

Photo #64

Install the butterflies in the collector and file them to fit if necessary.



Photo #65

Remove the shaft and measure 1-1/8" from the bend. With a #53 drill bit (.0595 inch), drill a hole parallel to the butterfly shaft. This hole is where the control cable will be attached.

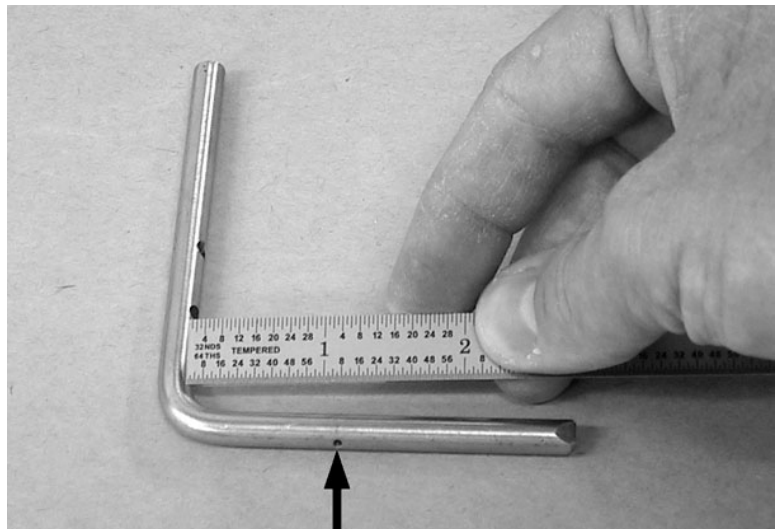


Photo #66

Before final installation, trim off any excess shaft material. Cleco the butterflies in place. Remove one cleco and install the pop rivet, then install the second pop rivet.





Photo #67

Final installation of the butterflies on the shafts.

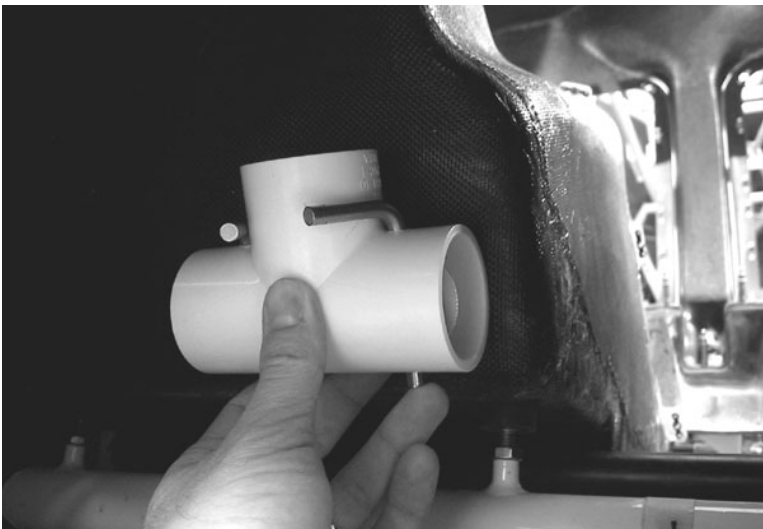


Photo #68

Locate the collector on the underside of the floor pan in front of the passenger foot pedals. Mount it to the floor pan using two nut plates riveted to the inside of the collector. Nut plates should be located in the center of the collector. It will be necessary to countersink the rivet holes in the collector deeper because of the thickness of the material.

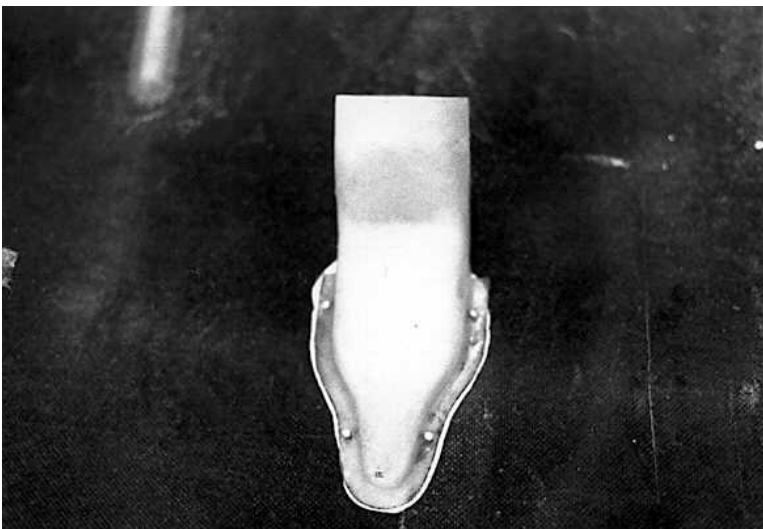


Photo #69

Place the cabin fresh air scoop in the tub so it is centered and 20-1/2" from the front edge of the tub (just in front of the engine fresh air intake scoop). Use the scoop as a pattern to cut the hole in the tub. Attach the scoop to the tub with pop rivets and silicone. (This view is of the inside of the tub.)

Photo #70

A view of the fresh air scoop from the outside of the tub. Note that the shape and size of the opening are the same as the scoop design.

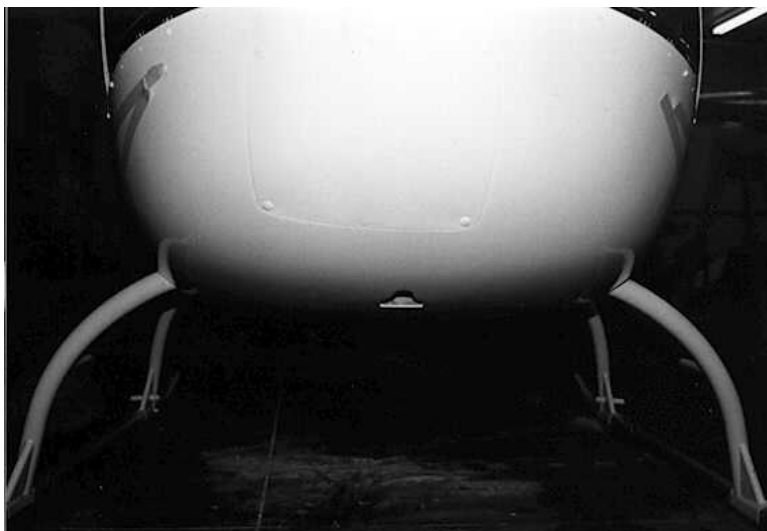


Photo #71

Use masking tape to lay out the cabin air inlet slots. There will be four slots, two on each side. Find the center of the pod and measure 4" to the left and 4" to the right. This will be the starting point of the slots. Each slot will be 3-1/2" long and 3/8" wide, with 3-1/2" between. The front edge of all slots will be 3/4" from the windscreen edge of the pod.

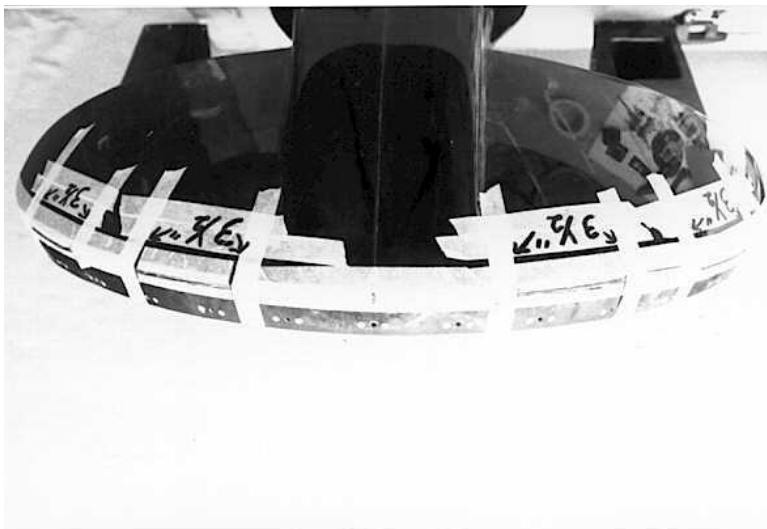
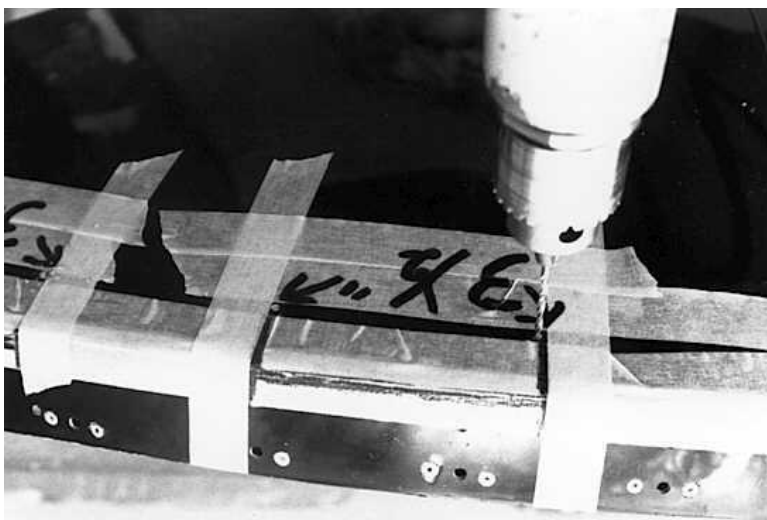


Photo #72

Drill a 3/8" hole at each end of the slots.



