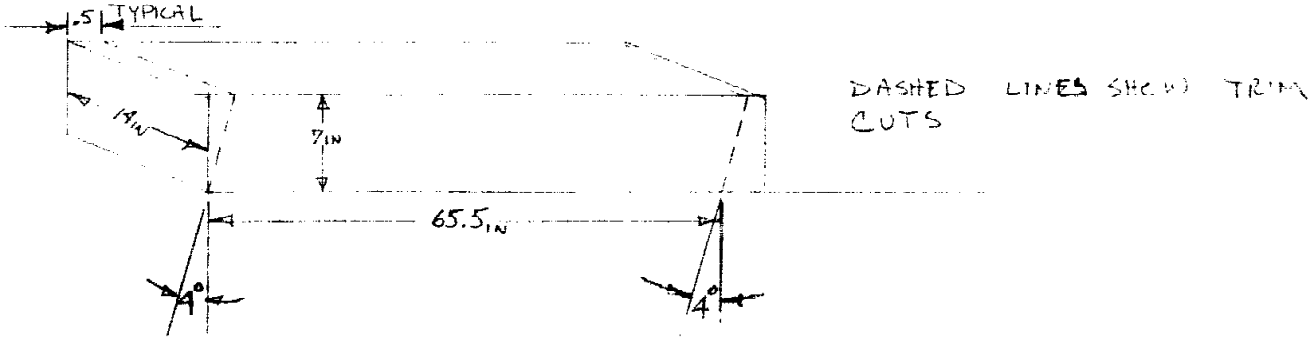
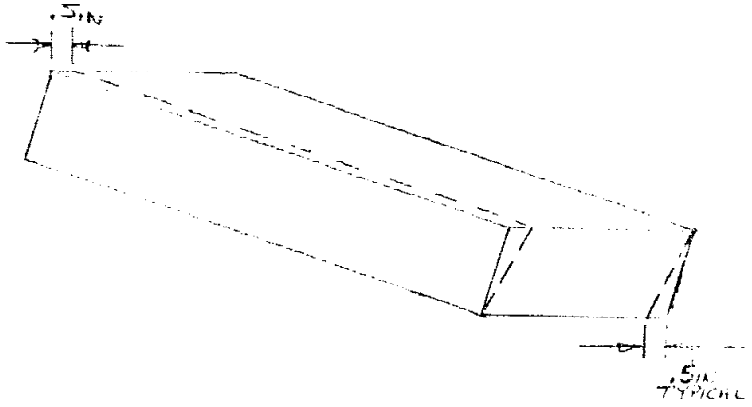
Step 1 Foam Cores

Make the hotwire templates shown on pages A-1 thru A-9 from 1/8 inch tempered masonite. The edges need to be smooth for the hotwire to pass over the templates evenly.

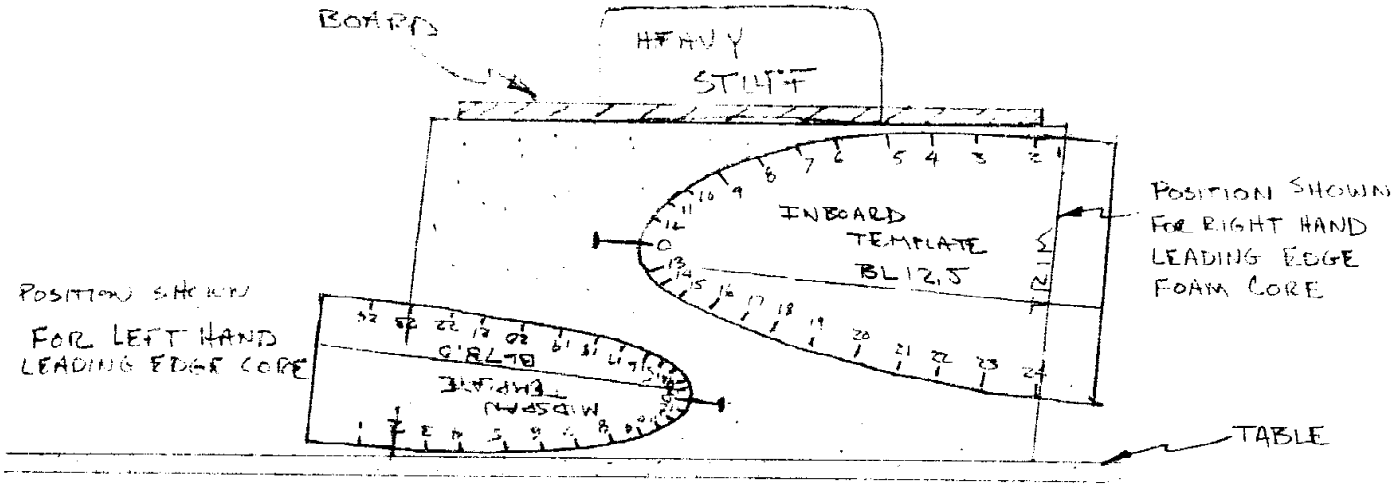
Round up the W.S. 12.5 and W.S. 78.0 leading edge template. Trim cut one 7 x 14 x 67 foam block for the wing dihedral angle as shown in the sketch below.



Next trim the long edges as shown below (to provide better "nesting" of the foam cores).



Now you are ready to mount the leading edge templates for cutting. The foam block is crowded to avoid waste so mount the templates carefully as shown below.



Notice several important things regarding the template positioning:

1. The top side of the aerofoil and the outside of the foam block are close together.

2. Both the inboard and midspan templates have to be about 1/8 inch from the upper edge of the foam. Otherwide, both left and right leading edges won't fit without overlapping.

3. The sketch above shows the inboard template in position to cut the right side leading edge core.

4. Make the cut with the templates at the top of the foam block to avoid interference between the work bench and the hotwire.

5. Make certain that the heavy stuff (used to keep the foam block from moving around while you cut) doesn't hang up on the hotwire bow.

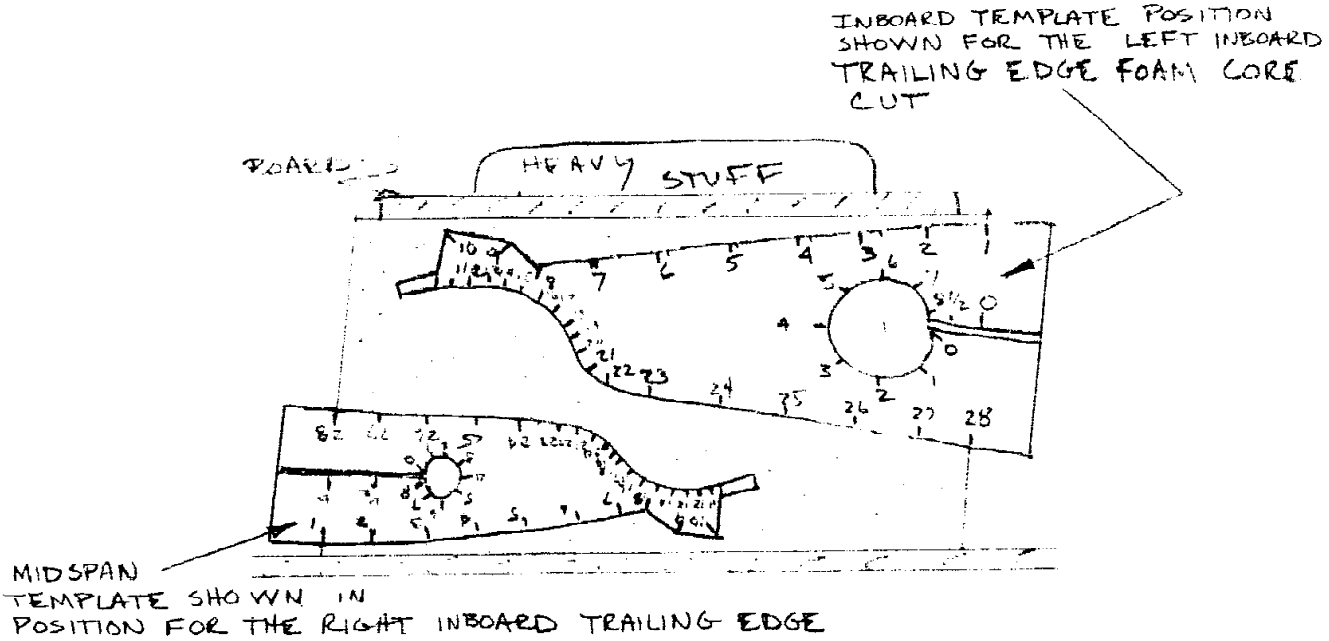
6. When you nail the templates to the foam block, be very careful to get the trim edge of the template lined up with the trimmed edge of the foam block. This sets the incidence and twist of the wing. Talking Numbers 1 and 24 on the inboard template are to be on the trimmed edge. Talking Numbers 2 and 23 on the midspan template are to be on the trimmed edge.

Cut the right hand inboard leading edge core first. Leave the core in the block. Flip the block upside down. position the templates for the left hand inboard leading edge core and cut.

Clean the hotwire, cut leading edges up by sanding off any minor defects with your sanding block. Be careful not to create a scalloped leading edge.

Now, grab another 7 x 14 x 67 foam block and trim it exactly like you did the first one. (Yes, if your length turned out to be 65.6 instead of 65.5 on the first one you're better off to repeat the same mistake this time).

The locations of the inboard trailing edge templates are similar to the leading edge cuts just made.

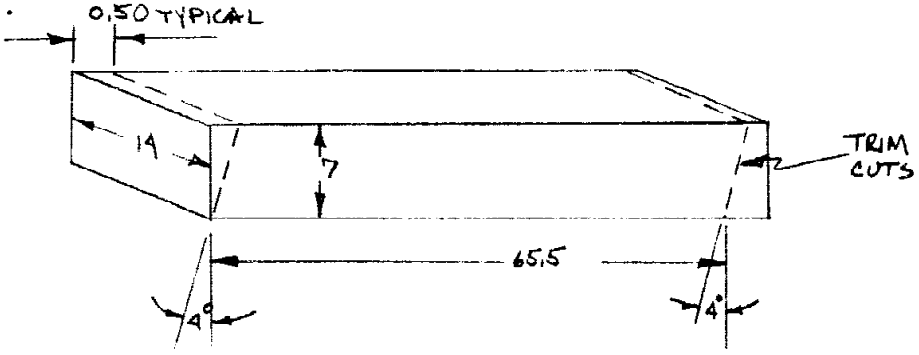


The cautions that were given before still apply. In addition:

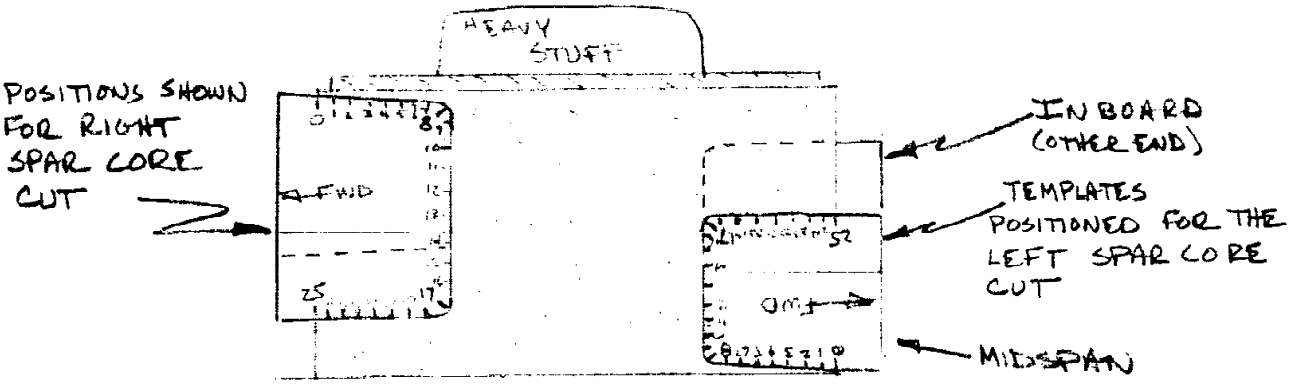
1. After reaching the "stinger" (after #10) make sure that you pause long enough (3-4 sec.) for the wire lag to catch up before starting toward #11.

2. Cut the hole first then cut the outside.

Next we cut the inboard spar cores. Drag out the last of the 7 x 14 x 67 foam blocks and trim for the wing dihedral angel only. No trim on the long edges this time.



