

## WHEEL PANT BUILDING TIPS AND INSTRUCTIONS

**TIP:** Protect the molds. Before each lay-up, clean any cured epoxy scale off the molds with a plastic putty spreader or something that will not scratch the mold. Coat the mold with a light covering of mold release wax, let it cure 10 minutes or so, and buff to a shine with a soft cotton rag (old teeshirt).

**Tip:** A good lay-up schedule for reasonably strong and light wheel pants is to cut your BID cloth on the bias, about 18" wide by 38" long, and lay up two complete plies in the boat shaped molds, and a third ply covering the center part of the mold where all the loads from mounting screws will carry the loads. You can mount with brackets or with spats permanently attached to the gear legs. Having a ¼" bolt into the end of the axle is good to steady the pant.

**STEP ONE:** Lay up your BID cloth into the boat shaped mold for the right and left half of one wheel pant. If you have it cut on the bias, it will lay down with no wrinkles (you will never get it to do right if you cut the cloth at 90degrees to the bolt of cloth). Trim off any extra cloth that is hanging over the edges to ½" or less (hanging glass will cause an air bubble to form at the edge of the mold).

If you can catch it at razor trip stage of cure, trim the edges flush with the mold. If it goes to full cure, scribe a scratch mark around the edge with an awl or sharp object. Pop the pant halves out of the mold. You can gently pull away from the edge and take a rubber hammer and bump the mold in the places still stuck, and you can see it release. Do not damage the mold or stick any sharp object down into the mold to try to pry it out – you will scratch the mold surface. Trim the edges with your shears to the scribe line. You should end up with two halves that you can hold together and the nose, edges, and tail should match.

**STEP TWO:** At this point, you could tape the two halves together, cut a huge hole in the bottom and slip it down over the tire and mount it, but you would end up with large gaps all around the tire and lots of drag. Most builders like the pants split front and back so they can be mounted close to the tire and have minimum gaps, and one half of the pant can be removed to air up tires as needed.

Take the two pant halves and slide them down into the rear half mold, make sure the halves are lined up on the nose end, and scribe around the mold. Take the halves and cut them into at the scribe line with a hack saw blade. Put duct tape (or pkg tape) on the edge line of the front half (so the flange you are going to lay up does not stick to it), put it into the nose of the proper boat mold. Sand the mating edge of the rear part so you glass lay up will stick, and put in the matching boat mold. Take a few small (4" long or so) pieces of duct take and tape the edges of each part to the side of the mold so they will stay in place during the flange lay-up.

Cut some strips of BID about 3" wide (on the bias) to lay a 3 ply flange in place. (you did clean up, wax, and buff the mold where the wet epoxy is going didn't you) When your

flange is cured, take the parts out of the molds, take off the tape, mark the flange sticking out to be trimmed about  $\frac{3}{4}$ " long (enough room to hold nut plates and have 10/32 mating screws. You should have enough parts that match to make one complete 5:00 by 5 wheel pant and be ready for step 3.