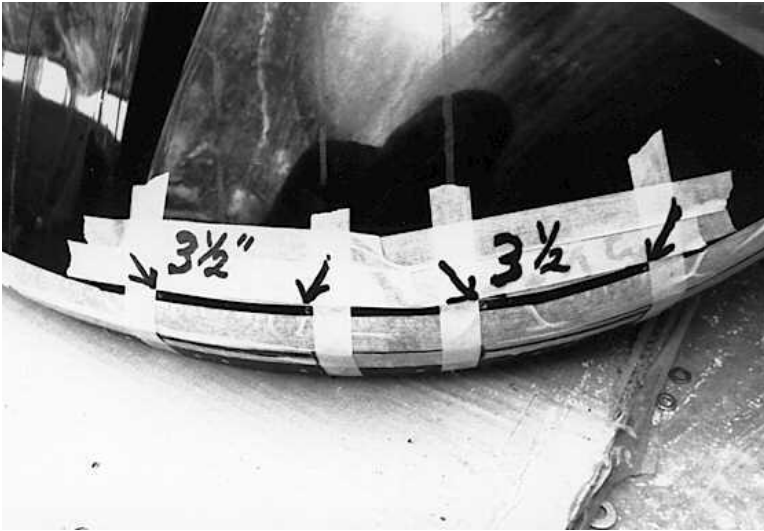


Photo #73

After the holes are drilled, use a cutting wheel on an air grinder to cut the slot openings between the holes.

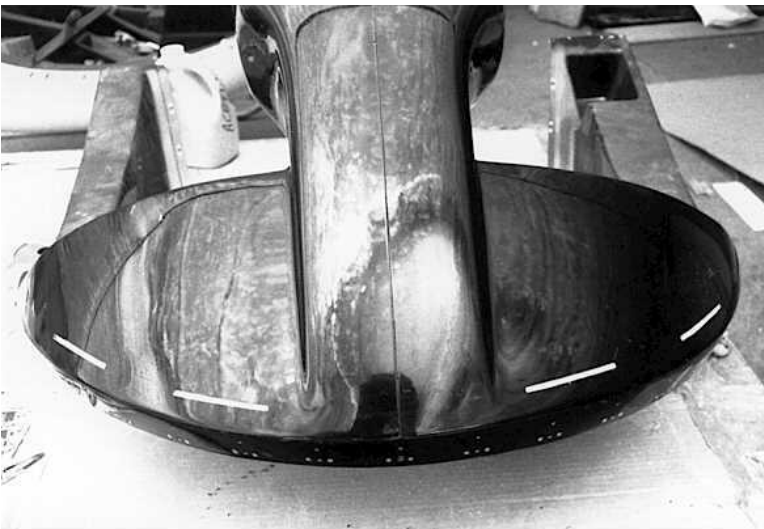


Photo #74

Remove the tape and deburr the slots with a file and sandpaper.

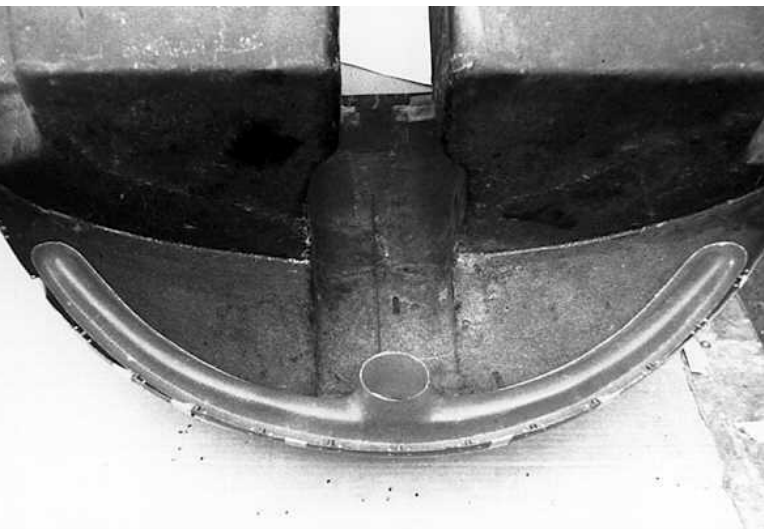


Photo #75

Use fiberglass mat and resin to bond the plenum (curved fiberglass part) to the underside of the floor pan/instrument pod. Hold it in place with clamps while the bond is curing. Be sure that the plenum is correctly aligned under the slots.

Note: Paint the exterior of the plenum black prior to final assembly. This will make it less visible from above.

DOORS

Photo #76

Use print E41-2000 and templates E41-1 and E41-2 when constructing the doors. Parts as received from RotorWay International.

Note: Small parts and hardware for the doors is found on E41 CARD 1F.

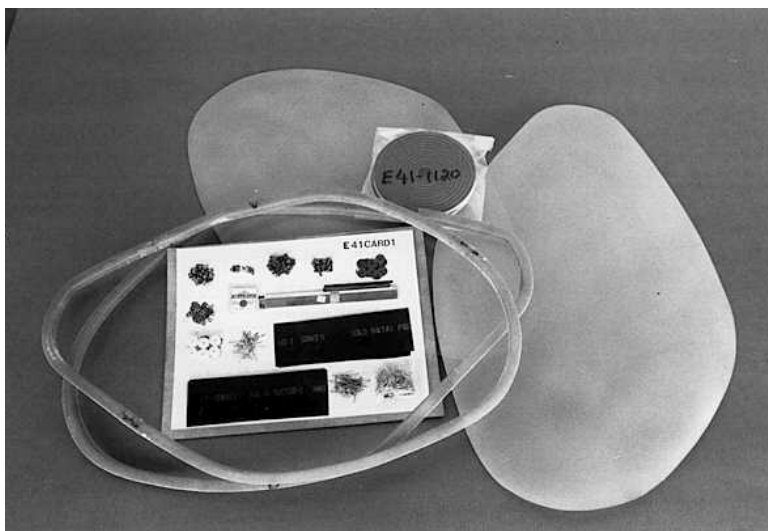


Photo #77

Cut several pieces of 3/16" thick cardboard into 1" wide strips and tape them to the inside openings of the doors.

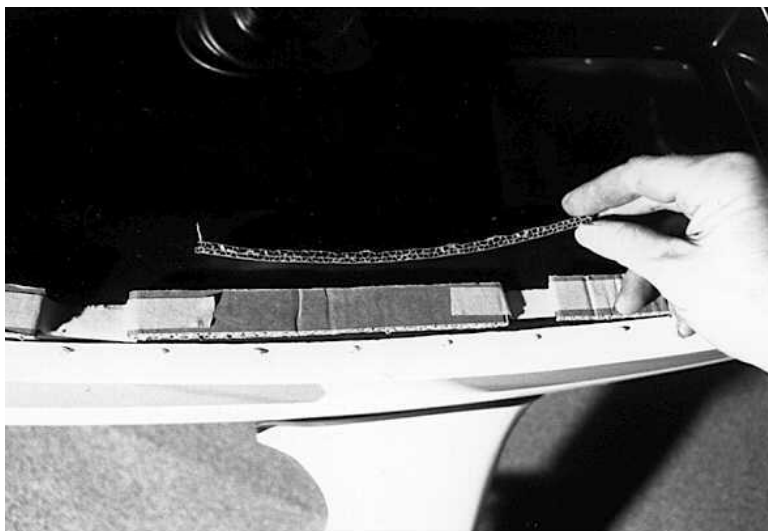


Photo #78

Overview of cardboard in the door opening. The cardboard will provide the clearance needed between the door stiffener and the body when opening and closing the door.



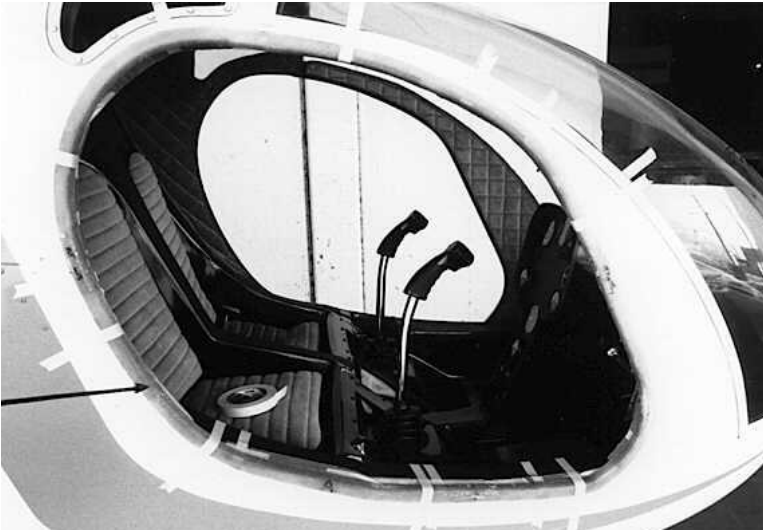


Photo #79

Fit the door stiffener tight against the cardboard. It may be necessary to cut the stiffener to make it fit.

