

## SERVICE BULLETIN

**Beech**

**TITLE: FLIGHT CONTROLS/STABILIZERS – AFT FUSELAGE, RUDDERVATOR, AND RELATED SYSTEMS INSPECTION FOR CONDITION**

### 1. Planning Information

#### A. Effectivity

(1) Airplanes

BEECH Bonanza Model 35, Serials D-1 through D-1500;

BEECH Bonanza Model A35, Serials D-1501 through D-2200, and D-15001;

BEECH Bonanza Model B35, Serials D-2201 through D-2680;

BEECH Bonanza Model 35R, Serials R-1 through R-14.

If you are no longer in possession of the airplane, please forward this information to the present owner.

(2) Spares

None.

#### B. Reason

The airplanes listed in EFFECTIVITY are approximately 50 years old. The FAA issued an airworthiness directive to restrict the speed of those airplanes in an effort to increase their safety. This Service Bulletin is being issued as a result of an investigation performed by the Federal Aviation Administration and Raytheon Aircraft Company to develop procedures to remove the speed restriction while maintaining the airplane in a safe condition.

This Service Bulletin provides inspecting procedures for the empennage and related portions on the airplanes listed in EFFECTIVITY conforming with Type Certificate No. A777. The procedures do reduce the upper ruddervator balance limit from 19.8 to 18 inch-pounds to increase the margin of safety for these airplanes.

This Service Bulletin does not provide relief from the requirements of Airworthiness Directive 94-20-04 (inspection of the vertical stabilizers and ruddervators), which remains in effect. The inspection schedule in this Service Bulletin is to be accomplished in addition to any other inspections or inspection schedules.

Exported under the authority of license exception: TSU. "These commodities, technology or software were exported from the United States in accordance with Export Administration Regulations. Diversion contrary to U.S. law prohibited."

Raytheon Aircraft Company (RAC) issues Service Information for the benefit of owners and fixed base operators in the form of two classes of Service Bulletins. The first class, Mandatory Service Bulletins (red border) includes changes, inspections and modifications that could affect safety or crashworthiness. RAC also issues Service Bulletins with no red border which are designated as either recommended or optional in the compliance section within the bulletin. In the case of recommended Service Bulletins, RAC feels the changes, modifications, improvements or inspections will benefit the owner/operator and although highly recommended, Recommended Service Bulletins are not considered mandatory at the time of issuance. In the case of Optional Service Bulletins, compliance with the changes, modifications, improvements or inspections is at the owner/operator's discretion. Both classes are mailed to:

- (a) RAC Authorized Service Centers.
- (b) Owners of record on the FAA Aircraft Registration Branch List and the RAC International Owner Notification/Registration Service List.
- (c) Those having a publications subscription.

Information on Owner Notification Service or subscription can be obtained through any RAC Authorized Service Center. As Mandatory Service Bulletins and Service Bulletins are issued, temporary notification in the Service Bulletin Master Index should be made until the index is revised. Warranty will be allowed only when specifically defined in the Service Bulletin and in accordance with the RAC Warranty Policy.

Unless otherwise designated, RAC Mandatory Service Bulletins, Service Bulletins and RAC Kits are approved for installation on RAC airplanes in original or RAC modified configurations only. RAC Mandatory Service Bulletins, Service Bulletins and Kits may not be compatible with airplanes modified by STC installations or modifications other than RAC approved kits.



**Raytheon** Aircraft

**Beech**  
**Hawker**

## SERVICE BULLETIN

---

### C. Description

An evaluation of the airplane's repair history is made to determine how modifications may affect flight characteristics. An inspection of the empennage, including ruddervator control surfaces, aft fuselage structure, and related components is accomplished. Ruddervator and engine/propeller balance is checked. The ruddervator control system is checked for proper cable tension, free play, wear, proper rigging, corrosion, and other conditions which might affect flight characteristics. A check balance procedure is accomplished for the ruddervator control surfaces to determine conformity to a new upper balance limit.

