

## ROLL-OVER-STRUCTURE & SEAT BELTS

A high-contrast, black and white photograph. In the upper left, a person's torso and arms are visible. They are wearing a light-colored t-shirt with the word 'Hardcore' in a stylized, cursive font. Below the text is a graphic of a person's head. The person's hands are holding a small, dark object, possibly a cigarette or a small container. The background is dark and indistinct, with some light reflecting off surfaces, suggesting an industrial or workshop environment. The overall mood is gritty and industrial.

## CARVING THE FOAM PIECES

BEVEL ONE  
EDGE TO FIT  
THE SEAT BACK AS  
SHOWN BELOW

MAKE 2

2.7 IN

6.9 IN

12.6

0.7 IN

1.4 IN

8.4

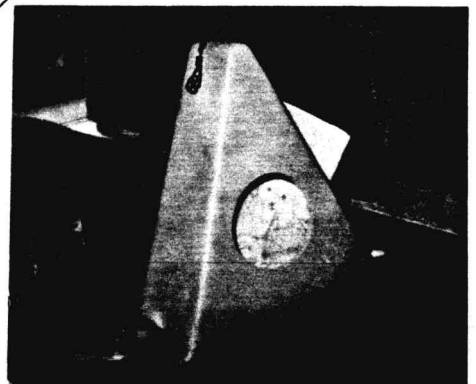
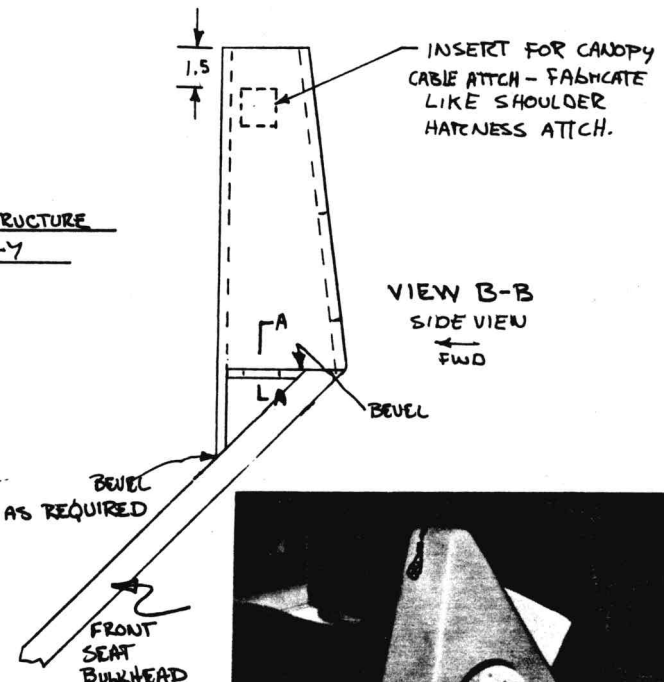
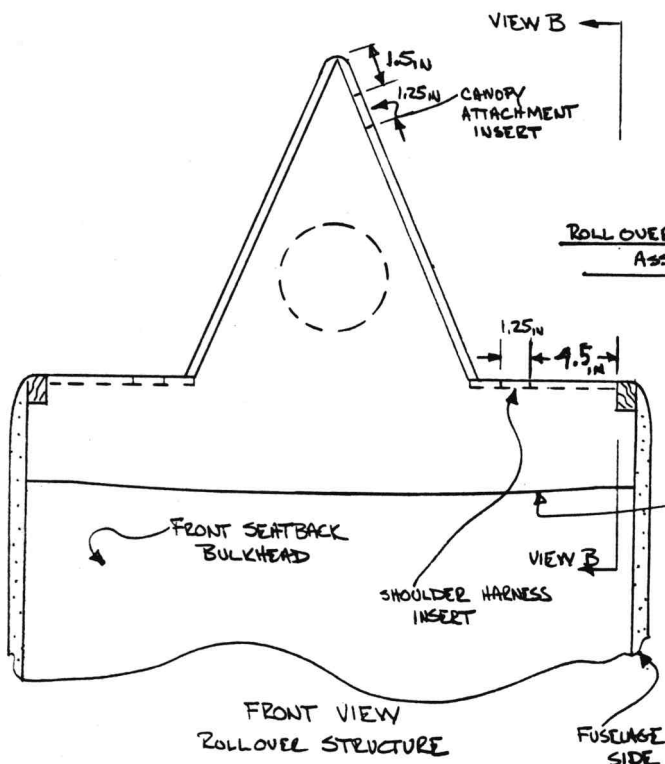
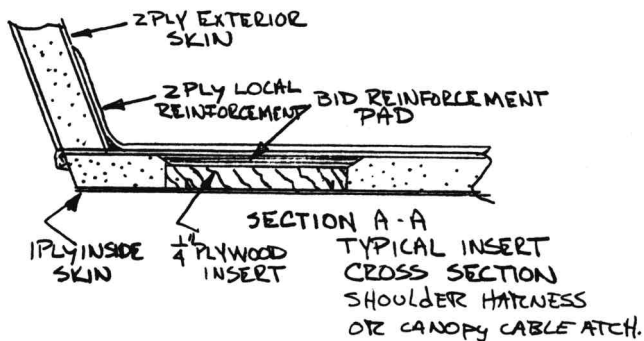
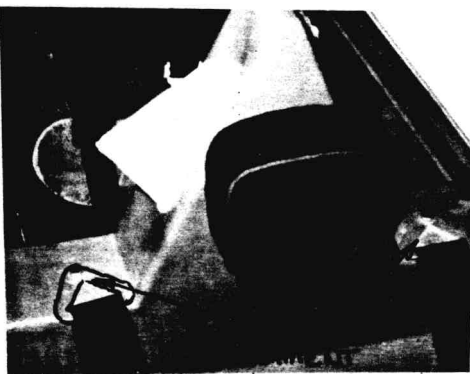
23 IN