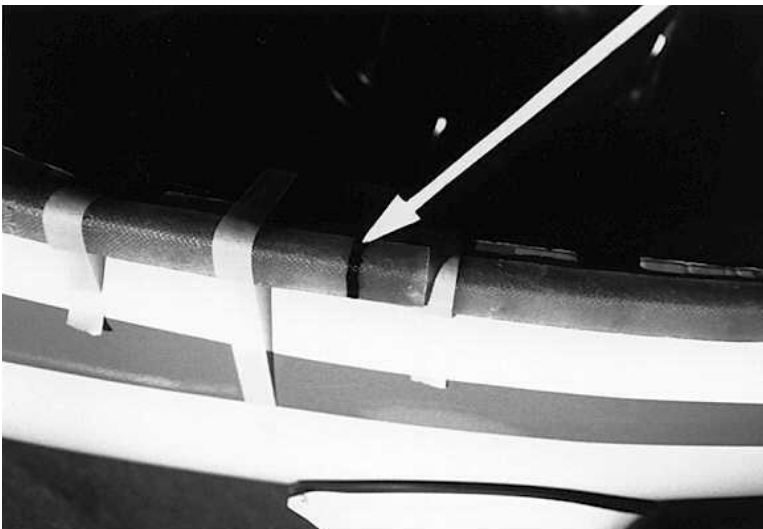


Photo #80

If necessary, remove a section of the stiffener so that when it is butted together there is a tight fit between the stiffener and cardboard. Use masking tape to hold it in place.

After sizing, re-join the stiffener using 2 or 3 layers of fiberglass cloth and resin applied to the side of the stiffener opposite the plexiglass (the side that fits against the body).

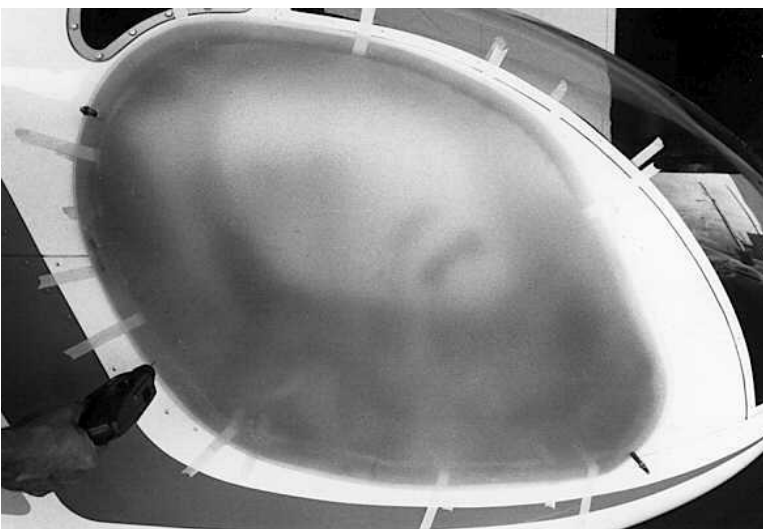


Photo #81

Hold the door against the stiffener so that it extends beyond the stiffener all the way around the door. Use masking tape to hold it in place.

Photo #82

Drill a 1/8" hole through the plexiglass door and stiffener with a hand drill, and install a cleco.



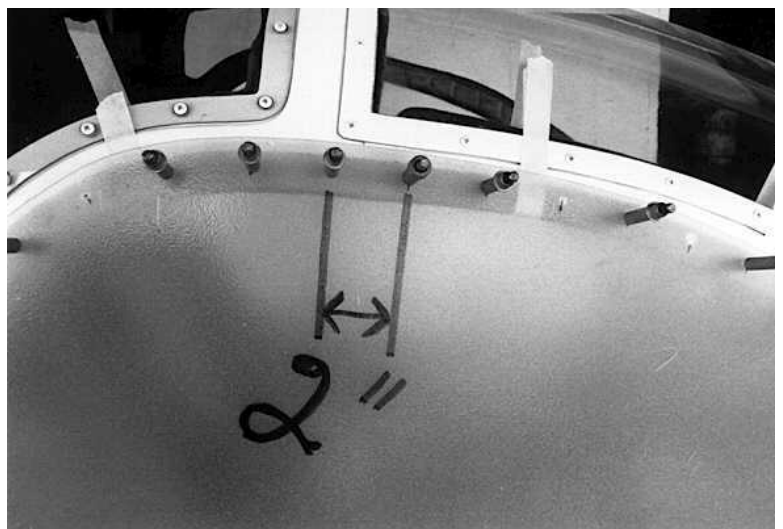
Photo #83

Place a thin piece of wood or metal scrap between the stiffener and the body panel when drilling to prevent damage to the body panel.



Photo #84

Lay out the location of the rivet holes around the door with a felt tip pen. The rivets will be two inches apart and centered on the stiffener.



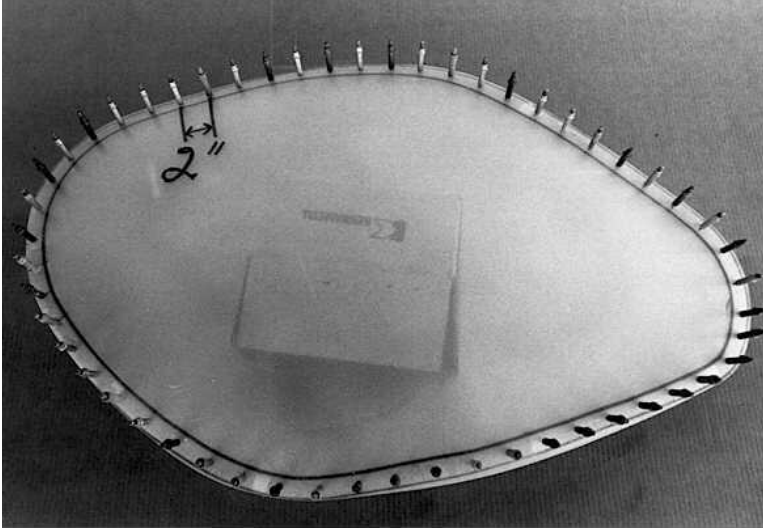


Photo #85

The 1/8" holes drilled and cleco installed.

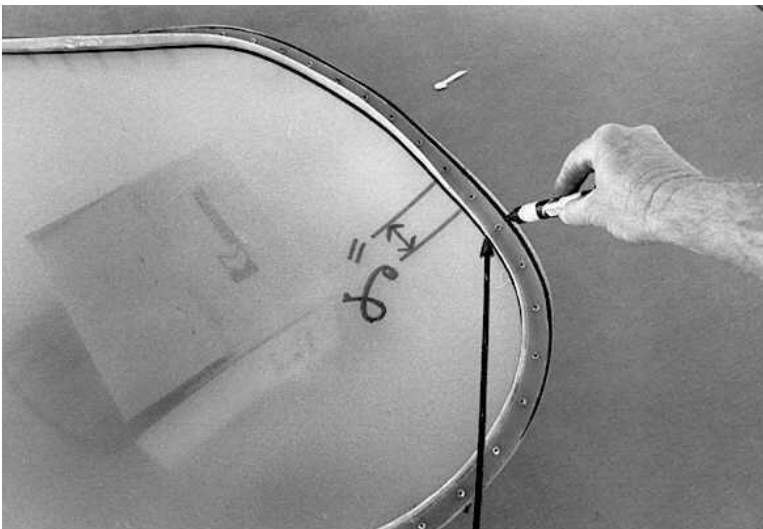


Photo #86

Using a felt tip pen, outline both sides of the stiffener.



Photo #87

Trim the plexiglass to the line and edge of the stiffener.

Photo #88

Use a utility knife blade to cut the protective film on the plexiglass even with the inside of the stiffener.

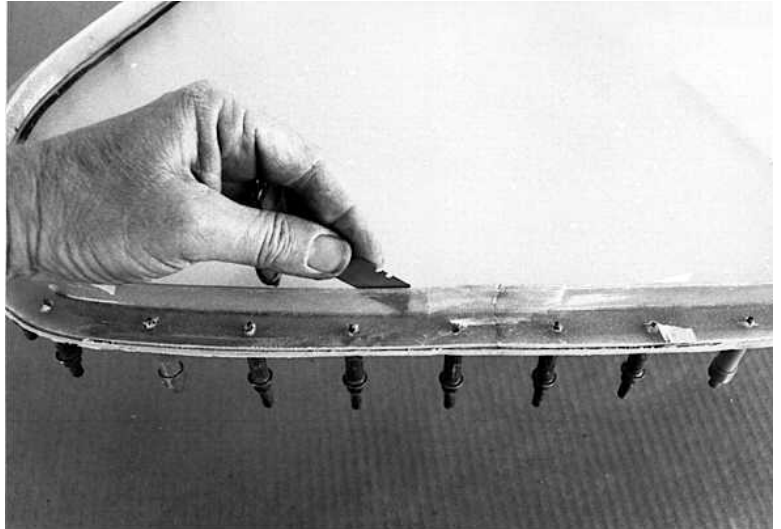


Photo #89

Another view of cutting the protective film. Be careful to cut only the film.