### D. Compliance

Raytheon Aircraft Company recommends that this inspection/modification be accomplished at the next scheduled inspection after receipt of this Service Bulletin, but no longer than the next 400 flight hours in an effort to remove the FAA mandated speed restriction.

### E. Approval

#### NOTE

Service Bulletin 27-3358, No Revision, is approved by the Manager, Wichita Aircraft Certification Office by letter dated February 11, 2000, as an Alternate Means of Compliance with AD 98-13-02, paragraph (f).

The engineering data contained in this Service Bulletin is FAA approved.

### F. Manpower

The following information is for planning purposes only:

Estimated man-hours for inspection: 40 hours.

Estimated man-hours for modification: 12 hours.

Suggested number of men: 1 man.

The above is an estimate based on experienced, properly equipped personnel complying with this Service Bulletin. Occasionally, after work has started, conditions may be found which could result in additional man-hours.

### G. Weight and Balance

The weight and balance information for each airplane modified in accordance with this Service Bulletin must be adjusted as follows:

#### NOTE

A change to the airplane weight and balance will be dependent upon the total Ruddervator(s) balance weight added or removed, per paragraph 3.1.(8). Use the formula:  $WEIGHT\ CHANGE \times H-ARM = H-MOMENT$  to determine the airplane weight and balance change. Refer to the following table.

Weight (lbs.)	H-Arm (in.)	H-Moment (lb.-in.)
Weight Change (X)	270	Moment Change

## SERVICE BULLETIN

---

Apply the weight and H-Moment changes to the current airplane Basic Empty Weight and H-Moment values. Divide the new airplane H-Moment by the new airplane weight to determine the new airplane center of gravity.

It is the responsibility of the owner/operator to maintain compliance with the applicable Airworthiness Regulations.

### H. Electrical Load Data

Not changed.

### I. Software Accomplishment Summary

Not applicable.

### J. References

BEEHCRAFT 35 Shop Manual, P/N 36-590096B19 or subsequent revision, Sections 2, 3, 4, 7 and 8;  
BEEHCRAFT Bonanza Illustrated Parts Catalog, P/N 35-590028B4 or subsequent revision, Figure 12;  
BEEHCRAFT Mandatory Service Bulletin No. 2605;  
BEEHCRAFT Service Bulletin No. A35-8;  
BEEHCRAFT Service Bulletin No. 35-26.

### K. Publications Affected

It is recommended that a note "See Service Bulletin No. 27-3358 or subsequent revision" be made in the following:

BEECH BONANZA Series Shop Manual, P/N 35-590096B19 or subsequent revision, Sections 2, 3, 4, 7, and 8;

BEEHCRAFT Bonanza Illustrated Parts Catalog, P/N 35-590028B4 or subsequent revision, Figure 12.

### L. Interchangeability of Parts

Not applicable.

### M. Warranty Credit

None.

## 2. Material Information

### A. Materials – Price and Availability.

Contact a Raytheon Aircraft Authorized Service Center for information.

### B. Industry Support

Not applicable.

### C. Airplanes

The following parts required for accomplishment may be ordered through a Raytheon Aircraft Authorized Service Center or RAPID:

## SERVICE BULLETIN

---

**WARNING**

**Maximum weight of the elevator counter balance weight assembly, including any combination of P/N 35-660040-40 or 35-660040-67 counter balance weights and P/N 35-660042-1 and 35-660042-3 elevator balance weight adjustment washers and P/N 183809 lead washer adjustment weights, is 4.55 pounds.**

Part Number	Description	Quantity Per Airplane
• 35-660042-1	Adjustment Washer, Balance Weight, Elevator (approximately 0.05 lb. each)	As Required
• 35-660042-3	Adjustment Washer, Balance Weight, Elevator (approximately 0.05 lb. each)	As Required
35-660040-40	Weight, Counter Balance, Elevator (2.73-2.83 lbs.)	1 per Elevator
▪ 35-660040-67	Weight, Counter Balance, Elevator (3.80-4.00 lbs.)	1 per Elevator
◆ 183809	Lead Washer	As Required

