

SERVICE BULLETIN 28

SUBJECT: FITTING OF VARIOUS GLASAIR I PARTS TO GLASAIR II FUSELAGE

APPLICATION: BUILDER OPTION

DESCRIPTION: Stoddard-Hamilton has received a number of orders from existing Glasair I builders for the wider Glasair II fuselage which they intend to mate to various Glasair I components.

Due to the many possible combinations, and the varying stages of completion of the builders at this time, this bulletin attempts to provide general information and assembly procedures for the areas most clearly affected by the mating of any Glasair I and Glasair II parts. If difficulties arise, or if this bulletin does not address specific details of your particular situation, please consult our builder support division for a case-by-case solution.

AREAS AFFECTED WHEN USING A GLASAIR I WING AND GLASAIR II FUSELAGE

A. MAIN SPAR ATTACH FITTING

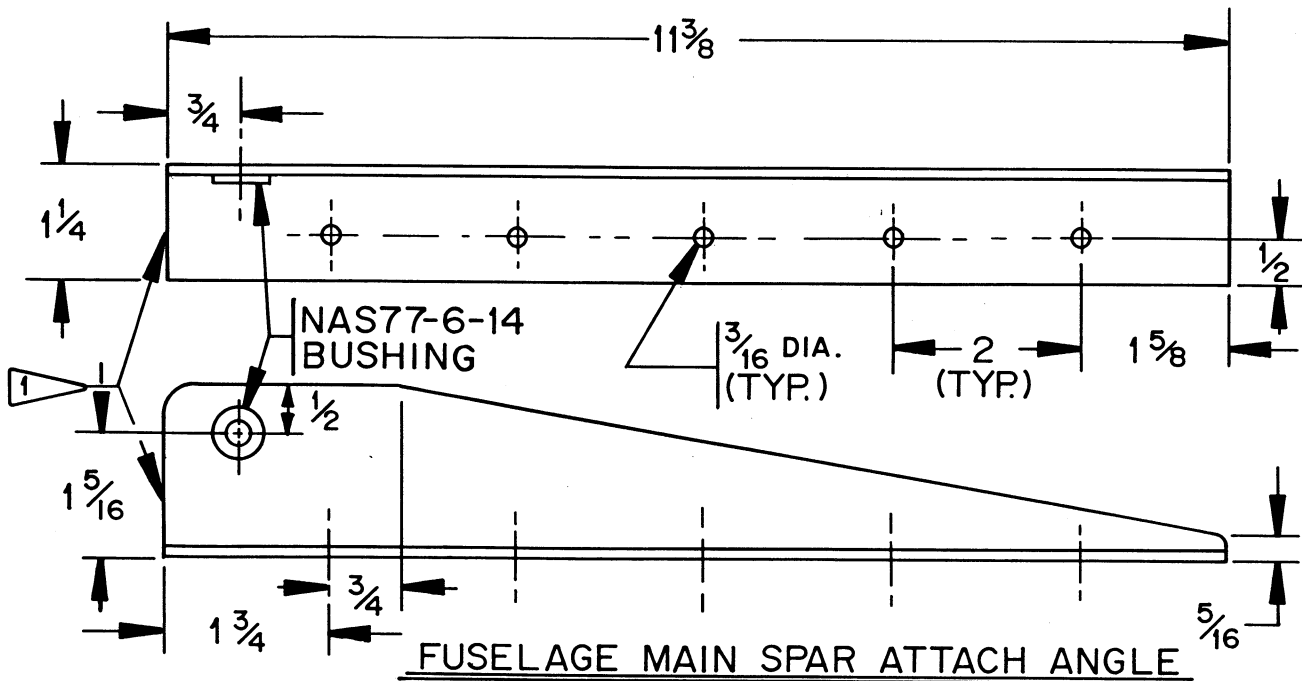



FIGURE (1)

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When using a Glasair I wing with a Glasair II fuselage, wider fuselage main spar attach angles must be fabricated, as shown in FIGURE (1), from material supplied in the upgrade kit. Use these angles when mating the wing to the fuselage, as described in the Wing to Fuselage Installation subdivision of the Final Assembly section of your original Glasair Instruction Manual.

Fabricate the fuselage main spar attach angles from 2" x 1-1/4" x 1/8" 2024-T3 aluminum angle, as shown in FIGURE (1).

NOTE: Make (4) fuselage main spar attach angles: (2) identically alike and (2) the exact mirror image of the first two.

File any saw-cut roughness smooth and deburr. Scuff the parts with a fine "scotch brite" pad and wipe with acetone to prepare for painting. Spray the parts with a light coat of zinc chromate or epoxy primer to prevent corrosion.

