

GLASTAR SERVICE BULLETIN 16

Subject: Trim tab counterweight arm

Applicability: GlaStar Kits #5002–5249, inclusive


Discussion: GlaStar tail kits shipped under Revisions 01–04 of the kit parts list included a pre-fabricated trim tab control horn (P/N 303-01003-01) and a short, straight trim tab counterweight arm (P/N 303-01005-01). These are the parts that are described and depicted in the initial release of "SECTION V: ELEVATOR ASSEMBLY" of the *Assembly Manual* (Steps 61, 66–68, 72–74, 102 and 103; and Figures 38, 39, 45–47, 49, 50 and 63–65).

It was subsequently determined that this horn-and-arm combination had too small a moment arm, and therefore an unacceptably large amount of lead was needed to counterbalance the trim tab as required. Because of this deficiency, a new, longer counterweight arm (P/N 303-01005-03) was designed and included in kits shipped under tail kit parts list Revision 05 or later, beginning 6/12/96. The new arm is angled to clear the tail cone, and is described and depicted in the initial release of "SECTION X: FINAL ASSEMBLY" of the *Assembly Manual* (Steps 166 and 167; and Figures 181–183).

The purpose of this Service Bulletin is to provide instructions for finishing and installing the new arm. These instructions will cover procedures for builders who have already installed the old horn and arm, as well as for those who have not yet completed this portion of the assembly.



Note Builders whose tail kits were shipped under parts list Revision 04 or earlier (Kits #5002–5249) will be provided with the new-style counterweight arm and the necessary rivets free of charge. The original control horn will still be usable, and no additional parts are required for this modification. We anticipate processing shipments of the new arm toward the end of November 1996.

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Recommended Action:



Note Not all of the following steps apply to all builders. Steps that are only for builders who have **already** installed the old-style counterweight arm will be designated “*Old Arm Only*”; steps that are only for builders who have **not** yet installed the old-style arm will be designated “*New Arm Only*”; and steps that apply to all builders will be designated “*All*.”

Step 1: Finish the New Counterweight Arm (All)

The new counterweight arm comes pre-bent, but you must drill holes for the pushrod and counterweight attach bolts, as well as radius the corners of the arm. Figure 1 shows the locations of the three #10 holes. Note that the **longer** of the two parallel faces of the arm is the **upper** one, and this is where the pushrod hole should be drilled.

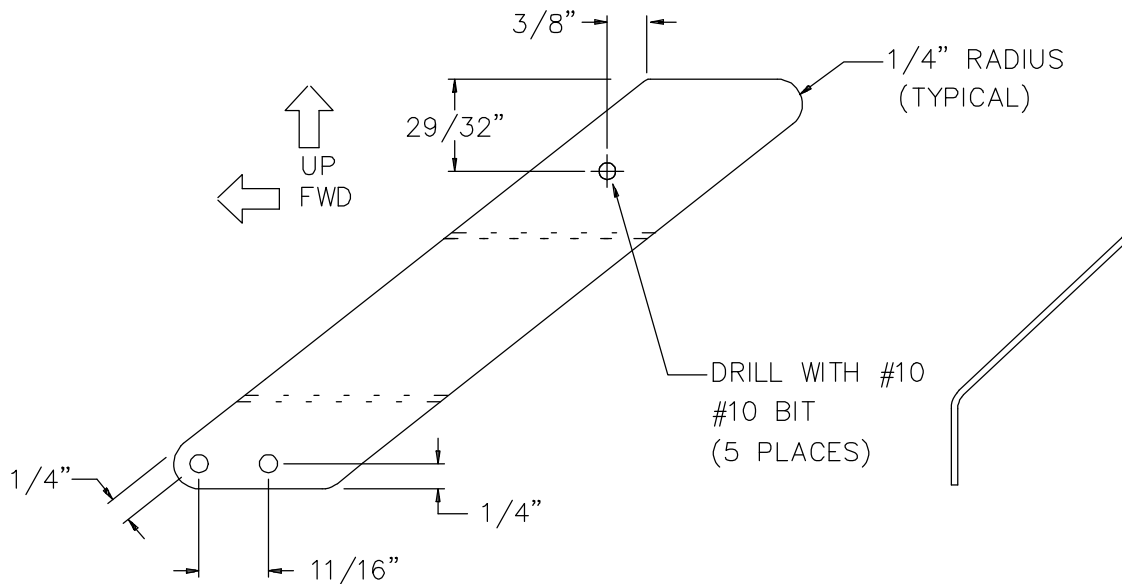


Figure 1: Finishing the New Counterweight Arm

Step 2: Remove the Old Counterweight Arm (Old Arm Only)

