

SERVICE BULLETIN

TITLE: FLIGHT CONTROLS - CONTROL COLUMN HARDWARE REPLACEMENT

1. Planning Information

A. Effectivity

(1) Airplanes

Model A36 Bonanza, Serials E-2104, E-2111 through E-3629, and E-3631 through E-3635;

Model G36 Bonanza, Serials E-3630, and E-3636 through E-4049;

Model B36TC Bonanza, Serials EA-320, and EA-389 through EA-695;

Model 58 Baron, Serials TH-1389, and TH-1396 through TH-2124;

Model G58 Baron, Serials TH-2125 through TH-2430;

Model 58TC Baron, Serials TK-147 and TK-151;

Model 58P Baron, Serials TJ-436, and TJ-444 through TJ-497.

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

(2) Spares

None.

B. Reason

This Service Bulletin is being issued because Beechcraft Corporation (BC) has received two (2) reports of control column binding. One report was found on preflight and the other was found during landing. It was subsequently determined that both incidents were the result of hardware binding in the pilot's control column.

C. Description

This Service Bulletin provides instructions to install a new hardware configuration in the pilot's control column.

D. Compliance

An Airworthiness Directive will be requested on the matter covered by this Service Bulletin.

Beechcraft Corporation considers this to be a Mandatory Service Bulletin. It must be accomplished no later than 100 flight hours or 12 months from issuance of this Service Bulletin, whichever occurs first.

The export of these commodities, technology or software are subject to the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited. For guidance on export control requirements, contact the Commerce Department's Bureau of Export Administration at <http://www.bis.doc.gov>.

Beechcraft Corporation (BC) 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, inspection and modifications that could affect safety or crashworthiness. BC 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, BC 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 available on the web at <http://pubs.beechcraft.com> and mailed to:

- (a) Owners of record on the FAA Aircraft Registration Branch List and the BC Safety of Flight Information (SOFI) List.
- (b) Those having a publications subscription.

Information on Safety of Flight Information (SOFI) or subscription can be obtained through the Beechcraft Corporation Technical Manual Distribution Center (TMDC). As Mandatory Service Bulletins and Service Bulletins are issued, the Service Bulletin Master Index will be updated and available online at <http://pubs.beechcraft.com>. Warranty will be allowed only when specifically defined in the Service Bulletin and in accordance with BC Warranty Policy.

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

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E. Approval

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

This modification is classified Level 2 Major per FAA Order 8110.52.

Prior to accomplishment, owners/operators of airplanes registered in countries other than the United States shall consult with their local Aviation Regulatory Authority.

F. Manpower

The following information is for planning purposes only:

Estimated man-hours: 3 hours

Suggested number of technicians: 1

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

G. Weight and Balance

Negligible.

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

H. Electrical Load Data

No change.

I. Software Accomplishment Summary

Not applicable.

J. References

Bonanza Maintenance Manual (MM), P/N 36-590001-9C8 or subsequent revision, Chapter 27;

Baron Maintenance Manual (MM), P/N 55-590000-13G8 or subsequent revision, Chapter 27.

Reference Mandatory Service Bulletin 27-4136 video on the internet:



<http://textron.vo.llnwd.net/o25/CES/CustomerService/SB27-4136/SB27-4136.html>

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K. Publications Affected

It is recommended that a note, "See Service Bulletin 27-4136," be made in the appropriate chapter of the applicable Illustrated Parts Catalog.

L. Interchangeability of Parts

Not applicable.

M. Warranty Credit

Warranty credit for labor and parts to the extent noted under MANPOWER and MATERIAL will be allowed on all airplanes meeting all the following criteria:

- (1) Airplane owners must have active Standard Warranty coverage and/or an active Beechcraft Maintenance program with applicable Service Bulletin coverage for the subject airplane when the Service Bulletin is issued.
- (2) Standard Warranty coverage and/or Beechcraft Maintenance Program must be active for the subject airplane on the day the work is accomplished.
- (3) The work shall be accomplished in accordance with the criteria defined in Paragraph 1.D., COMPLIANCE.
- (4) The work shall be accomplished in accordance with criteria defined in Paragraph 3, ACCOMPLISHMENT INSTRUCTIONS.
- (5) The work shall be accomplished at Hawker Beechcraft Services or an Authorized Service Center (ASC) rated to perform maintenance on the specific model of Beechcraft airplane.
- (6) While work shall be accomplished in accordance with the criteria defined in Paragraph 1.D, COMPLIANCE, warranty coverage offered in this Service Bulletin will expire 12 months from the last day of the month this Service Bulletin is issued. After this date, the owner/operator assumes the responsibility for compliance cost.
- (7) Claims for compliance with this Service Bulletin (SB) are to be filed as a W3-type claim against SB 27-4136.
- (8) After the Service Bulletin has been accomplished, a warranty claim must be submitted to BC within 60 days of the Service Bulletin completion date.