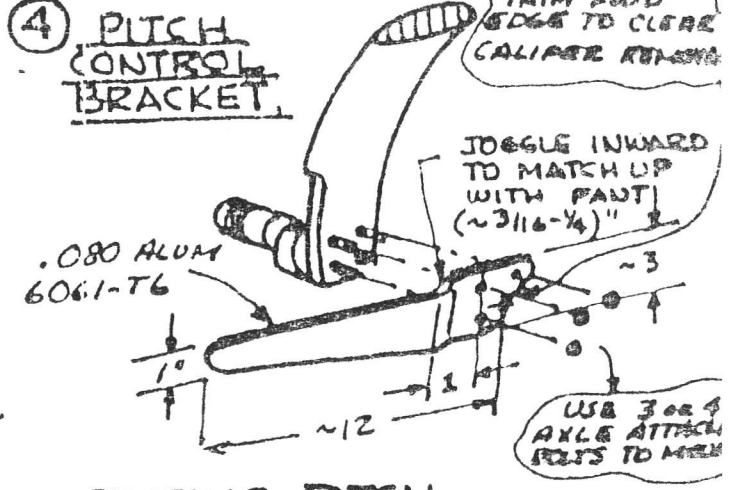
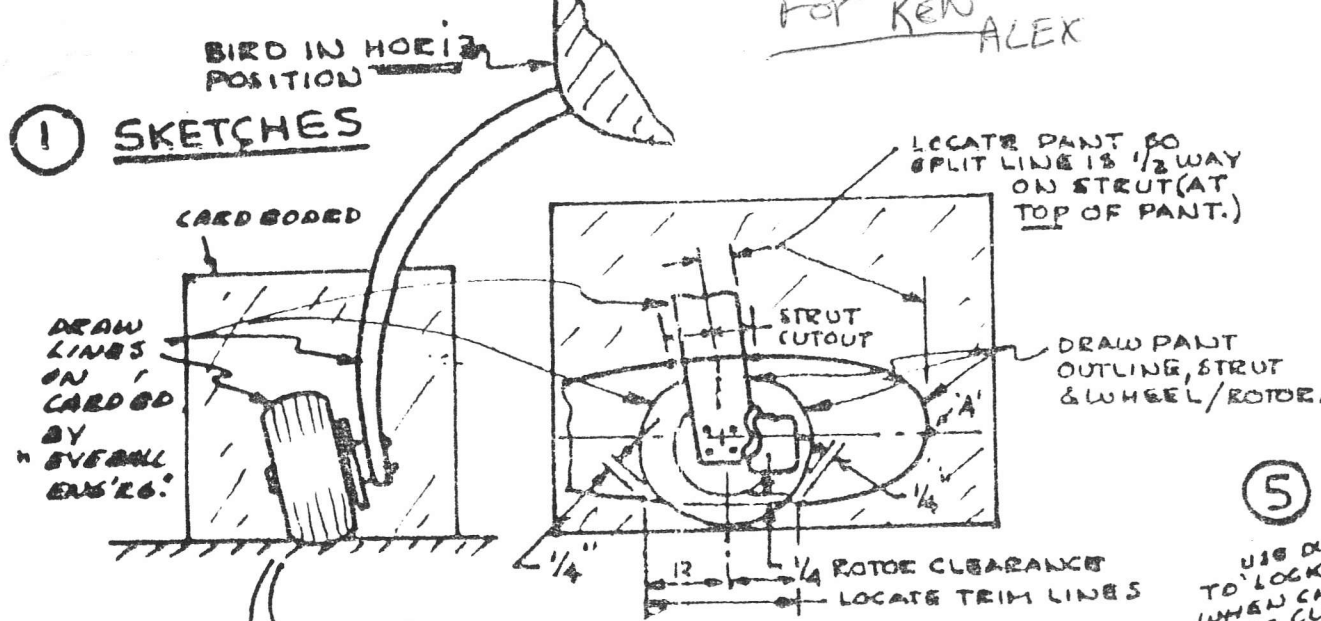
STEP THREE: With all your parts cleaned up and your deep molds waxed and ready, sand the edges of all parts where they will be taped together. The tapes should lap onto the halves about 1.5" on either side of the split line. Cut some long lengths of BID about 3 inches wide. Put the nose parts into the nose deep mold, line them up properly, and put about two pieces of duct tape on each half to hold in position in the mold during lay up and cure.

I find it easier measure the length of tape required with a tape measure inside the nose mold, wet out a two ply tape on some plastic, cut it with shears to proper length and width, drape it down into the mold, and rub it down onto the pre-wet and sanded surface to get out the air bubbles. Let it cure, pull the plastic off, bump it out of the mold and you have a complete wheel pant half. Do the same on the rear part, except you will have to make two lay ups. It is hard to get to the tail to do a pretty lay-up, you may have to mix some stiff flox and spread it on the seams in the tail with a screwdriver or trimmed tongue depressor or something. You can finish it better when you take it from the mold from the outside of the part.

You should have one complete wheel pant now. Repeat steps as necessary to make additional pants.