- Use no more than three P/N 35-660042-1 balance weight adjustment washers on the inboard screw of the P/N 35-660040 elevator counter balance weight and no more than three P/N 35-660042-3 balance weight adjustment washers on the outboard screw of the P/N 35-660040 elevator counter balance weight. If an odd number of balance weight adjustment washers is required to obtain balance, install the larger number of balance weight adjustment washers on the inboard screw. Refer to the airplane Shop Manual, Section 3.
- Use the 1.12-lb. heavier P/N 35-660040-67 Elevator Counter Balance Weight as spares for P/N 35-660040 Elevator Counter Balance Weight to meet underbalance requirements.
- ◆ Use no more than eleven P/N 183809 lead washers to balance the elevator. Install no more than three lead washers on the outboard screw of the elevator counter balance weight assembly. Install no more than four lead washers on the center screw of the elevator counter balance weight assembly. Install no more than four lead washers on the inboard screw of the elevator counter balance weight assembly. If six lead washers are used, do not use the center screw. Install four lead washers on the inboard screw and two on the outboard screw. If fewer than six lead washers are used, do not use the center screw and distribute lead washers such that the larger number of balance weight lead washers are installed on the inboard screw. Refer to the airplane Shop Manual, Section 3.

Raytheon Aircraft Company expressly reserves the right to supersede, cancel and/or declare obsolete, without prior notice, any parts or publications that may be referenced in this Service Bulletin.

## SERVICE BULLETIN

The following materials may be obtained locally:

Part Number	Description	Quantity Per Airplane
MIL-T-23397, Type II	Masking Tape	As Required
A-A-2577 or A-A-50878A	Paper Cups, Disposable	As Required
A-A-1491	Cotton Cheesecloth	As Required
DOD-R-003081	Wiping Rags	As Required
DSTAN 68.17, GOST 28959-91 or JAN-A-183	Nitric Acid (5% Solution)	As Required

**D. Spares**

None.

**E. Tooling – Price and Availability**

Part Number	Description	Quantity	Price
Vibrex 2000 or 8500 (Part Number of Chadwick-Helmuth Co., Inc., 4601 N. Arden Dr., El Monte, CA 91731, Telephone 626-575-6161)	Dynamic Propeller Balancer/Analyzer	1	Contact Vendor for Pricing Information
Sonic 1200 (Part Number of Staveley Instruments, Inc., 421 N. Quay Street, Kennewick, WA 99336, Telephone 509-735-7550)	Digital Ultrasonic Skin Tester	1	Contact Vendor for Pricing Information

**3. Accomplishment Instructions**

This Service Bulletin shall be accomplished as follows:

**NOTE**

Should any difficulty be encountered in accomplishing this Service Bulletin, contact Raytheon Aircraft Company 1-800-429-5372 or 316-676-3140.

## SERVICE BULLETIN

---

### A. Airplane

<b>WARNING</b>
----------------

Observe all Warnings and Cautions contained in the aircraft manuals referred to in this Service Bulletin.

Whenever any part of this system is dismantled, adjusted, repaired or renewed, detailed investigation must be made on completion to make sure that distortion, tools, rags or any other loose articles or foreign matter that could impede the free movement and safe operation of the system are not present, and that the systems and installations in the work area are clean.

<b>WARNING</b>
----------------

This Service Bulletin applies to each airplane identified in the EFFECTIVITY section, regardless of whether it has been modified, altered, or repaired prior to installation of Service Bulletin parts. If the airplane has been modified, altered, or repaired, received an owner modification, or modified by Supplemental Type Certification (STC), contact a Designated Engineering Representative (DER) or owner of the STC to determine whether those are all compatible with each other and the basic Type Certificate.

### NOTE

The term "elevator" is used in several instances within this Service Bulletin. The ruddervator flight control system incorporates the function of both a rudder and elevator system, therefore, references to elevator are actually intended to signify the ruddervator flight control system.

