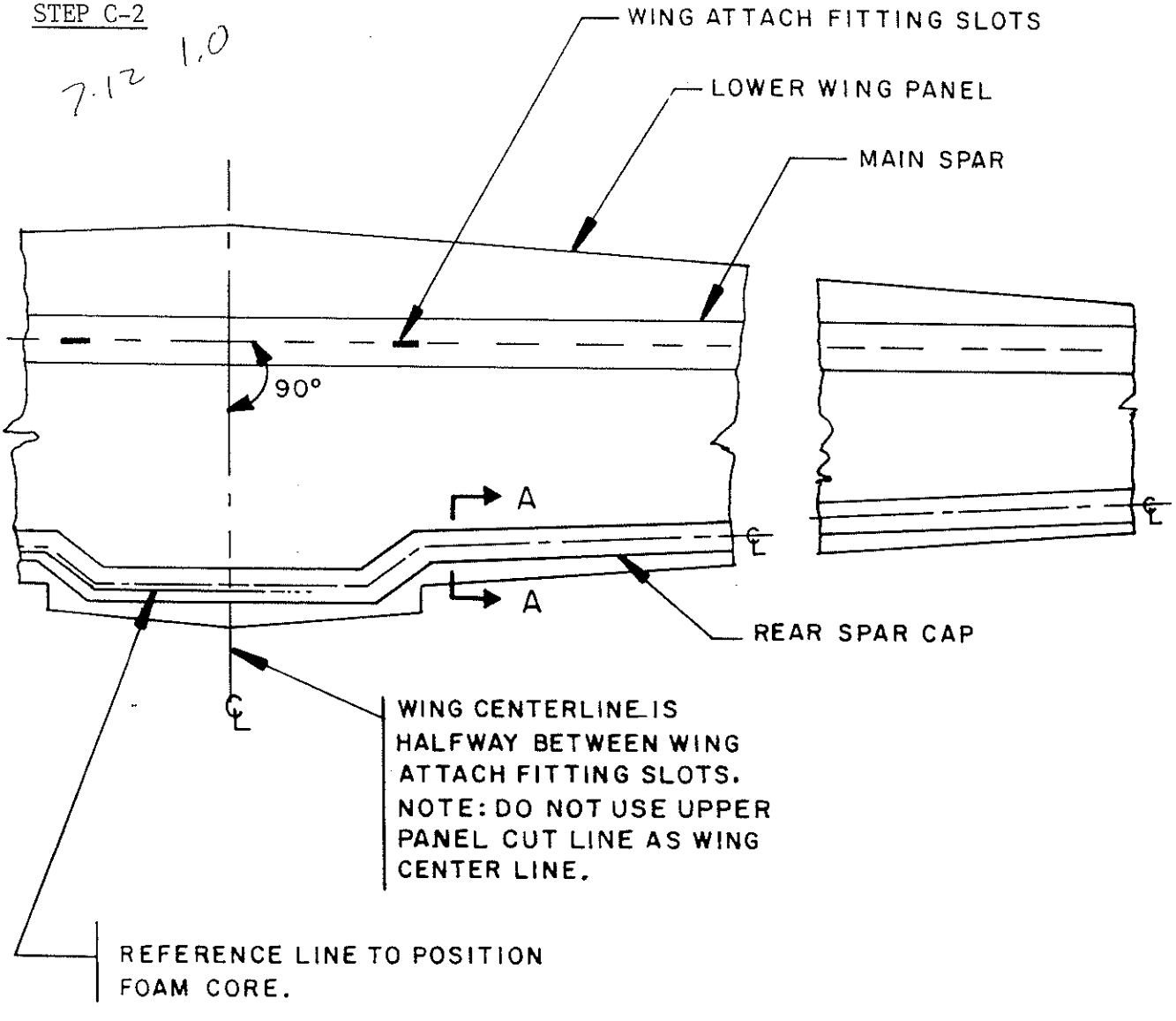
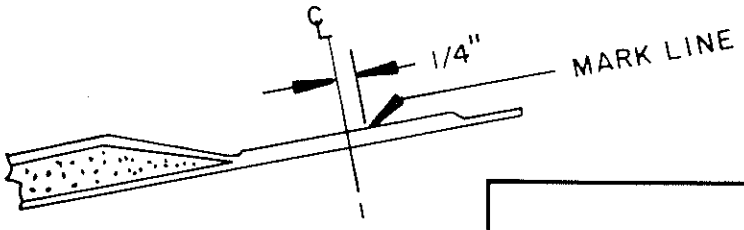
Cut the rear shear web foam cores from 1/2" thick 4.5 lb. foam to the dimensions shown in FIGURE (C-8). Cut two each of the middle and outboard sections; cut one inboard section. The dimensions shown are oversize to allow trimming of the cores to their final size.