To drill the holes for the NAS77-6-14 bushings, start with a 1/8" pilot hole and then step drill to enlarge the hole to size. For the final hole size, use a sharp drill bit just smaller than .500" and then ream the hole to size with a .500 reamer. The O.D. of the bushings are slightly larger than 1/2" (.5013"), so a press fit can be achieved if the holes are not drilled too large. We suggest using a drill press or a vise, if a small press is not available, to press the NAS77-6-14 bushings into the angles. Make sure the bushing collars are on the "outsides" of the angles, as shown.



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B. REAR SPAR ATTACH FITTING INSTALLATION LOCATION

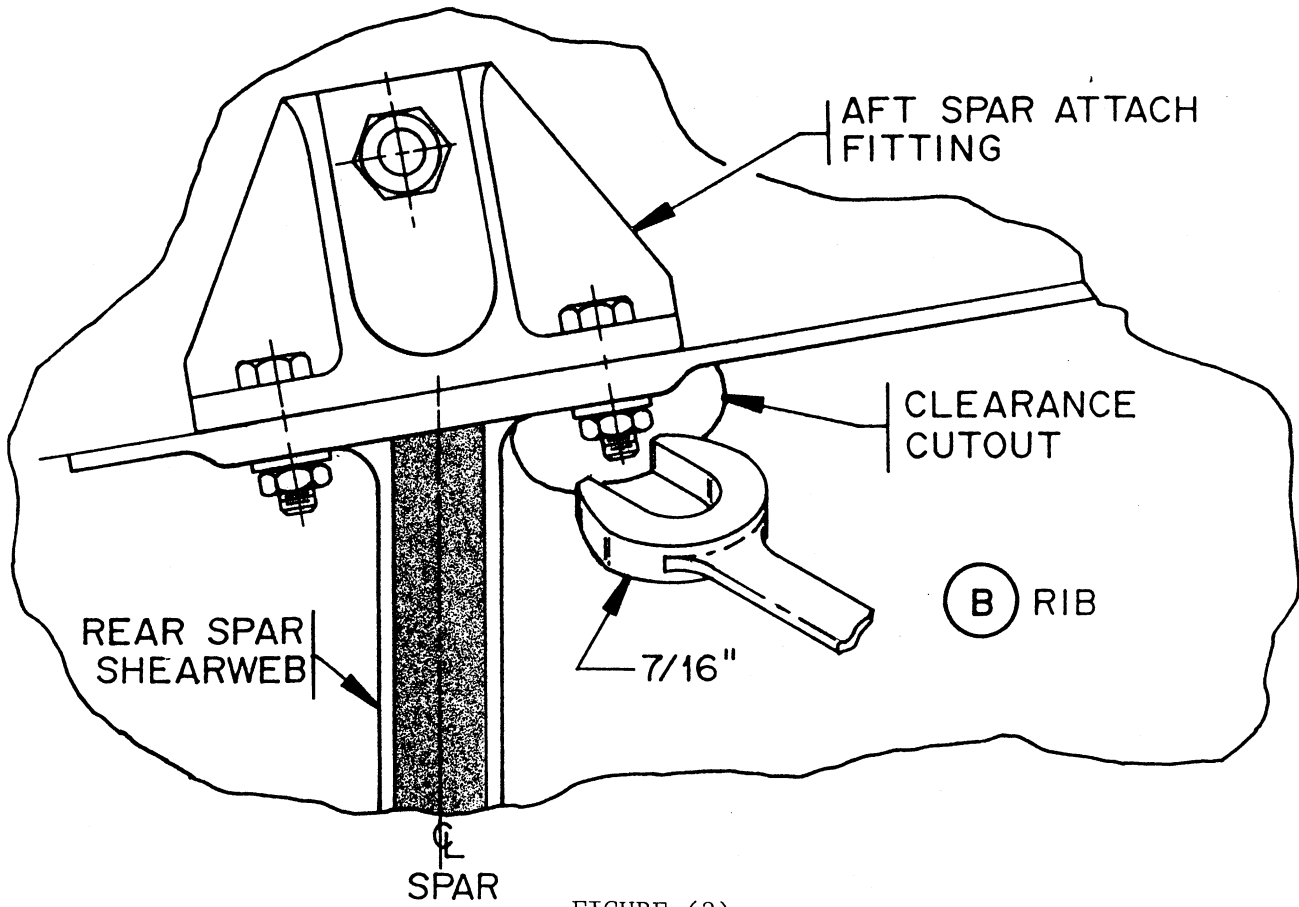



FIGURE (2)

Because of the extra width of the Glasair II fuselage, the rear spar attach fittings must be moved outboard about 1-1/2" which places them very close to the inboard sides of the "B" ribs in the wing. If building an RG or a TD, the builder must carve out areas of the "B" ribs to provide clearance for the nuts that secure the attach fittings to the rear spar cap. Grind or carve away the minimum amount of "B" rib necessary to allow the AN364-428A nuts to fit the AN3-7A bolts. Allow sufficient clearance for an open end wrench to hold each nut, as shown in FIGURE (2). Make smooth radius corners on the clearance cutout.