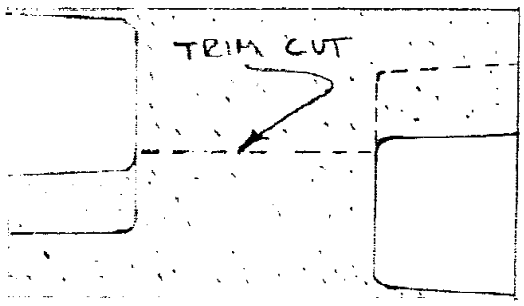
Next, locate the spar core templates as shown below.



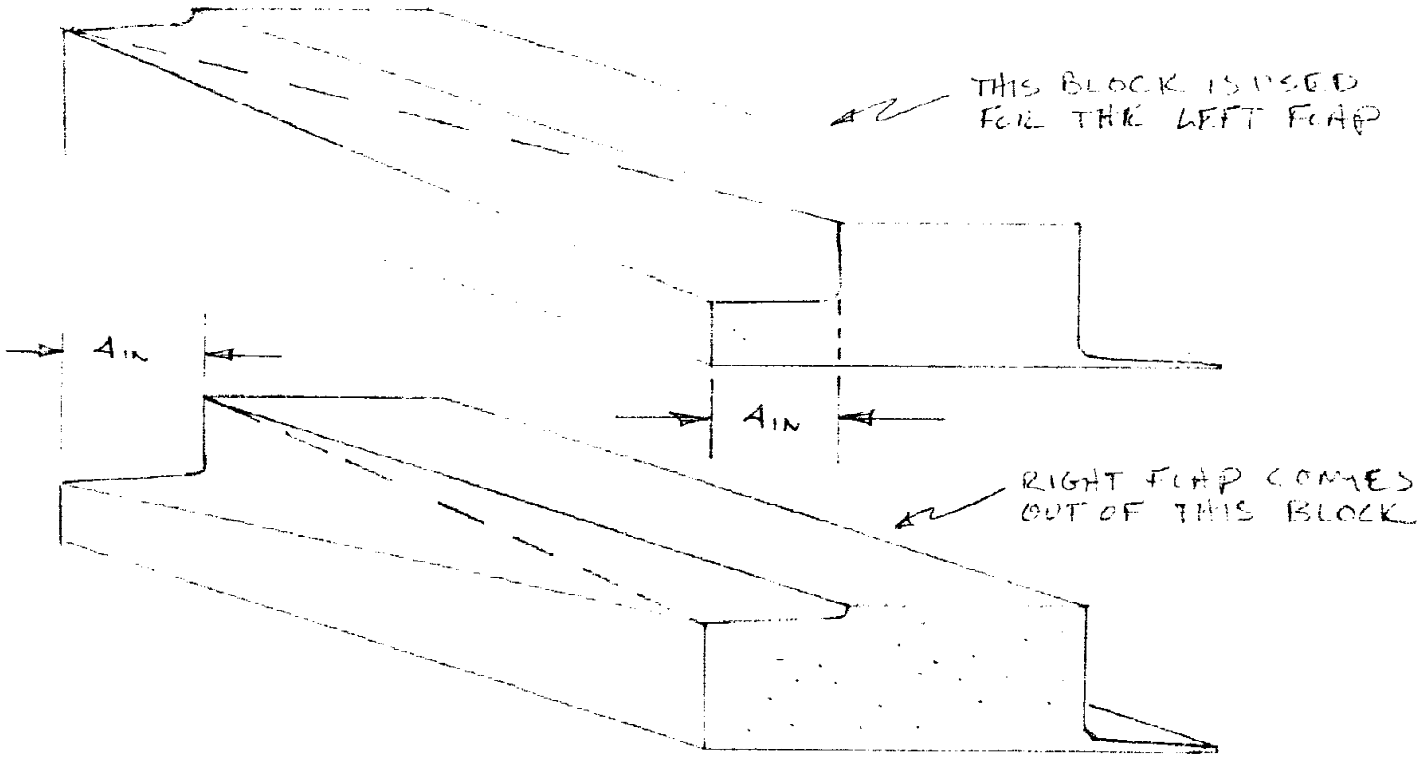
Cut the right wing spar first then flip the foam block over to cut the left spar. Talking Numbers 0 and 25 must be aligned with the foam block edge to give proper fit between leading edge, spar and trailing edge cores.

Remove the spar cores from the block and store. The remaining foam block will be used to make flap foam cores.

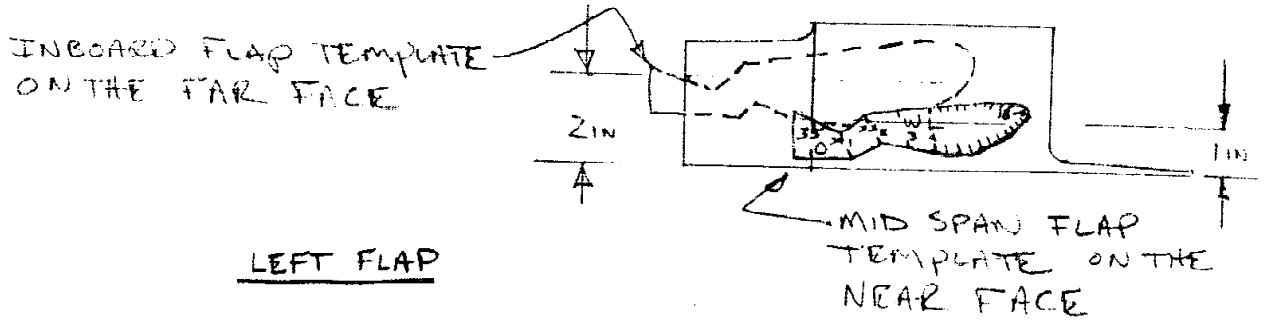
Use the trim templates and cut the remaining block in half as shown.



Next make the vertical trim cuts shown below to set the flap trailing edge sweep angle.



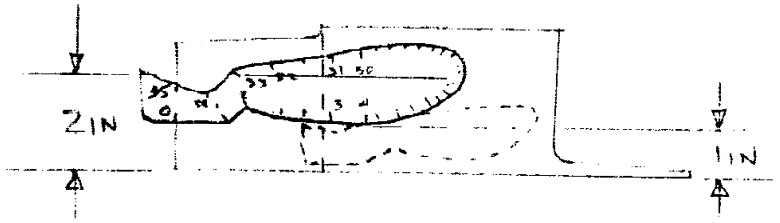
Position the flap templates on the foam block as shown below.



Note that these templates are staggered in height above the base of the foam block. The midspan template is set with its chordline one inch above the edge. The inboard templates chordline is set up 2 inches. The chordlines should be levelled on both ends before cutting the core.

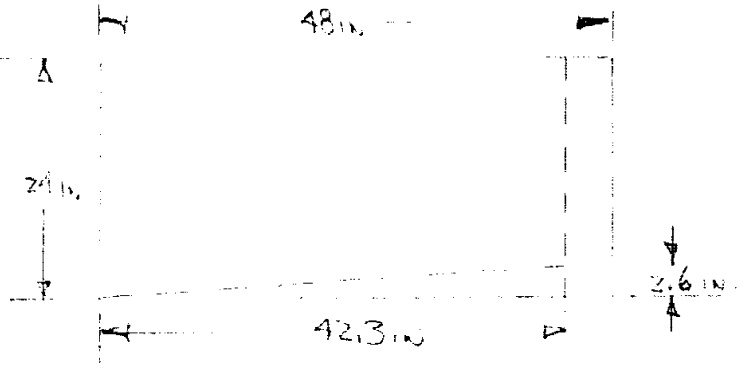
For the right flap, position the templates as shown in this end view sketch.

The notes from the left flap still apply here



Store the finished flap cores safely away. They won't be used until the wing is finished.

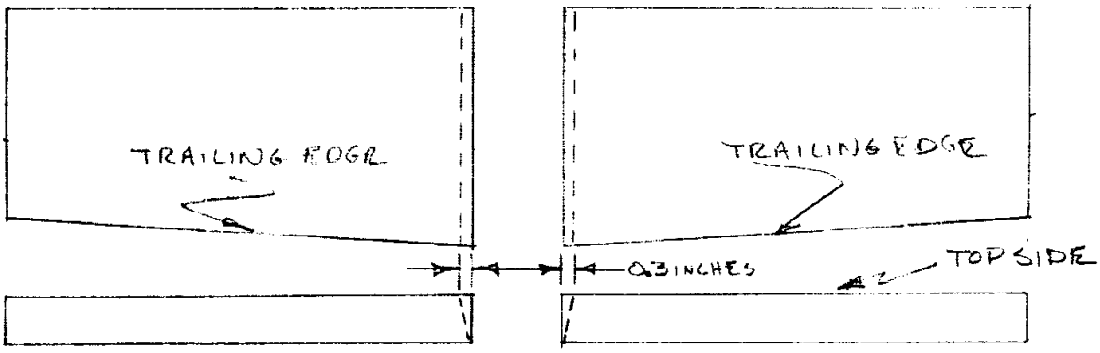
Next cut the outboard wing panel foam core. Get out two 4 x 24 x 48 foam blocks. Trim cut both as shown below.



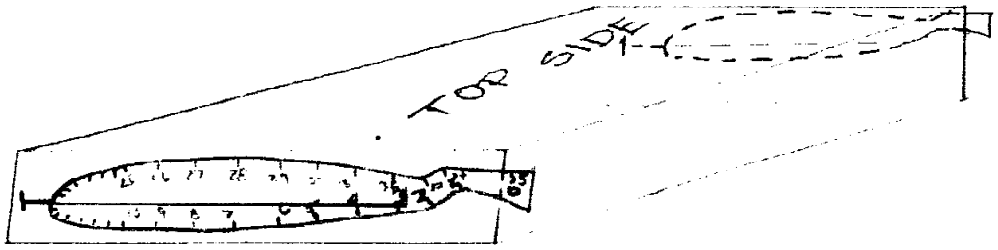
Trim both blocks to 42.3 inches length. Save the drop-offs for use in the spar carry through.

Next trim cut to the 2.6 inch dimension shown to set the trailing edge sweep angle.

Next lay both blocks out and trim for the wing dihedral angle as shown.

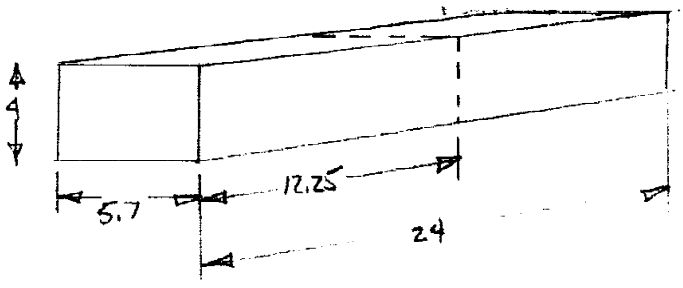


The next sketch shows the template positioning for the right hand core cut.

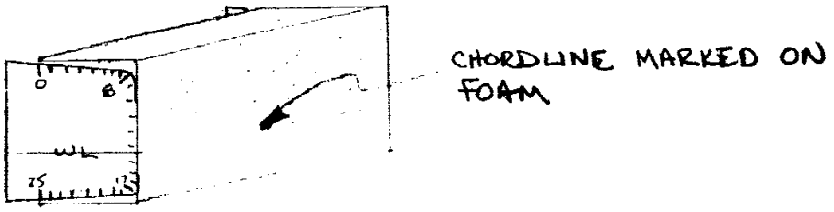


Crowd the templates high on the foam block. The aerofoils should be right side up. Level the chordlines on both ends before cutting.

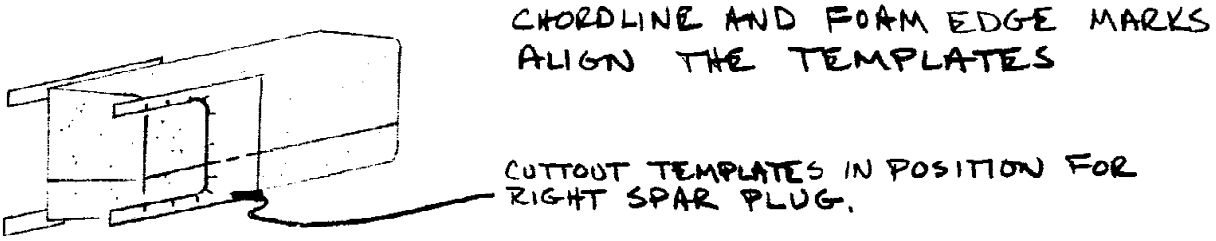
The left side is done the same way. Store the left and right outboard foam cores for a while. Grab the drop-off foam blocks from the outboard wing trim cuts. Trim the drop-off blocks to 12.25 inch lenth as shown.



