

DATE: January 18, 1972

SUBJECT: Control Surface Bearing Support Inspection

SERIALS AFFECTED: AA1A-0095 thru AA1A-0158, AA1A-0160 thru AA1A-0215, AA1A-0217 thru AA1A-0250, AA1A-0253 thru AA1A-0272, AA1A-0274, AA1A-0276 thru AA1A-0290, AA1A-0292 thru AA1A-0294, AA1A-0296 thru AA1A-0299, AA1A-0301, AA1A-0304 thru AA1A-0307, AA1A-0309, AA1A-0314, AA1A-0318 and AA1A-0320 thru AA1A-0323.

TIME OF COMPLIANCE: Within the next 50 hours of operation

General

It has come to our attention that some of the above aircraft may have been produced with control surface bearing support assemblies that were improperly machined and/or assembled. This improper machining and/or assembly could result in the bearing supporting collar becoming loose in the support bracket/flange. In most instances, looseness of the bearing support collar in the bracket or flange would simply result in rotation of the collar within the bracket/flange and would be of no particular concern as the collar is adequately restrained by the control surface and shims.

There are three (3) critical areas in the aircraft where the above discrepancy could result in excessive looseness of the control surface assembly due to the bearing collar not being restrained. These areas are the outboard aileron bearing support, located adjacent to the wing tip, the inboard aileron torque tube support and the inboard flap torque tube support located under the baggage compartment floor.

Inspection

It is recommended that a one time inspection be performed within the next 50 hours of operation on the above affected aircraft on bearings that are located in the above mentioned critical locations, only. Detailed inspection and rework/replacement procedures are listed below. If defective bearing support/flange assemblies are found, they should be reworked or removed from service before further flight.