NOTE: The "B" ribs on the FT model cannot be carved out in this area due to the unidirectional laminates in the upper edges of the ribs. If building an FT, install 3/16" aluminum spacers between the aft spar attach fittings and the insides of the fuselage panels to provide clearance from the "B" rib reinforcement cap laminates. This change requires longer bolts (AN4-15A instead of AN4-13A) for attaching the fuselage panels to the aft spar attach fittings.

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C. FLAPS

Since the fuselage is wider, the flaps will be shortened by approximately 1.5". Likewise, the flap actuator fitting (mounted to the flap shearweb) will have to be moved 1.5" outboard.

If you have not completed your flap assemblies yet, simply locate the flap rib A, the actuator fitting, and the inboard hinge 1.5" outboard of the location shown in the Glasair I Instruction Manual, and shorten the flaps by 1.5". (The flaps may be left long and trimmed short after the fuselage has been joined to the wing.)

D. GLASAIR I WING RIB LOCATION

The mating of a Glasair I wing to a Glasair II fuselage can be accomplished if the wing has been completed and closed. If it has not been completed, the wing rib locations may be changed as per the Glasair II wings which may give some advantages. We have outlined the different situations with each model below.

RG model

If the wing rib installation has not been completed, we would strongly advise locating the wing ribs per the Glasair II wing instructions to avoid complications with interference between the flap actuator rod and the main gear tires in the retracted position (remember - the flap actuator fitting has moved 1.5" outboard).

Please contact our builder support department for new Glasair II RG wing instructions that describe the relocation of the "B" ribs, the "C" ribs, and the landing gear support structure. All of these components are moved 1.5" outboard which requires 1.5" longer control stick swivel tubes, flap torque tubes, and control stick interconnect linkage rods.

If the wing ribs are already installed per the Glasair I wing instructions, and the flap actuator fittings will have to be moved outboard, special angled or doglegged flap actuator rods will have to be made to allow for tire clearance. Please contact our Builder Support department if you fall in this category. The modified rods will be supplied upon request.



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FT and TD models

For FT and TD models of the Glasair I in which the wing ribs are already installed in their original locations, the flap actuator arm installation illustrated in FIGURE (3) must be used. This is the configuration of the flap linkage on the original Glasair I kits (by "original kits" we mean the earliest kits in which all the welding was left for the builder to complete), so, for these kits, no change in the flap linkage is required.

For later model Glasair I kits (kits for which all welding is completed during manufacture) that have already had the wing ribs installed, the flap actuator arms must be repositioned to align with the repositioned flap actuator fittings. For these airplanes, use a longer flap torque tube, install a 7/8" I.D. flanged teflon bearing in the B rib in place of the 1" I.D. bearing originally supplied, shorten the tubular part of the flap actuator arm to a 1-3/4" length, and assemble the components as shown in FIGURE (3). The longer flap torque tubes, 7/8" I.D. flanged teflon bearings, and the AN960PD1416L thrust washer shown in FIGURE (3) are available as part of the upgrade kit. Please call to request these parts if you fall into this category.

For FT builders, moving the "B" ribs outboard does not have any real advantages that we can foresee. It would require purchasing new Glasair II inboard main gear strut attach brackets as well as longer control stick swivel tubes, longer flap torque tubes, and longer control stick interconnect linkage rods for the control system. Moving the "B" ribs outboard on a Glasair TD requires replacing just the control system components, but also does not offer any advantages to do so.

We recommend that FT and TD builders install the wing ribs in the Glasair I configuration.