- (1) Review all airplane logbooks and 337 forms and inspect the airplane to ensure it conforms to Type Certificate No. A777 by confirming it is in original condition. If the airplane has been modified, altered, or repaired, received parts produced by an owner/operator or been modified by Supplemental Type Certificate(s) (STC)(s), contact a Structures Designated Engineering Representative (DER) and owner(s) of the STC(s) to determine whether those are all compatible with each other and the original condition/Type Certificate.
- (2) Any parts for which compatibility was not found in step (1) above, must be removed or replaced with compatible parts.
- (3) Remove all power from the airplane and disconnect the battery. Display warning notices prohibiting reconnection of airplane electrical power.

## SERVICE BULLETIN

---

- (4) Open appropriate doors and access panels, as necessary, to gain access to the inspection/work area. Remove the tail cone assembly to gain access to the Station 272 bulkhead. Remove interior components, as necessary, to gain access to aft fuselage inspection areas and the Station 256.9 and Station 246.3 bulkhead assemblies. Refer to the airplane Shop Manual.
- (5) Perform an inspection of the empennage and aft fuselage assembly prior to removing the ruddervator control surfaces. Accomplish the following:
  - (a) Inspect the airplane's empennage control cable system, including the elevator system, rudder system, and elevator trim tab system. Repair or replace any condition found. Perform the following:
    - (i) Inspect for proper routing of control cables. Refer to the airplane Shop Manual.
    - (ii) Inspect for proper control cable tension. Refer to the airplane Shop Manual.
    - (iii) Inspect for condition and wear of attaching hardware, especially for corrosion, damage, and incorrect or missing parts. Refer to the airplane Shop Manual and Parts Catalog and replace any missing, corroded, or damaged parts.
    - (iv) Inspect for disconnected and/or damaged pulleys, bellcranks, and horns.

### NOTE

Set travels on elevators and elevator trim tabs using a travel board in accordance with procedures in the airplane Shop Manual. Do not use a protractor.

- (v) Inspect elevator surfaces for freedom of movement and alignment.
- (vi) Inspect elevator attachment points and push-pull rods for bearing condition, free play, and proper bolt torque.
- (vii) Inspect ruddervator trim tab and hinge pin for proper threading.
- (viii) Inspect for cracks on the trim tab hinge support channel.
- (ix) Inspect drain holes to ensure they are open and clean. Make sure there is no internal build-up of dirt, oily films, water, ice, and other contaminants that can result in weight build-up and can promote corrosion.
- (x) Inspect the stabilizer front and rear spar attachment points for cracks, corrosion, deformation, and loose or missing fasteners.
- (xi) Inspect for presence and condition of rubber extrusion at the aft fuselage/stabilizer junction. Check for cracks, deterioration, and proper adhesion of the rubber extrusion. Rebond rubber extrusions in serviceable condition. Replace cracked or damaged rubber extrusions.
- (xii) Inspect for corrosion by visually inspecting exterior and interior surfaces of the aft fuselage, elevators, stabilizers and components thereof. Check for evidence of any gray or whitish salt-like non-metallic substance. This is indicative of the residue of corrosion. Check painted surfaces for paint blisters, raised areas, unevenness and/or cracks in the paint or metal. If any evidence of corrosion is detected during visual inspection, check the area closely for pitting, metal degradation, and metal delamination. Any of the above-listed corrosion conditions is cause for replacement of parts.
- (xiii) Inspect for corrosion on bolts and other steel parts. Red or black oxide or dust buildup, often accompanied by a red stain, is an indication of steel corrosion. Parts should be cleaned and examined further. If the corrosion is present, replace parts as needed.

## SERVICE BULLETIN

---

- (xiv) Inspect elevator and trim tab control cables for broken wires, wear, and corrosion. Visually inspect for frayed strands and a buildup of gray, whitish, or red residue on control cables surfaces. Use a rag to wipe down the cable. Inspect for snags indicating broken strands. If strands are broken, pitted, or if the cable cross-section is reduced, replace the cables. Inspect condition of pulleys, pulley brackets, and attaching hardware. Check for binding and rubbing on the insulation and on the underside of floorboards. Make sure control cables are not contacting or cutting insulation and damaging adjacent parts.
  