Position the two inboard spar templates as shown and cut two spar plugs. These are constant cross-section plugs, not tapered. Mark the reference chordline on the foam core, all four sides.



Position the centerline cut out templates on the plugs as shown and cut one left hand and one right hand notch.

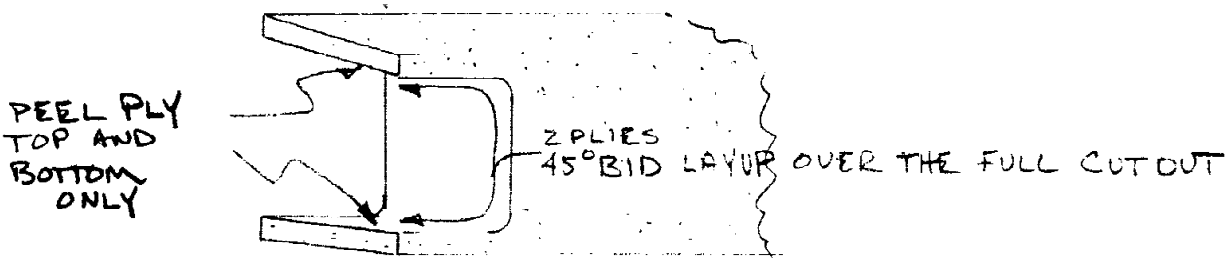


This completes the hotwire cutting of wing, flap, and aileron foam cores. The next step is building up the spars and shear webs.

Step 2 Spar Core and Shearweb Buildup

Get out your two center section spar plugs. Cut 4 pieces of 45° BID approximately 10 1/2 x 4 1/2 and 4 pieces of dacron tape 4 x 5.

Lay up 2 plies of 45° BID on the inside of the spar cut-outs as shown below. The dacron peel ply is layed up against the foam before the glass is applied in the areas shown.

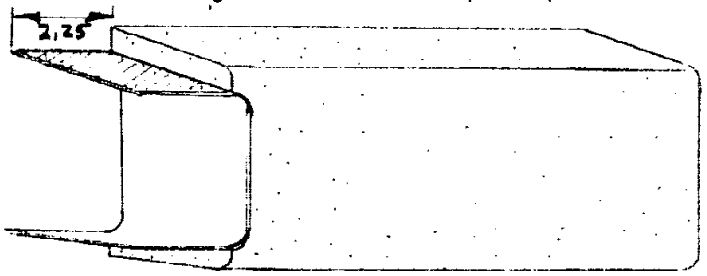


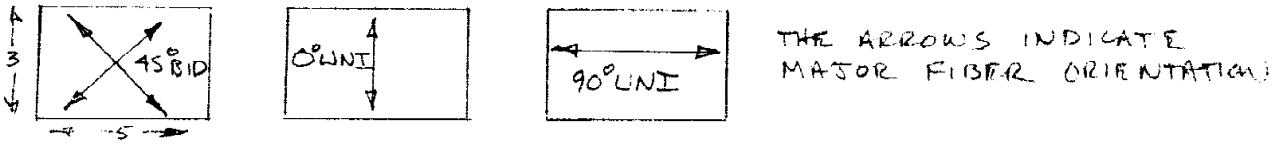
Knife trim the edges flush with the foam core and allow to cure completely.

While the center section plugs are curing, clear a flat spot on your work bench long enough to accomodate both spar cores. Lay the spar plugs out aft face down and weight them to the flat table top. Use your long straight edge and make sure that the top and bottom surfaces of the spar are as straight as possible. If necessary, spring them straight and weight them down so they stay staright. The whole object of this exercise is to take any bow out of the foam core before it is glassed.

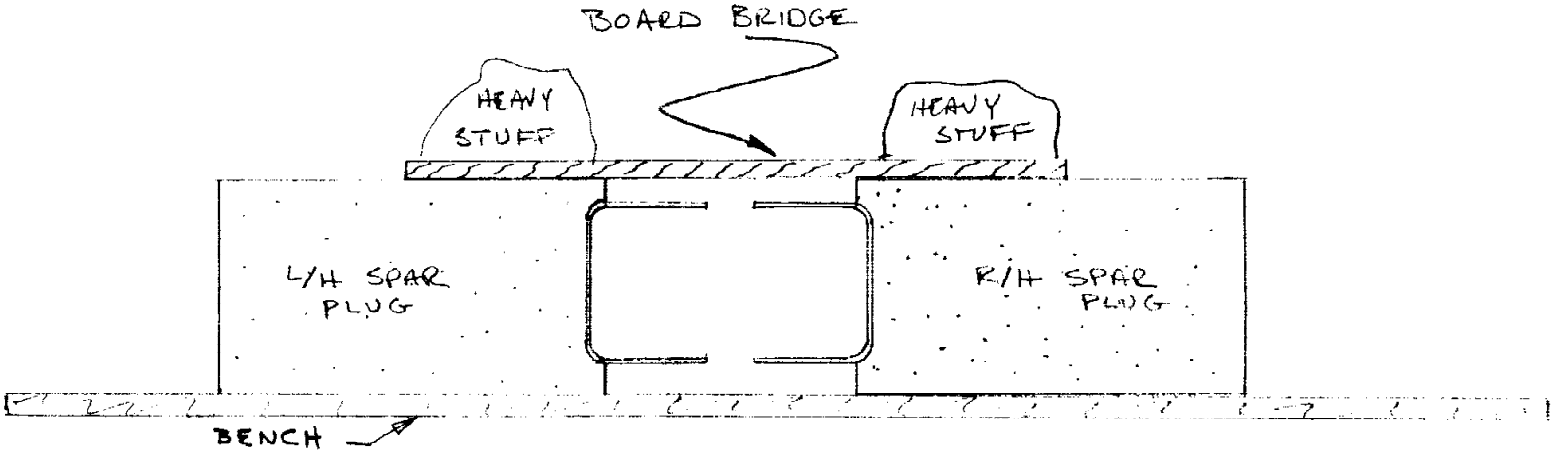
Once you have the core straight, bond a 1 x 2 board to the forward face of the foam core with a small dab of 5 min and micro balloons every six inches or so along the 1 x 2. The 1 x 2 need not be straight but the 5 min/micro blobs have to bridge any gaps. Bear in mind that a little dab will suffice. You will be breaking the lumber loose after the rear shear web is installed and big blobs of 5 min will tear a big chunk of foam out of your core. The smallest dab of 5 min that you can apply will do an adequate job of fixturing the foam. Let the 5 min cure completely (more like 30 minutes than 5). Remove all of the weights and recheck the core's straightness. If you blew it, break the 1 x 2 loose and start over.

Go back to the center section plug after the cut-out lay up has had time to cure (24 hours or more). Sand the foam away from the "legs" of the C shaped spar cut-out as shown below. Now, cut about 60 plies of glass cloth 5 x 3. Use up your scrap box for these pieces. Try to get an even mix of 45° BID and unidirectional at 0° and 90° plies.





Peel the dacron peel ply off of the outside surface of the exposed legs of the "C" shaped cut-out. This will also remove the rough micro slurry/foam interface, preparing the surface for the next lay up. Find a flat piece of wood or sheet metal that will bridge across the two spar plugs as shown below. The piece must be at least as wide (4 inches) as the plugs.



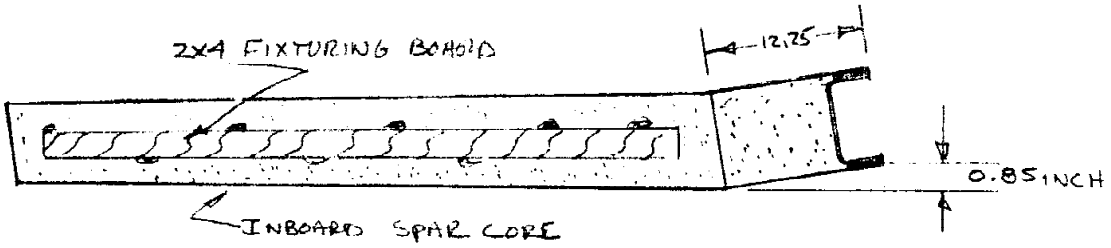
Before you start laminating, mask the bare foam areas around the lay up with tape to keep the epoxy spatters off.

Now, lay up the glass plies on the outside of the top leg of the "C" on the left and right plugs. Lay up enough plies (about 25) to bring the glass slightly above the foam edge (1/32 to 1/16 inch). Laminate a piece of dacron peel ply on top of the stack. The glass plies should alternate their fiber orientation throughout the lay up. Start with a ply of 0° UNI, followed by 90° UNI, followed by a ply of 45° BID and repeat this sequence until the required thickness is obtained.

When both pads have been layed up, position the plugs as shown above, lay a sheet of waxed paper over the lay ups then place the board bridge on top. Weight the bridge down to squeeze the pad lay up flush with the foam. Allow to cure 24 hours. Don't try to knife trim the lay up, it's too thick! After cure, use a hacksaw to trim the lay up's edges.

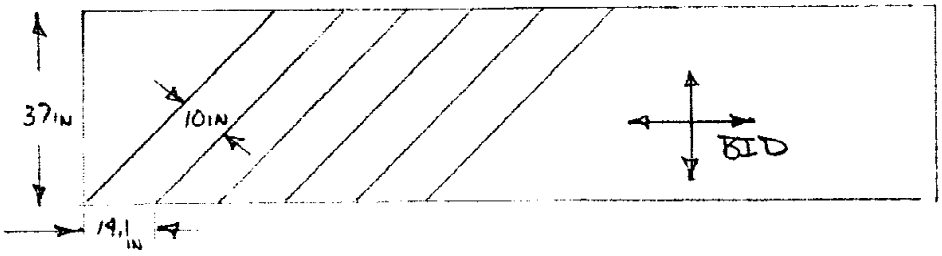
Repeat this exercise for both bottom sides of the spar plug. This process results in flat, parallel sides for both spar plugs which is important to getting a good fit with the center splice fittings later.

Clear off your flat spot again and drag out the inboard spar cores that you fixtured straight a while back. Lay the spar cores aft face down on the table and butt the spar plug up flush with the inboard core.



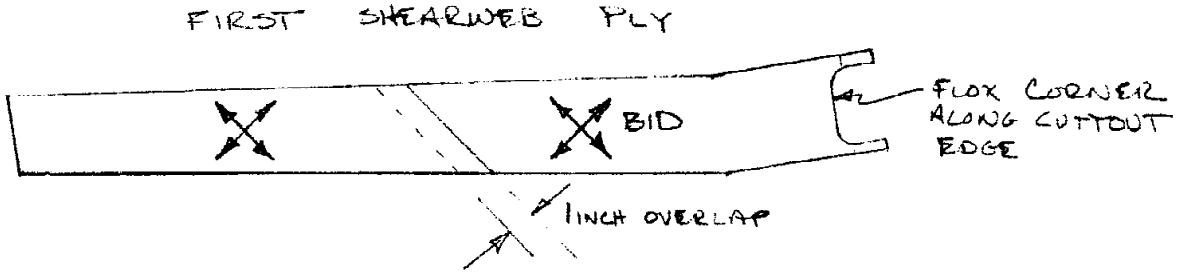
The foam trim should set the wing dihedral angle. Use the 0.85 inch dimension shown as a reference to verify that both left and right sides are the same. Glue the center section spar plugs to the inboard cores with a thin layer of 5 min/micro.

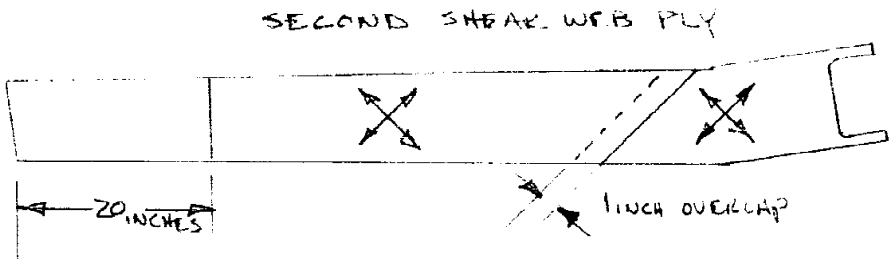
Go cut 10 strips of 45^0 BID 10 inches wide and the full width allowed by the roll of cloth.

