SERVICE BULLETIN 70

SUBJECT: INDUCTION SYSTEM FATIGUE IMPROVEMENTS

APPLICATION: All Glasair III aircraft and optional injected induction kits for the Glasair I and Glasair II.

ITEM 1: ADDITIONAL LAMINATES TO SECURE THE INDUCTION HOUSING TO THE LOWER COWLING

DESCRIPTION: The Cabosil mixture that bonds the induction housing to the inside of the lower cowling has proven inadequate. The Cabosil bond must be reinforced with two-layer laminates applied between the inside of the induction housing and the inside of the lower cowling for the entire perimeter of the housing.

SOLUTION:

Case 1, the induction housing has already been completed:

Remove the lower cowling. Remove the cover plate and the air filter from the induction housing.

Especially if the engine has been run, thoroughly clean any fuel or oil residue from the inside of the induction housing.

Sand the inside of the induction housing and the inside of the lower cowling for 1" on both sides of the joint where the two parts meet. Apply a Q-cell radius in the corner between the two parts, and when the Q-cells have cured, apply a 2" wide, two-layer bidirectional laminate in the corner all around.

NOTE: In the areas where the filter retaining ring is close to the inside of the induction housing, it will not be possible to apply a full 1" width of laminate onto the inside of the cowling. Do the best you can to maximize the contact area of the laminates.

Case 2, the induction housing and the filter retaining ring have not been installed:

In Step AD-8 on page G-411 of the Final Assembly section, mark both the outside and the inside circumference of the filter retaining ring onto the inside of the lower cowling.

In Step AD-9, mark around the entire circumference of the induction housing onto the inside of the lower cowling so the housing can be repositioned for bonding.

Bond the induction housing to the inside of the cowling (described in Step AD-12) before riveting the filter retaining ring in place. In addition to the Cabosil bond between the induction housing flange and the cowling, apply two-layer bidirectional laminates between the inside of the induction housing and the inside of the cowling for the entire perimeter of the housing. Apply the laminates for 1" onto the inside of the induction housing all around. In the straight inlet section at the forward end of the induction housing, lap the laminates for 1" onto the inside of the cowling. In the circular area of the housing, where the housing is close to the filter retaining ring, lap the laminates onto the cowling beyond the retaining ring inside circumference mark made in Step AD-8. This provides a two-layer reinforcement for the retaining ring rivets. Also apply a separate two-layer laminate on the lower cowling to complete the retaining ring reinforcement on the forward side where the ring is not close to the sides of the induction housing. Make sure the laminates are smooth with no overlaps in the areas where the retaining ring will contact the cowling.

NOTE: Before bonding the induction housing in place, thoroughly prep sand the induction housing flange and the areas on both the induction housing and the cowling where the bonding laminates will contact.

Install the filter retaining ring, as described in Step AD-11, centering the ring within the large circular opening in the induction housing. Complete the induction housing installation as described in the manuals.

ITEM 2: COVER PLATE ATTACH FLANGE REINFORCEMENT

DESCRIPTION: On our prototype, the induction housing flange to which the aluminum cover plate attaches cracked over time, allowing the cover plate nutplate clips to pull loose.

SOLUTION: If your induction housing was shipped before 7/10/89, reinforce the cover plate attach flange with a three-layer 45° bidirectional laminate applied on the inside of the induction housing.

NOTE: Repair any existing cracks in the cover plate attach flange, using standard fiberglass laminate repair procedures.

NOTE: The cover plate flange reinforcement laminates were applied during manufacture for induction housings shipped after 7/10/89. If you have one of these later housings, you can ignore this item.

ITEM 3: ALTERNATE AIR DOOR SPRING ATTACH BRACKET AND TAB--MATERIAL CHANGE

DESCRIPTION: The alternate air door spring attach bracket and spring attach tab for the induction system were originally fabricated from extruded aluminum angle and aluminum sheet, respectively. The material for these parts has proven in service to lack the necessary durability, however, allowing the spring to wear through its mounting points when exposed to engine compartment vibration.

SOLUTION: Fabricate the alternate air door spring attach bracket and spring attach tab from .030" thick stainless steel sheet. Bend and shape the two pieces to the same dimensions as shown in FIGURES (G-249) and (G-250) on pages G-425 and G-426 in the Final Assembly section of the Instruction Manuals. A 2" x 2" piece of .030" stainless steel sheet (Part No. 750-0319-002, enough for both pieces) is available from Stoddard-Hamilton.