Service Bulletin 158

Subject: Glasair III Engine Mounts: Part No.: 223-1420-101

Applicability: Engine mounts delivered approximately between 1998 and April 2005: Kits 3313-3392

Compliance Time: At the next annual inspection or anytime after 250 hours total airframe time.

Discussion and Background Information:
Glasair Aviation has recently been advised of a failed Glasair III engine mount. The particular tube of concern is the 1" diameter tube that connects the lower engine attach points to the nose gear trunnion attach sleeves. The failure was located immediately forward of the gusset on the 1" diameter tube. This particular mount was one of the early mounts that had been reinforced in accordance with Service Bulletin 71.

Glasair Aviation performed a review of the engine mount history, the Service Bulletin 71 that was issued in 1990, Revision A to that Service Bulletin in 1991, Revision C in 1996 and the manufacturing process that Stoddard Hamilton Aircraft (SHAI) used from approximately 1998 and which continued up through present production by Glasair Aviation.

Prior to 1998, all Glasair III mounts were manufactured by an outside vendor. In 1990, when Service Bulletin 71 was issued, the wall thickness of 4 tubes were increased to .095" (up from .049 and .058) and gussets were added to reinforce the area of concern. Service Bulletin 71 defined the reinforcement procedures for these early mounts with the thinner walled tubes.

In approximately 1998, SHAI began to co-manufacture the engine mounts at their Arlington, Washington facilities and continued to use the same outside vendor to meet production. Apparently SHAI did not implement the increased wall thickness on those four tubes into the bill of materials when they began production. It is also not known

exactly when SHAI began producing the mounts, as records are not available.

Review of the original analysis revealed the load cases of concern are the excessive actuator loads from improperly configured actuator geometry as well as loads occurring during nose gear shimmy. Normal landing gear loads were not of concern and do not appear to overload the engine mounts.

Because all engine mounts produced after the original Service Bulletin 71 have included the reinforcing gussets addressing the high stress area, the mounts delivered from 1998 through present deliveries are a significant improvement over the original design. Therefore, Glasair Aviation is recommending annual inspection be done on the mounts.

Required Action: If you have more than 250 hours of airframe time on your Glasair III, you should inspect your mount within the next 20 hours of flight time and at every annual inspection thereafter.

If you have less than 250 hours of airframe time, you should inspect the engine mount during your next annual inspection and at every annual inspection thereafter.

If you have experienced nose gear shimmy or are experiencing hydraulic pressures that are routinely high during retraction or deployment, you should be particularly vigilant upon inspection of the mount.

What To Do If Your Mount Has Evidence of Cracking:

If your mount has evidence of cracking, contact Glasair Aviation to review and propose a repair procedure for your particular situation.