Beechcraft Corporation reserves the right to void continued airplane warranty coverage in the area affected by this Service Bulletin until the date the Service Bulletin is accomplished.

The owner/operator should contact Hawker Beechcraft Services or an Authorized Service Center (ASC) to schedule the warranty work to be accomplished. Hawker Beechcraft Services or an Authorized Service Center (ASC) must submit the appropriate paperwork directly to the Beechcraft Warranty Department for warranty consideration.

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2. Material Information

A. Materials - Price and Availability

Contact information:

Hawker Beechcraft Parts & Distribution (HBP&D)

7121 Southwest Boulevard

Wichita, KS 67215

USA

Phone: 316-676-3100 or 1-888-727-4344

Fax: 316-676-3222 or 316-676-3327

E-mail: parts@beechcraft.com

B. Industry Support

Not applicable.

C. Airplanes

The following parts required for accomplishment of this Service Bulletin may be ordered through Hawker Beechcraft Services, an Authorized Service Center (ASC), HBP&D, or obtained locally:

Part Number	Description	Quantity Per Airplane
36-524024-21	Tube Cover	1
60-524101-7	Guide	1
60-524101-9	Bushing	1
MS35338-44	Washer	1
MS35335-33	Lock Washer	2
MS35335-35	Washer	1
36-524091-15 (Bonanza)	Spacer	As Required
36-524091-17 (Baron)	Spacer	As Required
AN4-24A (Baron)	Bolt	1
AN4-14A (Bonanza) or 130909B45	Bolt	1
MS20470AD5-X*	Rivet	8

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Part Number	Description	Quantity Per Airplane
Alodine 1200, 1200S, 1201 or 1132 (MIL-PRF-81706 in accordance with MIL-C-5541)	Chemical Conversion Coating	As Required
Loctite 495	Cyanoacrylate Adhesive	As Required
*Grip length as required.		

Beechcraft Corporation 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.

D. Spares

Not applicable.

E. Reidentified Parts

None.

F. Tooling - Price and Availability

Not applicable.

3. Accomplishment Instructions

This Service Bulletin shall be accomplished as follows:

NOTE

Should any difficulty be encountered in accomplishing this Service Bulletin, contact Beechcraft Corporation at 1-800-429-5372 or 316-676-3140.

WARNING

Observe all Warnings and Cautions contained in the airplane manuals referenced 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.

A. Airplane

- (1) Remove all power from the airplane and disconnect the battery. Display warning notices prohibiting reconnection of airplane electrical power.

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- (2) In the cockpit, locate the pilot's control wheel and control column. Refer to Figures 1, 2 and 3, as necessary in the following Steps (2)(a) through (2)(i).

NOTE

Unless otherwise noted, items that are removed in the following steps shall be retained for later use.

- (a) Remove the pilot's control wheel from the control column.
- (b) Remove the control column tube cover (heat shrink).
- (c) Drill out eight (8) rivets that are attaching the control wheel adapter to the control column. Refer to Figure 2.
- (d) Mark the orientation of the adapter on the control column prior to removing the adapter. Remove the adapter.
- (e) Ensure the control column is clear of metal shavings, fasteners, and other loose material.

WARNING

Chemical conversion coating may affect skin, eyes and respiratory tract. Chemical goggles and neoprene gloves will be worn. Use in a well-ventilated area.

- (f) Apply chemical conversion coating to bare metal surfaces. Allow adequate drying time following application of chemical conversion coating.
 - (g) Remove bolt P/N AN4-24A (Baron) or bolt P/N AN4-14A (Bonanza), from the center of the control column. Refer to Figure 1.
 - (h) Remove the following items from the bolt:
 - Washer P/N AN960-416. Discard washer.
 - Guide assembly P/N 60-524101-0005. Discard guide assembly.
 - Washer P/N NAS1149F0463P. Discard washer.
 - Spacer P/N 36-524091-15 (Bonanza) or P/N 36-524091-17 (Baron). **Retain the spacer.**
 - (i) Discard the bolt.
- (3) Refer to Figures 1 through 4 and reassemble the control column as follows:
- (a) Place new bushing P/N 60-524101-9 on hard surface.
 - (b) Place new guide P/N 60-524101-7 over top of bushing and press down to install bushing in guide.
 - (c) Adjust bushing position by pushing in or out so that the bushing protrudes 0.030-inch to 0.040-inch from the guide.