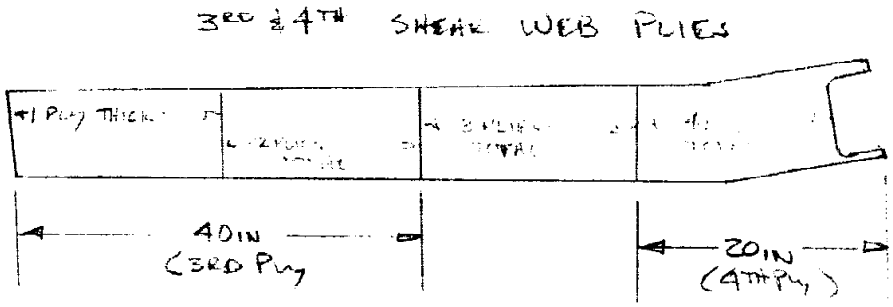


Prep the aft face of the center section spar stub "C" for a flox corner. Use tape to protect the forward half of both top and bottom faces of the spar core from epoxy slop while the aft shear web lay up is made. Mark the aft edge of the tape with a bold colored marker line down the length of the spar to aid in knife trimming the shear web lay up. Cut two 80 inch long strips of 4 inch dacron tape peel ply.

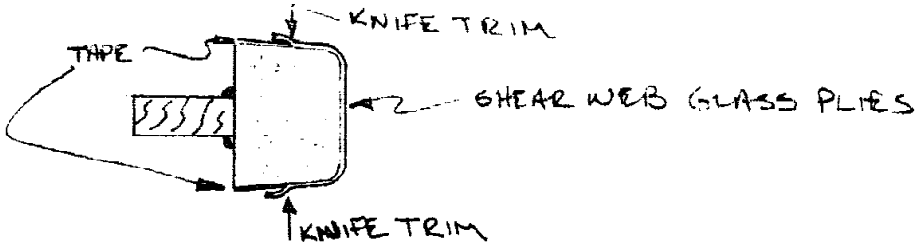
Lay up the aft shear web. One ply extends the full length of the spar, the second stops 20 inches short of the outboard end, the third stops 40 inches short and the fourth covers only the inboard 20 inches. The 45^0 BID strips are not long enough to cover the full length of the spar. The first ply and second ply must be done in two pieces. This is accomplished by overlapping the cloth pieces one inch.





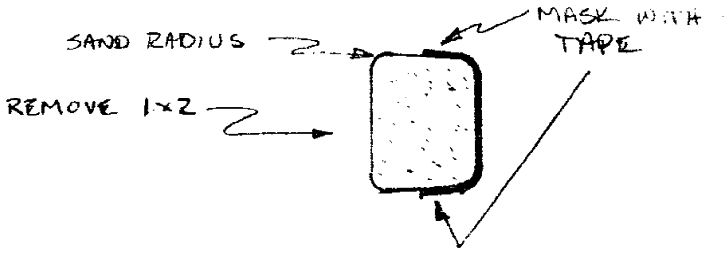


The shear web plies run from the middle of the top side to the middle of the bottom of the spar.



Peel ply the full length of the shear web. Cure at room temperature for 24 hours. Knife trim.

Remove the 1 x 2 fixtures from the forward faces of the two spar foam cores. Be sure to remove all of the 5 min from the foam surface. Sand a 3/16 inch radius (approx.) on the top and bottom edges of the core. Tape the edges of the aft shear web lay up to keep overlap and overslop from the forward shear web lay up from contaminating the completed aft face lay up.

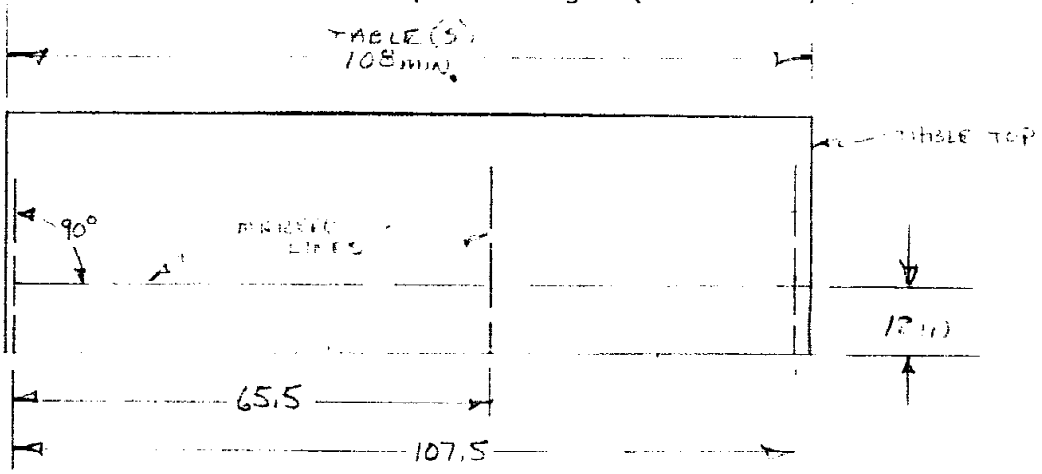


Lay up the forward faces the same as the aft faces. Note that the forward face and aft face shear web lay ups butt together on top and bottom and do not overlap.

Step 3 The Wing Jig

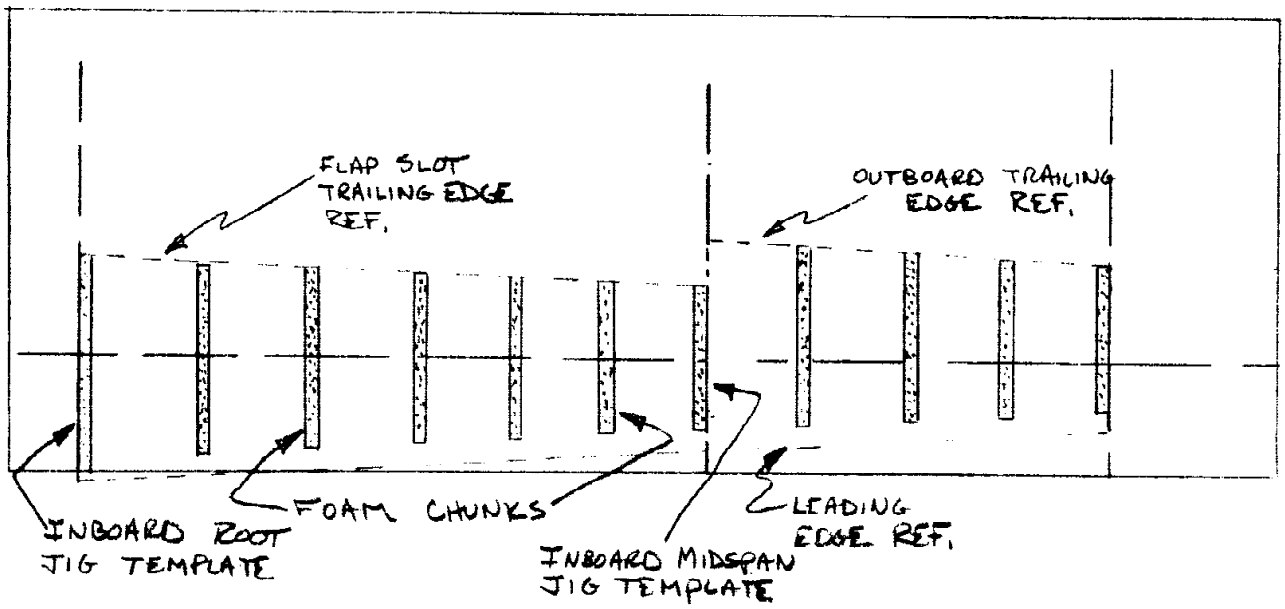
Cut the three jig templates shown on pages thru out of 1/8 inch masonite.

Clear your work bench and mark bold lines as shown in the sketch. You may need to use two benches to obtain the required length (108 inches).

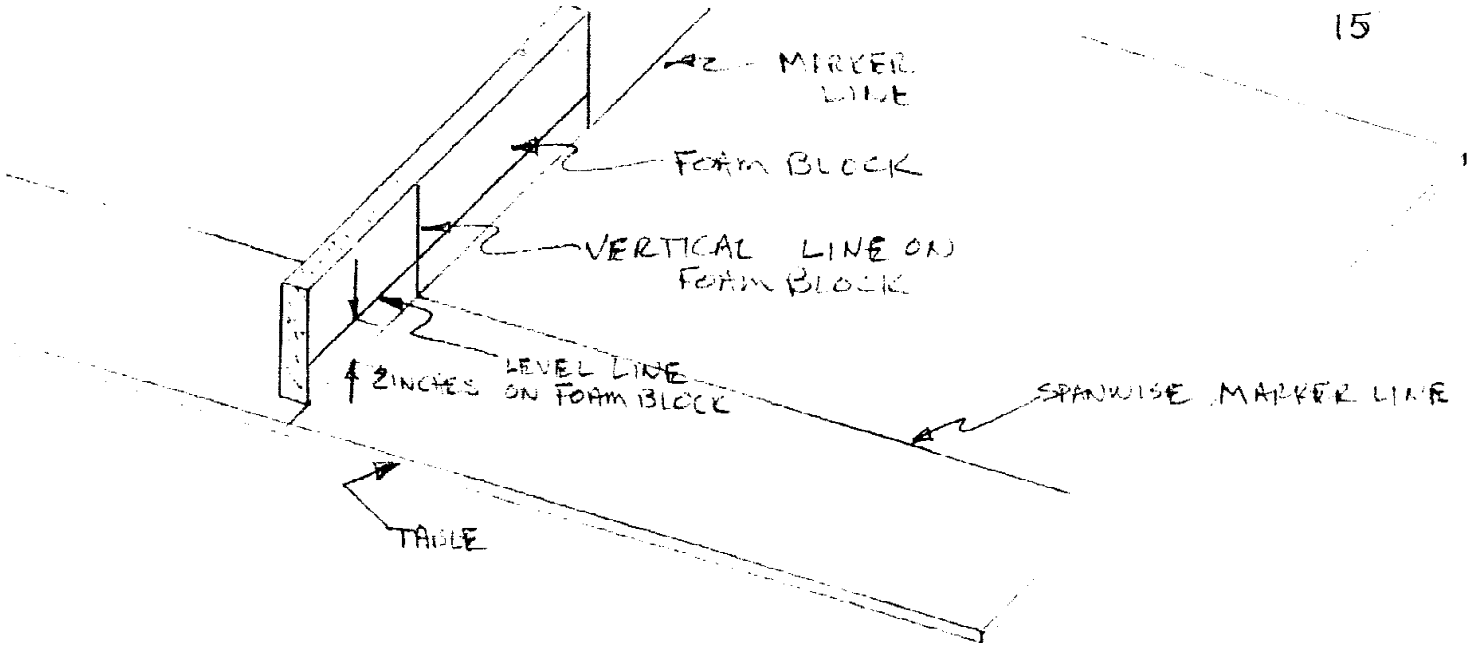


SHOWN FOR RIGHT WING

You can also mark the outline of the wing leading and trailing edges lightly on the table top for quick reference. Rummage through your styrofoam scraps and come up with about a dozen chunks of foam 6 inches wide and 16 to 22 inches long. These foam chunks should be at least 1/2 inch thick but can be irregular. Use 5 min/micro to locate the foam chunks as shown in the sketch.



Three of the foam blocks must stand up straight and be aligned carefully with the marker lines on the table as shown. Use your level and mark a vertical line on the outside of the end foam blocks which intersects the spanwise marker line on the table top. The long marker line and the vertical lines on the foam block are going to be used to locate the jig templates and the lines represent the rear face of the spar. Mark a similar vertical line on the foam block which is aligned on the middle marker line. This vertical should intersect the span wise marker line and the chordwise marker line.



On each of the three vertically marked foam blocks, measure 2 inches up from the table top and mark a level line. Stretch a tight string between the two end foam blocks along the leading edge end of the level lines to verify that all three level lines agree. Add a second level line to the outboard block (wing tip) which is 2 inches above the first (4 inches off the table top).

Mount the inboard jig templates on the foam blocks as shown a couple of sketches back. Use the level lines and vertical lines marked on the foam to align the templates. Hot wire. Remember, stay on the templates and avoid lift marks. Pausing in corners too long will not hurt your jig, but not pausing long enough for the wire lag to catch up will cause many problems.