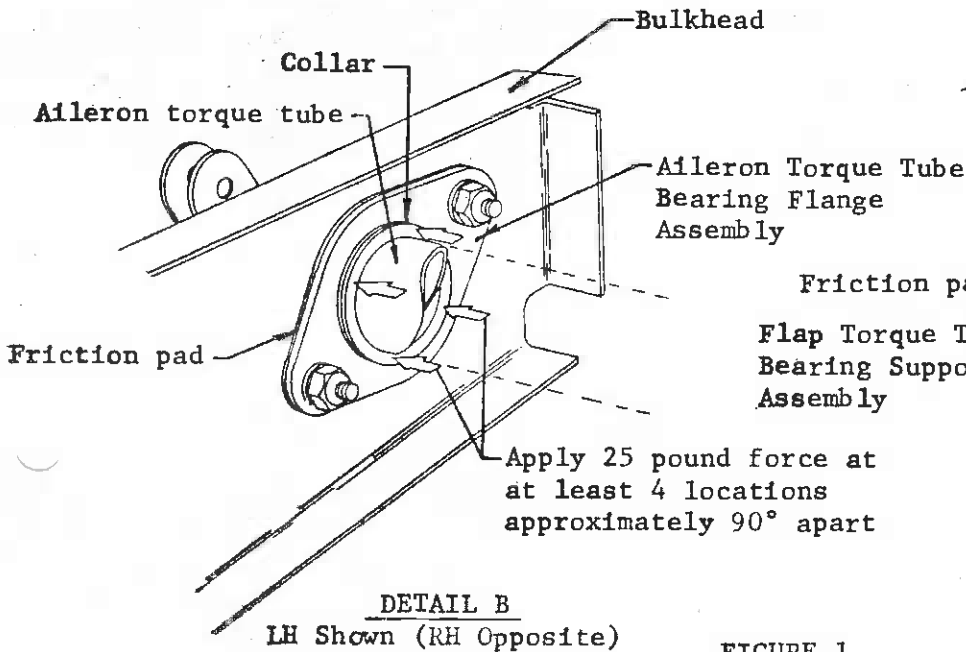
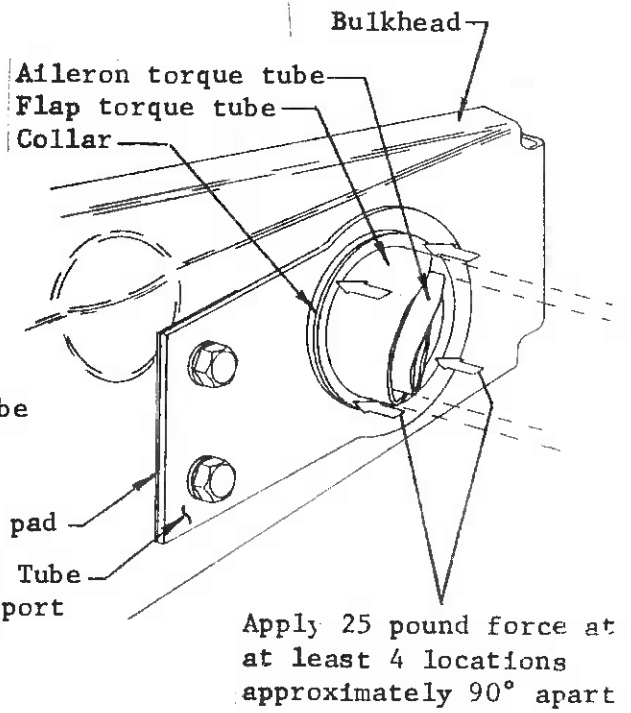
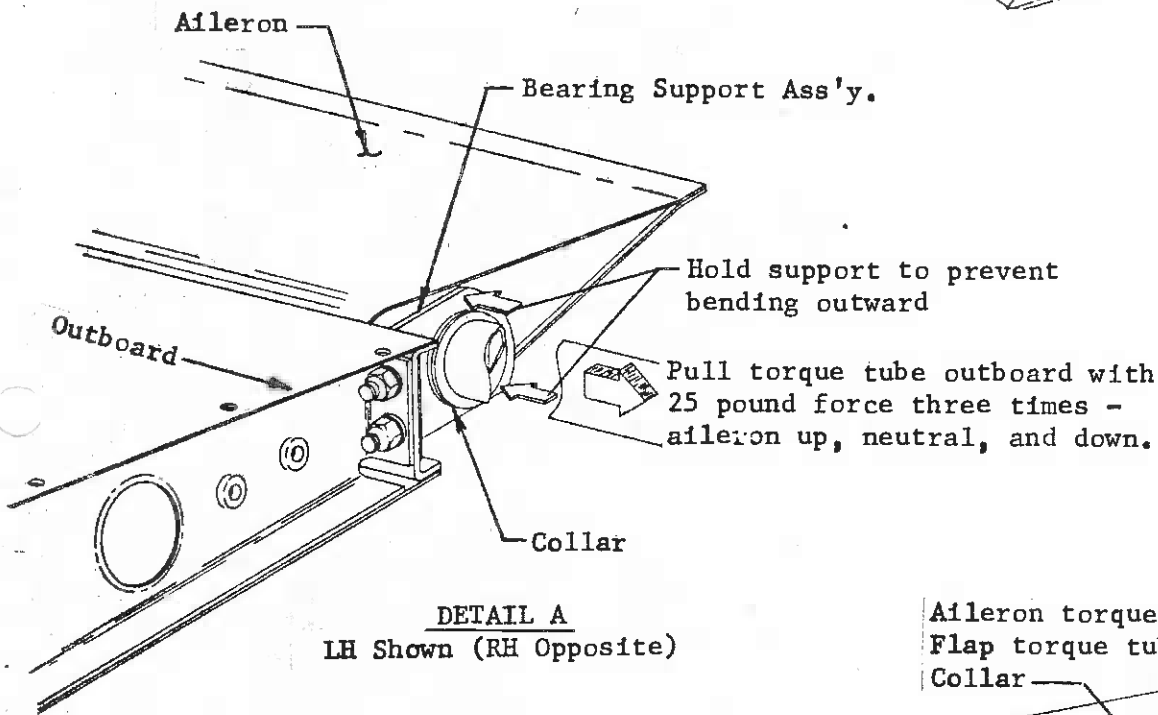
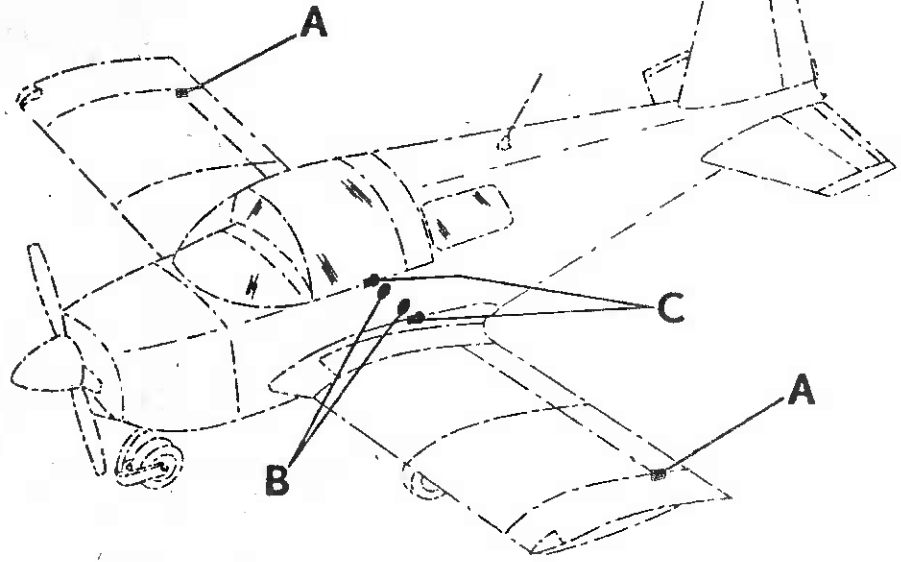
It is further recommended that all control surface bearing support assemblies be inspected for security of the bearing retaining collar at the next 100 hour or annual inspection. If loose retaining collars are found, the bearing support/flange assembly should be removed and reworked per rework instructions listed below or replaced.

