

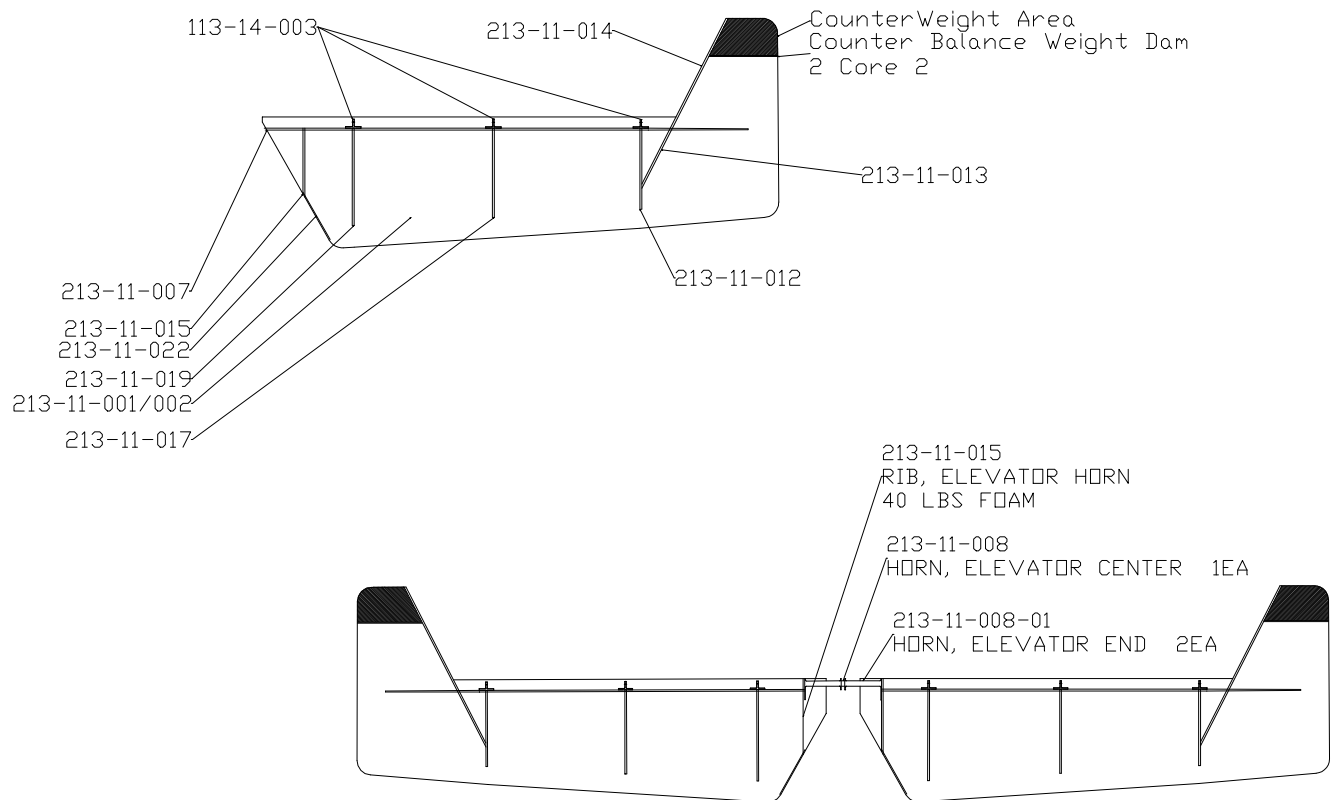
PROCEDURE 5.030
CONSTRUCTION OF ELEVATOR ASSEMBLIES

In this Procedure...

During this procedure you will use the horizontal stab fixture to construct the left and right elevator.

Materials supplied:

<u>Part No.</u>	<u>Qty.</u>	<u>Description</u>
213-11-001	2	Skin, Elevator Lower
213-11-002	2	Skin, Elevator Upper
213-11-007	1	Elevator Spar
213-11-012	2	Rib, Elevator BL 50
213-11-017	2	Rib, Elevator, BL 30.5
213-11-019	2	Rib, Elevator, BL 11.8
213-11-015	2	Rib, Elevator, Control Horn 40lbs
213-11-014	2	Rib, Elevator, Counterweight
213-11-013	2	Rib, Elevator Angle Brace
213-11-022	2	Rib, Inboard Close Out
213-11-008	1	Horn, Elevator Center
213-11-008-01	2	Horn, Elevator End
213-11-008-02	2	Backing Plate, Elevator Horn
113-14-016	12	Plates, Backing, Hinge
113-14-003	6	Hinge "T"
AN3-5A	8	Bolts, Elevator Horn
AN3-12A	24	Bolts
AN960-10	32	Washers, Hinge and Horn
K2000-3	32	Anchor Nuts, Hinge and Horn
AD426-3-5	64	Rivets, Solid, Hinge and Horn
BSC-43	16	Pop Rivet, Backing Plates



Step 1 Trim elevator skins.