7.3 IN

1 IN

3

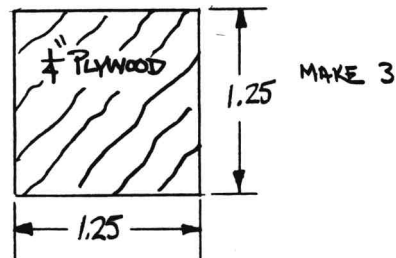
CARVE THIS  
EDGE TO FIT  
ON SEAT BACK  
BULKHEAD AS  
SHOWN BELOW



## STEP 2

### LOCATING THE SHOULDER HARNESS AND CANOPY ATTACHMENT INSERTS AND GLASSING THE INSIDE SURFACES FOR WET ASSEMBLY

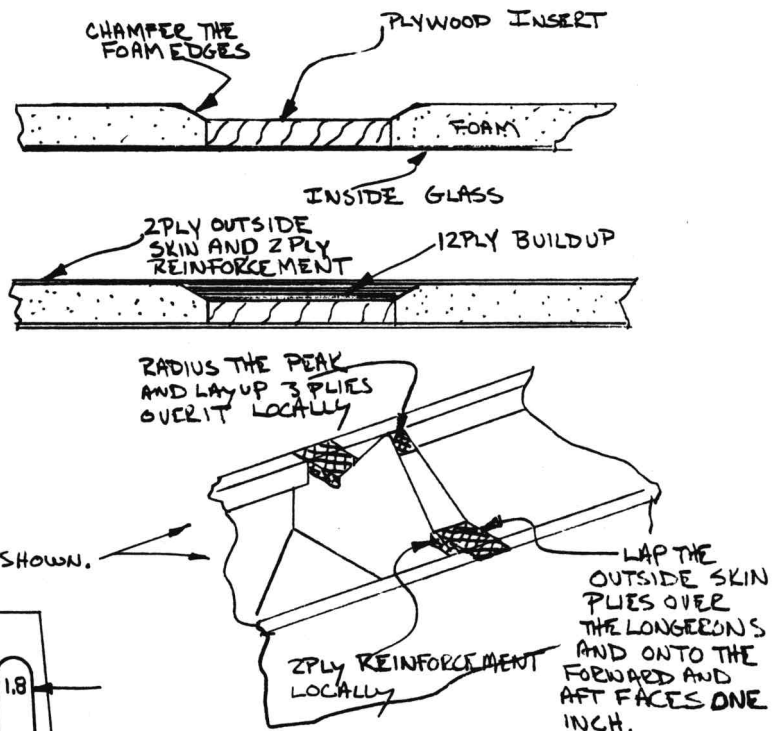
Disassemble the foam roll over box pieces, cut the three plywood inserts shown, and locate them, as shown, flush with the inside foam surfaces. Lay up one ply BID over all the inside foam surfaces. Let this layup cure to knife trim, trim the foam pieces, mix wet Micro and reassemble the roll-over box on the fuselage with nails holding it in place. Use Micro on all joining surfaces. Be sure to sand the cured glass surfaces of the seat back and fuselage sides before bonding. Clean off excess Micro and cure.



## STEP 3

### GLASSING THE OUTSIDE OF THE ROLL-OVER STRUCTURE

Sand a radius on the roll over peak and round all corners for glassing. Contour the foam around the inserts as shown. Sand the seat back and fuselage sides dull where the roll over structure glass laps over cured glass surfaces. Lay up the local buildups over the inserts. The 12 plies locally provide the required bearing strength for the harness and canopy stop bolts. Lay up two plies BID over all of the outside surfaces. These plies should overlap the adjoining seat and fuselage skins one inch. Lay up three additional plies over the peak, and two additional over the shoulder harness pads as shown.



