Trim Box Cover Fabrication

(by Steve Mestler)

This article explains how to fabricate the covers required for the stabilizer trim boxes. If you happen to have a scrap wing panel with the “beads”, these can be cut to match the stabilizer skin on the lower side. Otherwise a .040” aluminum sheet will work just fine. Republic Service News #17 addresses this modification and is available here: **http://republicseabee.com/Service%20News/Seabee%20SN-17.pdf**

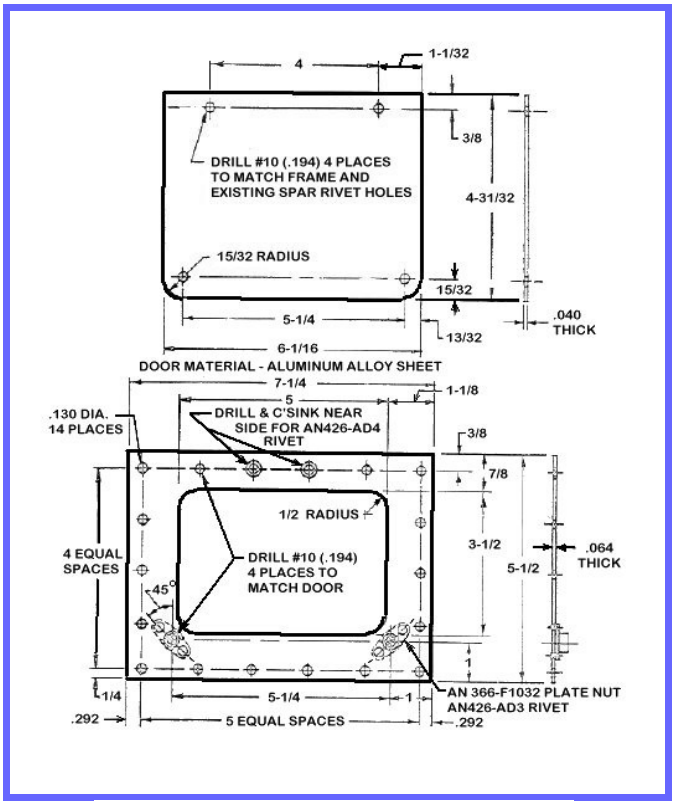
If you are simply replacing the existing covers, there is no need to make the reinforcement plate noted on the photo below. Just make the cover itself and you are done. The hole placement may be different than the plans below so match the holes that exist on your Seabee.

Procedure for installation on original stabilizers :

