

Raytheon Aircraft

MANDATORY SERVICE BULLETIN

33, 35, 36, 45, 55, 56TC, 58
58P, 58TC, 95

No. 2242, Rev. I
ATA Code 27-30
Recurring Inspection

SUBJECT: FLIGHT CONTROLS - INSPECTION AND/OR REPLACEMENT OF MAGNESIUM ELEVATOR CONTROL FITTINGS

SYNOPSIS OF CHANGE: Corrected location of P/N 35-660031-2 in MATERIAL. Clarified Composition Test and deleted Step 3 in ACCOMPLISHMENT INSTRUCTIONS.

OPERATIONAL BENEFITS: Beech Aircraft Corporation is issuing this Service Bulletin because one report of a broken magnesium elevator control fitting has been received. This case appears to be a result of an overload condition on the ground which may have been caused by propeller or jet blast. All operators should continue to inspect this area as a part of routine preflight inspections in accordance with the applicable preflight procedures. A fleetwide inspection for cracking of the subject magnesium control fitting is considered to be mandatory.

EFFECTIVITY: BEECHCRAFT Debonair/Bonanza 35-33, 35-A33, 35-B33, 35-C33 and E33, serials CD-1 through CD-1234;
35-C33A, E33A, serials CE-1 through CE-289;
E33C, serials CJ-1 through CJ-25;
35, 35R, A35, B35, C35, D35, E35, F35, G35, H35, J35, K35, M35, N35, P35, S35, V35, V35-TC, V35A, and V35A-TC, serials D-1 through D-9068, D-15001 and D-15002;
36, serials E-1 through E-184;
Baron 95-55, 95-A55, 95-B55 and 95-B55A, serials TC-1 through TC-1287;
95-C55, 95-C55A, D55 and D55A, serials TE-1 through TE-767;
56TC, serials TG-2 through TG-83;
Travel Air 95, B95, B95A, D95A and E95, serials TD-2 through TD-721;
Any other Model 33, 35, 36, 45, 55 Series, 56TC, 58, 58P, 58TC and 95 Series airplane which may have installed a spares replacement magnesium elevator control fitting.
Any of the following military airplanes which may be eligible for civil certification by performing modifications as described on the applicable Federal Aviation Administration Type Certificate Sheet or Aircraft Specification:
Model T34A and T34B Airplanes (Commercial Model 45 Series);

No BECP M

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(a) RAC Authorized Service Centers.

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

Information on Owner Notification Service or subscriptions 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.

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Model T42A Airplanes (Commercial Baron 95-B55B).

COMPLIANCE: Beech Aircraft Corporation considers this to be a mandatory modification and a visual inspection of both elevator control fittings must be accomplished within 25 service hours after receipt of this Service Bulletin.

If the fittings are of magnesium construction and are not replaced, the visual inspection must be repeated at each 25 hour inspection interval until they are replaced with aluminum fittings.

If the fittings are replaced with aluminum fittings, the 25 hour inspections contained herein are no longer required.

NOTE

Beech Aircraft Corporation began manufacturing airplanes equipped with aluminum elevator control fittings in 1969. No reports of cracked or broken aluminum fittings have been received by Beech Aircraft Corporation as of the issue date of this Service Bulletin.

An Airworthiness Directive has been requested on the matter covered by this Service Bulletin.

APPROVAL: Engineering data contained in this Service Bulletin is FAA approved.

MANPOWER: The following information is for planning purposes only:

Estimated man-hours for the 25 hour inspection: .5 hour.

Estimated man-hours for removal and replacement of one elevator control fitting, if required: 8 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.

MATERIAL: The following parts, if required for this inspection/replacement may be ordered through a BEECHCRAFT Authorized Outlet:

Model 33 through E33C, 36 and A36

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
33-610000-39	Elevator Control Fitting, LH & RH	2, if required
AN23-9A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

Model 35 through V35B

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
35-660031-1	Elevator Control Fitting, RH	1 if required
35-660031-2	Elevator Control Fitting, LH	1, if required
AN23-10A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

A36TC and B36TC, EA-1 through EA-272, except EA-242

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
33-610000-39	Elevator Control Fitting, LH & RH	2, if required
AN23-9A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

B36TC, EA-242 and EA-273 through EA-328

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
33-610000-91	Elevator Control Fitting, LH	1 if required
33-610000-92	Elevator Control Fitting, RH	1, if required
AN23-9A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

B36TC, EA-329 and after

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
33-610000-95	Elevator Control Fitting, LH	1, if required
33-610000-96	Elevator Control Fitting, RH	1, if required
AN23-9A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

Model 55 Series, 56TC, 58, 58P, 58TC, 95 Series

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
95-610005-3	Elevator Control Fitting, LH	1, if required
95-610005-4	Elevator Control Fitting, RH	1, if required
AN23-9A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

Model 95-B55B (T42A Airplanes)

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
95-610005-3	Elevator Control Fitting, LH	1, if required
95-610005-4	Elevator Control Fitting, RH	1, if required
AN23-9A /M/	Bolt	8, if required
AN960-10	Washer	8, if required

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
130909N29	Nut	8, if required

Model T34A and T34B

PART NUMBER	DESCRIPTION	QUANTITY PER AIRPLANE
45-660031	Elevator Control Fitting, RH	1 if required
45-660031-1	Elevator Control Fitting, LH	1, if required
AN23-10A /M/	Bolt	8, if required
AN960-10	Washer	8, if required
130909N29	Nut	8, if required

WARRANTY: None.