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NOTE

Installing bushing P/N 60-524101-9 in guide P/N 60-524101-7 creates guide assembly P/N 60-524101-5.

- (d) With the protruding side of the bushing facing up, place new washer P/N MS35335-35 over the bushing and apply one (1) small drop of Loctite 495 (or equivalent) to one of the teeth of the washer. Remove any excess adhesive and wait for adhesive to cure before installing guide to the new bolt in the following steps.
- (e) For Baron airplanes, install new washer, P/N MS35338-44, on new bolt, P/N AN4-24A. For Bonanza airplanes, install new washer P/N MS35338-44, on new bolt P/N AN4-14A (or equivalent).
- (f) For Baron airplanes, install retained spacer P/N 36-524091-17, on the bolt, next to the washer that was installed in Step (3)(e). For Bonanza airplanes, install retained spacer P/N 36-524091-15, on the bolt, next to the washer that was installed in Step (3)(e).

NOTE

The rest of the following steps apply to Baron and Bonanza airplanes.

- (g) Install two (2) new lock washers, P/N MS35335-33, on the bolt, next to the spacer that was installed in Step (3)(f).
- (h) When adhesive that was applied in Step (3)(d) has properly cured, install guide assembly on the bolt, with P/N MS35335-35 washer on the opposite side of the guide from the P/N MS35335-33 washers.
- (i) Insert the bolt, which contains the grouping of parts installed in Steps (3)(e) through (3)(h), into the center of the control column as follows:
 - (i) Insert a portion of a tongue depressor, or similar tool, under the torque shaft to elevate it so that the nutplate hole is in the middle of the control column tube, to allow the bolt to be threaded into the nutplate. Access to elevate the torque shaft is also possible through the gust lock hole in the control column.
 - (ii) When the bolt is partially threaded into the nutplate, rotate the tongue depressor and guide assembly so that one of the flats of the guide assembly is at the bottom of the control column. Refer to Figure 4.
 - (iii) Leave the tongue depressor in place to hold the guide assembly in position during the process of torquing the bolt to 50-70 inch-pounds over the free running bolt torque.
 - (iv) Remove the tongue depressor after bolt has been torqued to 50-70 inch-pounds.
 - (v) Check for smooth fore and aft control column movement.

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- (j) Install a new tube cover, P/N 36-524024-21, on control column. Leave control column rivet holes uncovered. Refer to Figure 3.
- (k) Using eight (8) new rivets, P/N MS20470AD5-X*, install the adapter to the control column.
- (l) Slide the new tube cover that was installed in Step (3)(j) over rivet heads and heat shrink to fit.
- (m) Verify that a minimum of 0.06-inch gap exists between the aft face of the P/N 36-524091 spacer and the forward face of the control column adaptor at the full nose down column position. If the gap is less than 0.06-inch from the spacer to the control column adaptor, perform rigging of the control column neutral position per Maintenance Manual Chapter 27.
- (n) Install the pilot's control wheel to the control column.
- (4) Reconnect the airplane battery, remove warning notices, and restore power.
- (5) Check for full smooth control column movement in both pitch and roll and verify proper direction of control surface movement.
- (6) Ensure all work areas are clean and clear of tools and miscellaneous items of equipment.
- (7) Return airplane to service.

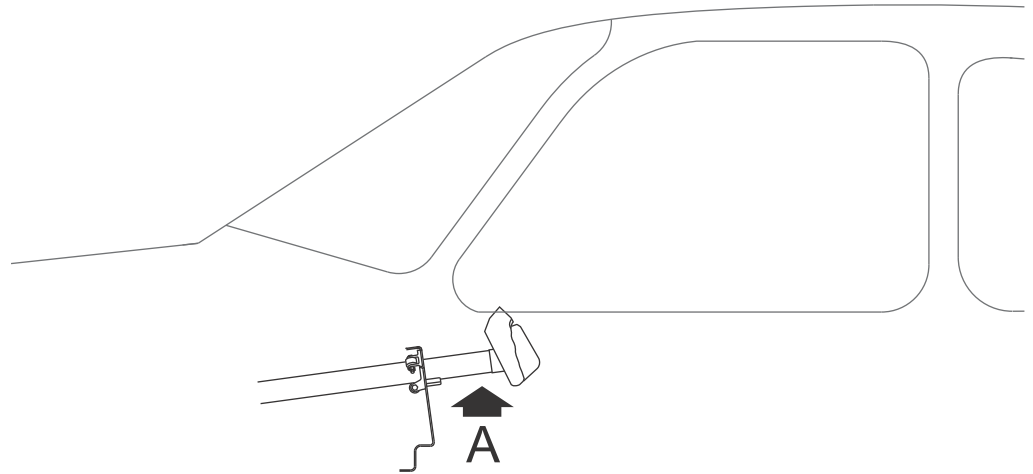
B. Spares

Not applicable.