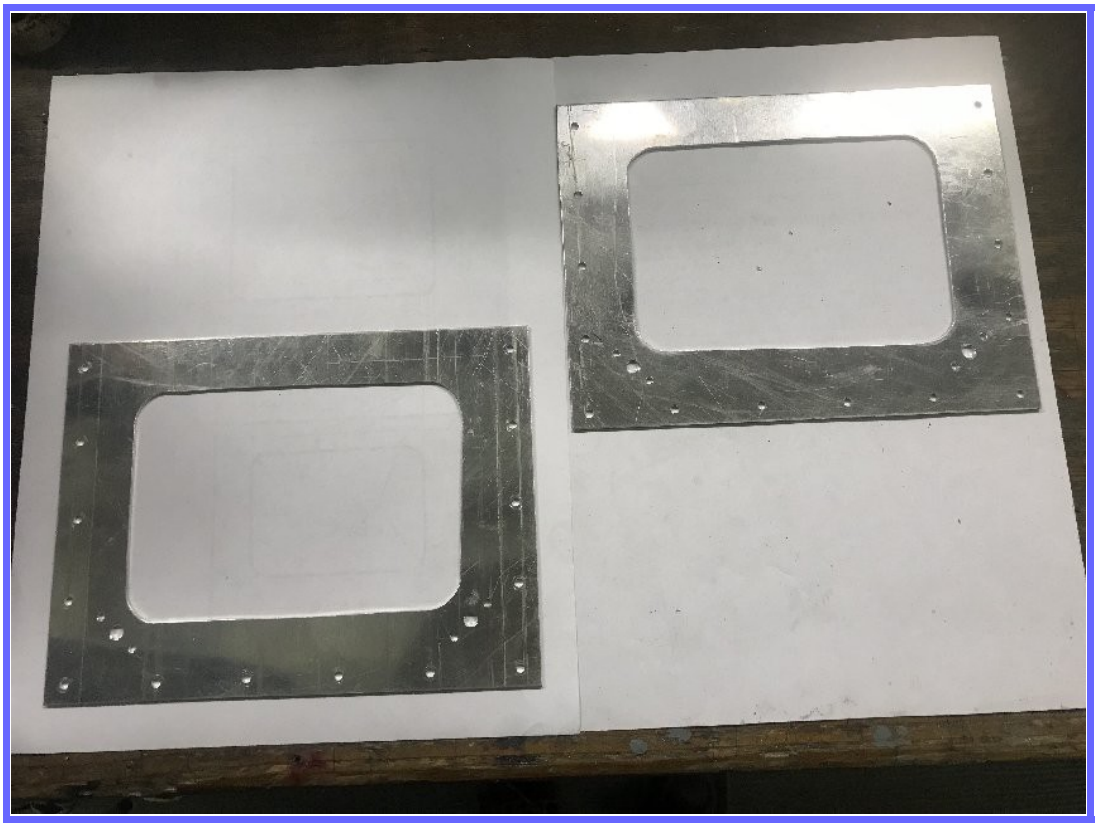
If you have an original stabilizer with no trim covers, it will be much easier to remove both stabilizers from the Seabee. It is a big job that requires at least one other person. Do this:

-Remove the air rudder, disconnect all wires and label them
-Remove the vertical fin
-Remove each stabilizer separately
-Place the stabilizers on a large flat surface
-BE SURE THEY ARE BOTTOM SIDE UP!

Cut out the backing plate from the plans below. Drill all the holes as shown. Notice two flush head rivets on backing plate. Cut the covers from .040” aluminum or scrap wing skin. Prime the backing plates and let dry completely. Attach the four AN366 nut plates on each backing plate before permanently installing in stabilizer.



Plan view of backing plates and covers



Finished backing plates

Measure and mark the outline of the new trim covers on the BOTTOM of each stabilizer (dimensions and location are listed on the Service News above). Remove trailing edge rivets inside the marked area. Cut out the stabilizer for the future covers. It has been found that drilling the corner holes first greatly eases the cutting of the holes (15/16” drill). Use a cutoff wheel carefully to finish the cutouts. File or sand the inside edges smooth.

Using a Cleko clamp, place the backing plate in place with the stabilizer trailing edge flush with the aft end of the backing plate. Using an appropriate 1/8“ hole finder, drill the rivet holes required to attach the backing plate. Cleko each hole as you go. Drill the remaining 14 holes through the stabilizer skin. Cleko the backing plate in place. Remember the two flush rivets on the trailing edge. The backing plate can be countersunk for the two flush head rivets before installation.

The two corner nut plates can be installed before installation as well. The trailing edge nut plates will be installed after the backing plate is riveted in place.

The good news is that a rivet squeezer can be used in ALL the rivets! No bucking required. Remove the Clekos one at a time and squeeze an AN456-4AD rivet in place. Repeat 13 more times. Now install the trailing edge AN426-4AD flush rivets and the two remaining nut plates using AN456-3AD rivets. A nut plate tool is really handy for locating and drilling the AN456-3 rivets.

Fabricate the covers with .040” aluminum of your choice. 2024-T3 works well. If a wing skin is used, the fit will be trial and error a few times until the beads line up. Then, using a 5/32” hole finder, mark and drill the four screw holes through the cover matching the nut plates. See photos below.

