

GLASTAR SERVICE BULLETIN 39

MANDATORY

Subject: Counterweight attachment to elevator counterweight ribs


Applicability: All GlaStar fuselage kits shipped prior to 12/8/98

Discussion: We have received a report from a GlaStar owner of cracking in the elevator counterweight rib. The cracks, which measured approximately 3/4" in length, emanated from the holes for the counterweight attach screws. The subject aircraft had approximately 90 hours in service at the time of the discovery.

Separation of the elevator counterweight from the counterweight rib would pose two potentially serious problems. The first, of course, is the possibility of flutter—the very problem the counterweights are designed to prevent. Although the counterweight lead is contained within the elevator tip fairing and thus is very unlikely to depart the aircraft completely, it could move to the aft part of the fairing where it would no longer contribute to flutter prevention.

A second potential problem, more likely but no less serious than the first, could arise if the rib cracked in such a way as to allow the counterweight attach screw heads to impede free movement of the elevator.

The cause of the observed cracking can likely be traced to the fact that the counterweight lead is attached with only two screws. These screws define a single axis about which the lead "rocks" when subjected to vibration in the course of normal operations. This fatigues the metal around the screw holes, allowing cracks to propagate. The solution is to add a third attach screw to prevent the rocking action of the counterweight.

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Required Actions: For flying GlaStars, visual inspection of the elevator counterweight ribs for cracks is **required prior to further flight**. If any cracks are found, the following remediation procedures are **required prior to further flight**. If no cracks are found, then the following procedures are **required within the next twenty-five hours of operation**. For aircraft not yet flying, the following procedures should be incorporated into the assembly process at an appropriate time **prior to first flight**.

Figure 1 shows the recommended location for installing a third attach screw through the counterweight stack for ribs that have already been drilled per the *Assembly Manual*. Figure 2 shows new recommended locations for all three holes for ribs that have not yet been drilled. Drill the appropriate hole(s) through the rib and the lead stack per the instructions for Step 39 in "SECTION V: ELEVATOR ASSEMBLY" and Step 174 in "SECTION X: FINAL ASSEMBLY."

Secure the counterweight stack with AN509-10R24 flush-head machine screws, AN970-3 large steel washers and AN364-1032A nylon self-locking nuts. Two of each of these pieces of hardware are supplied with this bulletin.



Note In drilling the third hole through an already completed counterweight stack, you are removing some mass from the counterweight. However, the difference between this lost mass and the mass added by the additional screw, washer and nut is entirely negligible. There is no need to rebalance the elevator after this procedure has been accomplished.

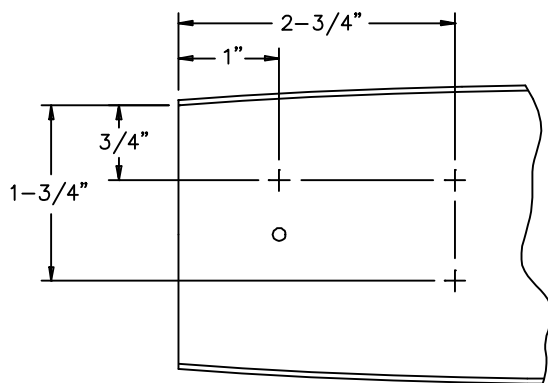


Figure 1: Third Hole Location for Ribs Already Drilled

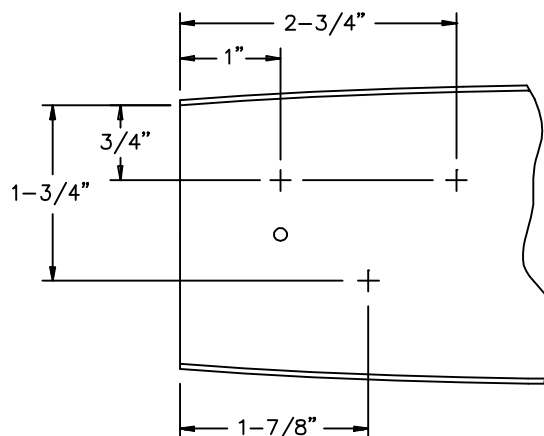


Figure 2: New Hole Locations for Ribs Yet to Be Drilled