C. Record of Compliance

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

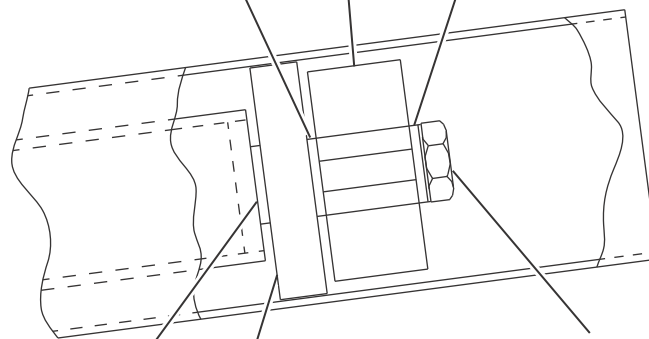
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INSTALL 36-524091-15 SPACER, APPLICABLE TO BONANZA
INSTALL 36-524091-17 SPACER, APPLICABLE TO BARON

REMOVE AN960-416 WASHER
INSTALL MS35338-44 WASHER

INSTALL 2 MS35335-33 LOCK WASHERS



REMOVE AN960-416 WASHER
INSTALL MS35335-35 LOCK WASHER

REMOVE EXISTING AN4-24A BOLT
INSTALL NEW AN4-24A BOLT, APPLICABLE TO BARON
REMOVE EXISTING AN4-14A BOLT
INSTALL NEW AN4-14A BOLT, APPLICABLE TO BONANZA
TORQUE BOLT 50-70 IN-LBS

60-524101-5
INSTALL NEW GUIDE ASSEMBLY

DETAIL **A**

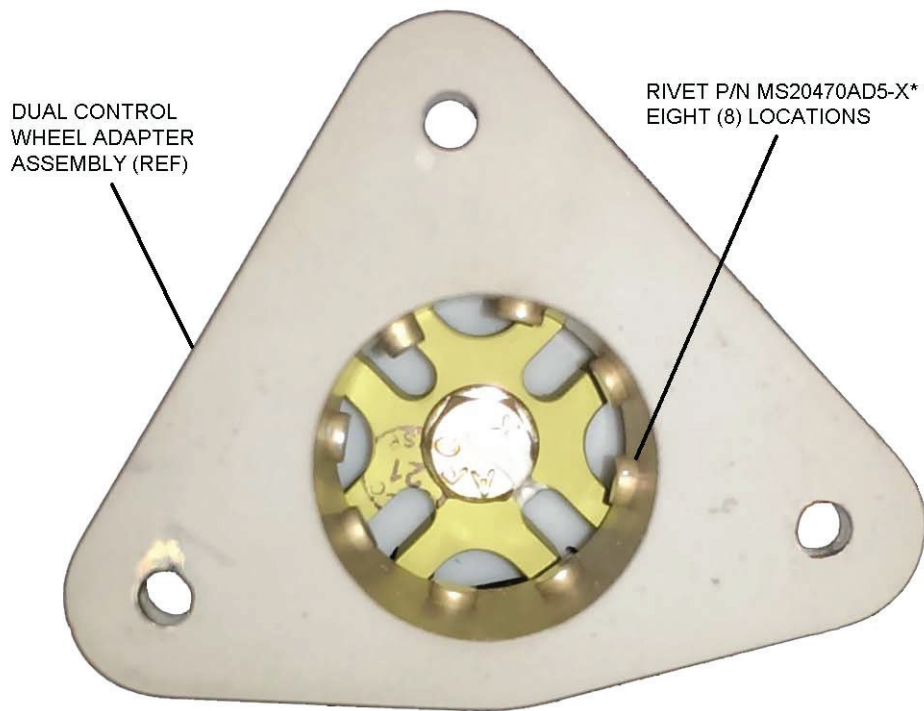
CONTROL COLUMN SHOWN
WITH CONTROL WHEEL AND
CONTROL WHEEL ADAPTER REMOVED.