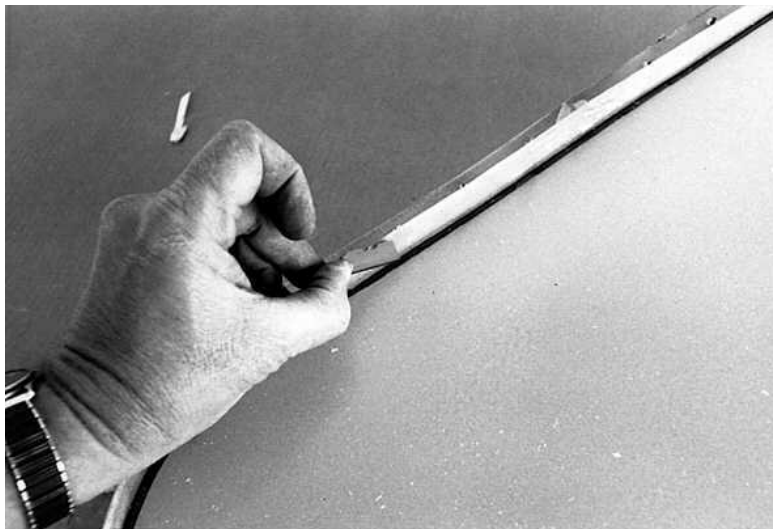
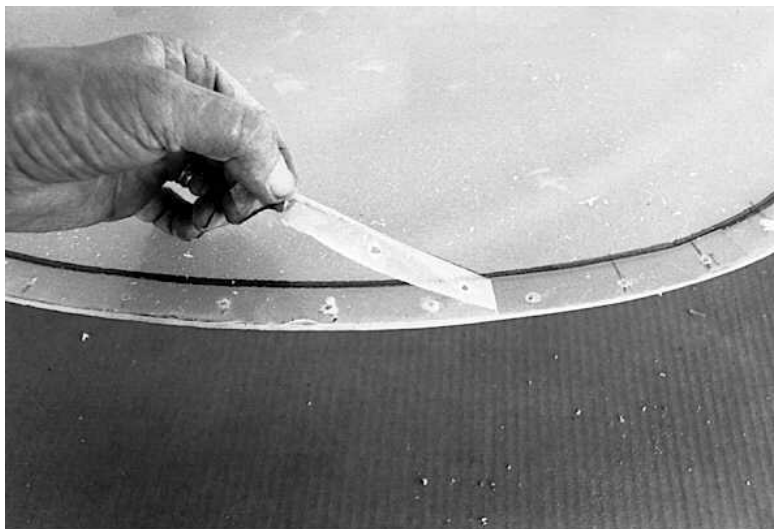


Photo #90

Remove the protective film from the edge of the plexiglass door.



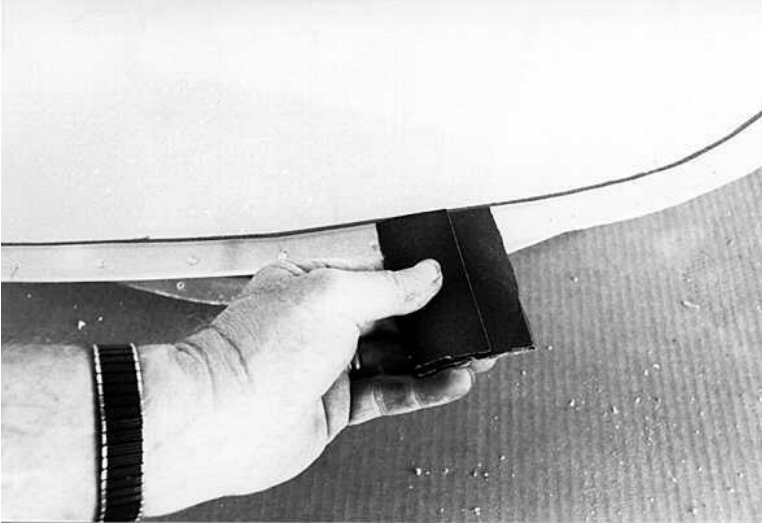


Photo #91

Use 220 grit sandpaper to sand the plexiglass that will be bonded to the stiffener. Wipe clean with acetone.



Photo #92

Use 220 grit sandpaper to sand the stiffener where it will be bonded to the plexiglass. Wipe clean with acetone.

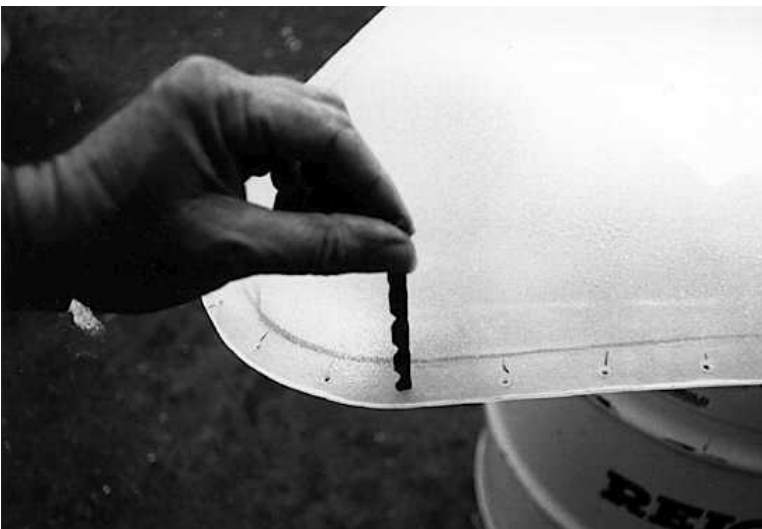


Photo #93

Countersink the holes in the plexiglass for the head of the pop rivets.

Photo #94

Mix some resin and catalyst and apply a coat on the edge of the plexiglass door where the stiffener is to be bonded.



Photo #95

Apply the resin to the stiffener where it is to be bonded to the plexiglass.



Photo #96

Place the stiffener on the plexiglass and install the pop rivets.



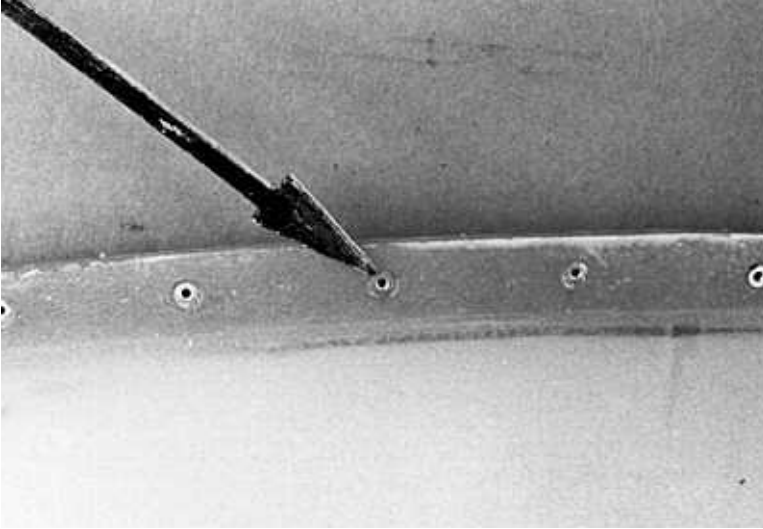


Photo #97

View of the head of the pop rivet installed.

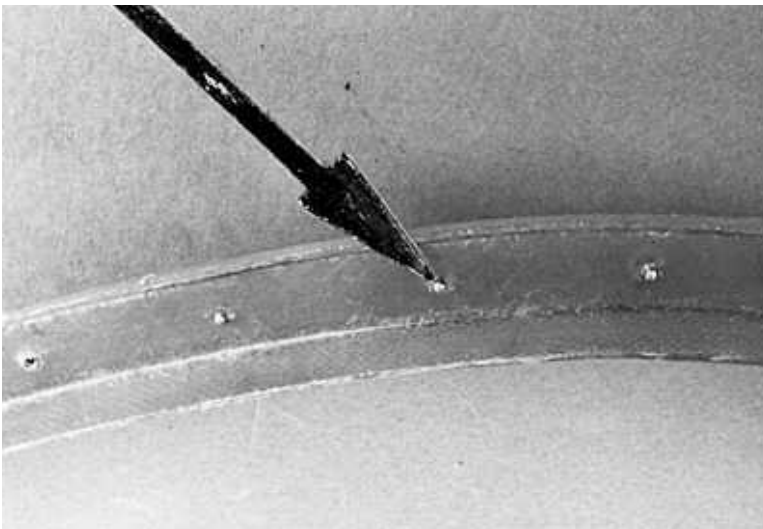


Photo #98

View of the bottom of the pop rivet installed.

