

## PROCEDURE 4.210

## INSTALLATION OF HORIZONTAL STABILIZER

In this procedure...

The horizontal stabilizer will be fit and temporarily installed onto the fuselage. Alignment measurements taken and shimming requirements determined.

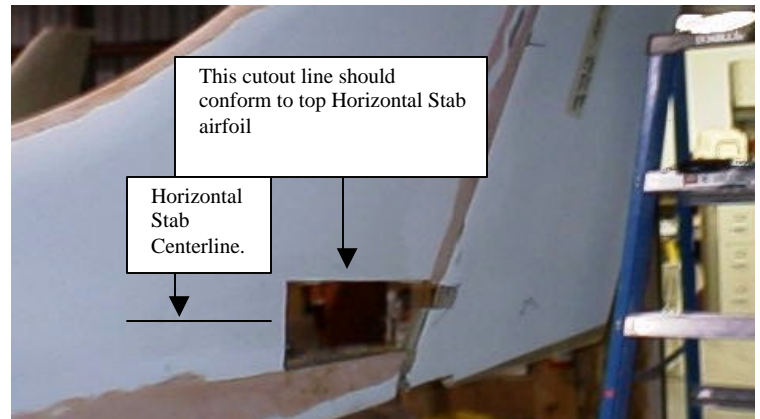
**Step 1. Align Fuselage.**

Recheck the fuselage alignment and make sure the fuselage is level both pitch and roll axes.

**Step 2. Cut out area on left side of empennage to allow for stabilizer installation.**

A cut out must be made in the empennage skin to allow for the installation of the horizontal stabilizer. The topside of this cutout should conform to the upper airfoil of the stabilizer. The lower edge of the cutout will extend below the stabilizer centerline 4 inches to allow clearance for stabilizer installation. This area will be covered with a removable panel.

To determine the location of the cutout locate the centerline of the horizontal stab by drawing a horizontal line across of aft face of bulkhead 235, level with the horizontal stab alignment hole. Drill a 1/8" hole through the left empennage skin. The horizontal stab is set at 0° incidents so use a level and draw the horizontal stab centerline on the left outside empennage skin.

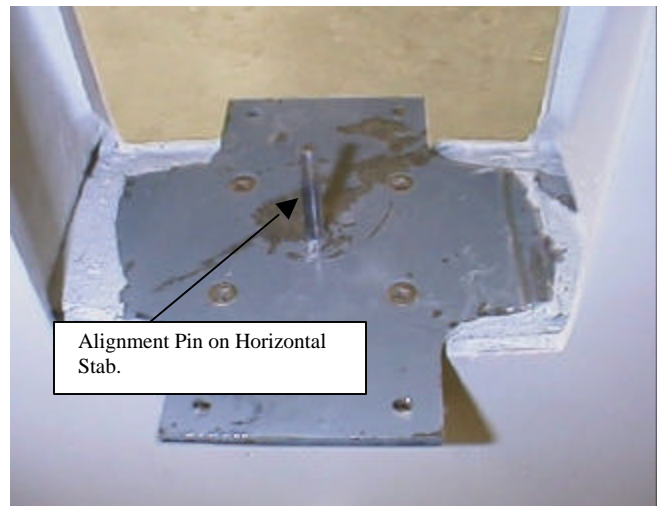


To determine the upper trim line use the BL 3.2 template used to support the horizontal stab during construction. Mark the forward face of the horizontal stab spar on the template. Place the template on the centerline drawn on the empennage with the forward face of the horizontal spar mark aligned with the hole drilled through the skin (Aft face of Bulkhead 235). Trace along the template. Measure down 4" from the horizontal stab centerline and mark the lower cutout line. Cut out the area aft of Bulkhead 235. It is recommended that you trim short of the line and final trim as you install the Stab.

### Step 3. Install the Horizontal Stab in Position.

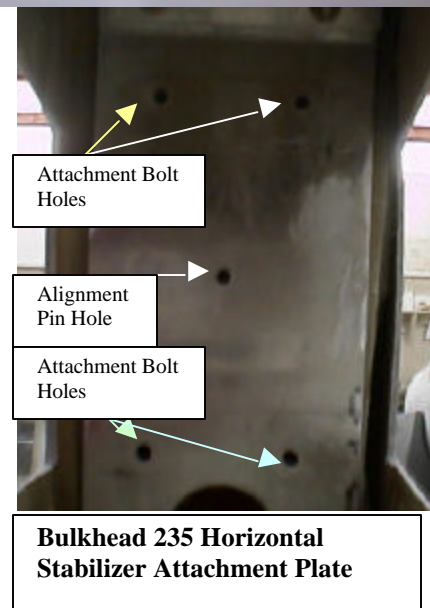
Install the horizontal stab locating pin in the forward attach plate attached the horizontal spar. If not previously done drill and tap the center hole in the forward attach plate to a 1032 thread. Cut the head off of a 3" long AN3 bolt and bevel the edges of the bolt. Screw the bolt into the taped hole.

With the help of an assistant slip the horizontal stab into position. Insert the alignment pin into the center hole of the plate on bulkhead 235 and slide the horizontal stab into position. Support the outer ends of the stab with sawhorses or similar device. Secure the stab with four AN3 bolts. **(Note: On final assembly the four attach bolts will be changed to 1/4" bolts.)**



### Step 4. Check Horizontal Stabilizer Alignment.

Check the stabilizer for square ness with the fuselage by selecting a point on the fuselage centerline just aft of the cabin door area. Measure to the outer end of the stabilizer at the trailing edge EOP. This measurements should be plus or minus 1/4". Record this measurement. Next recheck the stabilizer for degrees of incidents using the BL 3.2 Template. Record this measurement. Also check the stabilizer for levelness and record the measurement. **(Note: These measurements are initial measurements. Final measurements will be made after the right side of the fuselage is installed. These measurements are used to determine if any modifications must be make to the bulkheads installation prior to closeout)**



**Minor adjustments will be make to the Horizontal Stabilizer Alignment through the use of a shim placed between the horizontal stabilizer and bulkhead 235 on final assembly.**

**It is recommend that at this time you attach the elevators to the horizontal stab, install the bellcrank and push pull tubes, to insure proper fit.**