Inspection Procedure - Aileron Outboard Bearing Support (Ref. Figure 1, Detail A)

1. Remove wing tips. Hold bearing support to prevent bending outward. Grasp aileron torque tube and pull outboard with a 25 pound force. Apply force three times - aileron up, neutral and down.
2. Any visible movement between collar and support is cause for rejection and rework or replacement of the support assembly.

N O T E

*Wings tips may be readily installed if nut plates are first inspected to insure that nuts are squarely located in retainers. Then install tip and carefully install all attach screws finger tight before final tightening.*



**DETAIL C**  
 RH Shown (LH Opposite)

**FIGURE 1.**

Inspection Procedure - Inboard Flap Torque Tube and Aileron Torque Tube Bearing Support/Flange Inspection (Ref. Figure 1, Detail B and C)

1. Lift up baggage floor covering and remove inspection covers.
2. Locate bearing support/flange assemblies. Apply 25 lbs. of force at approximately each 90° around the collar circumference using the extremes allowed by raising and lowering the flaps and ailerons.
3. Any visible movement between collar and support/flange is cause for rejection and rework or replacement of the support/flange assembly.

Removal and Installation Instructions (If above inspections require bearing rework or change.)

Installation of Outboard Aileron Support Assembly (Ref. Figure 1, Detail A)

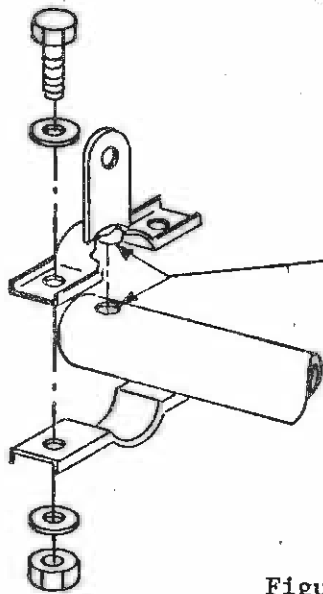
1. Remove aileron counterbalance. (*Caution - Note location of bolt spacers inside aileron torque tubes*) Remove bearing support assemblies from rear wing spar and slide them off torque tube noting number and location of spacers.
2. Install in reverse order installing spacers in same position to assure minimum endplay.

Installation of Inboard Aileron Torque Tube Bearing Flange Assembly (Ref. Figure 1, Detail B)

1. Detach outboard aileron bearing support assembly from rear spar.
2. Disconnect aileron bellcrank from inboard end of aileron torque tube. (Do not disturb control system rigging)
3. Slide aileron assembly outboard far enough that torque tube is slid out of inboard bearing flange assembly. Mark original installed position and remove bearing flange assembly from bulkhead noting location of friction pad between bulkhead and bearing flange.
4. Install in reverse order. Use caution in reassembling and do not apply excessive force to bearing collars or brackets which may cause bending of the bearing brackets.

Installation of Inboard Flap Torque Tube Bearing Support Assembly (Ref. Figure 1, Detail C)

1. Complete all steps shown above under installation of inboard aileron bearing/flange assembly except do not remove flange assembly from bulkhead.
2. Disconnect flap bellcrank from flap torque tube.
3. Detach bearing support assembly from bulkhead, noting location of friction pad between support assembly and bulkhead and slide support assembly off torque tube.
4. Reassemble in reverse order noting that friction pad must be installed between bearing support assembly and bulkhead and that bearing support assembly location must be adjusted so that flap torque tube is concentrically located around aileron torque tube.