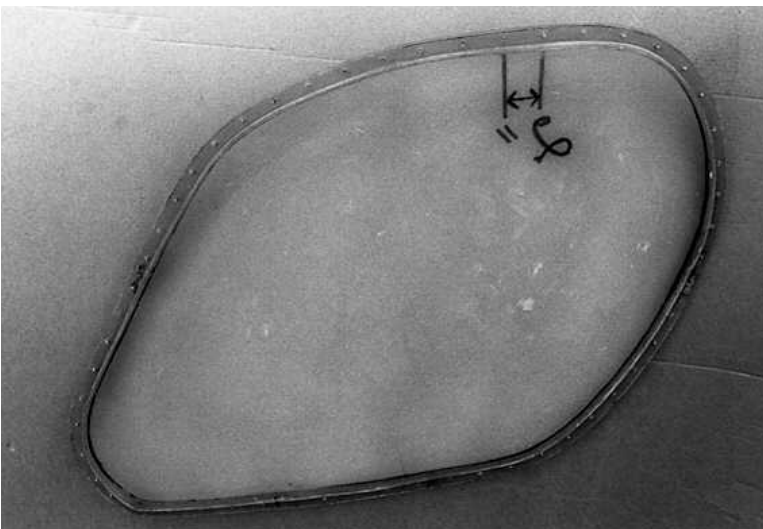


Photo #99

Overview of the door with the stiffener bonded and pop riveted together.

Photo #100

Use a pop rivet and a hammer to drive out the ball in the pop rivets.



Photo #101

File the end of the pop rivets flush with the stiffener.

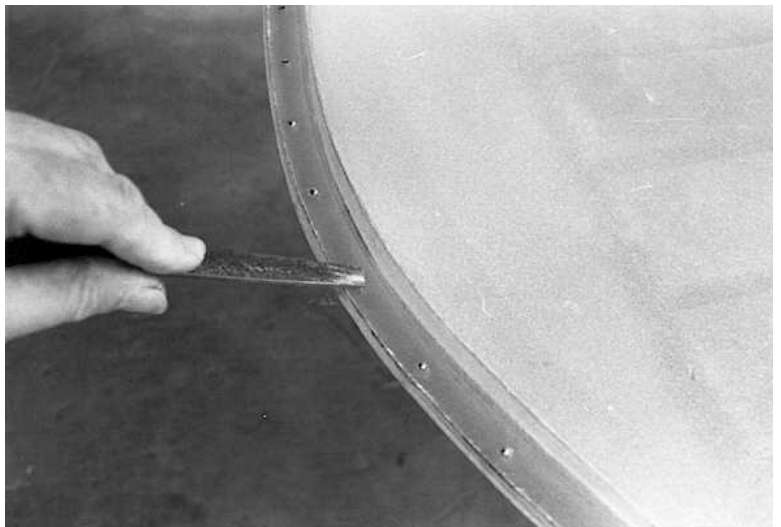


Photo #102

Sand the surface of the stiffener smooth with sandpaper.



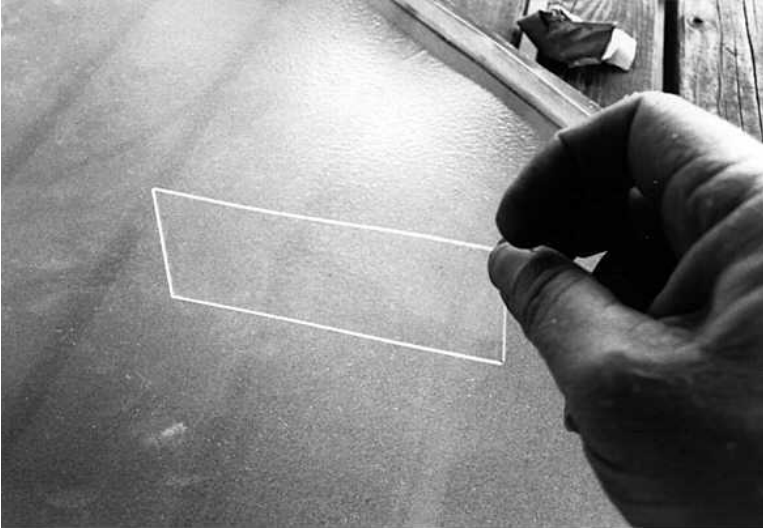


Photo #103

Cut a piece of plexiglass and smooth the edges to fit against the stiffener and door.

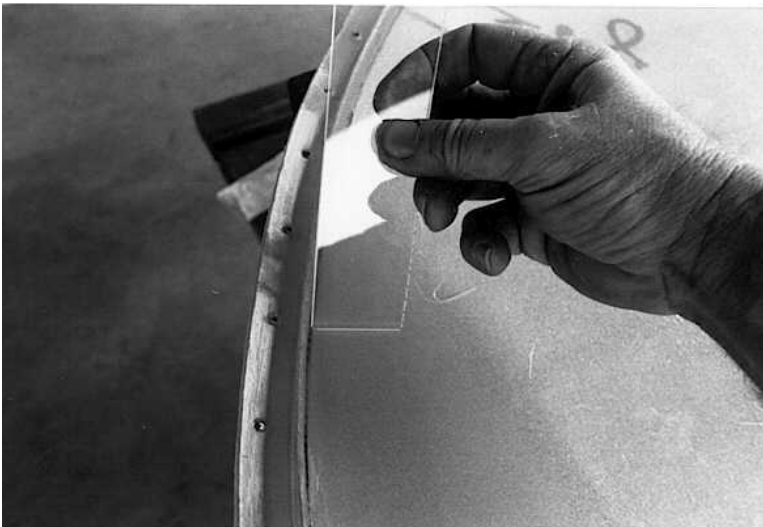


Photo #104

Use the piece of plexiglass to apply bondo in the corner where the stiffener and door meet.

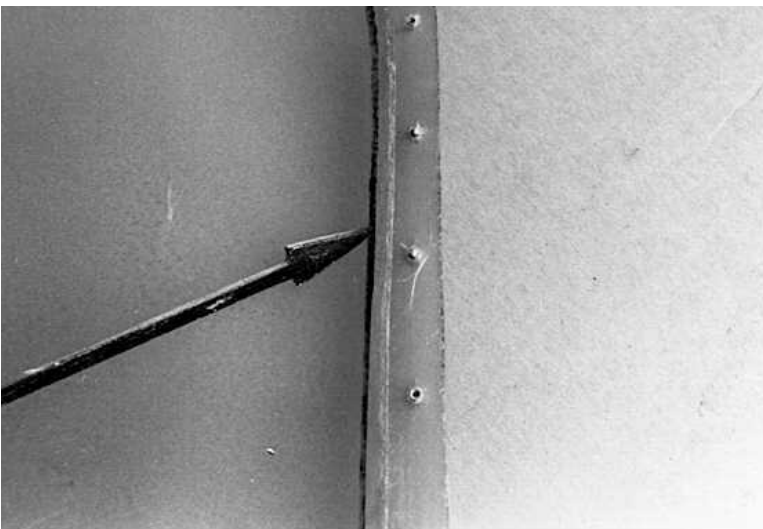


Photo #105

Arrow indicating where to apply the bondo.

Photo #106

Door hinges and latches as received from RotorWay International.

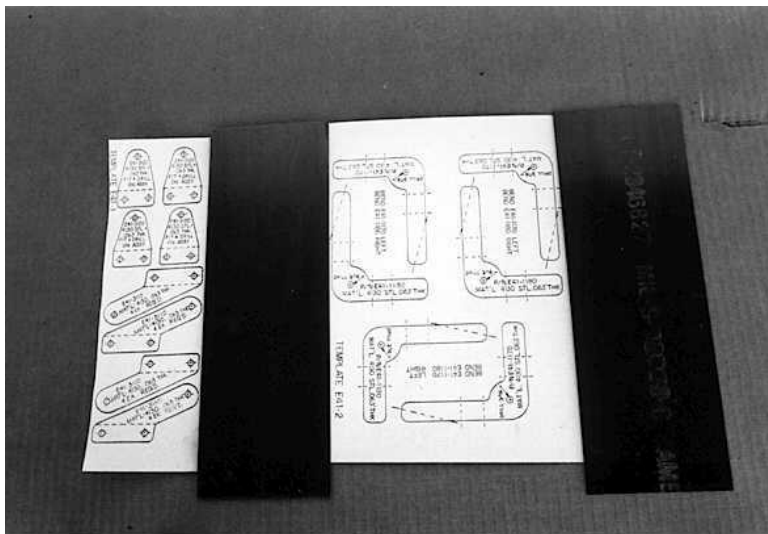


Photo #107

Clean the 4130 steel with acetone and apply the templates to it. Drill the holes where indicated on the templates, then cut out the parts.