## STEP 4

### CUTTING THE ACCESS HOLES

The access holes shown, can be cut after step 3 has cured. They allow the roll-over structure to be used as a handy map case. Sectional maps inserted in the side slot are easily reached by the pilot.



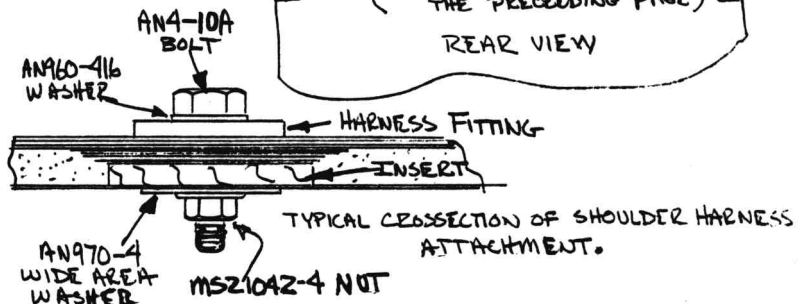
## STEP 5

### INSTALLING THE SHOULDER HARNESS ATTACHMENTS

The seat belt/shoulder harness assembly made to fit your long-EZ and complete with adjustments, is available from the distributors.

Drill a 1/4" hole through the center of the inserts in the roll-over structure and attach the front seat shoulder harness using the hardware shown.

Refer to chapter 14. Bolt the aft shoulder harness to the tabs provided on the center section spar (use AN4-6A bolt).

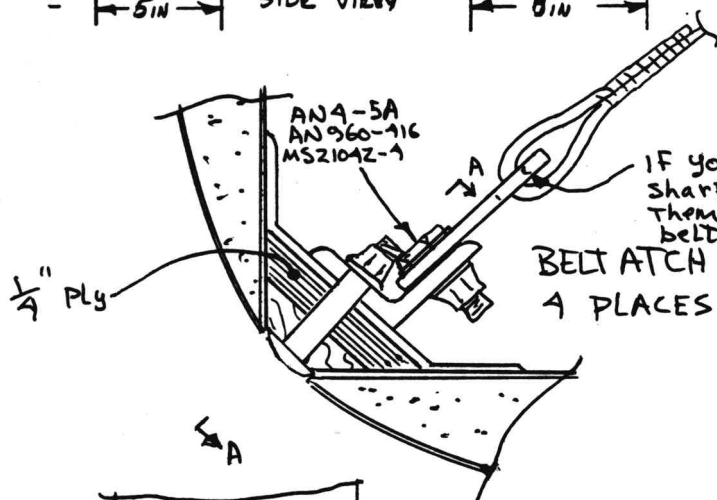
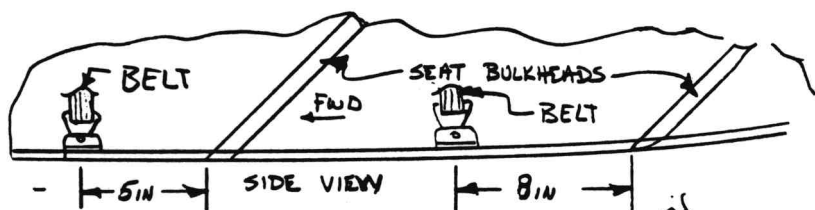


STEP 6, Next Page →

**STEP 6 - Installing the seat belt attachments and external step.**  
 Refer to the 2-view shown of the seat belt attachments. These are installed in four places (each side of both cockpits). The plywood insert does not have to be carved accurately to fit. Just rough it out to approximate shape, install with sufficient wet floc to fill voids, and immediately layup the 7 plies of BID. After cure, hold the extrusion angles in place and drill through with  $\frac{1}{4}$ " bit. Use a counter bore or your dremmel to flush the screw heads and install the AN525 bolts and angles wet with floc. Do not counter bore the left forward position. These bolts are used to attach the fixed step to allow short and medium pilots to enter the cockpit with the nose gear extended. A retractable step is not worth the trouble, since the aerodynamic drag of this step, when rounded as shown, slows the airplane by only 0.2 knots !