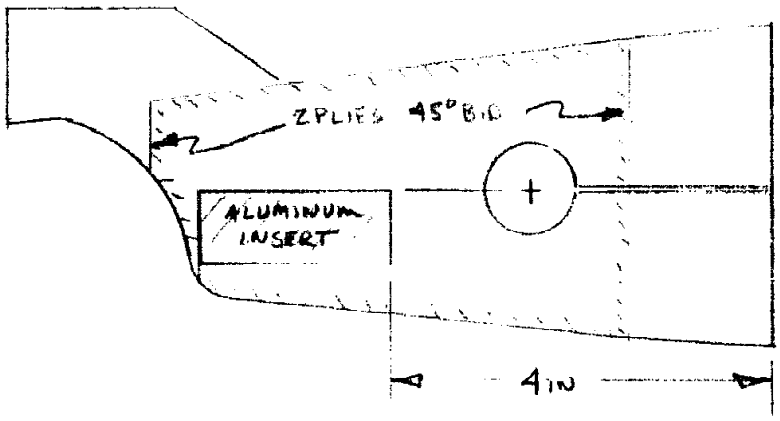
Next, locate the twelfth foam block along side of the foam block where the inboard mid span template was mounted and 5 min to the table (not to the foam block). Mark the level line on the new block, using the end points on the neighboring block. Break the inboard foam block loose from the table and save it for reinstallation later. The 5 min blobs and foam chips left on the table will serve to relocate the jig block broken loose.

Mark the level line on the new (outboard) foam block using the end points transferred from the inboard block. Mark the vertical line again with the level and mount the outboard jig templates. Hotwire. Remove the templates. Glue the inboard midspan foam block back in place. You have a complete jig.

Step 4 Core Assembly

Note: The wing core is assembled "belly up" in the jig. Locate the spar in the jig. Use the spanwise marker line to verify alignment of the aft face of the spar. Remove the peel ply from the spar and sand the edges of the shear web butt joints smooth on the top and bottom surfaces. Cut a piece of .020 2024-T3 sheet aluminum 2 inches x 3/4 inch. Sand it bright with 220 or 320 grit sandpaper and bond it to the outboard end of the inboard trailing edge foam core with 5 min/micro. Position the aluminum. Lay up 2 plies 45^{o} BID over the outboard face of the foam core from 1/2 inch forward of the hole to 3 1/2 inches aft of the hole. Peel ply knife trim flush with top and bottom surfaces and open the hole. Fixture the spar into position with some very small dabs of 5 min/micro. Next fit check the inboard leading edge and trailing edge foam cores with the jig and spar. The mating surfaces of the foam cores with the spar should fit tightly with no more than 1/16 inch gaps if any. Remember, the foam cores may have a bow in them from the hotwire cutting. Weight the

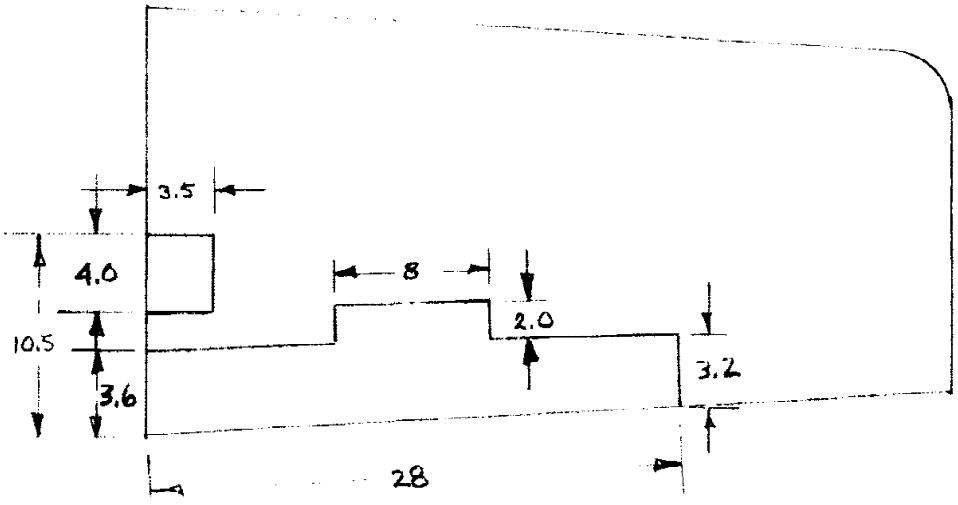
core securely into the jig to check the fit. Ideally, you should be able to assemble the foam cores tightly enough that painting the surfaces with a coat of micro slurry will provide all the material required to fill the gaps and give a void free joint. Before bonding the leading and trailing edge cores to the spar, mask the foam jig blocks with tape to avoid bonding everything to the jib with squeeze-out.



Weight everything securely in position, clean up any squeeze out and leave to cure.

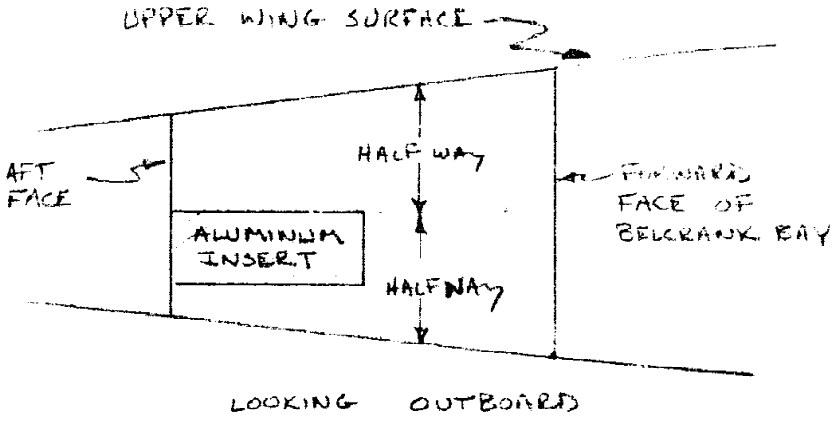
Round up the outboard foam core and mark the aileron and bellcrank bay outlines on both top and bottom surfaces.

Saw and sand a pleasing radius at the tip end. Approximately a 3 inch radius should be used.



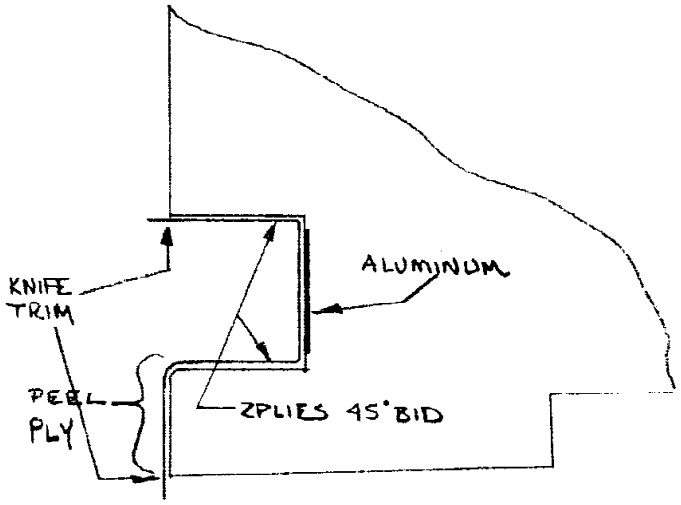
Nail trim templates (straight edges) to the core on both top and bottom surfaces, aligned to let the hotwire follow the outlines just marked. Clamp the hotwire to the table and cut the outlines by feeding the foam core past the stationary wire. If you're careful you can do this operation solo, but don't if help is available. Save both the aileron core and the block cut out of the aileron bellcrank bay for use later.

Sand a 3/16 inch radius on the aft inboard corner of the aileron bay. Cut a piece of .020 thick 2024-T3 aluminum 3/4 inch x 2 inches. Sand both sides of the aluminum bright with Scotchbrite or sand paper and bond it to the outboard end of the bellcrank bay with 5 min/micro. The aluminum should be positioned as shown below.



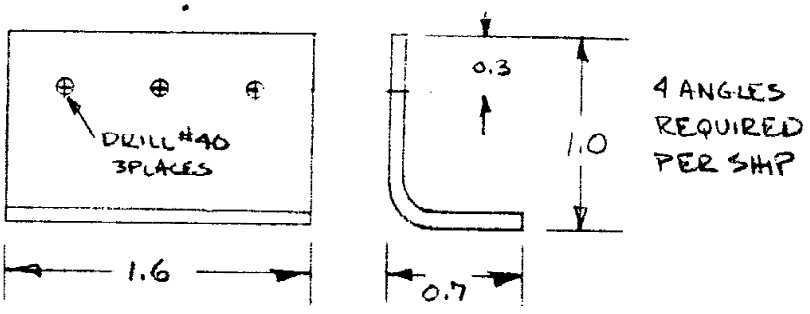
Trim fit the outboard foam core in the jig. Sand fair any slight offset between inboard and outboard foam cores, then remove.

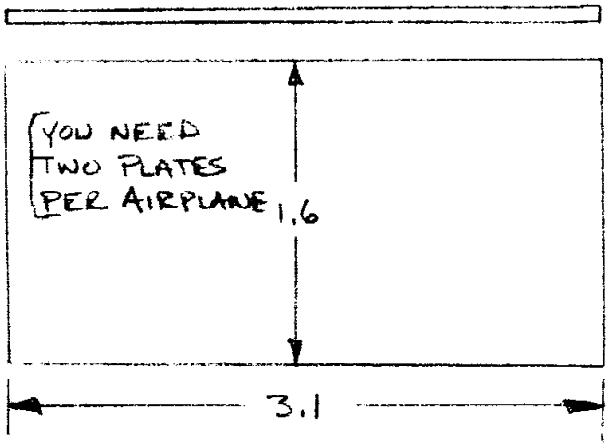
Lay up 2 plies of 45^{0} BID around the aileron bay and aft to the aileron trim. Peel ply the area shown.



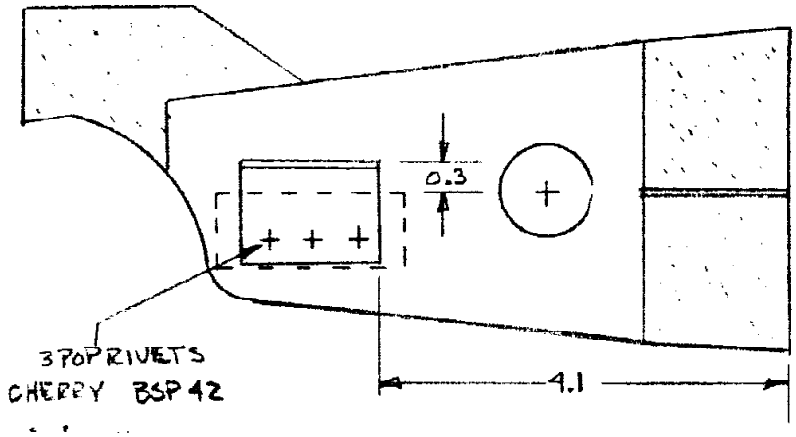
Knife trim at the forward edge of the bellcrank bay, at the aileron cut-out, and along the top and bottom foam surfaces. Cure 24 hours.

While the aileron bellcrank bay lay up cures, make these parts from 2024-T3 or 6061-T6 aluminum, .063 thick.

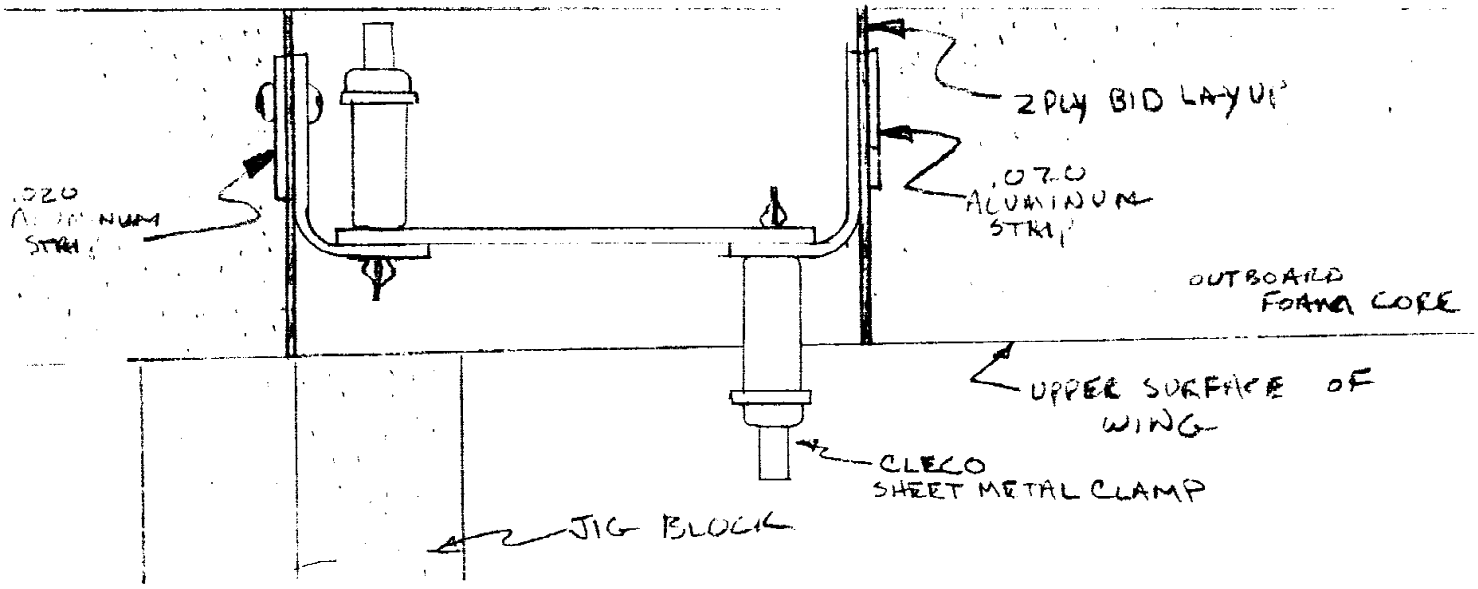




Remove the peel ply from the inboard trailing edge lay up. Carefully locate the angle against the end as shown below, drill the three rivet holes through the angle, 2 ply BID lay up and the aluminum insert. Attach with three pop rivets.