Begin by removing the lead counterweight, if installed. Save the lead and all the hardware. Next, using the procedures described in “SECTION II: TOOLS AND TECHNIQUES” of the *Assembly Manual*, use a #40 bit to drill out the five $3/32"$ AN470AD3 universal-head rivets holding the counterweight arm to the control horn. This will require either

a 90° drill motor or a flexible extension bit due to the proximity of the trim tab skin to the upper pair of rivets. Discard the old counterweight arm.

Step 3: Drill the Counterweight Arm (All)

The next step is to use the five rivet holes in the control horn as guides to drill five matching holes in the counterweight arm. As shown in Figure 2, temporarily pin the arm to the horn with a hardware-store 3/16" bolt, aligning the upper edge of the arm with the horizontal flange of the horn, and drill the five holes with a #30 bit. (Note that these are larger holes than originally prescribed; you will be using 1/8" rivets to rivet the new arm to the horn.)

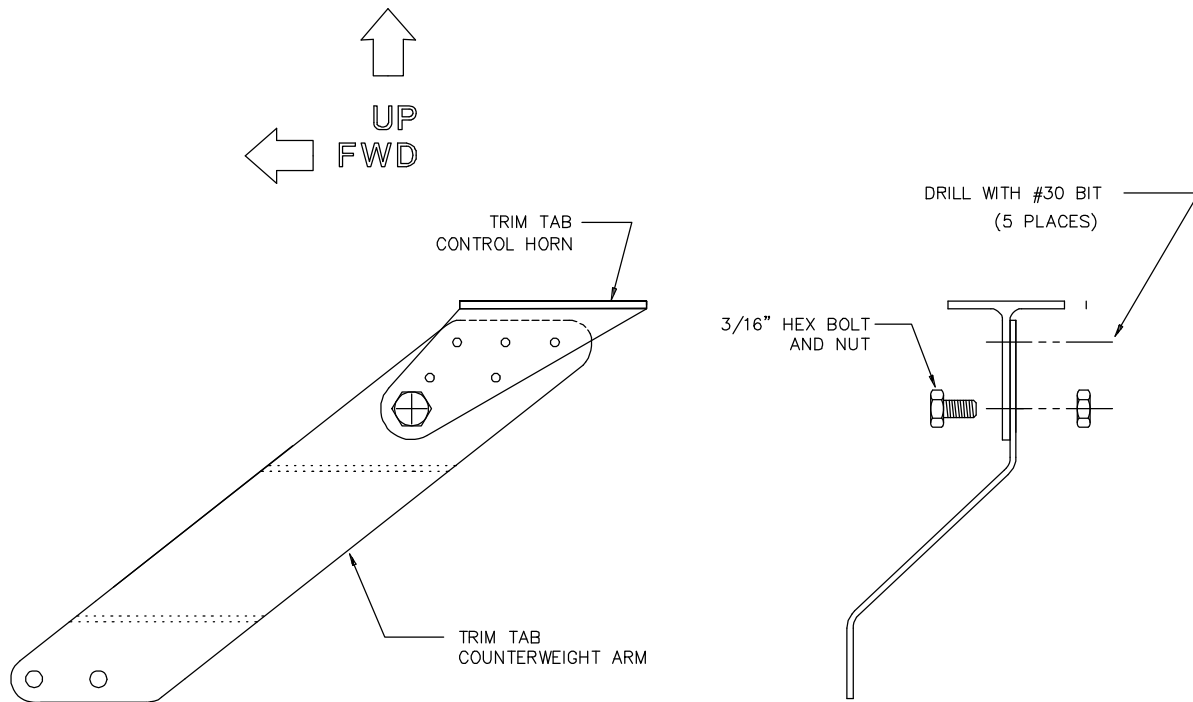


Figure 2: Drilling the Counterweight Arm

Step 4: Drill the Horn Attach Holes Through the Trim Tab Zee Ribs (New Arm Only)

Follow the instructions in the *Assembly Manual*, "SECTION V: ELEVATOR ASSEMBLY," Step 68.