NOTE: The foam comes in maximum 8' lengths, so splice together two shorter lengths of foam to make the two long outboard sections of each shear web half. Mix a small batch of body putty to make a butt joint at each splice. Remove excess body putty before it cures.

STEP C-2

7.12 1.0





SECTION A-A

FIGURE (C-9)

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The rear spar cap consists of thick unidirectional roving laminated into the wing panels near the trailing edge. The rear spar caps are not straight, but jog aft in the wing center section area to provide clearance for the seat pans. Using a straight edge for the center section and a chalkline for the long straight outboard section, mark a line 1/4" aft of the center of the rear spar cap onto the lower panel. This line follows the jog of the rear spar caps and will be used to position the rear spar shearweb. (See FIGURE [C-9].)

NOTE: The rear spar cap is made from unidirectional roving, which is noticeably different in texture than bidirectional cloth and has the same appearance as the main spar cap.

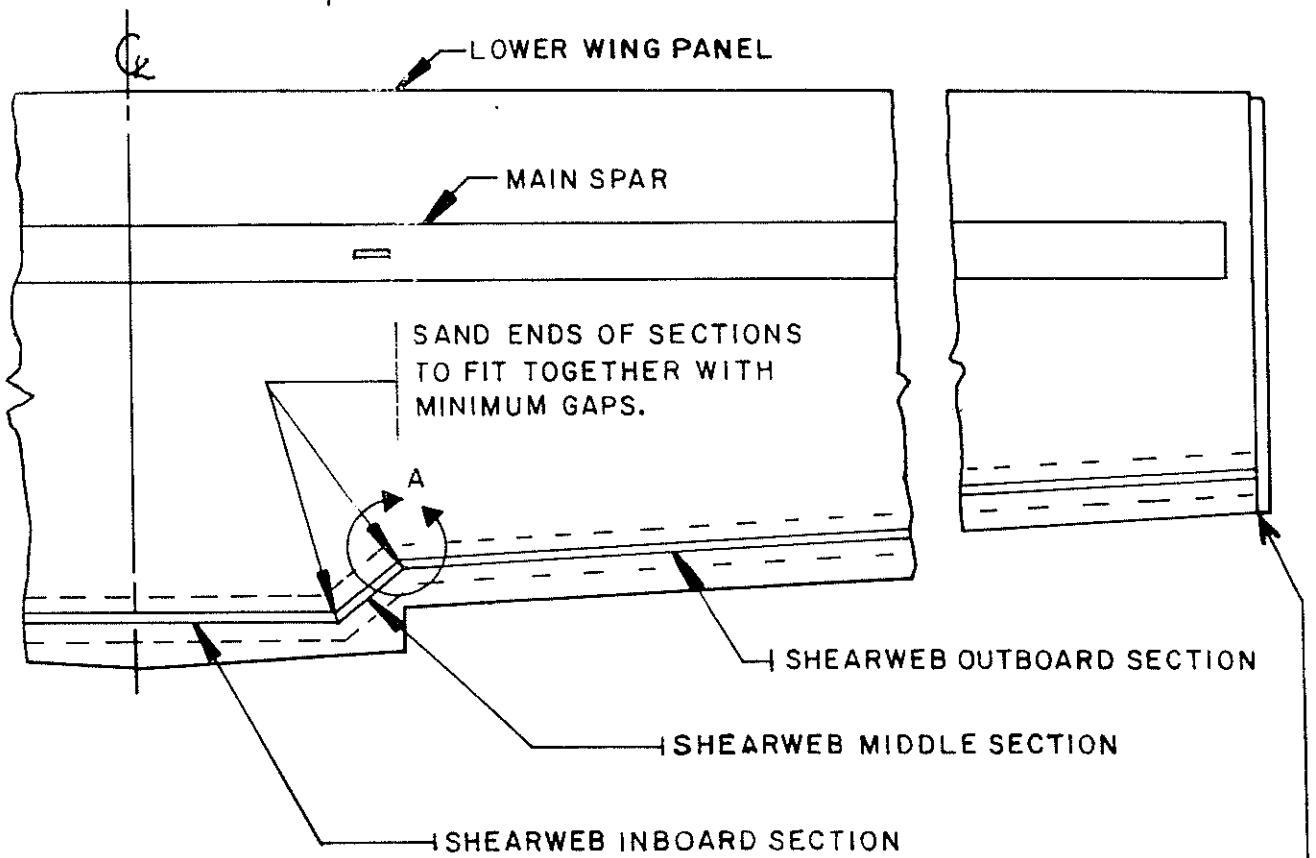
When laying out the shearweb position line, the center of the rear spar cap will have to be approximated because the cap is not of perfectly uniform width and has somewhat indistinct edges. The reference line is not parallel to the trailing edge of the lower wing panel, but tapers inward following the lower spar cap centerline.