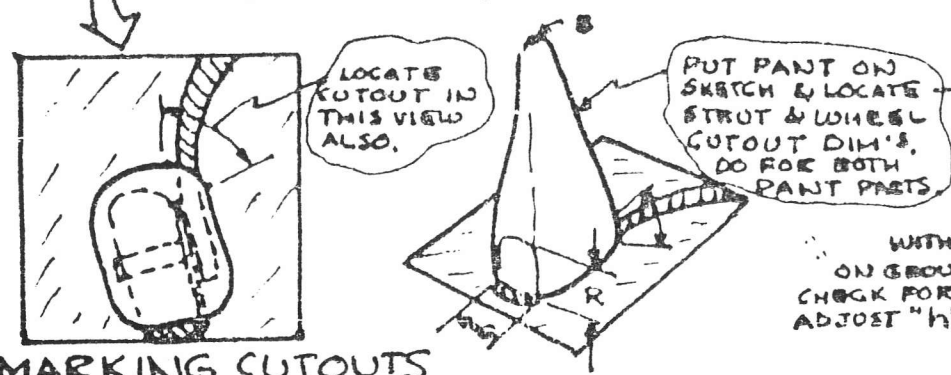
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① SKETCHES

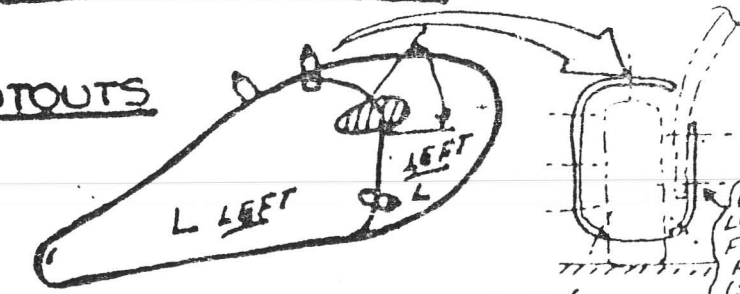


②

MARKING CUTOUTS



③ CUTOUTS

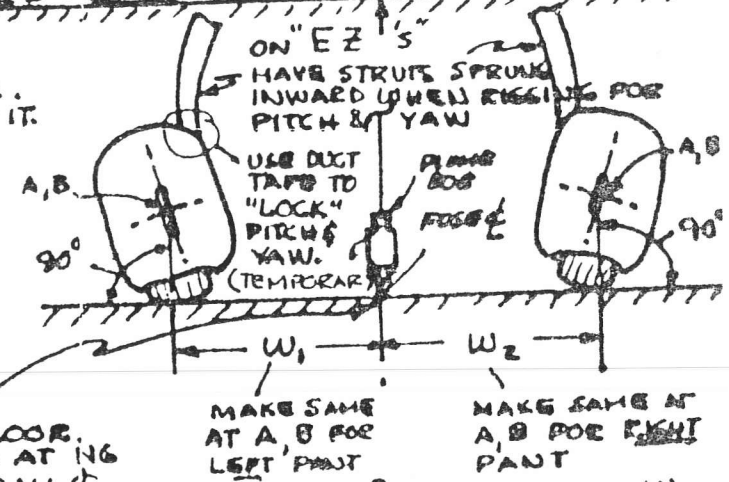


ASSEMBLE L-L & R-R (CHECK FIT OF L-L TO MAKE SURE YOU HAVE MATCH) & COORDINATE STRUT & WHEEL CUTOUTS FRONT TO REAR. MAKE WHEEL CUTOUT SMALL TO START WITH. (SEE NOTE STEP 6)

APPROXIMATE LOCATION OF #8 FRONT-TO-REAR ATTACH SCREWS. (SEE NOTE STEP 11.)

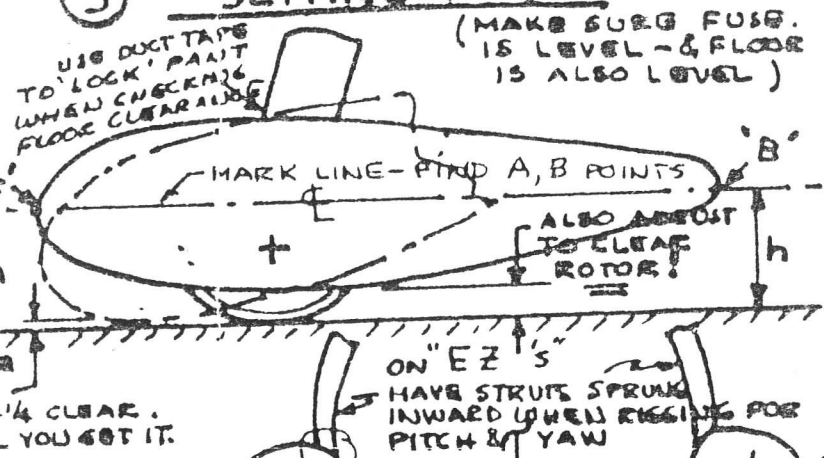
⑥ SET YAW

MAKE ⚬ ON FLOOR. USE PLUMB BOB AT NG HINGE & FIREWALL ⚬. ADJUST PANT IN YAW SO THAT VERTICAL PROJECTION OF PTS. A & B ON FLOOR RESULT IN EQUAL (W<sub>1</sub>) DIMENSION TO FLOOR. ⚬.