Step 5: Rivet the Control Horn to the Zee Ribs (New Arm Only)

Follow the instructions in the *Assembly Manual*, "SECTION V: ELEVATOR ASSEMBLY," Step 74.



Note Don't forget that the ANOR of 6/15/95 re-sequenced Steps 72–77 of "SECTION V: ELEVATOR ASSEMBLY." The proper order should be: Steps 73, 74, 75, 76, 77, 72.

Step 6: Rivet the Counterweight Arm to the Control Horn (All)

As shown in Figure 3, use 1/8" AN470AD4-5 universal-head rivets to rivet the counterweight arm to the horn. This procedure is identical to that in the *Assembly Manual*, "SECTION V: ELEVATOR ASSEMBLY," Step 72, except that you're using the new arm and larger rivets. Note that the arm should be on the **right-hand** side and the rivet heads on the **left-hand** side of the horn, relative to the aircraft. This is necessary for the trim tab pushrod to line up with the proper clearance on the left side of the horn.

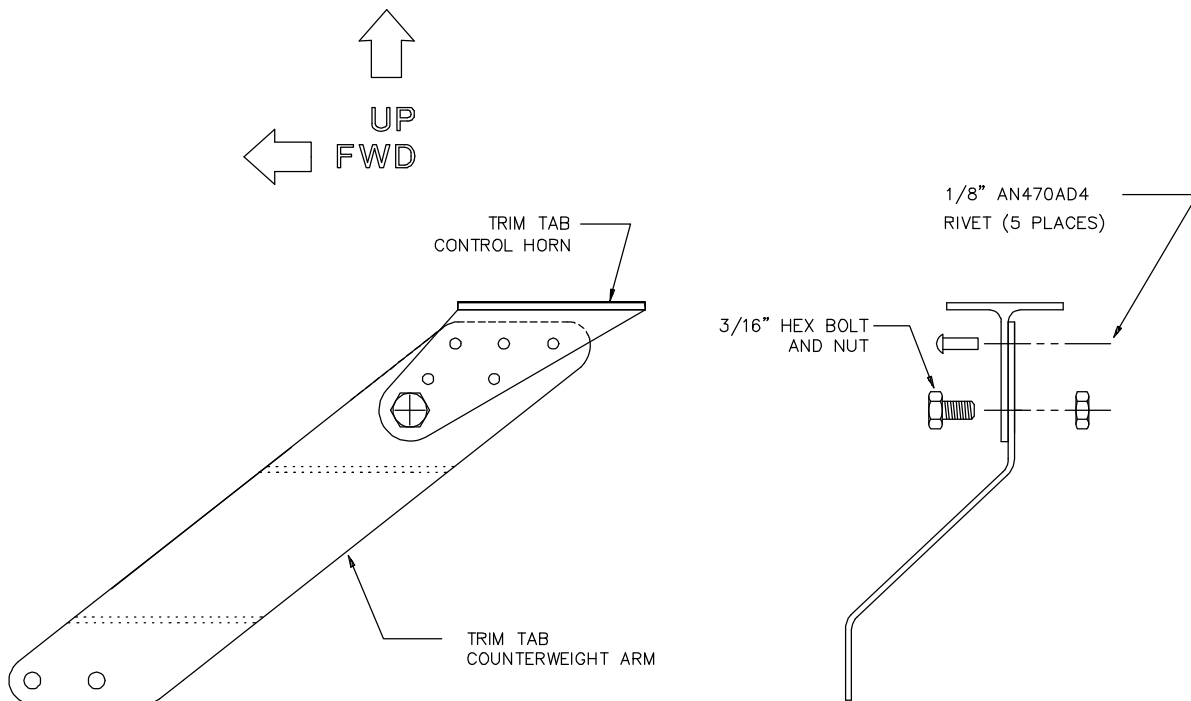


Figure 3: Riveting the Counterweight Arm to the Control Horn

Step 7: Install the Counterweight (All)

As specified in the ANOR of 12/1/95, we currently recommend holding off on counterbalancing the trim tab until "SECTION X: FINAL ASSEMBLY." Steps 166 and 167 of that section detail the procedures for calculating the amount of weight required and installing it on the new-style, angled counterweight arm.