear safety goggles. The "glass dust" from the body, that is being ground off by the disc sander is something very much akin to itching powder. Once this powder gets worked into the skin it is hard to wash off.

A good example of the results that can be attained from a repair like this is the case of Hill and Davis's streamliner. Last month while on the way to the Fresno Auto Show, the streamliner acquired a hole in the fiberglass body. George wired to Plasti-glas, for one of their starter kits and repaired the hole before putting the car in the show and the public was none the wiser.

As I was leaving to come back to the Hop Up office to put this story down on paper Bill said: "Tell those guys that this fiberglass construction is not a cure-all and shouldn't be looked upon as "the end" but until something better comes along it is sure a darn good substitute. I'm sold on it."