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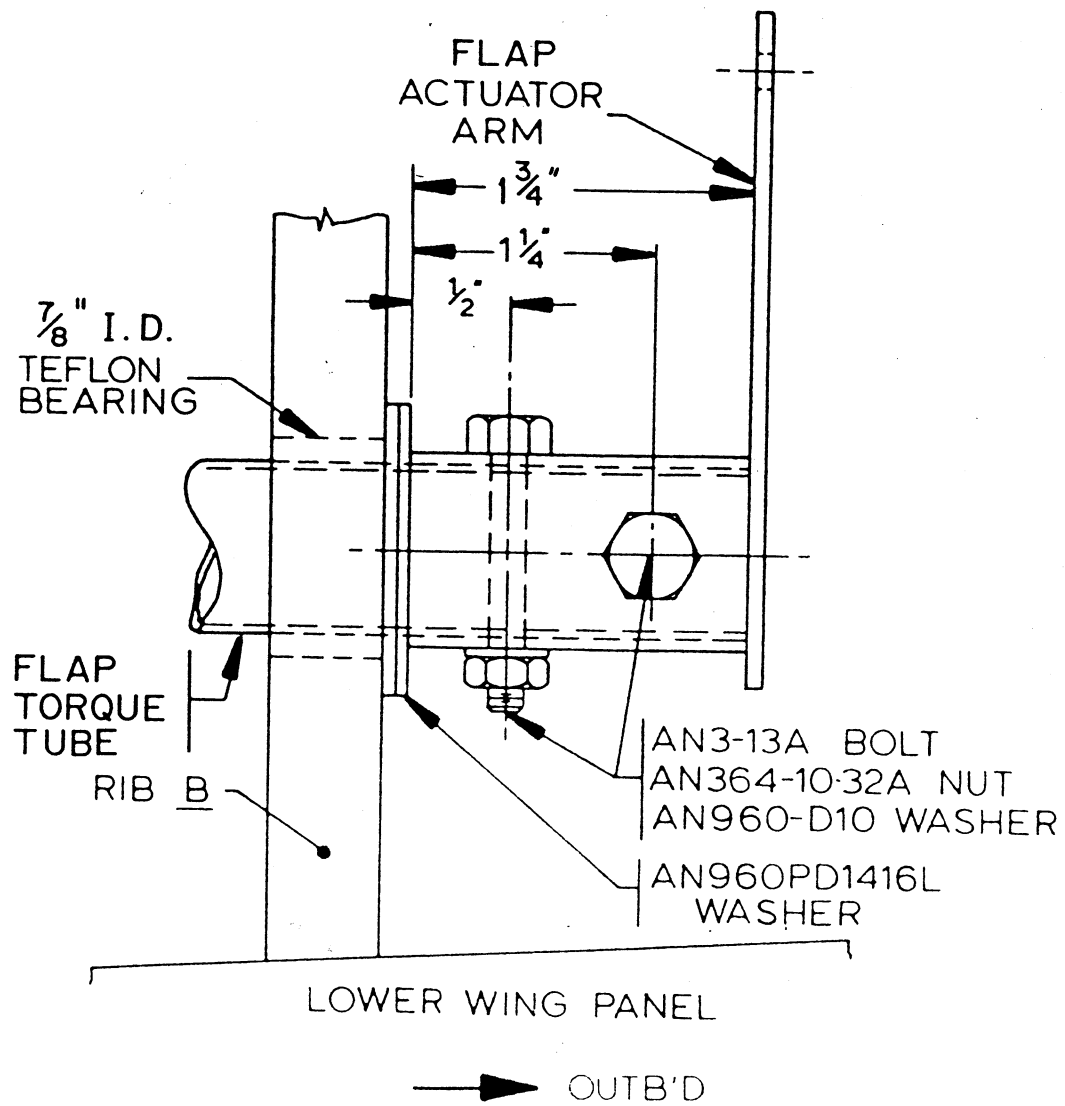


FIGURE (3)

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AREAS AFFECTED BY INSTALLATION OF GLASAIR I HORIZONTAL TAIL TO GLASAIR II FUSELAGE

A. CLEARANCE FOR INTERNAL ELEVATOR COUNTERWEIGHT ARM

A clearance cutout is required in the Glasair II fuselage forward vertical fin shearweb for Glasair I elevators with the internal fuselage counterweight arm.

After the horizontal stabilizer has been installed, temporarily install the elevators with the counterweight arm attached, and check the clearance required before the forward vertical fin shearweb is installed. Some adjustments in height or positioning may be required. Please notify our Builder Support department when you are at this stage.

B. GLASAIR II TRIM SYSTEM

This area we have not fully investigated yet. The Glasair I elevator counterweight arm will require additional tabs welded on to allow attachment of the elevator trim cables.

The new elevator trim mechanism mounted in the cockpit center console may have some interference problems with the Glasair I flap mechanism. We will advise of this in a later Service Bulletin once our investigation is completed.



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