- (b) Inspect for wrinkles and cracks on the aft fuselage skin (inside and outside) and stringers. Repair or replace any condition found. Accomplish the following:
  - (i) Inspect for diagonal wrinkles and/or tears on both sides between the FS 233.5, FS 256.9, and FS 272.0 bulkheads.
  - (ii) Inspect for bi-directional (X-shaped) wrinkles on the lower aft fuselage between FS 207.0, FS 233.5 and FS 256.9 bulkheads.
  - (iii) Inspect for wrinkles in the upper skin between both stabilizer front spar attachments.
  - (iv) Inspect skin thickness using an ultrasound skin gage tester. The minimum skin thickness should be 0.018 inch thick. Refer to TOOLING for ultrasound skin gage tester information.
  - (v) Inspect for improper repairs such as missing stringers, skin doublers, etc.
  - (vi) Inspect for any repairs or modifications in the form of skin patches, air skegs, air ducts, antennas, doors, etc. Inspect for loose or missing rivets.
  
- (c) Inspect for cracks and buckling on the aft fuselage bulkheads. Repair or replace any condition found. Accomplish the following:
  - (i) Inspect for any cracks or distortion of the FS 233.5, FS 256.9, and FS 272.0 bulkheads.
  - (ii) Inspect for pre-existing damage. Examples include old and/or dirty fracture surfaces, improper repairs, etc.
  - (iii) Inspect for presence of a U-shaped stiffener at FS 256.9 bulkhead on A35, B35, and 35R airplanes.

### NOTE

Model 35 Bonanza airplanes did not have an added stiffener of this type.

- (iv) Check bulkhead thicknesses. Refer to the airplane Shop Manual, Section 2.
- (d) Inspect for damage to stabilizers. Repair or replace any condition found. Accomplish the following:

<b>CAUTION</b>
----------------

*Do not apply heavy loads on the end of the stabilizers when checking for secure spar attachments, as the FS 256.9 bulkhead may be further damaged. Torsional loads in the fuselage are created, for example, if the stabilizer is used as a long lever arm during ground handling. Damage to the airplane may result.*

- (i) Inspect for security of attachment of the stabilizer front and rear spars to the FS 256.9 and FS 272.0 bulkheads.
- (ii) Inspect for diagonal skin buckling (oriented from aft outboard to forward inboard) on the upper and lower surfaces, just forward of the ruddervator center and outboard hinge. Inspect elevator outboard hinge assembly, including elevator attachment hardware, for cracks, deformation, wear, and loose or missing fasteners. Replace damaged parts.



## SERVICE BULLETIN

---

- (iii) Inspect for stabilizer trailing edge deformation between the ruddervator center and outboard hinges.
- (e) Inspect for ruddervator damage. Repair or replace any condition found. Accomplish the following:
  - (i) Inspect for repairs and modifications (e.g. static wicks).
  - (ii) Inspect for trailing edge up or down twisting. Removal of the ruddervator may be necessary to obtain a clear determination of a twist.
  - (iii) Inspect ruddervator counterbalance assemblies for secure attachment, any up or down leading edge deformation, and a faint spanwise crease just forward or aft of attachment screws.
  - (iv) Inspect hinges for radial wear (not to exceed 0.001 inch), axial wear (not to exceed 0.025 inch), and proper hardware installation.
  - (v) Inspect for cracks on the elevator trim tab hinge support channel.
  - (vi) Inspect counter balance horn for cracks, corrosion, and loose or missing fasteners. Repair or replace damaged parts.
  - (vii) Inspect for proper skin thickness. Minimum skin thickness should be 0.018 inch thick. Use a digital ultrasonic skin tester. Refer to TOOLING for tester information.
- (f) Inspect for damage to the elevator trim tabs. Repair or replace any condition found. Accomplish the following:

### WARNING

**On Model A35 Bonanza airplanes (Serials D-1501 through D-2200) which have complied with Service Bulletin No. A35-8, a ruddervator tab, cambered on the bottom, may have been installed. This modification, a difference from Model 35 airplanes, provides an aerodynamic load on elevator surfaces in a downward direction when flying at speed. Owners of airplanes that did not comply with Service Bulletin No. A35-8 may have to adjust the center of gravity (cg) limit forward from 85.4 to 84.4. This will result in a reduction in baggage carrying capability of approximately 45 pounds.**

- (i) Inspect for trailing edge movement without the control cables removed.
- (ii) Inspect for proper threading of the trim tab hinge.
- (iii) Inspect for trim tab movement perpendicular to the hinge line (forward and aft, as well as up and down).

### WARNING

**If edge distance on the elevator tab horn MS20470AD3 rivets is short, the tab horn may separate from the control surface, resulting in loss of rudder control.**

- (iv) Inspect for presence of two rivets securing each trim tab bracket to the actuating horn to confirm compliance with Service Bulletin No. 2605. Refer to Figure 1 and inspect for minimum aft rivet edge distance at each of the two rivets closest to the actuator cable attach points on the actuating horn using the following table:

## SERVICE BULLETIN

TABLE 1

MODEL	PART	BJ-3 RIVETS MINIMUM EDGE DISTANCE	BJ-4 RIVETS MINIMUM EDGE DISTANCE
• 35	Magnesium Horn	0.11	0.13
• 35	Aluminum Horn	0.05	0.063
A35	Aluminum Horn	0.05	0.063
B35	Aluminum Horn	0.05	0.063

- Model 35R airplanes are covered under the Model 35 effectivity.

### NOTE

Maintenance personnel should review the entire list of materials and tools, as these items may not be immediately available unless the airplane is near a well-outfitted Fixed Base Operation (FBO).

- (6) Locate necessary shop aids and tools necessary to accomplish removal and balancing of the ruddervators using a force measurement method. Recommended tools are as follows:
- (a) A current and updated copy of the applicable airplane Shop Manual.
  - (b) #2 Phillips and flat-head screwdrivers.
  - (c) Long-nose pliers and wire cutter.
  - (d) A ¼-inch drive socket and ratchet set with extensions.
  - (e) Masking tape to mark trim tab cables. Refer to CONSUMABLE MATERIALS listing.
  - (f) Disposable paper cups for temporary storage of hardware and small parts. Refer to CONSUMABLE MATERIALS listing.
  - (g) Triple beam balance scale with certification less than one year old.
  - (h) Two knife-edge supports. Local manufacture from aluminum angle material is permissible.
  - (i) Two C-clamps for securing the knife-edge supports.
  - (j) A 24-inch straight-edge/ruler or equivalent.
  - (k) Spirit level.

**WARNING**

**Many modifications to the airframe and flight control surfaces may affect vibration characteristics. Even rework as minor as paint touch-up can alter control surface balance. Any modification to a control surface must be followed by flight control removal and rebalancing.**

- (7) Perform the following empennage inspection after removing the ruddervators:
- (a) Inspect for dirt, insect nests, water accumulation, etc., inside the elevator (ruddervator).
  - (b) Weigh each elevator (ruddervator) assembly, including the elevator trim tab.
  - (c) Remove and weigh the P/N 35-660040-40 or 35-660040-67 Elevator Balance Weight and the elevator (ruddervator) counterweight assembly, including the attaching skin.

## SERVICE BULLETIN

---

- (d) Refer to the bulleted notes following step 2 C of MATERIAL INFORMATION table and record the number of P/N 183809 lead washers, P/N 35-660042-1 Balance Weight Adjustment Washers, and 35-660042-3 Balance Weight Adjustment Washers used on the P/N 35-660040-40 or 35-660040-67 Elevator Counter Balance Weight in the airplane log book. Refer to the airplane Shop Manual.
- (e) Inspect for unapproved weights (e.g. lead bars or other substitute weights bolted to or otherwise attached to the lead balance weight).