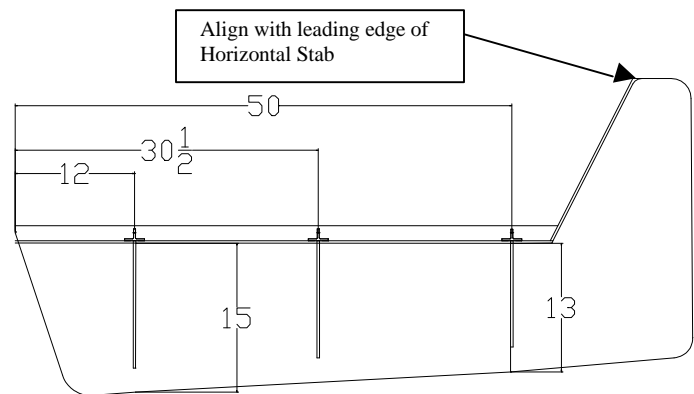
Carefully trim the trailing edge of the lower elevator skins to the end of part line. Make sure you maintain a straight edge along the entire length of the trailing edge.

Step 2. Position the lower elevator skin.

Place the elevator skin behind the horizontal stab. Slide the skin forward till the leading edge touches the aft side of the horizontal aft shear web. The outboard section (Counterweight Area) should have a $\frac{1}{4}$ " space between it and the horizontal stab. (Note: It may be necessary to cut slots in the leading edge of the elevator skin to allow for clearance with the three hinge assemblies.)

Step 3. Position the Elevator Spar.

Temporarily attach the 6 “T” hinges to the hinges on the trailing edge of the horizontal stab. Take the elevator spar and clamp it to the backside of the hinges, with the legs of the spar facing aft. Make sure the center of the hinge is lined with the center of the elevator spar and that the spar is vertical. Align the spar on the lower skin by placing the aft edge of the elevator $15\frac{1}{2}$ ” from the aft face of the spar at the inboard rib and 13” at the outboard rib. Hot



glue in place. Drill the holes for the mounting bolts and secure the hinge to the elevator spar. (Note: Use non-aviation nuts to secure the hinges. Once the spar is attached to the skin the hinges will be removed and anchor nuts will replace the nut for final assembly.)

Step 4. Attach Spar to Elevator Skin.

Attach the spar to the elevator skin, using a milled fiber squash. Allow curing over night. Once the spar is cured, remove the hinges. Laminate 3 layers of 7781 tapes, which extend up the aft face of the spar and 1” onto the elevator skin.

Step 5. Position and Laminate Ribs.

Use hot glue to position elevator ribs. Q-cell and tape in location. The locations of the ribs are shown above. Install the counterweight dam 3” from the forward edge of the elevator counterweight area. Two laminates should be placed on each side of the rib and extend onto the elevator skin 2”. Laminate the rib to the spar before you install the hinge anchor nuts. Install the anchor nuts and backing plates in the same manner, which you installed them in the horizontal stabilizer. Reinstall the hinges to make sure you have proper alignment.



Step 6. Install the Elevator Horn Backing Plates.

The elevator horn is mounted on the inboard 40 lbs. Ribs. The horn is centered on the hinge centerline. Drill the four mounting holes and install the anchor nuts to backing plates. Use pop rivets to secure the backing plates to the rib.

**Step 7. Fit Upper Skin to Elevator.**

With the hinges installed and the stabilizer and elevator connected sand the top side of the ribs and fit the upper skin. Hold the upper elevator skin on the elevator assembly with tape and install the elevator on the horizontal stabilizer. Make sure you have 25° of travel in both directions. Once you have insured you have proper travel you can close out the right elevator. Complete the Trim Tab installation prior to closing out the left elevator.

Step 7. Upper Skin Close Out.

Notch the foam on the elevators ribs the same as you did on the Horizontal Stab. Use a milled fiber mix and close out the elevator.