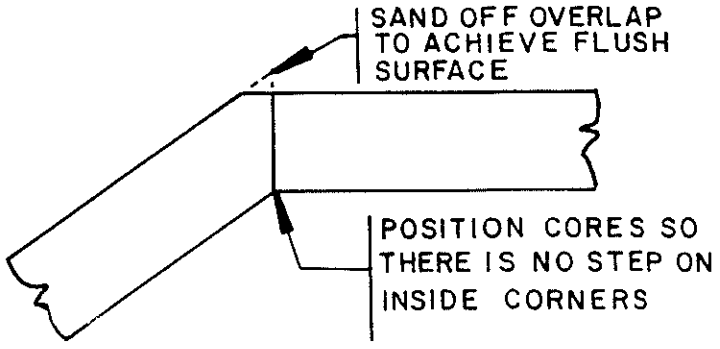
Also, if not already done, extend the spanwise wing centerline that was marked in Step B-5 across the rear spar cap.

NOTE: Do NOT use the upper panel cut line as the wing centerline.

STEP C-3

7-12
1.25





DETAIL A
TYPICAL SHEARWEB JOINT

FIGURE (C-10)

Trim the foam shearweb sections to fit them to the previously marked reference lines, as shown in FIGURE (C-10). Sand the ends of the shearweb sections so that they join together with minimum gaps. Position the shearwebs perpendicular to the plane of the wing jig stand, as shown in FIGURE (C-11), using a carpenter's level to check. When the shearweb sections are fitting together properly, trim their outboard ends even with the wing tip attach flange joggles, as shown in FIGURE (C-10).

NOTE: It is acceptable to wait until the shearweb installation is complete before trimming the outboard ends. Also, the 5" and 38" shearweb dimensions shown in FIGURE (C-8) are not critical and can be adjusted to best fit the jogged area of the spar cap.

STEP C-4 7-23 1.75 ~~latex~~ about 350 grams

Mix a wet 200 gram Q-cell mixture. Apply the mixture to both sides of the foam shearweb sections with a squeegee and set aside to cure.