<b>WARNING</b>
----------------

**Repair is only authorized for magnesium skin. If the skin is aluminum, replace.**

- (f) Make log book entries that note the ruddervator static underbalance, moments, and the balance method used. Determine if the ruddervator skin is an approved magnesium or an unapproved aluminum, using the following procedures.

### NOTE

If the counterweight required to sufficiently balance the ruddervator is no more than four pounds, the skin is NOT aluminum. Aluminum is about 50% heavier than magnesium; therefore, the counterweight would have to be about 1.5 times heavier with an aluminum skin.

- (i) Apply a 5% nitric acid solution to the bare metal surface area of the skin.
- (ii) Wait one to three minutes reaction time to determine if there is a color change. Magnesium surfaces will turn a black color. No color change will occur on aluminum skin.
- (iii) Rinse the nitric acid solution from the surface with clean water. Wipe dry with clean, cotton cheesecloth or a clean wiping rag.

<b>WARNING</b>
----------------

**Do not use more than three P/N 35-660042-1 or 35-660042-3 elevator balance weight adjustment washers on any P/N AN520-10-36 screw (total of six adjustment washers per elevator). Install 35-660042-1 elevator balance weight adjustment washers on the inboard screw only. Install 35-660042-3 elevator balance weight adjustment washers on the outboard screw only. Do not use more than eleven P/N 183809 lead washers per elevator balance weight. Distribute balance weight lead washers evenly and install the larger number of balance weight lead washers on the inboard screw. If six lead washers are used, secure four lead washers with the inboard screw and two on the outboard screw. Do not use the center screw.**

## SERVICE BULLETIN

---

- (8) Remove the ruddervator flight control surface(s). Refer to the airplane Shop Manual. Check for an underbalance condition. Using a P/N 35-660040-40 or 35-660040-67 elevator counter balance weight, and if necessary, additional P/N 183809 lead weight washers and/or P/N 35-660042-1 and/or 35-660042-3 elevator balance weight adjustment washers to achieve a balance range of 16.8 to 18.0 inch-pounds. Refer to the airplane Shop Manual and Service Bulletin No. 35-26.
- (9) Perform a ruddervator control surface balance check in accordance with the airplane Shop Manual and tools listed in this Service Bulletin. If the control surface cannot be balanced after accomplishing weight adjustments, including addition or removal of balance weight(s), balance weight adjustment washers, and stripping and repainting of the control surface, it may be necessary to replace the control surface. Refer to the airplane Shop Manual.
- (10) Check for any approved or unapproved modifications to the airplane. (e.g. replaced or repaired aft fuselage assembly, improper engine/propeller combinations, etc.) Inspect the engine for condition and security. Repair or replace any condition found.
- (11) Check engine mount hardware for condition, security, and proper installation. Refer to the airplane Shop Manual. Replace any hardware if any condition is found.
- (12) Inspect the propeller and hub for condition and security. Inspect propeller blade tips for evidence of lightning strikes. If damage from lightning strikes is suspected, consult the engine manufacturer and Raytheon Aircraft for disposition. Inspect propeller blades for cracks, dents, nicks, scratches, erosion, corrosion, security, and movement in the hub. Balance the propeller in accordance with Chadwick-Helmuth Dynamic Propeller Balancer/Analyzer procedures. Refer to TOOLING for tooling vendor information.
- (13) Close any doors and access panels that were opened or removed to gain access to inspection/work areas.
- (14) Reconnect the airplane battery, remove warning notices and restore power.
- (15) Perform an on-ground operational test of the reworked control surfaces and propellers, as applicable, to ensure proper functioning.
- (16) Insure all work areas are clean and clear of tools and miscellaneous items of equipment.
- (17) Perform a check flight, as required.
- (18) Return airplane to service.