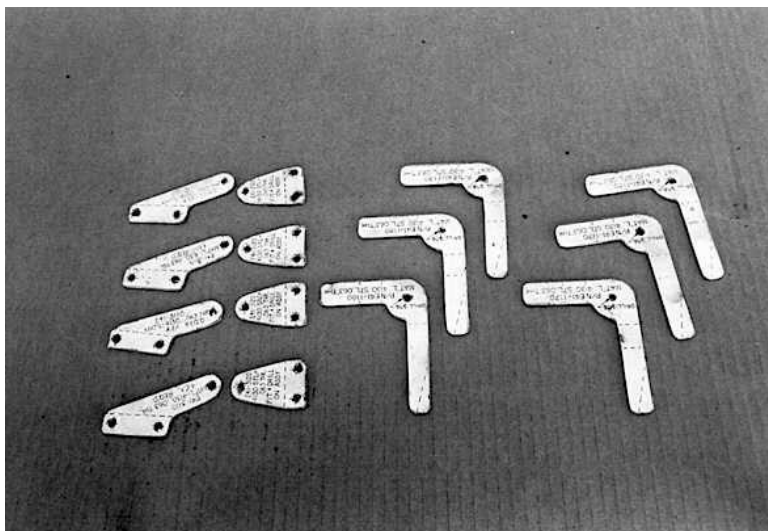


Photo #108

Bend the door latches where indicated on the templates.
Note: The bends will be opposite on the opposite sides of the ship.

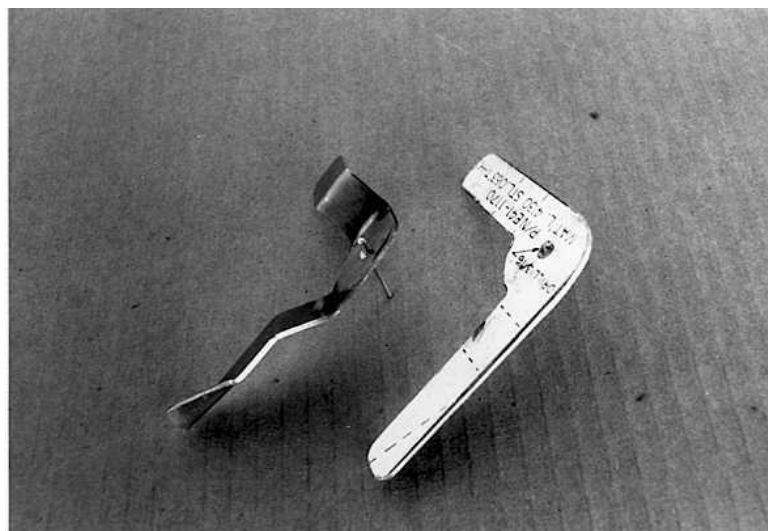




Photo #109

Bend the door hinges where indicated on the templates.

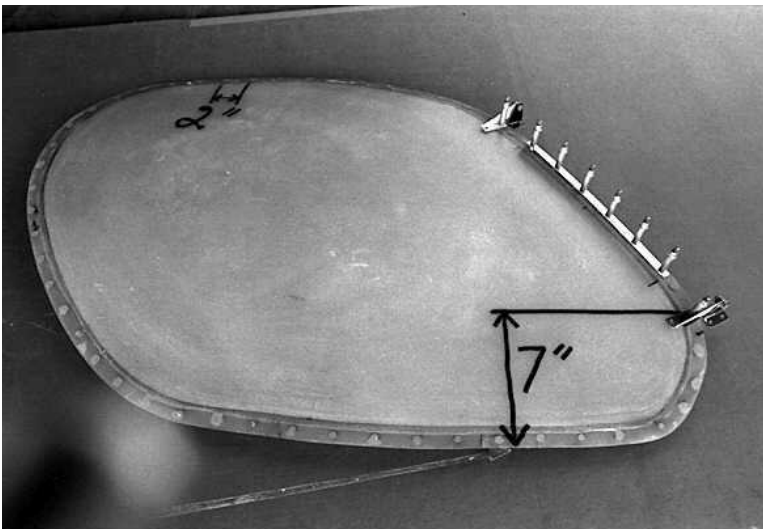


Photo #110

Draw a line parallel to the bottom of the door seven inches from the bottom. This will be the location of the bolt to hold the hinge to the door.

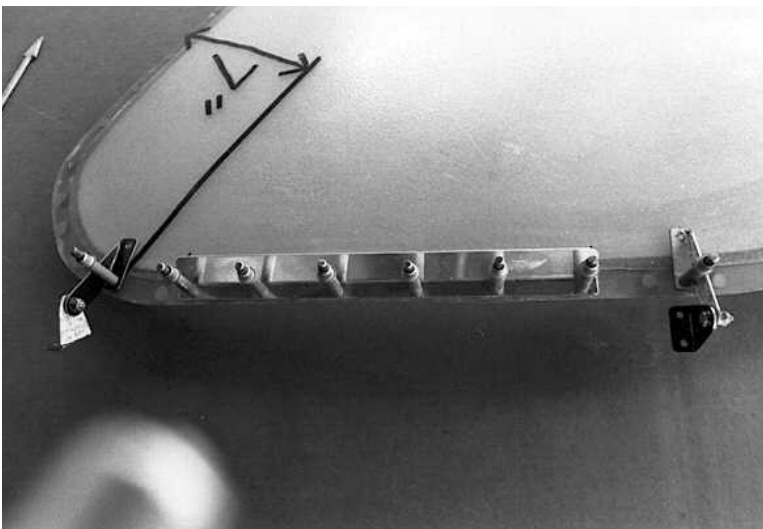


Photo #111

Install only one cleco in each hinge. Refer to print E41-2000 for hinge and stall strip location.

Photo #112

Install the pop rivets that hold the stall strip to the front of the door.

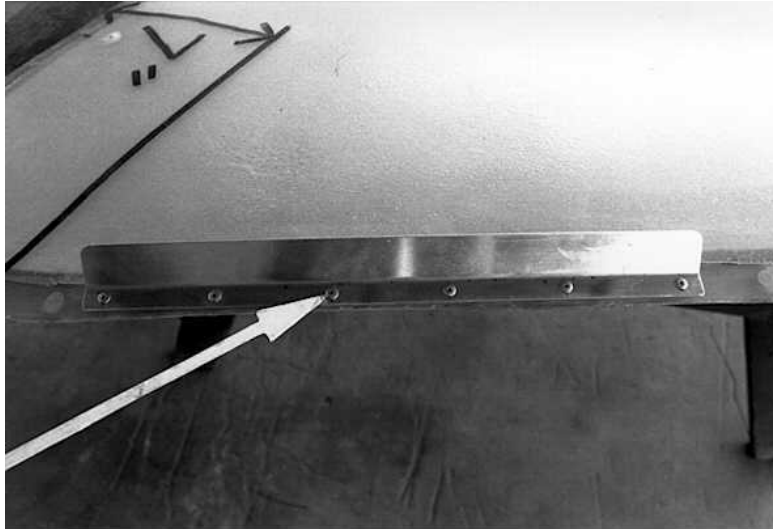


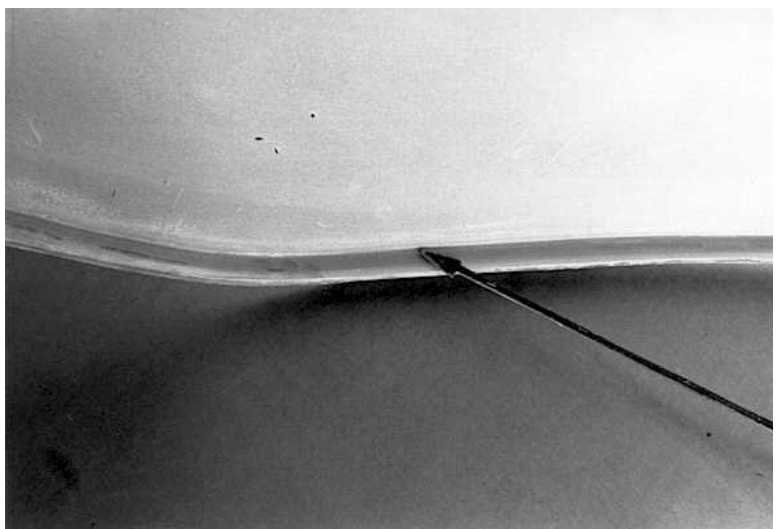
Photo #113

Apply the bondo between the stiffener and the plexiglass door and sand it to a smooth finish.



Photo #114

Another view of the area where bondo is applied around the stiffener and door.