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Control Column Hardware Replacement

Figure 1

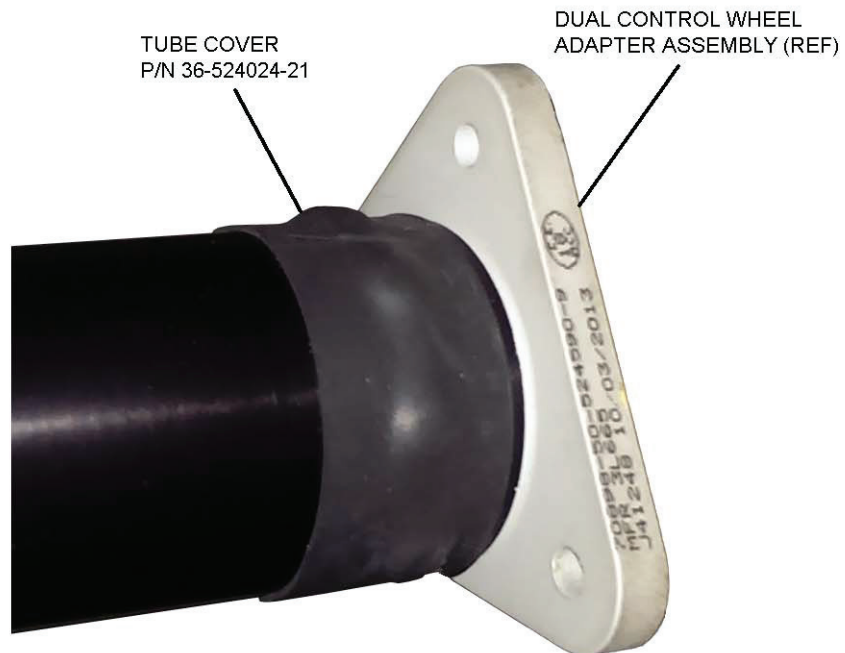
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Control Column Rivet Installation
Figure 2

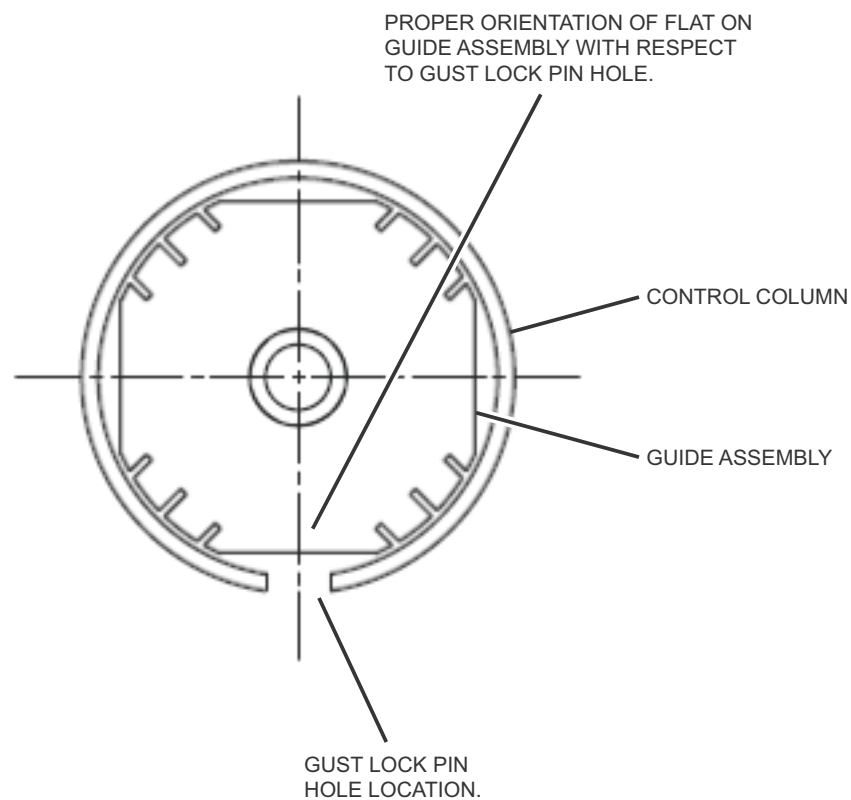
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Tube Cover P/N 36-524024-21
Figure 3

SERVICE BULLETIN



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**Proper Orientation of Flat on Guide Assembly
Figure 4**