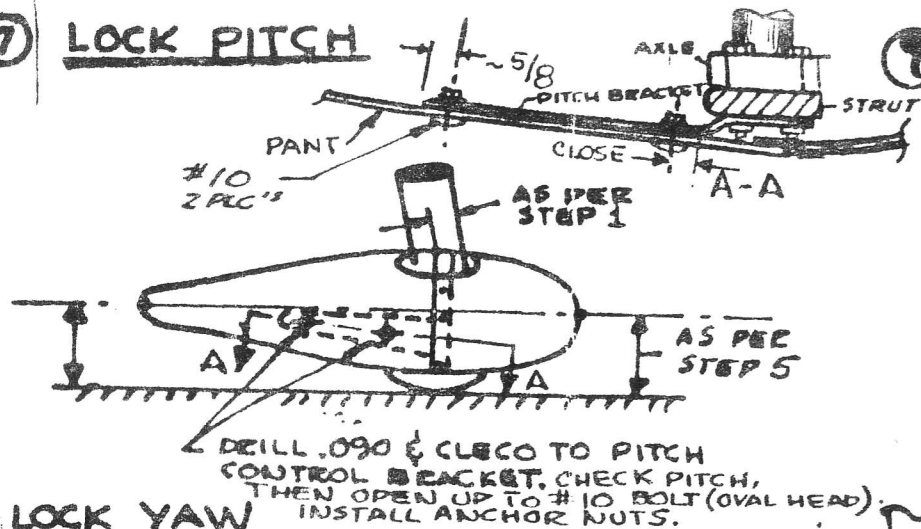


- NOTE ① W<sub>1</sub> NEED NOT = W<sub>2</sub> (PROBABLY WONT)
- ② MEASURE VERY CAREFULLY
- ③ ENSURE WHEEL CUT OUT AS FEEL'D FOR "TIGHT" TIE CLONG