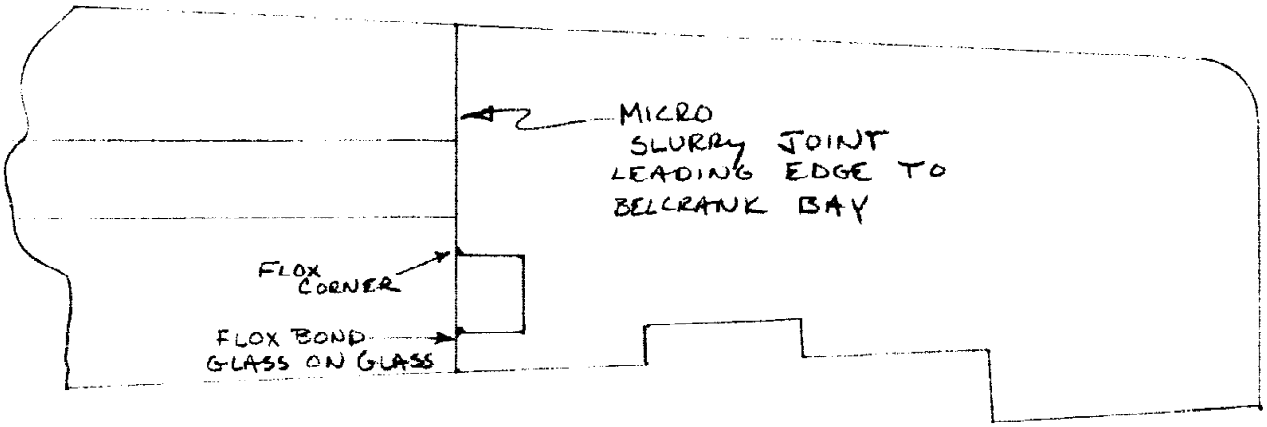


Locate the outboard wing core in the jig. Carefully pilot drill and cleco two angles and one plate together to obtain a tight fit inside the bellcrank bay as shown in the sketches below



5 min/micro bond the outboard angle in position against the outboard face of the bellcrank bay and allow to cure. Remove the clecos, pull the outboard foam core out of the jig, drill and rivet the outboard angle in place.

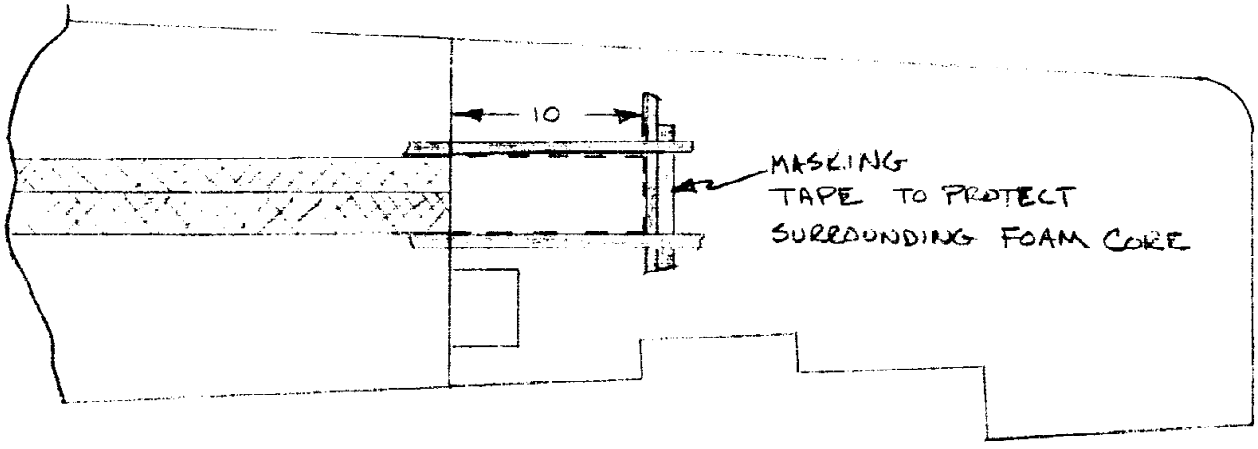
Prep the forward edge of the bellcrank bay lay up for a flox corner and remove the peel ply from the rear edge of the bellcrank bay lay up. Bond the outboard foam core to the inboard core assembly with micro slurry on adjoining foam surfaces and flox in the bellcrank bay areas shown below. Protect the jig blocks from squeeze out with masking tape. Try to use enough micro slurry to obtain a void free joint but avoid any squeeze out at the surface.



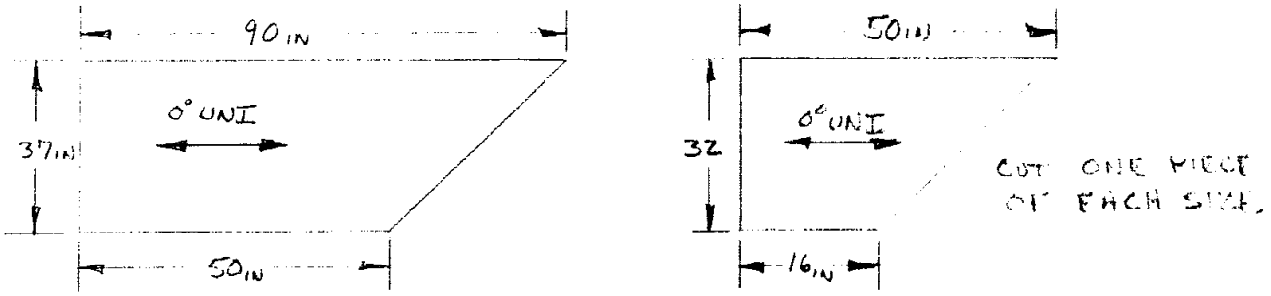
Put a couple of very small dabs of micro slurry on each outboard jig block. Weight the foam core firmly into the jig and cure 24 hours. Cleco the plate to the aileron bay angles to assure alignment.

Step 5 Bottom Spar Cap

Use tape to mask the spar cap extension area shown in the sketch. Sand the extension notch out with your sanding block. The notch depth should taper uniformly from even with the end of the inboard spar to about .010 at the outboard end.



Clean off all of the sanding dust and ragged masking tape. Mask the foam core forward and aft of the spar, full length, with tape to keep epoxy slop from the spar lay up off of the surrounding foam.

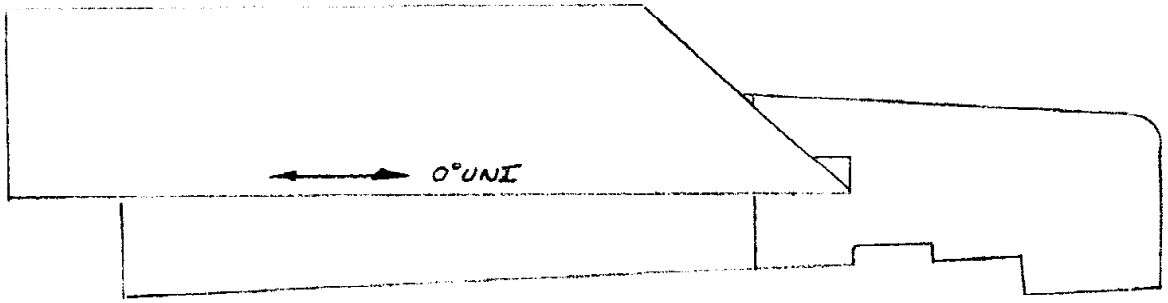


Cut two 46 inch lengths of 4 inch wide dacron peel ply.

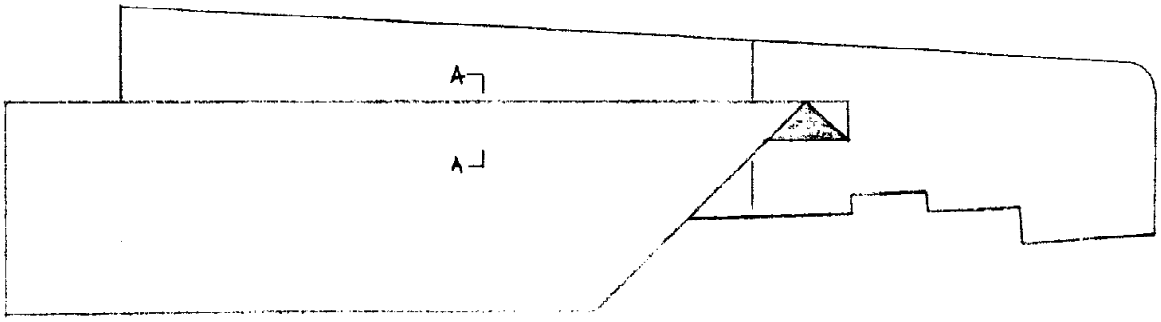
The spar cap lay up can be handled solo if you are familiar with the "flaging" method of spar cap lay up. If you haven't done this trick before, use an assistant.

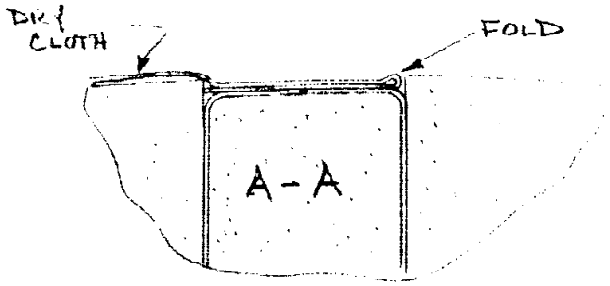
Before you start laying on cloth, stuff any gaps in the shear web butt joint or between the spar and leading or trailing edge foam cores full of flox. Paint a light coat of epoxy over the shear web laminate and slurry the foam surface of the extension outboard.

Start with the longest cloth edge (90 inches) positioned as shown in the sketch. Keeping the major glass fiber fundles straight and parallel with the leading edge of the spar is important. Small "waves" in the fiber bundles can be removed by having your assistant hold the outboard end of the glass cloth firmly against the wing while you tug the fibers straight from the inboard end.

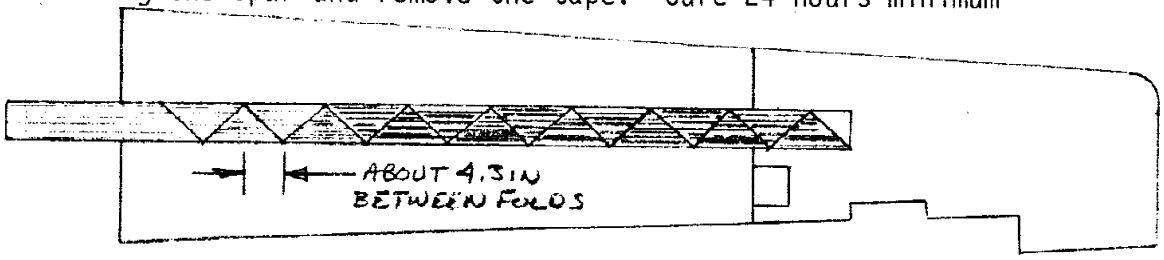


Wet out the cloth overlaying the spar completely. A coffee can lid (plastic) cut into a squeegee that is a touch narrower than the spar is a handy tool. Next, fold the cloth back over the wetted section so that the fold is just at the forward edge of the spar as shown below and wet out the cloth overlaying the spar again.