SPECIAL TOOLS: None.

WEIGHT AND BALANCE: None

REFERENCES: Refer to the appropriate Section/Chapter of the applicable Shop/Maintenance Manual.

PUBLICATIONS

AFFECTED: None.

ACCOMPLISHMENT

INSTRUCTIONS: This Service Bulletin may be accomplished as follows:

ELEVATOR FITTING COMPOSITION TEST

1. Gain access to both elevator control fittings on the airplane.

NOTE

The elevator control fitting does not need to be removed to perform the following test.

2. Perform the following test on both elevator control fittings to ascertain if the fittings are of magnesium or aluminum construction

a. Sand a one inch by one inch area of the elevator control fitting to bare metal.

b. Coat the entire sanded area with Alodine 1200, 1200s or 1201 (obtain locally).

c. Allow the Alodine coating to remain for one minute and flush with clean running water.

1) If the elevator control fitting is aluminum, a gold color will develop.

2) If the elevator control fitting is magnesium, the magnesium will turn gray or black.

3. If the elevator control fitting is of aluminum construction, prime, paint and return to service. No further action is necessary

4. If a magnesium control fitting is not being replaced with an aluminum fitting at this time, resand to remove

the effect of the alodine solution, coat with Dow 19 (instructions below) and return to service:

a. Place approximately 3/4 gallons of distilled water in a stainless steel, aluminum, vinyl polyethylene or a rubber lined container which will measure one gallon of fluid. The water should be at a temperature of between 70°F and 90°F.

b. Add 1 1/3 oz. of chromic acid (H₂CR₀₄).

c. Add 1 oz. of calcium sulphate (CAS₀₄) to the water.

d. Add distilled water to make one gallon of solution and stir vigorously for at least 15 minutes.

e. Brush the solution in and around the bare surface of the magnesium, keeping the area wet with the solution for one to three minutes to produce a brown film. Do not exceed three minutes.

f. Rinse with cold running water and dry by exposure to hot air blast.

g. Apply a liberal coating of zinc chromate primer and paint. If the elevator control fittings are magnesium they must either be replaced with aluminum control fittings or be reinspected at each 25 service hour interval until they are replaced.

25 HOUR VISUAL INSPECTION PROCEDURES

1. Refer to Figure 1 and inspect both elevator control fittings as shown.

2. Ensure correct freedom of movement of both elevator control fittings.

MAGNESIUM CONTROL FITTING REPLACEMENT

NOTE

Beech Aircraft Corporation recommends that even if the existing magnesium elevator control fitting is in an acceptable condition, it should be replaced with an aluminum elevator control fitting at this time. Beech Aircraft Corporation supplies only aluminum control fittings.

WARNING

Upon installing a new elevator control fitting, ensure that the fitting is clocked to the correct degree prior to drilling the holes.

1. If a new fitting is required:
 - a. Remove the elevator from the airplane and remove the existing fitting from the elevator.
 - b. Install a new elevator control fitting on the elevator in the correct position. Refer to Figure 2 for correct position.
 - c. Mark one hole on the new fitting, using an existing hole in the elevator as a template.

d. Remove the fitting and drill a .190/.194 inch diameter hole.

e. Reinstall the fitting on the elevator, install a P/N AN23-9A (or P/N AN23-10A) bolt and mark the three remaining holes.

f. Remove the fitting from the airplane and drill the three remaining .190/.194 inch diameter holes.

NOTE

Steps "g" and "h" are not applicable to V-Tail Bonanzas and T34A and T34B airplanes. Proceed to Step "i".

g. Back spot face the four holes (on the inside of the fitting) until a flat surface is obtained. The minimum allowable thickness of the spotfaced area is .156 inch. Refer to Figure 2.

h. Prime and paint the spotfaced area.

i. Use new hardware for the new fitting installation. See Figure 2.

2. Reinstall the elevators on the airplane. Refer to the applicable Shop/Maintenance Manual for installation and rigging instructions.

