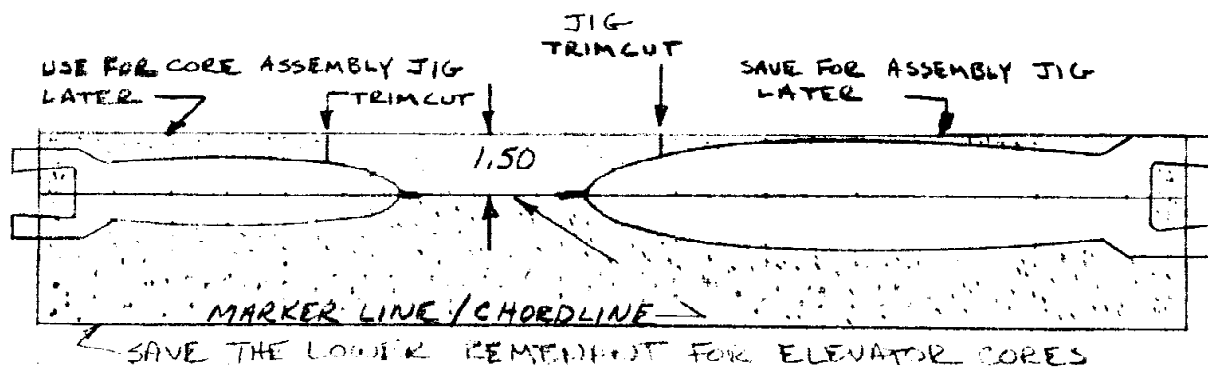
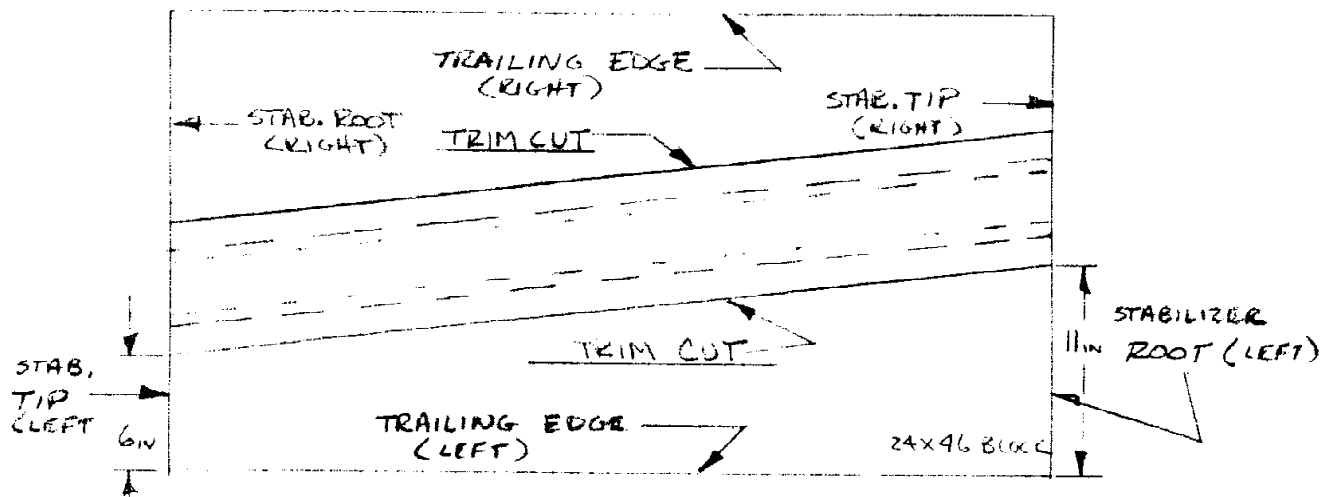
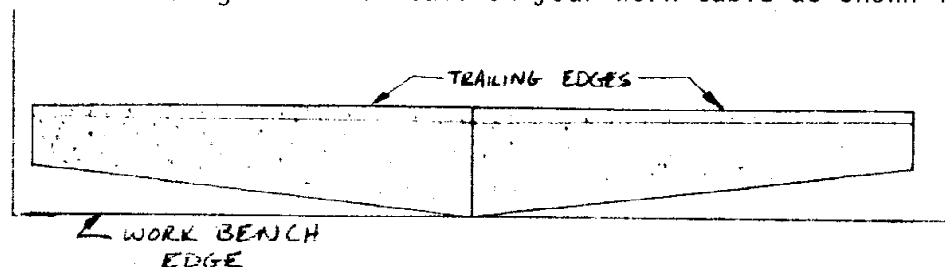


Make the stabilizer and elevator hotwire templates shown on page A-1 from 1/8 masonite.