STEP C-5

7-12 1.5

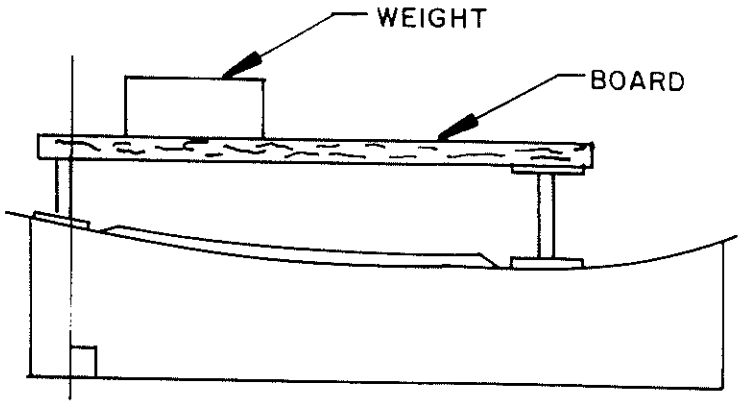


FIGURE (C-11)

Prep sand the upper surface of the rear spar cap on the lower wing panel in preparation for bonding the spar shearweb in place. (If the sandpaper gums up, sanding is not necessary.) Place the sections of foam for each shearweb half in their correct positions along the rear spar cap. Bond the sections together with body putty or hot melt glue. Clean up excess adhesive and let cure.

NOTE: The hot glue is preferred because it cures more quickly. Excess hot glue must be cleaned up immediately, however, because it cures so quickly and is very difficult to remove after curing.

Mix a thick 80 gram Q-cell mixture. Apply a generous bead of the Q-cell mixture to the rear spar cap where the shear web is to be positioned. Use the marked lines for reference. Position the shear webs and hold them in place with weights and boards, as shown in FIGURE (C-11).

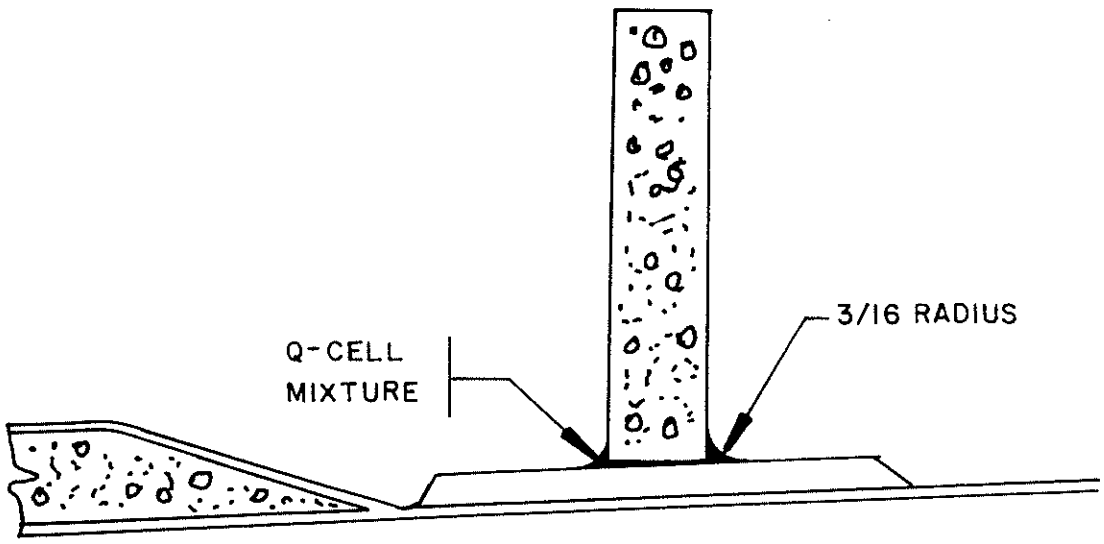


FIGURE (C-12)

Using a 3/8" diameter rod, form a Q-cell radius in the corners where the foam shear webs meet the spar cap, as shown in FIGURE (C-12). Radius both the forward and aft sides of the shearweb. Remove all excess Q-cell mixture and let cure.

COMPLETED ☒ 8-7 completed fillets 1.5

7-12 1.75 radius RH Fwd side only

7-19 radius LH Fwd RH Aft 2.5

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