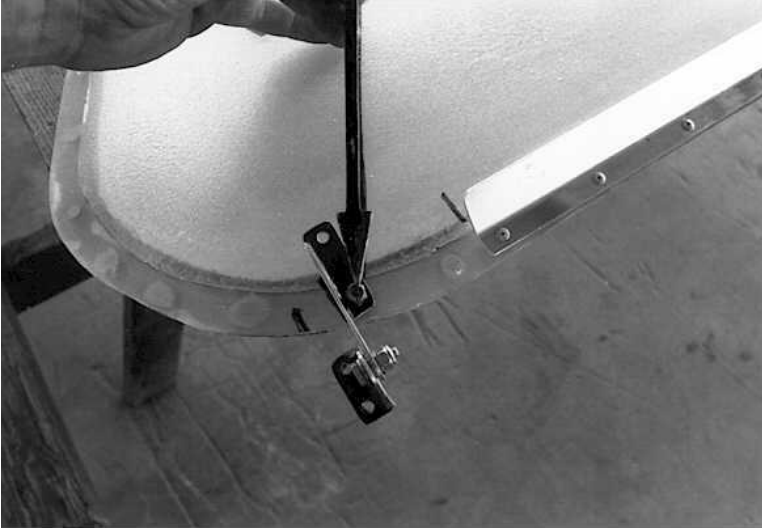


Photo #115

Bolt the two parts of the hinge together. Install one bolt in each hinge to hold the hinge to the door.

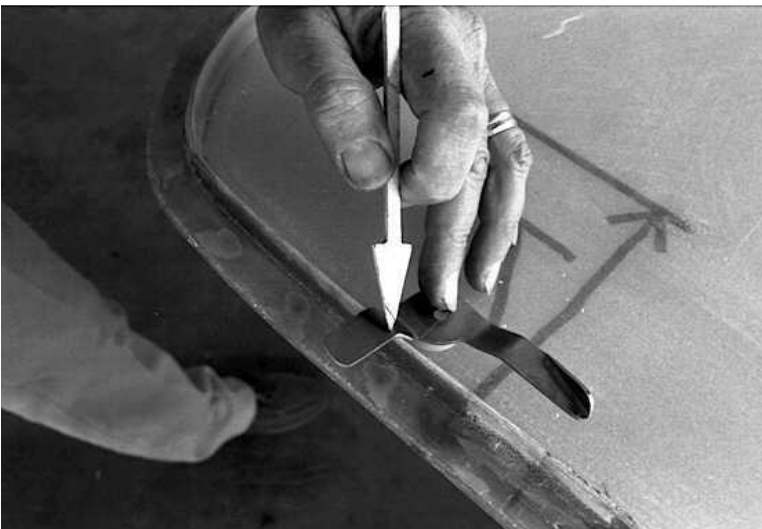


Photo #116

Place the bent latch on the spacer. Position the latch so the bend clears the door stiffener and is at the location called for on print E41-2000.



Photo #117

Before drilling the hole for the bolt, rotate the latch to check the clearance between the latch and stiffener.

Photo #118

Place the cardboard around the door opening. Hold the door in the opening and drill one hole in the part of the hinge on the door post. Open the door. If the hinges do not try to move, they are in alignment. Drill the remaining hole and install the bolts.

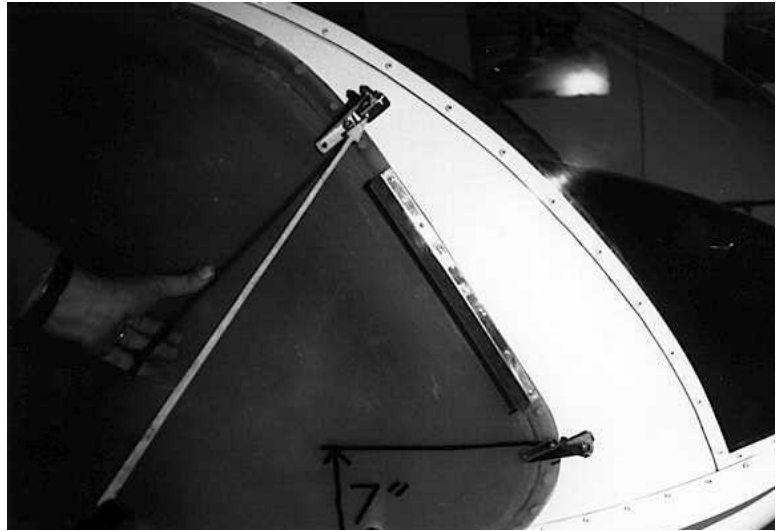


Photo #119

Remove the door and cardboard. Install the weather stripping to the door stiffener as shown. Note: It may be necessary to trim the fiberglass around the door opening to achieve the desired fit around the latches. Locate and cut the slots in the floor pan for the bottom latch. Cut out and rivet a piece of .050" aluminum around the slot as a wear plate for best results.

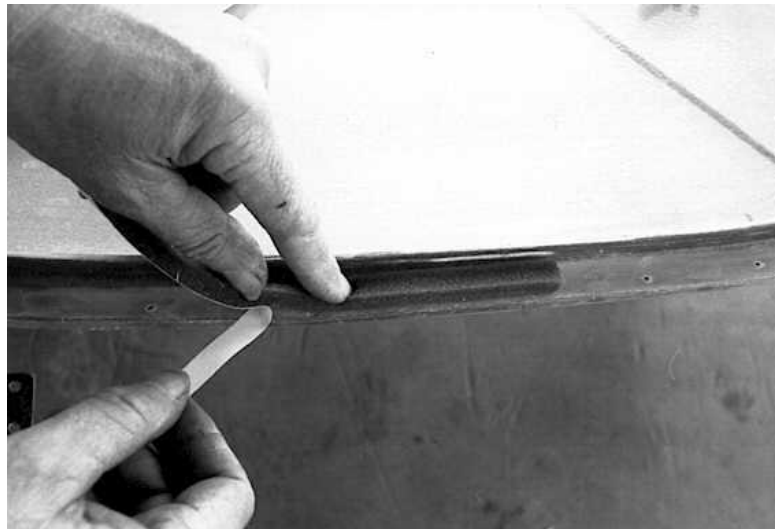
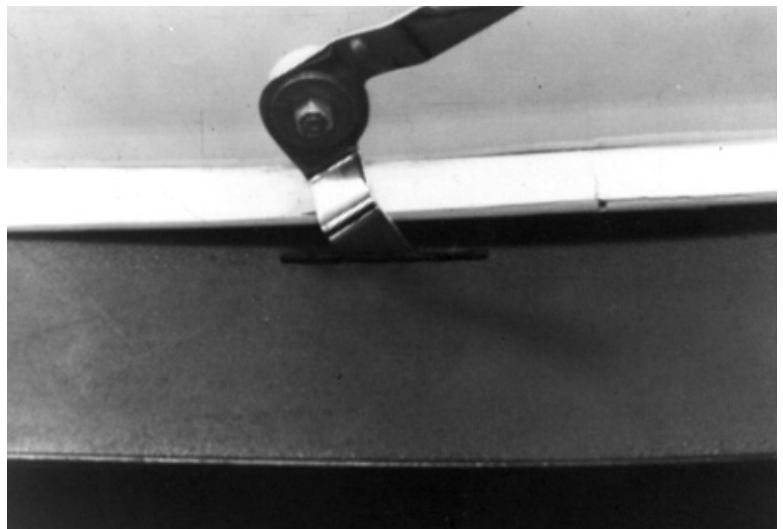


Photo #120

Photo showing the door latch and slot. Note: The protective film can be removed from the doors after all work on them is finished.



FINAL BODY COMPLETION

At this point in the construction, the body has been assembled and fitted, with only minor details remaining. Dzus buttons and nut plates should be installed in all panels, if not already done. The following photos show other steps to be completed as the body is being disassembled for painting.

Photo #121

Cut an opening in the side air scoops as shown. Leave about a 1/4" lip around the edge of the opening to provide rigidity.

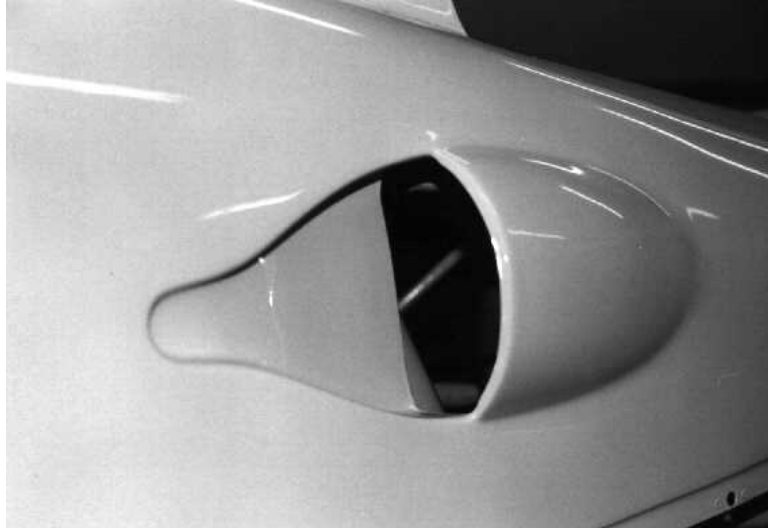


Photo #122

Cut out the opening of the air intake scoop in the bottom of the tub. Leave a slight lip (about 1/4") around the opening for stiffness.

Note: If equipped with optional ACIS, refer to Section 27 for instructions on installing the ACIS air filter housing.