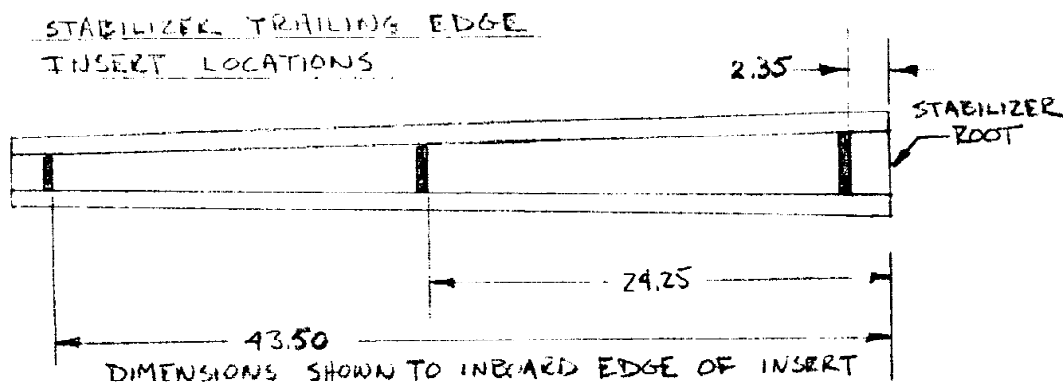
Drag out a block of blue foam four inches thick and cut a blank which is 24 inches x 46 inches. All four corners should be 90 degrees. Position the foam block for hotwire cutting and weight firmly against the table. Position the stabilizer hotwire templates on the foam block's 24 inch wide ends with the chordlines 1.50 inches below the top of the block and level with each other as shown below. Remember to align the "foam edge" marks with the edge of the foam block to set the sweep angle of the surface properly. Cut the rear spar notch first, then the outside contour. Save the left over foam for elevator cores and for a jig to assemble the left and right stabilizer foam core halves. Cut two cores in this fashion, then trim cut the left over for a jig as shown below. Remove the stab cores before the trim cuts are made. The trim cuts can be made with a saw or hotwire (free hand no templates). The dimensions are non-critical ($\pm \frac{1}{2}$ inch is O.K.)



Keep the two thin slabs of foam (they were on the top during the hotwiring of the stab cores). The two slabs mate with the outside contour of the stabilizer halves. Arrange the two slabs on your work table as shown in the sketch.

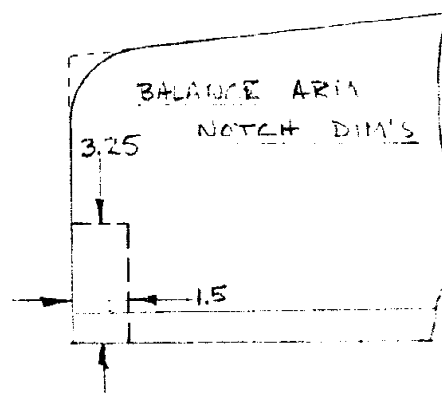


The trailing edge must be straight. 5 min/micro the jig to the table. Assemble the two stabilizer cores in the jig and fit check. Cut 1/2 x 3/16 aluminum inserts 2 each 0.9 long, 2 each 1.1 long, and 2 each 1.4 long. Lay out their positions along each trailing edge spar notch as shown in the sketch below and route out foam so they sit flush with the foam surface. Brighten the inserts and bond into the foam with 5 min/micro.



Carve the stabilizer tip to a pleasing radius, about a 2 to 2 1/2 inch radius on the plan form, and round the tip edges to your satisfaction. With that bit of art completed on both sides, cut the elevator arm notch in the tip as shown below.

Protect the inboard inch of each stabilizer core with masking tape. Position one stabilizer half in the jig and fixture it temporarily with some weights so it won't shift. Spread a thin layer of 5 min/micro over the stabilizer root (leave the outer 1/2 inch of the root rib bare to allow for squeeze out) and squeeze the second half into position in the jig. Verify the rear spar is straight and both halves are in alignment. Do all of this quickly, 5 min is fast setting.



Go cut the following glass cloth and peel ply:

- 45° BID strips 4 inches wide
- 2 each 46 inches long
- 2 each 30 inches long
- 2 each 16 inches long

