GLASTAR SERVICE BULLETIN 46

MANDATORY

Subject: Electric Elevator Trim System

Applicability: All GlaStars equipped with 921-01000-01 or –02 Electric Elevator Trim Systems

Compliance Time: Within 10 flight hours after receipt of parts.

Discussion: This Service Bulletin is required to limit trim tab travel on aircraft equipped with electric trim systems, and to reduce the trim tab movement rate in order to make the trim system less sensitive at cruise speeds. Both objectives will be achieved by lengthening the control horn on the underside of the trim tab.

We flight tested our new demonstrator, N498CF, at CG ranges from the forward to aft limits in order to determine the minimum trim tab deflection required to trim the aircraft for all possible conditions. Aft CG/gross weight flight tests showed a maximum of 5.5 degrees nose down trim was necessary to fly hands-off at 144 kts (Vno). Due to variations in customer-built aircraft, however, we added a 2.5 degree buffer to our nose-down trim deflection to establish our deflection recommendation.

At extreme forward CG, the effect of increasing nose-up trim in a power-off descent diminished rapidly for deflections above 12 degrees. Additionally, at 20 degrees nose-up trim, elevator authority into the flare was noticeably reduced, and the force required to overcome pitch-up during a go-around increased substantially. From this experience we established our nose-up deflection requirement.

Our recommendation is to start with 16 degrees nose-up trim, and 8 degrees nose-down trim. In the end, you will have to conduct flight tests on your aircraft to determine your optimum trim tab deflections.

Required Action: Install the lengthened trim tab control horn per the instructions provided with this SB kit.

Alternate Method of Compliance: Alternatively, you may choose to purchase and install the MAC 4A Servo, while keeping the trim tab control horn at its present length. This unit is a direct replacement for the 8A Servo supplied by Stoddard-Hamilton, but has only 0.7 inches of travel, rather than the 1.2 inches travel available on the 8A. In order to comply with the trim rate reduction requirement, however, you must install the MAC Speed Controller as well.