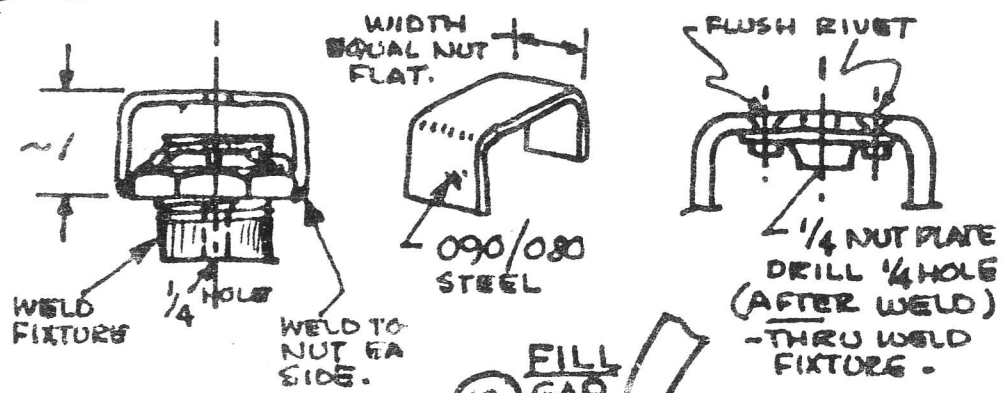
⑤ SETTING PITCH



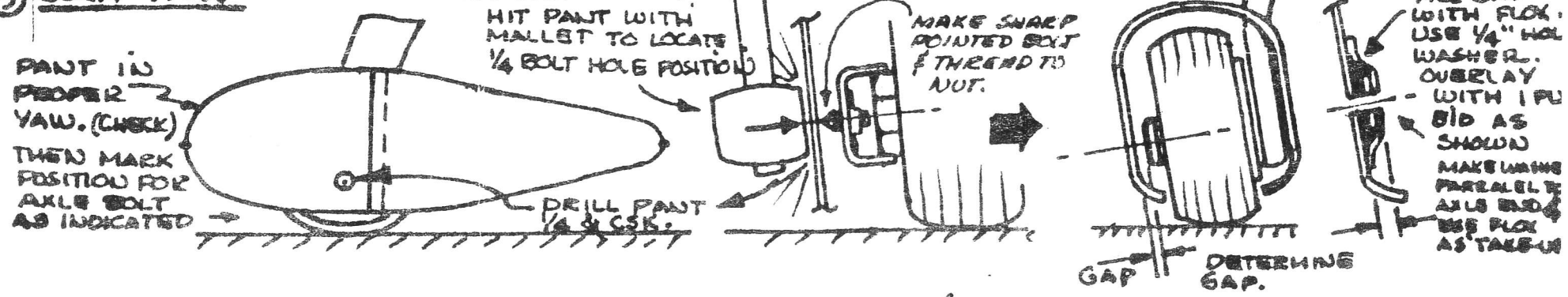
# 7 LOCK PITCH



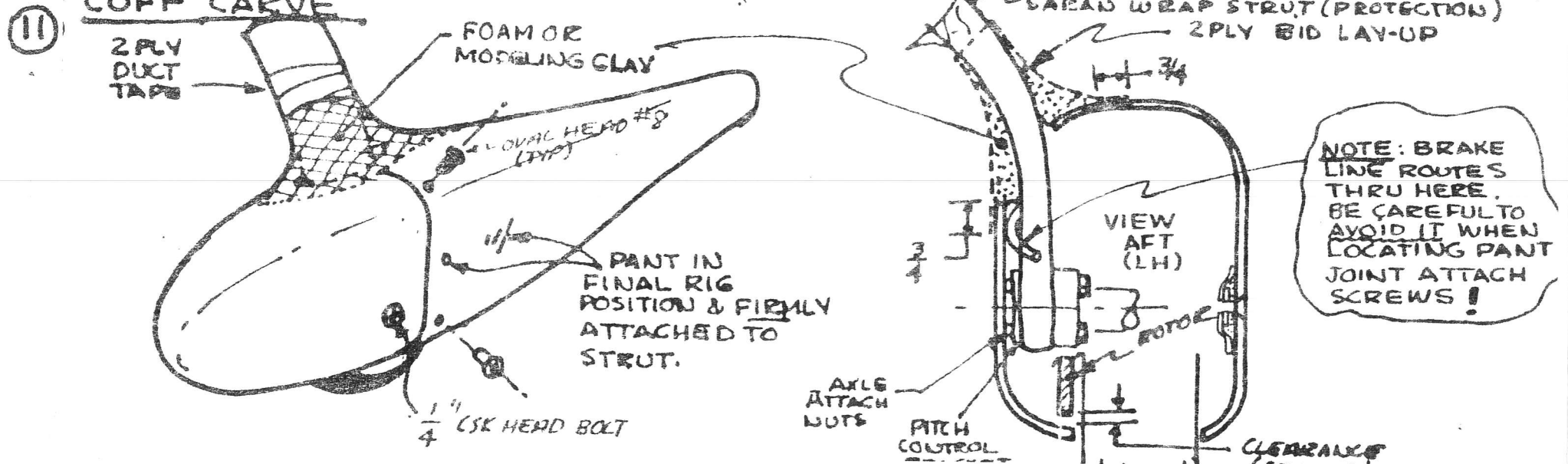
# 8 MODIFY AXLE NUT



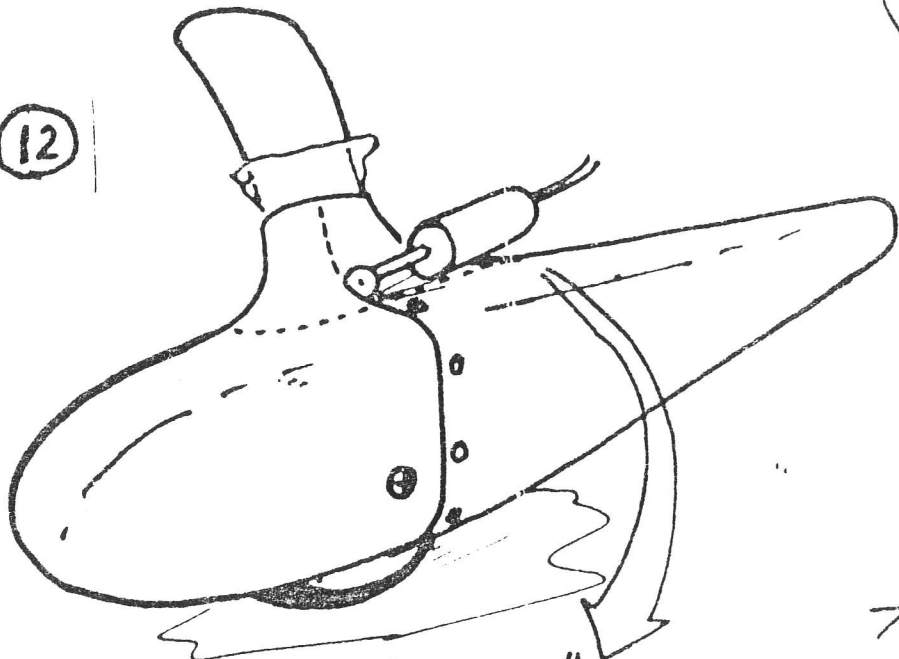
# 9 LOCK YAW



# 11 CUFF CARVE

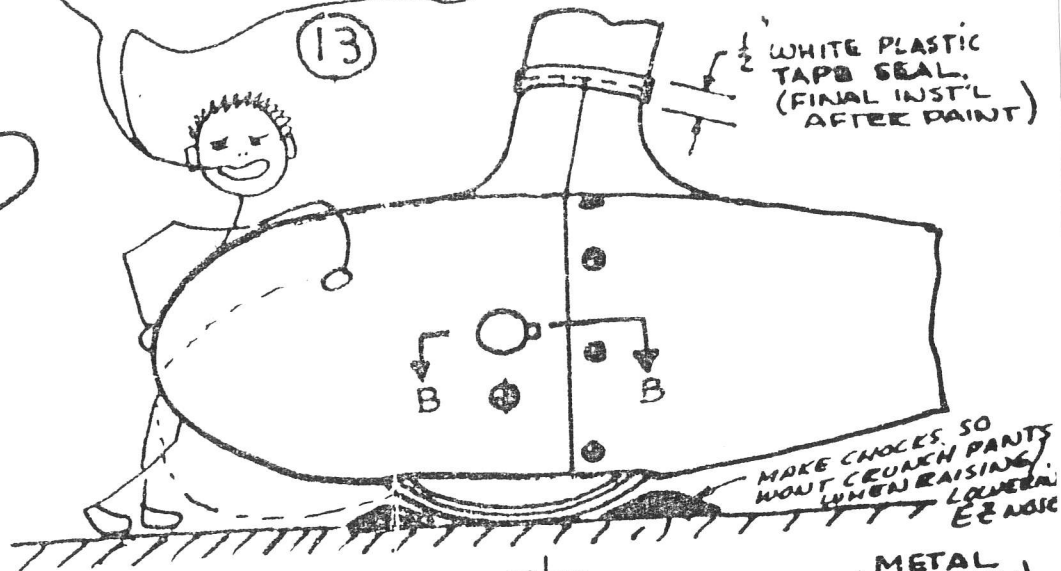