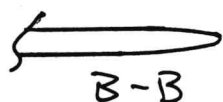
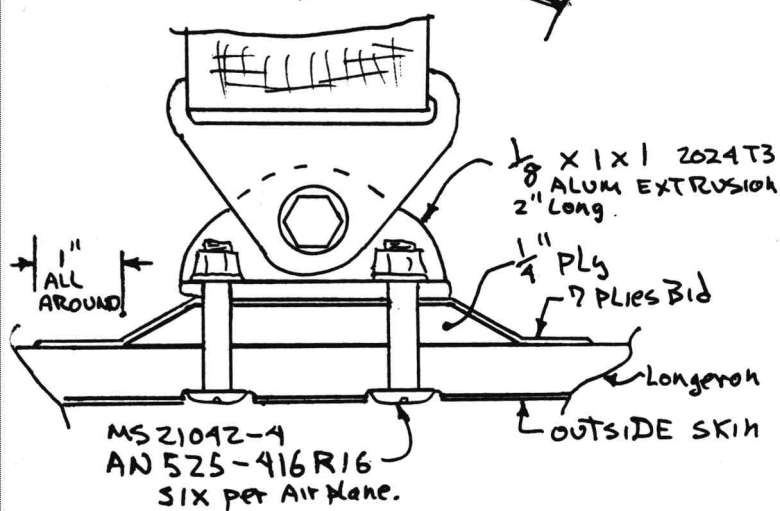
Fabricate the 1.8 x 4.5 x 4.5 2024T3 aluminum step. Mount with the four fasteners shown (two go through the seat belt attach).

You will now probably want to remove the AN4 bolts so you can remove the harness assembly to store it in a clean place, until after the cockpit has been painted.

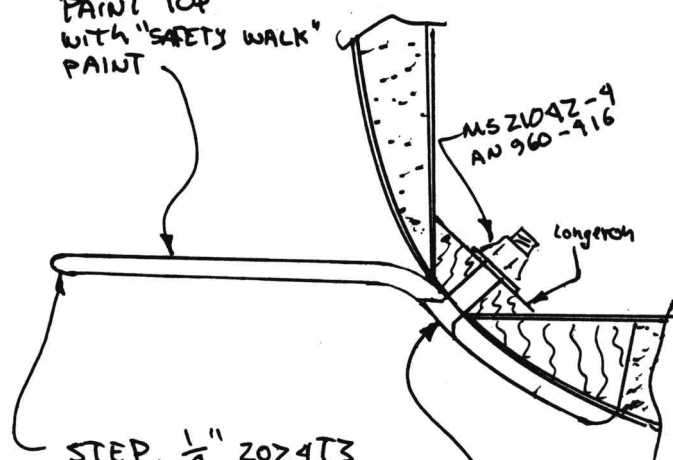


IF YOUR BELT FITTING HAS SHARP EDGES HERE, RADIUS THEM TO AVOID CUTTING THE BELT.

BELT ATTCH  
4 PLACES



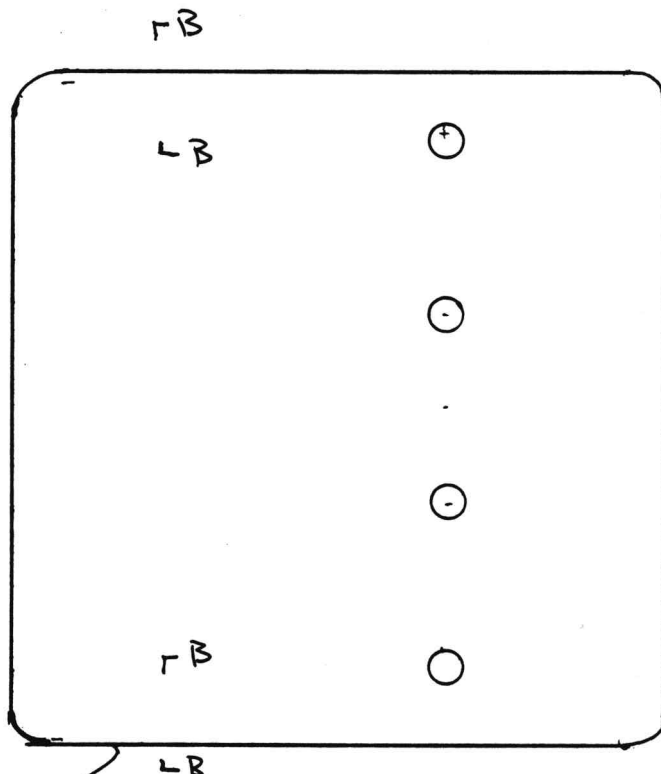
PAINT TOP WITH "SAFETY WALK" PAINT



STEP.  $\frac{1}{8}$ " 2024T3  
 BEND with a block of wood and Hammer in a Vise. MINIMUM bend RADIUS = 0.5", FORM BLOCK TO SUIT.

AN509-416 R18 Two places @ seat belt

AN509-416 R19 Two places @ Ends.



STEP - FULL SIZE  
 DRILL 4 PLACES  $\frac{1}{4}$ " AND CSK.  
 BEND PER ABOVE TO FIT.

NOTE: STEP IS AVAILABLE PREFAB.