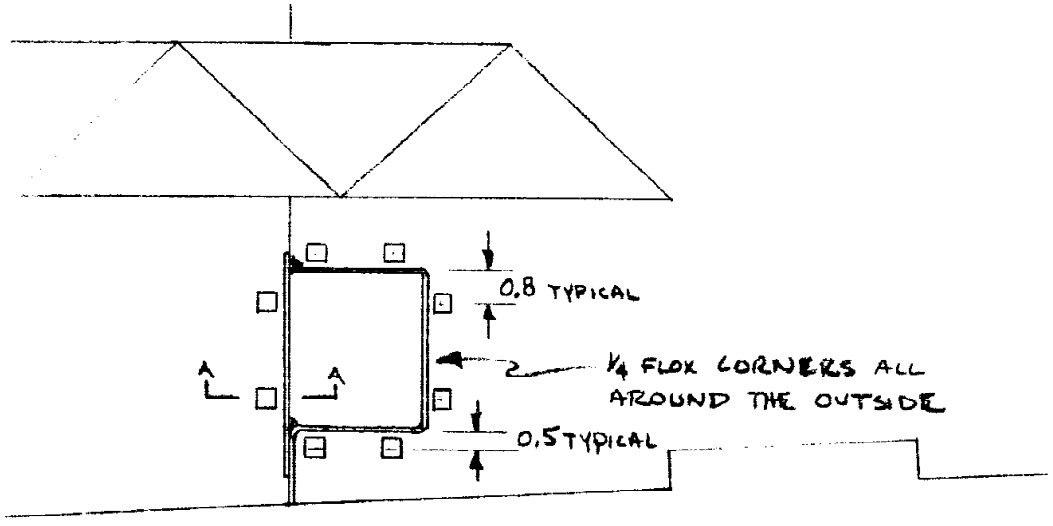


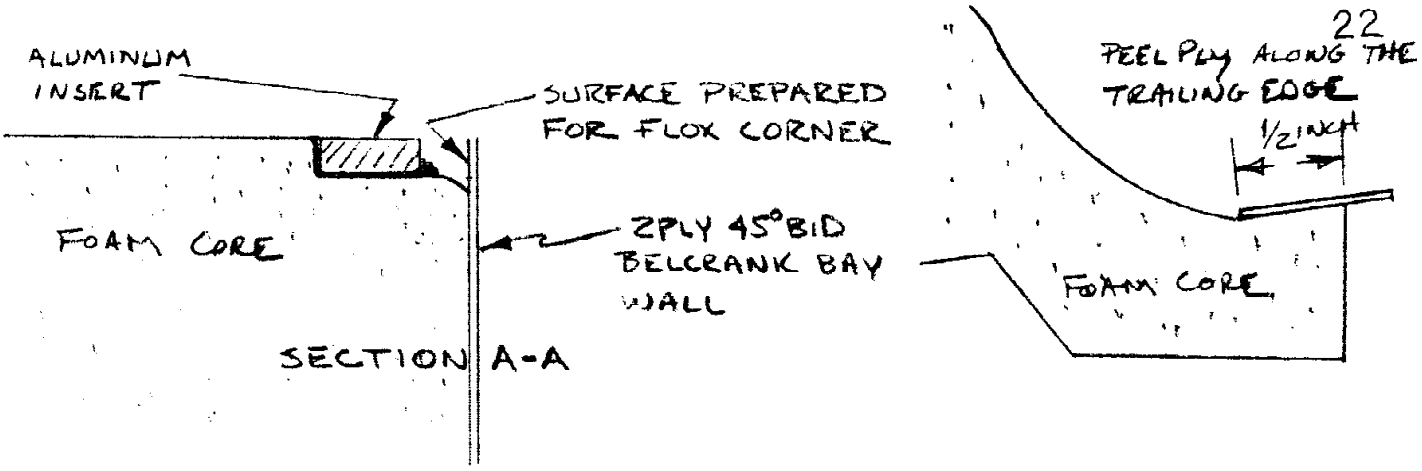
The cloth will not fold flat along the spar edge. The small cross fibers in the glass cloth are springy enough to hold a small void area open along the fold. To eliminate the void at each fold, use a sharp trim knife or single edged razor blade to cut the little cross fibers along the length of the fold. This operation only requires a light pressure on the knife. Try not to disrupt the wetted cloth more than necessary. After cutting the cross fibers, use your brush to work the edge area into the laminate. The whole spar lay up is a repeat of this sequence. Fold, straighten, wet out, cut cross fibers, and work the edge down for each ply. The tapered cut cloth determines how rapidly the spar tapers in thickness. For the bottom spar cap each fold is about 4.3 inches further inboard than the preceeding fold. Continue folding and wetting plies until the first piece of cloth is gone, then peel ply the outboard half of the spar length. Continue the wetting and folding until all of the cloth is used. The result is a spar cap 17 (and a fraction) plies thick at the inboard end uniformly tapering as it goes outboard. Peel ply the inboard end. Knife trim any frazzelled strings that lapped onto the tape surrounding the spar and remove the tape. Cure 24 hours minimum



Step 6 Bottom Skin

Prepare the aileron bellcrank bay cut-out for a flox corner and eight aluminum inserts as shown below. Egiht 1/2 x 1/2 x 3/16 2024T4 aluminum inserts will be required. Carve recesses in the foam for the inserts that will keep them flush with or slightly below the foam core surface. Brighten the inserts with sand paper or Scotchbrite and bond into the recesses with 5 min/micro.





Inspect the edges of the spar for a smooth transition from the spar cap to the adjoining foam core. Remove the peel ply and sand any rough edges fair.

Mark the leading edge of the foam core and the wing tip with a bold, straight marker line for knife trimming reference. Protect the upper wing surface and wing tip foam surfaces on the jig side of the marker line with tape to avoid epoxy over slop from the bottom skin lay up contaminating the upper side foam surfaces, or bonding the core permanently to the jig. Sand any shiney or glossy cured glass areas on the spar dull with coarse sand paper.

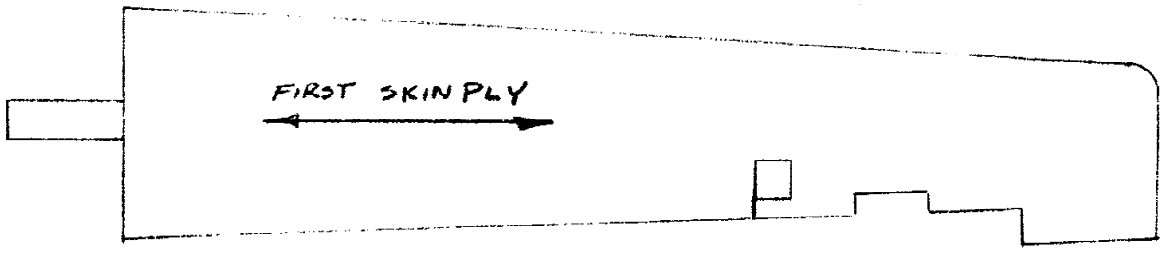
Go cut the following glass cloth.

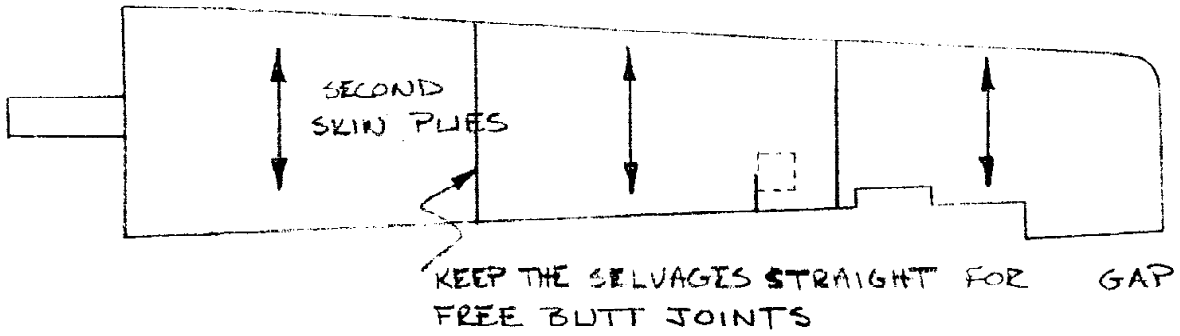
1 piece of 0^{o} UNI 37 inches wide by 35 inches long
1 piece of UNI 37 inches wide by 35 inches long
1 piece of UNI 37 inches wide by 32 inches long
1 piece of UNI 37 inches wide by 26 inches long

Cut the following peel ply.

3 pieces of 1/2 to 3/4 inch wide x 30 inches long (from one strip of 2 inch tape)
2 pieces 52 inch long x 4 inch wide

Fill the prepared corner areas around the bellcrank bay with flox. Slurry the foam surfaces and paint a light coat of epoxy on the cured spar cap. Fill any gaps adjacent to the spar with flox so voids (air pockets) do not occur under the skin plies. Dings in the foam may be filled with dry micro. Lay the 1/2 inch dacron strips along the trailing edges of the wing (except in the aileron bay area) as shown. The first skin ply is layed full length with the major fiber bundles parallel to the spar. The cloth must be cut to allow for the joggle at W.S. 78 where the flap slot contour and aileron bay meet. Wet the first ply completely, then use your cloth shears to trim big excesses off.

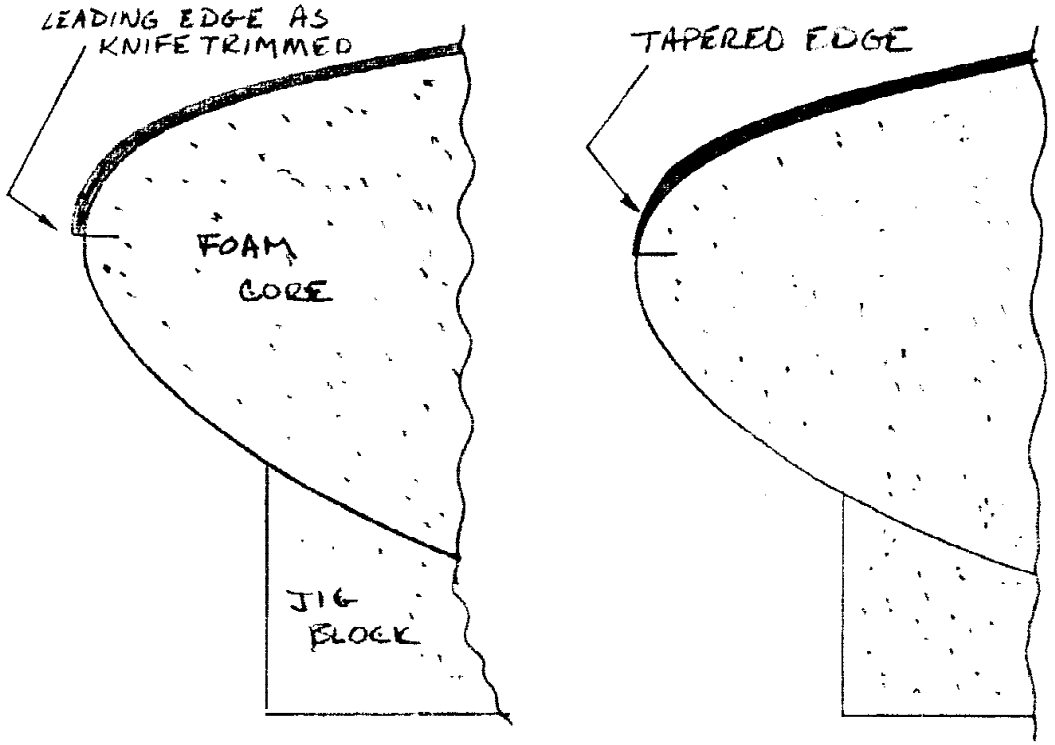




The second skin ply is layed up in three pieces with the fiber orientation chordwise (or 90^0 to the spar). The three skin segments are butted together not overlapped. You have to be careful not to open gaps in these joints while squeegeeing. After wetting out the second skin ply, lay up the 4 inch peel ply along the length of the leading edge. You will not be able to get the dacron to lay down where the tip is radiused so stop the peel ply where the radius begins.