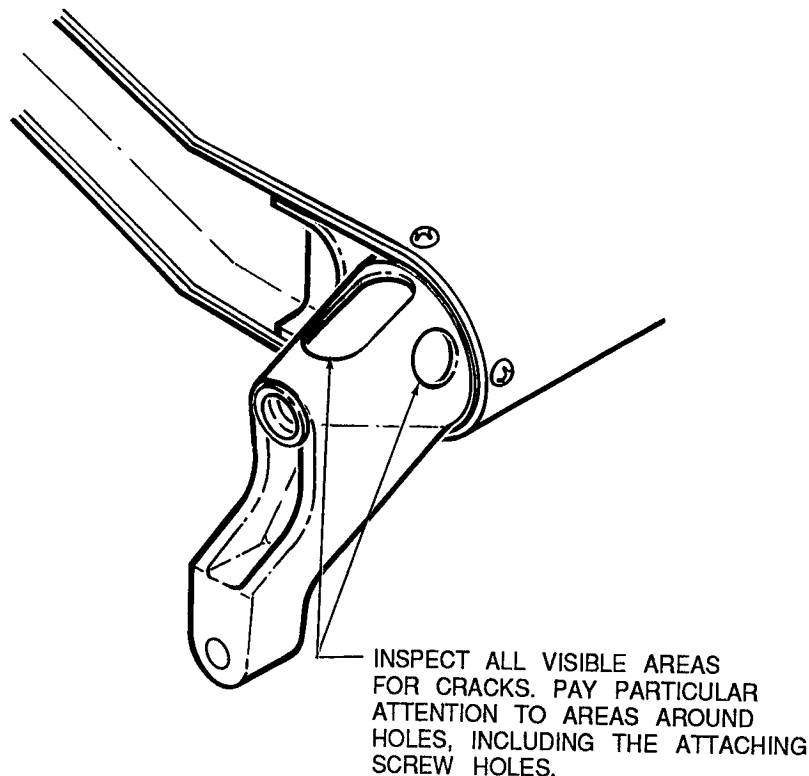


Figure 1

MODEL	* CLOCKING POSITION (WITHIN 1/2°)
33 Series Airplanes	90°
Model 45 Series - T34A & T34B	67° 20 minutes
35 through J35	67° 20 minutes
K35 through V35B	71° 20 minutes (LH) 67° 20 minutes (RH)
36 through A36	88°
A36TC (EA-1 through EA-272)	88°
B36TC (EA-273 through EA-328)	83°
B36TC (EA-329 and after)	81°
55 Series Airplanes 56TC, 58	90°
58P, 58TC, T42A, 95 Series Airplanes	90°

NEW FITTING INSTALLATION:

DRILL 4 .190/ .194 INCH DIAMETER HOLES

BACK SPOTFACE 9/16 WITH .06 INCH CORNER RADIUS (EXCEPT
V-TAIL BONANZAS AND T34A & T34B AIRPLANES)
MINIMUM ALLOWABLE THICKNESS, .156 INCH AFTER SPOTFACING
AN23-9A /M/ BOLT (4 PLACES) (ALL AIRPLANES EXCEPT
V-TAIL BONANZAS AND T34A & T34B AIRPLANES)

AN23-10A /M/ BOLT (4 PLACES) (V-TAIL BONANZA AND T34A
& T34B AIRPLANES ONLY)

AN960-10 WASHER (4 PLACES)
130909N29 NUTS (4 PLACES)

USE NEW HARDWARE FOR REINSTALLATION OF FITTING

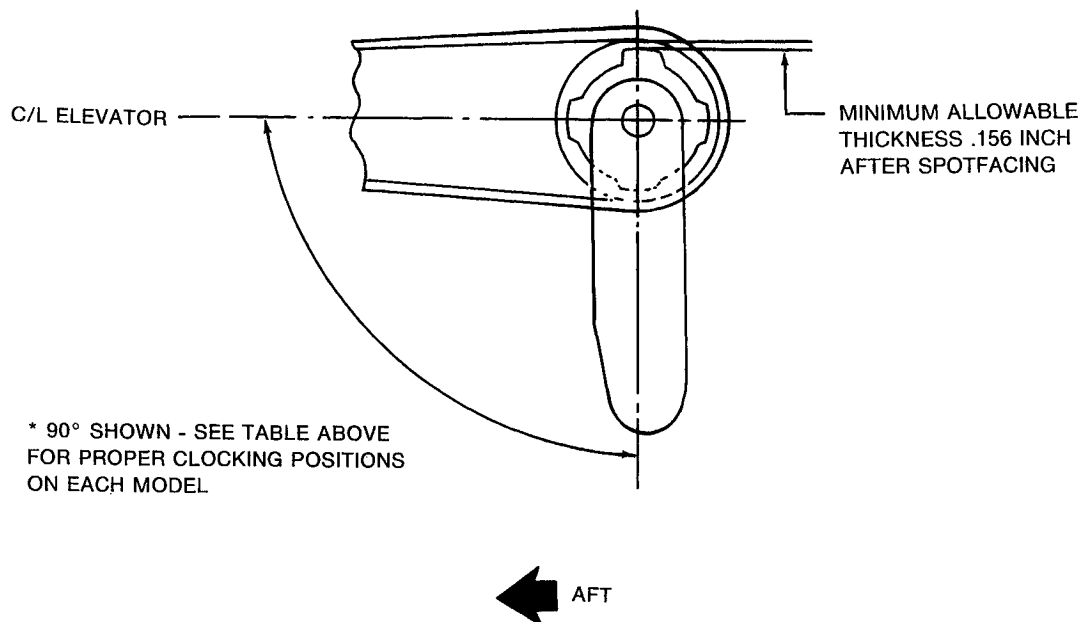


Figure 2

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

NOTE

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