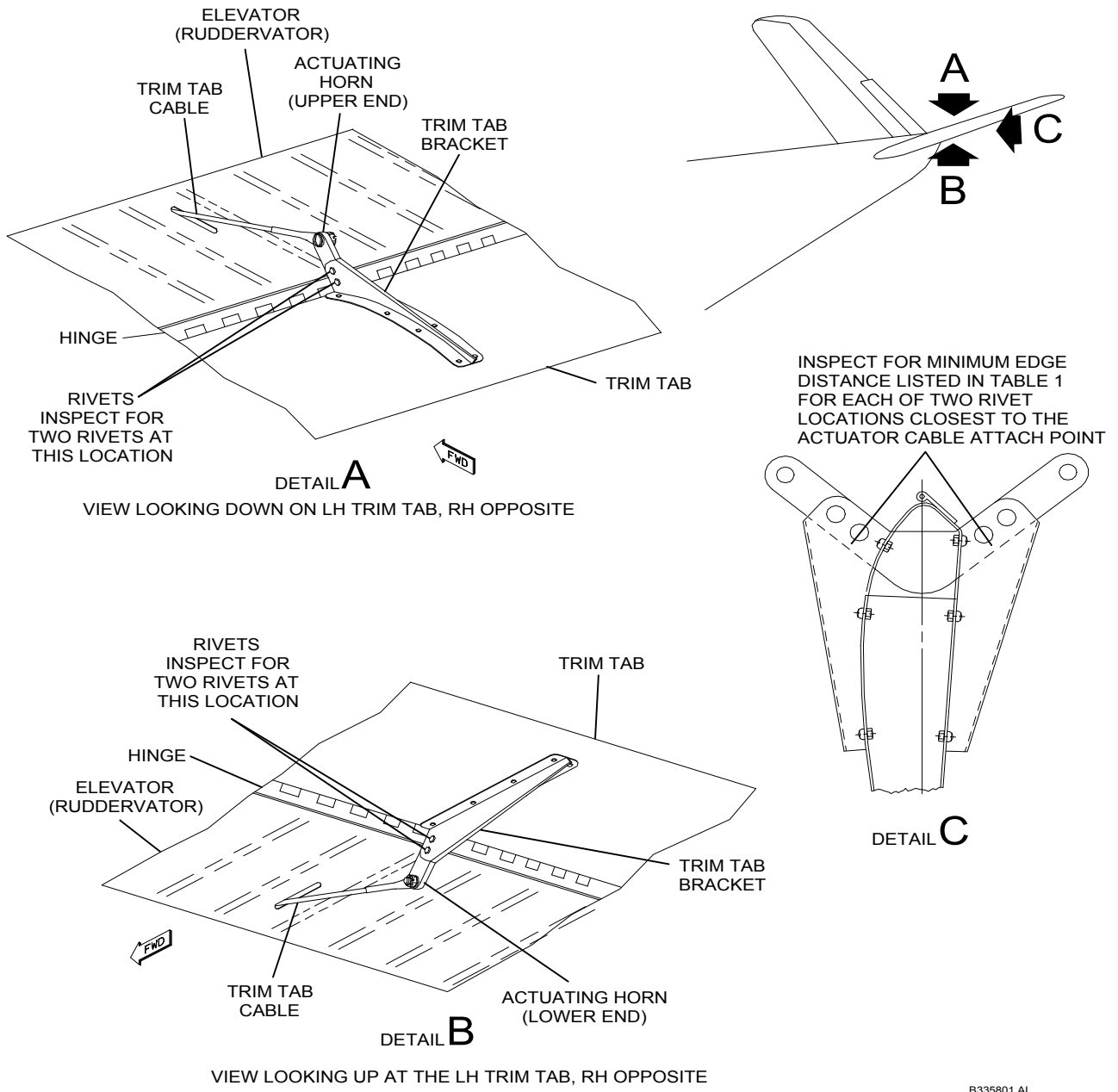
### **B. Spares**

Not applicable.

### **C. Record of Compliance**

Upon completion of this Service Bulletin, make an appropriate maintenance record entry.

# SERVICE BULLETIN



B335801.AI

**Elevator Trim Tab Bracket Aft Rivet Edge Distance Inspection**  
**Figure 1**