Finished trim cover cutouts

Backing plate Clekoed in place

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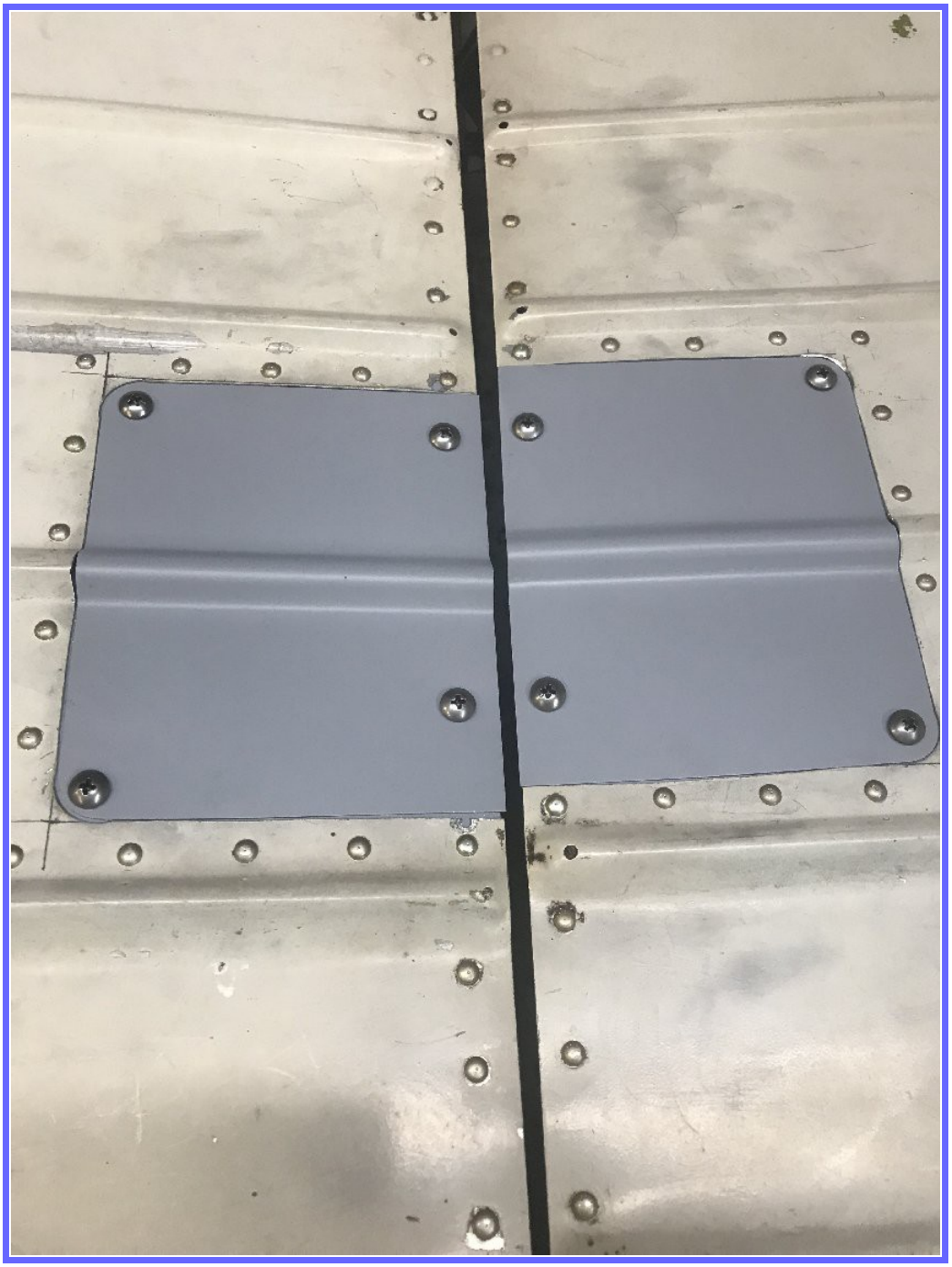
