**Procedure 3.080A**

## FLAP TORQUE TUBE INSTALLATION

In this procedure…
The flap torque tubes, collars, brackets and bearings will be installed in the wing. The flap actuator arm will also be installed.

**For this procedure, the following parts will be required:**

| Part Number | Description | Quantity |
|---|---|---|
| 111-24-060 | Flap Torque Tube- Outboard, Left | 1 |
| 111-24-061 | Flap Torque Tube- Outboard, Right | 1 |
| 111-24-062 | Outboard Flap Bracket | 2 |
| 111-24-064 | Flap Torque Tubes Inboard Bearing | 2 |
| 111-24-065 | Support, Rib J | 2 |
| 111-24-066 | Collar, Flap Torque Tube | 2 |
| 111-24-073 | Arm, Torque Tube Actuator | 1 |
| 111-24-071 | Actuator | 1 |
| 111-24-074 | Spacer, Actuator | 2 |
| J1812 | Bearing, Inboard Bracket | 2 |
| J1616 | Bearing, Outboard Bracket | 2 |
| CR3213-4-4 | Rivet, Cherry Max | 16 |
| AN3-10A | Bolt, Rib Bracket | 8 |
| AN3-14A | Bolt, Torque Tube Left Side | 1 |
| AN3-15A | Bolt, Torque Tube Right Side | 1 |
| AN4-14A | Bolt, Outboard Bracket | 4 |
| AN960-10 | Washer | 28 |
| AN960-416 | Washer | 8 |
| AN365-1032 | Nut | 14 |
| AN365-428 | Nut | 4 |
| AN396-33 | Clevis Pin | 1 |
| MS24665-134 | Cotter Pin | 1 |

**Step 1. <u>INSTALL INBOARD BEARING HOUSING AND OUTBOARD ACTUATOR BRACKET AT AFT SHEARWEB.</u>**

**A.** Locate outboard flap actuator access at BL 70.25, 90˚ from centerline of spar to top of aft shear web. Then draw a vertical line down aft shear web to wing skin.

**B.** Now measure up line 1.50" from wing skin and drill a #30 pilot hole for Holesaw. (Fig. 80.1)

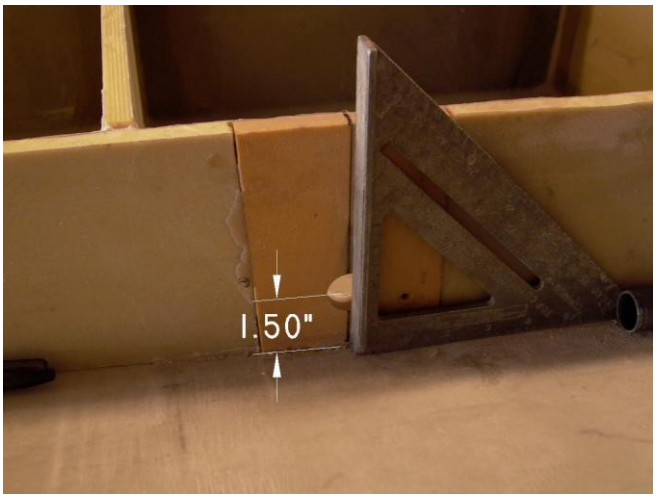


**Fig. 80.1**

**C.** Measure inboard from BL 70.25 centerline 1.00", then up from skin 1.20" and mark. Drill #10 (3/16") hole for bracket location purposes. Now, at BL 70.25 # 30 pilot hole, you can Holesaw 1" hole for flap actuator arm access hole.

**D.** Install outboard actuator arm torque tube into bracket with bearing pressed in with (1) AN3 (3/16") bolt onto forward, inside face of aft shear web. Snug-up nut and bolt and leave in place for now. (Fig. 80.2 through 80.3 )

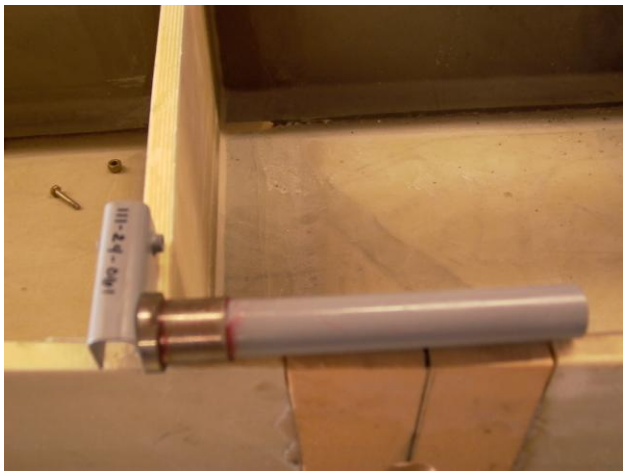

**Fig. 80.2**

**Fig. 80.3**

**E.** At outboard side of rib "O" (BL 55.25), mark a point 2.20" forward of aft shear web and 2.0" up from skin (Fig. 80.4 and 80.5) and Holesaw 1.50" to 1.75" Dia. Hole through Rib "O" (BL 55.25). Repeat at Rib "R" (BL 23.50) and at Rib "J" (BL 23.50) (Fig. 80.6).

**Fig. 80.4**

**Fig. 80.5**

**Fig. 80.6**

**F.** Shorten flap torque tube if necessary. Remove paint from ends of tubes to ease sliding into mating part. On tubes, mark 4" in from ends that slide into actuator sleeve as a reference to know how far the tube has been inserted into the actuator arm sleeve. Must be a minimum of 2.50". (Fig. 80.7)

**Fig. 80.7**

**G.** Now at inboard bearing housing (BL 23.50), before drilling holes through tube, ensure outboard actuator is 4" inboard of inboard Rib "J" (BL 23.50) surface. (Fig. 80.8).

**Fig. 80.8**

Drill (2) 3/16" holes each end of torque tube common to actuators and (1) ¼" hole at inboard bearing actuator arm (Fig. 80.9 though 80.11) Install bolts temporarily. Torque tube assembly is complete.

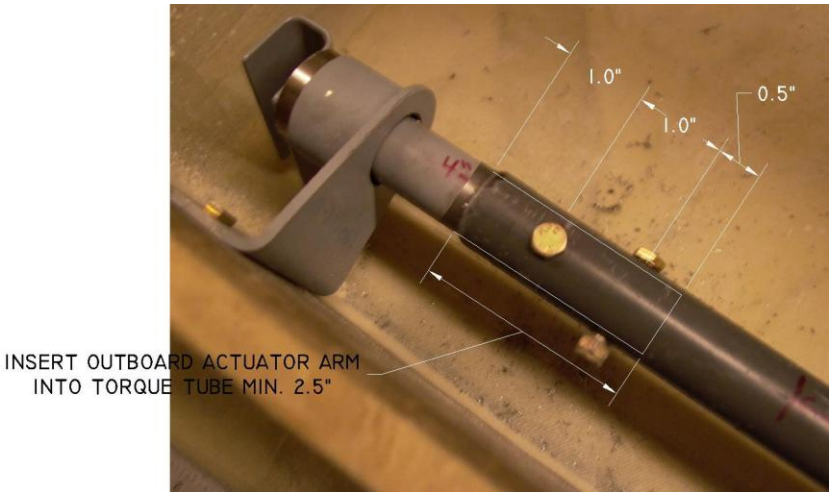


**Fig. 80.9 Outboard Actuator End**


**Fig. 80.10 Inboard Actuator End, Outboard Side Rib "J"**

**Fig. 80.11 Inboard Actuator End, Inboard Side Rib "J"**