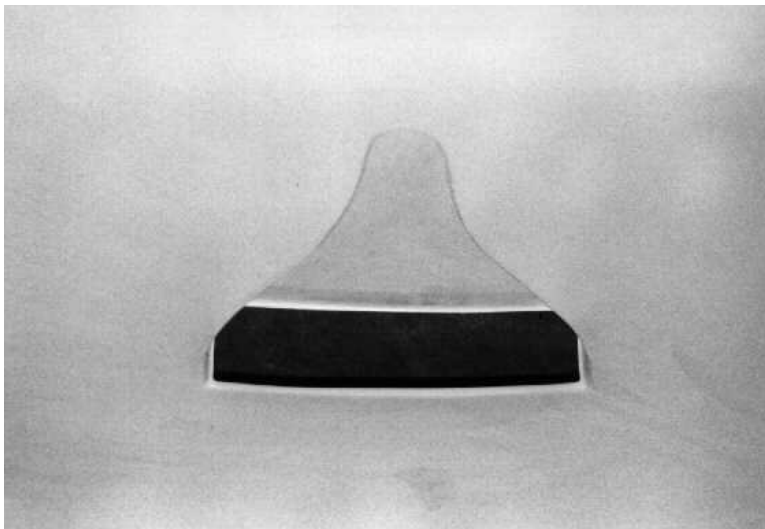


Photo #123

After the windscreen has been completely fitted, remove it from the ship and mask off 3/4 inch from the outside of the windscreen all the way around.

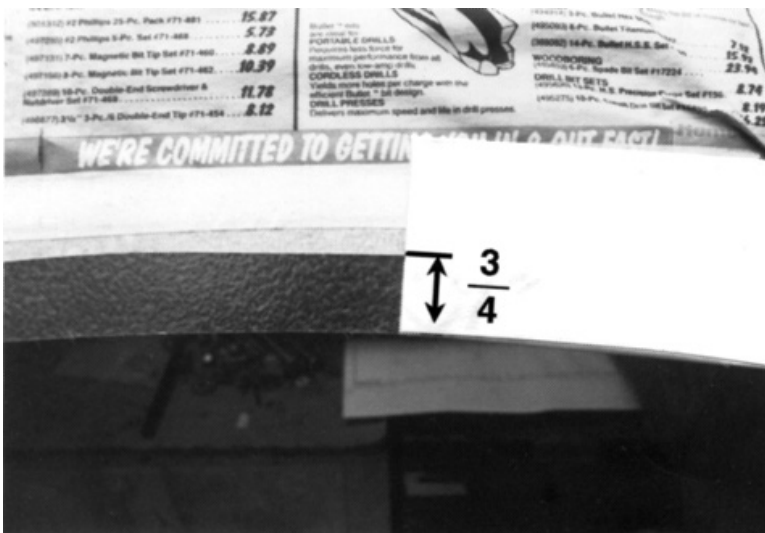


Photo #124

In the lower front corners of the windscreen, cut pieces of fiberglass mat and fit them so that there will be a 3-1/2 inch radius in those corners. (Finished windscreen shown.)

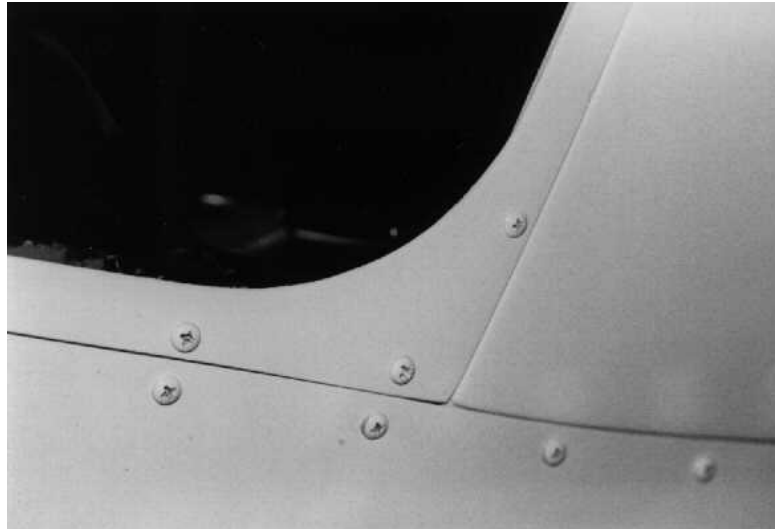


Photo #125

Cut and fit fiberglass to make a smaller radius on the upper rear corners of the windscreen. (Finished windscreen shown.)

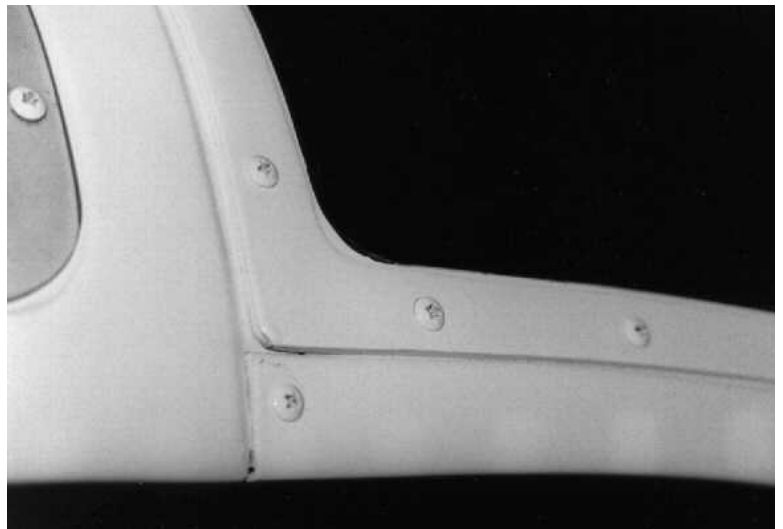


Photo #126

Sand the area with 220 grit sandpaper so the resin will stick to the plexiglass.
Note: Remove the protective coating in the area to be sanded.



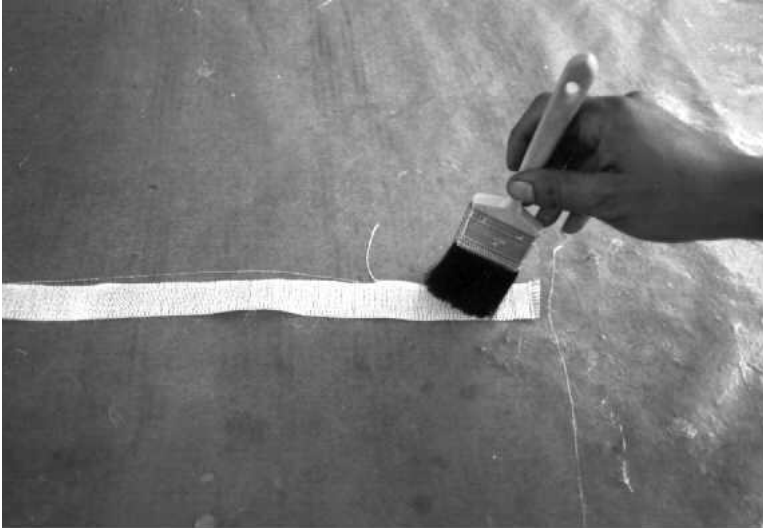


Photo #127

Place the strip of fiberglass cloth on a clean surface and saturate it with resin.

Note: This fiberglass cloth, part number E32-1170, is found on E32 CARD 2F.



Photo #128

Apply a coat of resin to the sanded edges of the windscreen.



Photo #129

Place the fiberglass cloth around the edges of the windscreen, allowing the edge to overhang. When the resin hardens, trim off the overhang with a razor knife. Re-drill all windscreen screw holes with a 5/32" drill.

Note: When painting the body, paint the reinforced edge of the windscreen the same color as the body.

Photo #130

Sand and polish the seam on the top of the instrument pod.

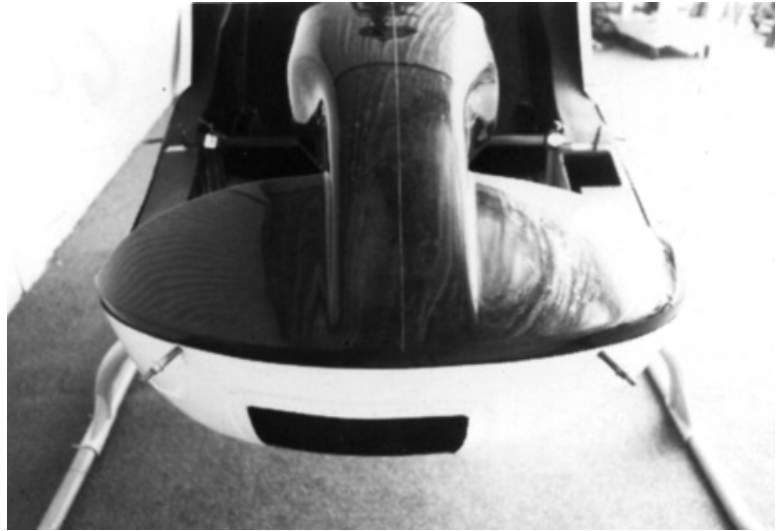


Photo #131

Fit and install the front inspection panel. Use 4 Dzus buttons.