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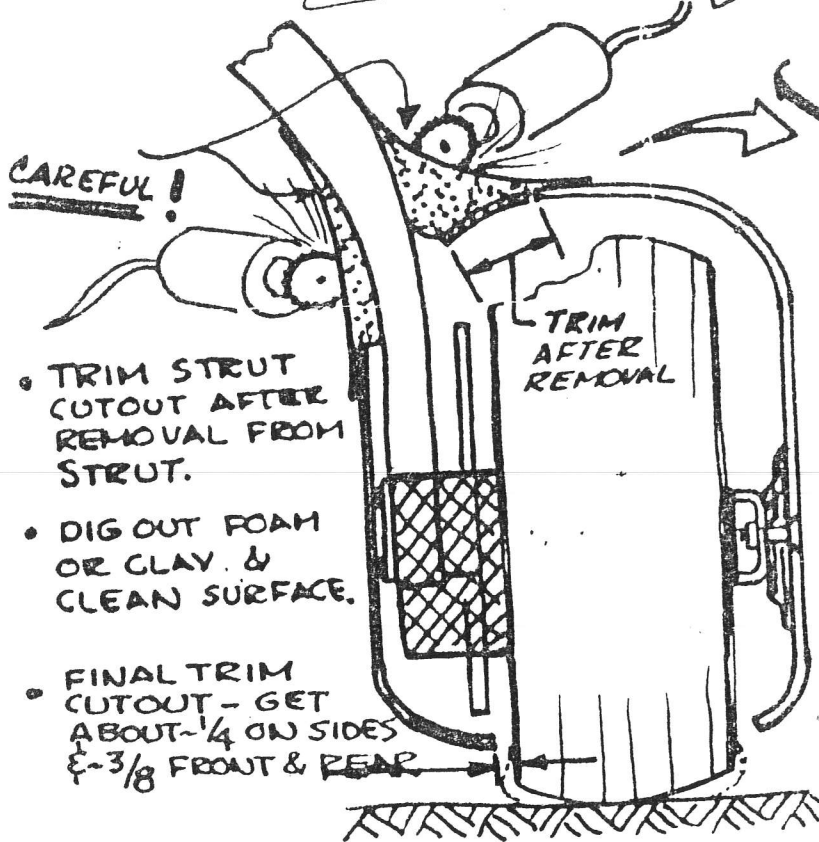


EXPECT ABOUT 25 HOURS OF WORK FOR THE TOTAL INSTALLATION

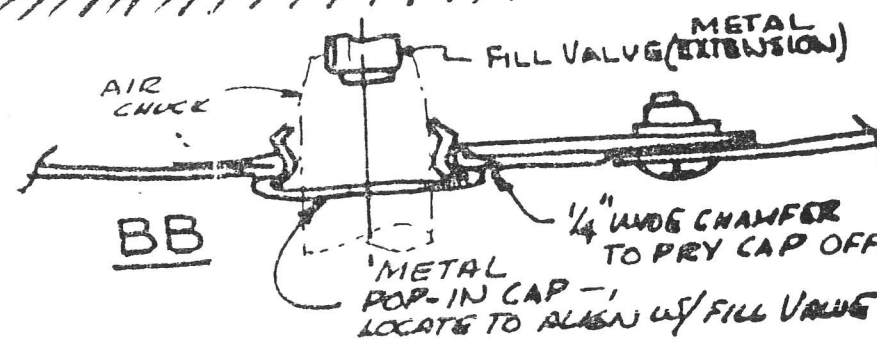
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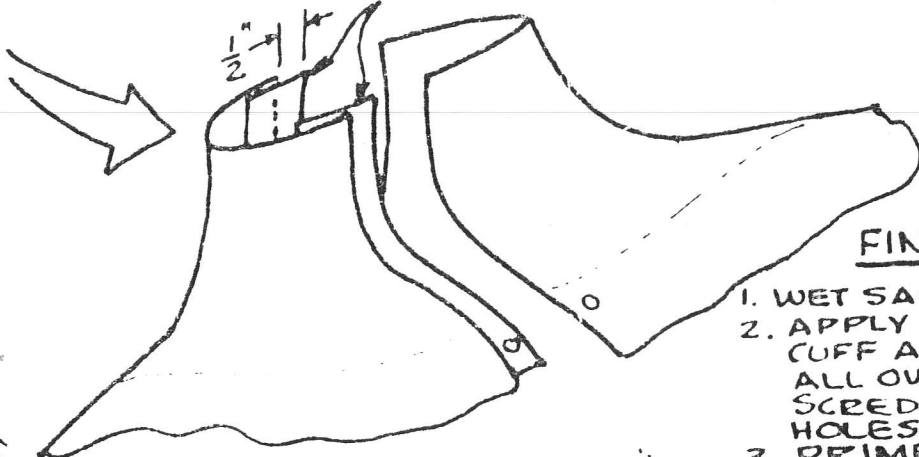
**CAREFUL!**



1" ADD 1 PLY BID ALL AROUND CUFF JOINT



ADD DOUBLER LAND (2 PLY BID)



**FINISH:**

1. WET SAND w/ # 220.
2. APPLY MICRO (DRY) IN CUFF AREA (MEDIUM ALL OVER PAINT) & SCREDE TO FILL PIN HOLES. SAND SMOOTH.
3. PRIME & PAINT.