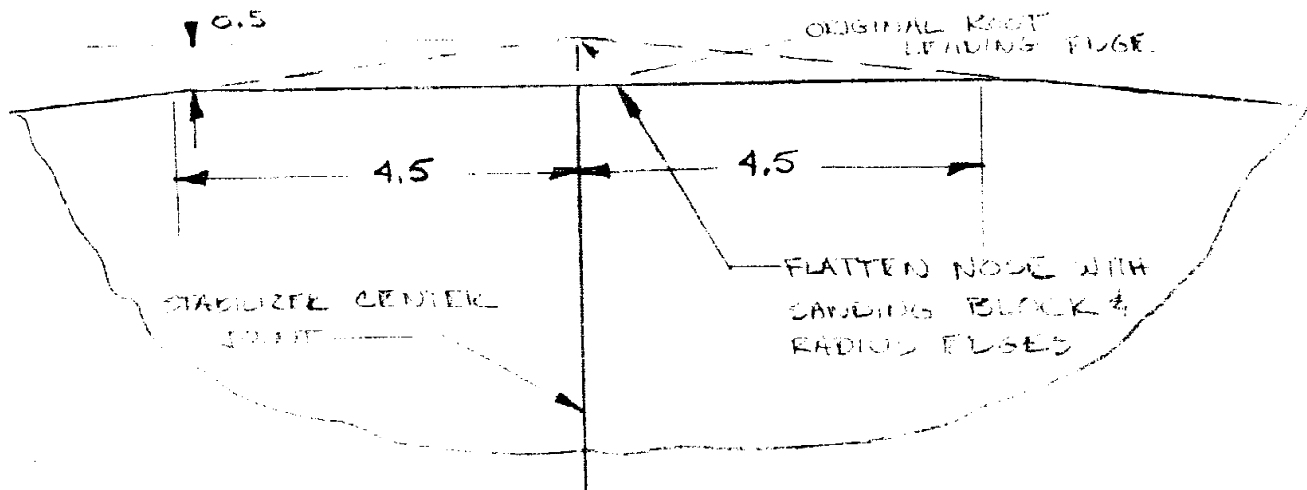
One 8 inch strip of 2 inch wide peel ply

A total of 190 inches of 3/4 to 1 inch wide peel ply strips.

Prop the stabilizer core trailing edge up to laminate the rear spar. Slurry the trailing edge spar notch and lay up as follows: Dacron peel ply strips along the skin overlap areas top and bottom first, then starting 1/2 inch to the right of center lay up one 46 inch long BID strip to the left tip. Starting 1/2 inch left of center lay up another strip to the right tip. You should have a one ply BID lay up from balance arm notch to balance arm notch with a center overlap of one inch. Using a 30 inch long ply, start one inch right of center and lay up to 29 inches left of center. Repeat in the opposite direction. Start 1.5 inch right of center with a 16 inch long ply and lay up to 14.5 left, then repeat in opposite direction.

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Get some small scraps of 45° BID (1 in. x 1.5 in) and add two patches over the outboard hinge inserts (B.L. 44) and add one patch over the midspan hinge insert (B.L. 24.5). Lay up a little piece of peel ply over each insert and BID buildup patches that is 2 inches wide and covers the vertical spar face. Scissor trim overhanging dry cloth within 1/2 inch of the foam edges then place the stabilizer back in the jig to cure. Knife trim and cure 24 hours.

After cure carve the trailing edge lumps down flush, exposing the spar/skin overlap at the trailing edge. Remove the peel ply from the exposed spar. Measure back from the center leading edge 1/2 inch and mark top and bottom surfaces. Use your hack saw and sanding block to flatten the nose of the center of the stabilizer parallel to the trailing edge and back 1/2 inch (as marked) from the original root leading edge.



Use your straight edge and watercolor marker to mark the leading edge full length and the tip chordline back to the balance arm notch. Protect against overslop with masking tape from the marker line down. Go cut glass cloth and peel ply as follows:

- 2 each 43 inch lengths of 4 inch wide peel ply
- 1 each 10 inch length of 4 inch wide peel ply
- 1 each 15 inch wide 96 inch long 0° UNI
- 1 each 15 inch wide 50 inch long 0° UNI
- 1 each 15 inch wide 96 inch long 0°-90° BID
- 1 each 15 inch wide 8 inch long 45° BID

Use your rotary file to prepare a 3/8 floc corner along the rear spar's forward face from centerline to four inches outboard either side of center.

Mix epoxy, slurry the foam, paint the bare glass, and fill the corner with floc. Lay up one full span ply of 0-90° BID followed by a full span ply of 0° UNI (parallel to trailing edge). Followed by 0° UNI from 25 inches left to 25 inches right of center line, followed finally by the 45° BID ply layed up four inches either side of center. Peel ply the leading edge. Knife trim and cure 24 hours. After cure, remove the peel ply from the leading edge and sand the step fair for a smooth leading edge overlap. Sand the tips dull for glass bonding. Flip the stabilizer over, sand the trailing lump off and remove the peel ply from the rear spar. Prepare a 3/8 floc corner as before four inches either side of center line. Mark the cured glass leading edge for a 1.5 inch overlap joint and tape off the areas adjacent to the trim line. Locate the stabilizer with the leading edge overhanging the table edge to allow easy access for the overlap. Cut the same number and size glass plies as were used in the first skin lay up. Lay the skins up in the same sequence as before, overlapping the cured skin plies with each. Peel ply the leading edge, knife trim and cure.