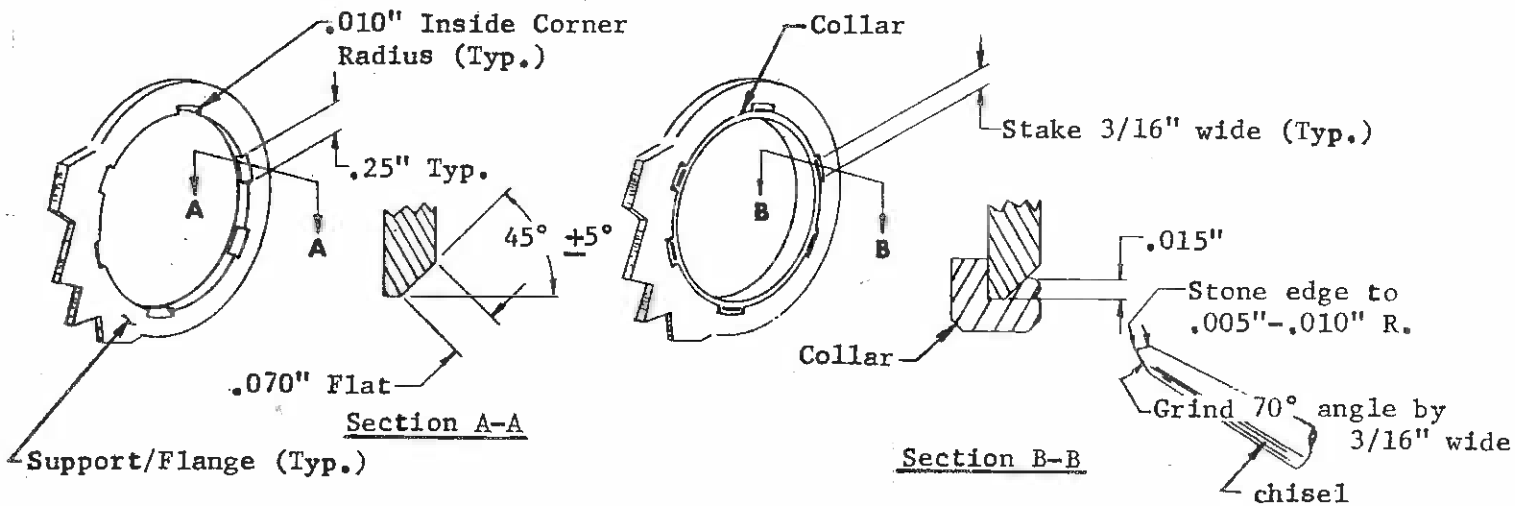
**CAUTION**

When installing the flap bellcrank horn, be sure the pin is engaged in the flap torque tube hole. This is essential for proper flap operation and rigging.

Figure 2.

Rework Instructions

Defective bearing support/flange assemblies may be satisfactorily reworked in the field by removing the assembly from the aircraft, and modifying per step 1 and step 2 of Figure 3 below:



Step 1. File 6 flats .25" wide on chamfer side of support/flange

Step 2. Install collar and stake 6 places 3/16" wide

**FIGURE 3.**

**NOTE**

After rework, before installing the bearing support/flange assembly, determine that bronze/teflon bearing liner is in satisfactory condition. If bearing liner has been removed, it must be sized out round after installation in the collar. Bearing liner inside diameter may be lightly lubricated with Grease per MIL-G-7711.

Parts Information

Bearing support/flange assemblies that cannot be satisfactorily reworked, must be removed from service and replaced per the following:

| <u>Part No.</u> | <u>Description</u> | <u>Price</u> | <u>Reference</u>     |
|-----------------|--------------------|--------------|----------------------|
| 902010-501      | Support Assembly   | \$8.13 (H)   | Figure 1, Detail "A" |
| 603077-501      | Flange Assembly    | \$6.25 (H)   | Figure 1, Detail "B" |
| 604067-501      | Support Assembly   | \$10.38 (H)  | Figure 1, Detail "C" |

Credit Allowance

Rework/Replacement

| <u>Inspection</u> | <u>Outboard Aileron Support Assembly</u> | <u>Inboard Aileron Flange and/or Flap Torque Tube Support Assembly</u> |
|-------------------|--|--|
| 1.0 hr.           | .25 hrs./support                         | .5 hours/support<br>.5 hours/flange                                    |

A labor credit, per the above schedule at the Dealer's Prevailing Shop Rate, will be available for inspecting and reworking/replacing bearings in the critical locations only, on all affected aircraft in or out of warranty.

A full parts credit will be available upon receipt at the factory of all defective bearing support/flange assemblies that cannot be satisfactorily reworked in the field.

All work must be performed or authorized by an American Aviation Corporation Dealer or representative and a completed Warranty Claim, Form AA-740 submitted to the factory prior to July 30, 1972 for credit allowance.

Prices are subject to change without notice.

*N O T E*

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