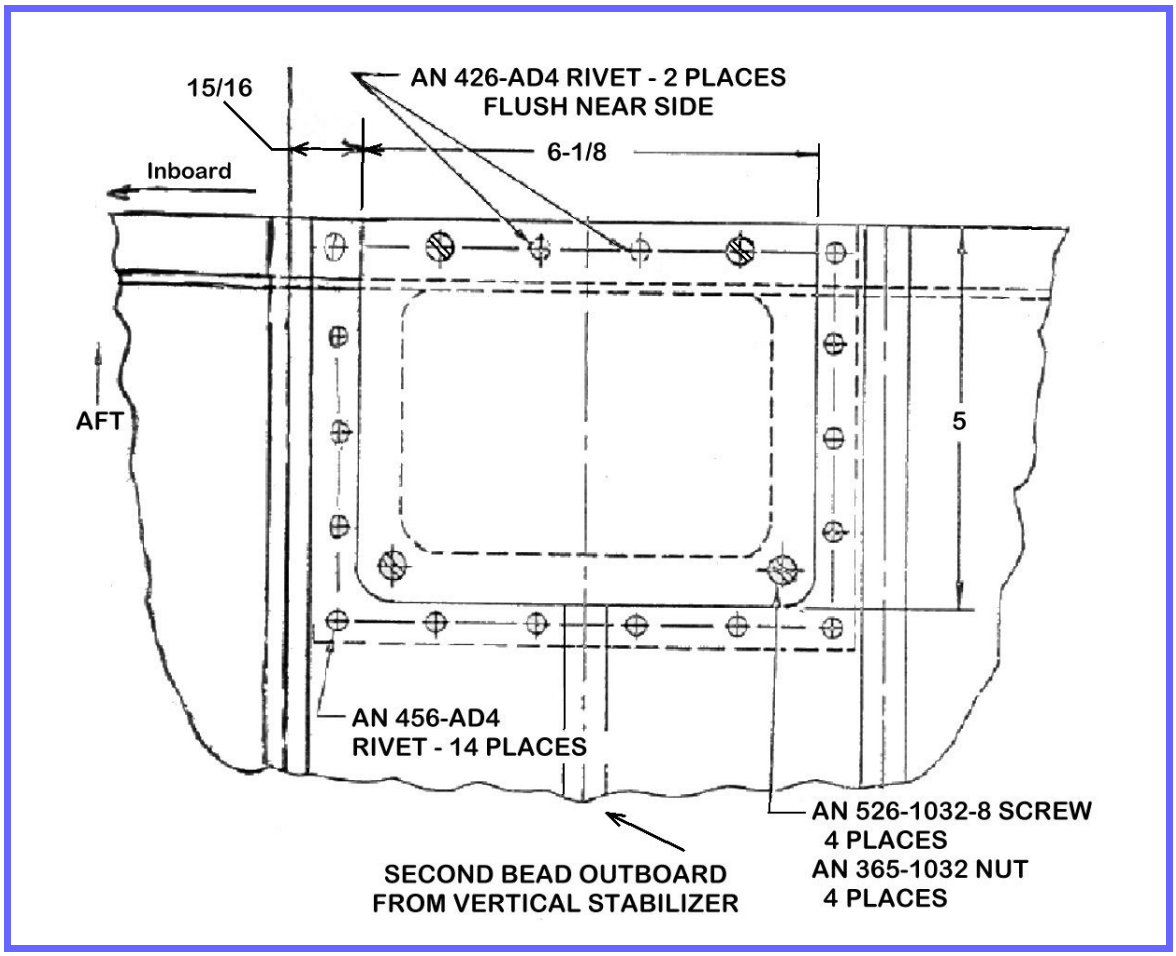
Backing plate riveted in place
Note: Two flush rivets on trailing edge.

Trim box cover in place



Trim box covers finished



Final Assembly Diagram