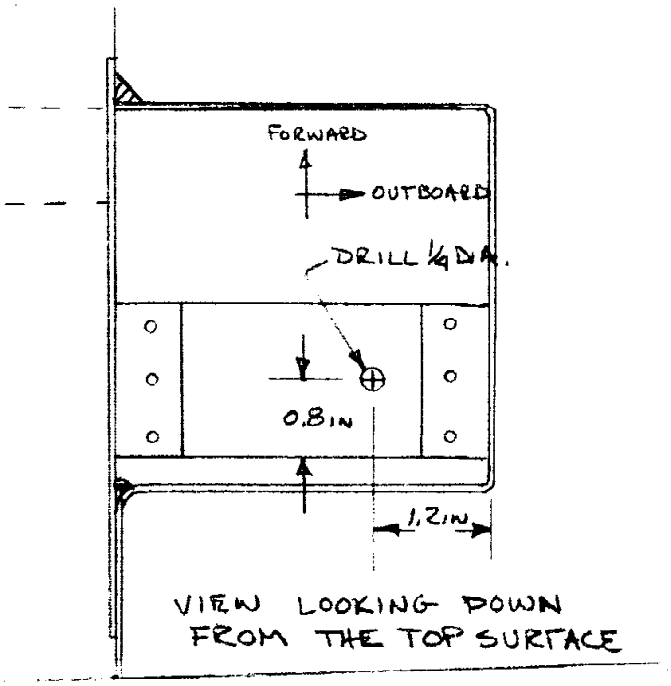
Knife trim the wing root, bellcrank bay, trailing edges, and the tip and leading edge along the marker line. Cure 24 hours minimum.

After cure, use your sanding block and file to true up and smooth the trailing edges and bellcrank bay edges. Using a soft sanding block (foam scrap wrapped with sand paper), sand the tip area where no peel ply was applied dull for bonding. The sanded area should extend from the knife trimmed edge a minimum of 1 1/2 inches onto the cured laminate. Remove the leading edge peel ply. Be sure to sand or scrape the edges to remove <u>all</u> strands and frazzles of the peel ply material. Use your sanding block or disc sanding attachment on your drill to taper the knife trimmed leading edge as shown below.



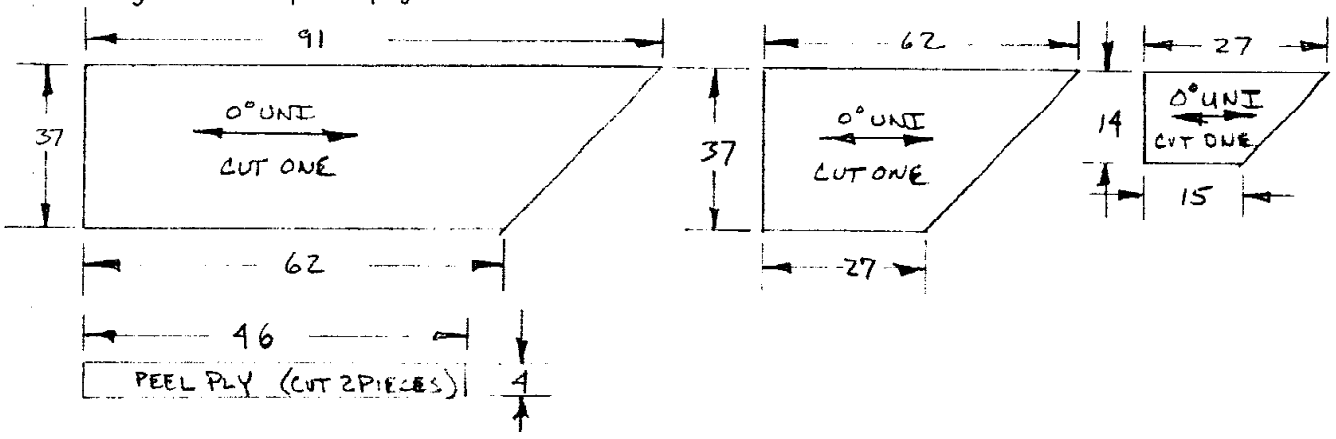
Step 7 Top Spar Cap and Skins

Remove the wing from the jig. Remove the jig from your working surface. Lay the wing on the table right side up (bare foam up). Locate and drill the hole shown in the bellcrank mount plate. Remove the plate and install a K1000-4 (1/4-28) nut plate on the top side of the plate. Install the plate with six rivets.



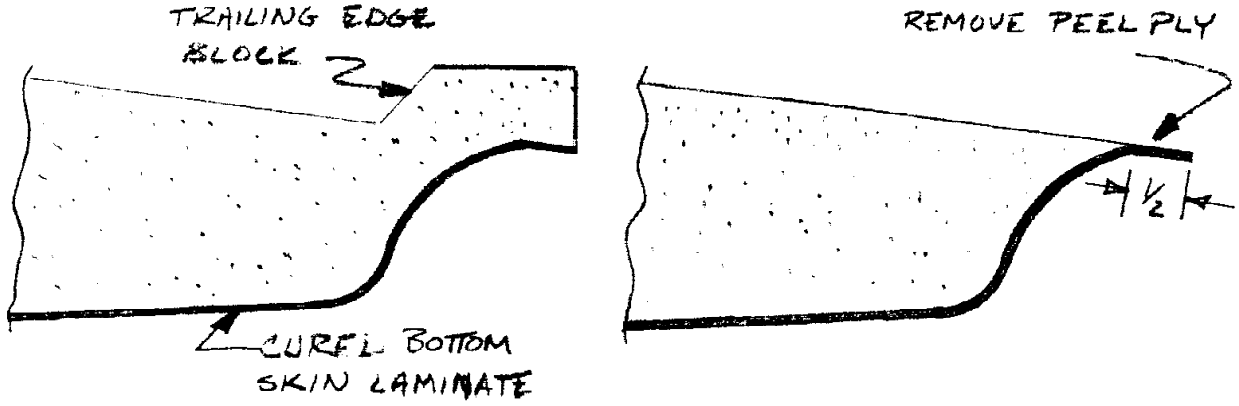
Go find the foam plug removed to make the bellcrank bay. Cut the top 1/2 inch off of the block and locate flush with the upper surface of the wing, filling the bellcrank bay. Use 5 min/micro dabs to maintain the plug's position. If necessary, sand the plug faired with the wing surface.

The top spar cap is a repeat of the lower cap except that it requires three pieces of 0^0 UNI cloth to achieve 22 plies total (bottom was 17 total). Cut the glass and peel ply shown.



Laminate the upper spar cap and peel ply. Knife trim and cure 24 hours.

Carve and sand the trailing edge foam block fiar with the aerofoil upper contour, exposing the bottom skin laminate along the aft 1/2 inch as shown below. Remove the peel ply from the trailing edge to prep the trailing edge for the lap joint. You may have some trouble splitting the peel ply off initially. Start at a corner.

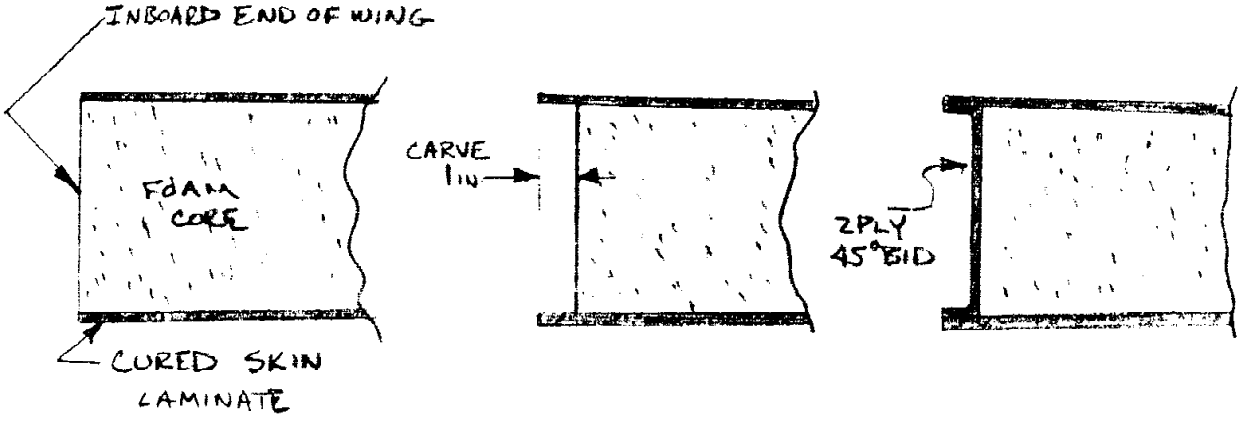


Mark the leading edge and wing tip with a felt tip marker along the knife trim line for the top wing skin. The marker line must allow a minimum of 1 inch of over lap of the top and bottom skins. Protect the bottom skins from epoxy overslop aft and inboard of the marker line two inches with masking tape. Position the wing with the leading edge over-hanging the table slightly. The aft 2 to 3 inches of the wing tip is too thing to allow an overlap of the skins at the tip. In this area route out approximately 1/4 inch of foam for a flox corner type of attachment.

Prepare for a flox corner in the bellcrank bay area as on the bottom surface. Remove the spar peel ply and sand as before. Cut UNI glass plies and peel ply leading edge strips the same as for the bottom skin lay up. Lay up the two ply skins in the same fiber orientation as the bottom skins. Over lap the top skin plies onto the cured bottom skins and protective tape. Peel ply the leading edge. Knife trim to the tape line and cure 24 hours. Note that the bellcrank bay is <u>not</u> open on the top surface.

Step 8 Aileron Bay and Root Rib Closeout

Carve the foam at the wing root away to 1 inch depth all along the wing root. Try for a reasonably flat surface but don't break your back to make it perfect. A rotary file in the drill or a hotwire tool can be used for this task. Use the file to prepare the insdie glass surfaces for laminating.



Repeat this process in the aileron bay area. Carve the foam along the hinge line back 3/4 to 1 inch into the wing. Carve a generous radius on each of the corners around the balance paddle cut-out to aid in getting the BID closeout plies to lay up easily. At the outboard end of the aileron bay carve out 1/2 to 3/4 inch foam at the hinge line and taper to a 1/4 inch depth at the trailing edge. Use the rotary file to prepare all of the skin laminates exposed for laminating. Lay up 2 plies of 45^{0} BID over the foam and bare glass. This lay up may be done in several pieces of cloth that overlap 1/2 inch. The outboard end trailing edge gets a flox corner where it gets too tight for the "c" shaped glass closeout. Lay up the root rib and aileron bay closeouts, knife trim, and cure.

Step 9 Flaps and Ailerons

Clear off the edges of your work bench and sand down any epoxy drips or other interruptions in the flat surface. Drag out the flap and aileron foam cores. Fixture the foam core bottom side up with the top surface flat on the table and the trailing edge block over-hanging. Use some very small dabs of 5 min/micro to hold the cores in position. Protect the forward face of the aileron with masking tape. Lay tape down the nose of each flap to provide protection from over slop and a knife trim reference at the leading edge similar to the wing.

Cut sic pieces of 10 inch x 45 inch 45^{0} BID for the two flaps and two pieces of 6 inch wide x 30 inch 45^{0} BID for the ailerons. The flaps will require four strips of 4 inch wide peel ply 66 inches long. The ailerons will require two 30 inch long strips of 4 inch wide peel ply. Cut 2 strips of peel ply 1/2 inch wide, 30 inches long and two strips 1/2 x 66 for the trailing edges and 2 pieces 2 x 8 peel ply for the balance paddles. Lay up the flap skins (2 plies 45^{0} BID) and the aileron skins (1 ply 45^{0} BID). Note that the flap skin plies require an overlap to cover the full length (1/2 inch to 1 inch overlap). Do not overlap both plies in one place. Put one overlap inboard and one outboard. The whole surface of both flaps and ailerons is peel plied except the trailing edge joggle which is later to be filled with dry micro (after FAA inspection). Peel ply, knife trim, cure 24 hours minimum.

After cure, breake the flaps and ailerons loose from the table, carve the trailing edge foam blocks down fiar, and remove the peel ply strip from the exposed trailing edges. Sand the leading edge of the flap skin laminate fair, like the wing leading edge was done, to avoid a step where the top and bottom skins meet. Remove all peel ply and sand away any steps or humps where the peel ply edges met. Mark and tape the flap leading edges for a 1 inch overlap of the top skin lay up onto the bottom skin. Fixture (5 min/micro dabs) the flaps so the leading edges over hang the table. Cut six pieces of 12 inch x 45 inch 45^{0} BID for the flaps and two 7 x 30 inch pieces of 45^{0} BID for the ailerons. Four strips of 4 x 66 peel ply, 2 strips of 2 x 66 peel ply, 2 strips of 4 x 30, 2 strips of 2 x 8, and 2 strips 2 x 30 peel ply. 5 min/micro bond a 1/2 inch thick block of foam to the front side of the balance horn and carve the radius shown in the sketch.