SERVICE BULLETIN

Beech

TITLE: **WINGS - WING ATTACH BOLT INSPECTION/REPLACEMENT**

1. Planning Information

A. Effectivity

(1) Airplanes

Beech Model 45 (YT-34), Serials G-3 through G-6;

Beech Model A45 (T-34A, B-45), Serials G-7 and after; CG-1 and after; AG-1 and after; JG-1 and after; Serials 34-1 through 34-125 (Manufactured by Canadian Car and Foundry),

Beech Model D45 (T-34B), Serials BG-1 and after;

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 to define an inspection procedure for the wing attach bolts and attach fittings, and to establish a recurring Time In Service (TIS) inspection/replacement schedule for the wing attach bolts.

C. Description

Part I

Provides instructions for determination of requirements for the inspection/replacement requirements of the wing attach bolts.

Part II

Provides removal, inspection and replacement procedures for the wing attach bolts. Repair the wing fittings, and associated hardware if necessary.

D. Compliance

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

Raytheon Aircraft Company considers this to be a mandatory modification and it must be accomplished as soon as possible after receipt of this Service Bulletin, or no later than the next scheduled inspection, not to exceed twelve (12) months.

Corrective Action	Initial Threshold	Repetitive Interval
Recurring Inspection	5 Years Time in Service (TIS), or within 12 months of MSB issue if bolts have over 5 but less than 10 years TIS	Every 5 years TIS
Recurring Fastener Replacement	10 years TIS or within 12 months of MSB issue if TIS of bolts cannot be determined	Every 10 tears TIS

E. Approval

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

F. Manpower

The following information is for planning purposes only:

Estimated man-hours to check the logbooks: 1 hour.

Suggested number of men: 1 man.

Estimated man-hours to perform the inspection: 18 hours.

Suggested number of men: 2 men.

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

None.

H. Electrical Load Data

Not changed.

I. Software Accomplishment Summary

Not applicable.

J. References

Airworthiness Directive 2001-13-18;

Appropriate Chapter of the applicable Shop Manual or Maintenance Manual.

K. Publications Affected

It is recommended that a note "See Service Bulletin No. 57-3458 be made in the following:

Appropriate Chapter of the applicable Shop Manual or Maintenance Manual;

Appropriate Chapter of the applicable Illustrated Parts Catalog.

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 this modification may be ordered through a Raytheon Aircraft Authorized Service Center or RAPID or obtain locally:

Part Number	Description	Quantity Per Airplane
130909B103	Bolt, Upper (See Note below)	As Required
130909B274	Bolt, Lower Aft Attach (T-34A only)	2 (1 per wing)
131790-3	Bolt, Lower Forward Attach (T-34A only)	2 (1 per wing)
130909B292	Bolt, Lower Forward Attach (T-34B/D45)	2 (1 per wing)
130909B290	Bolt, Upper Aft Attach (T-34B/D45)	2 (1 per wing)
130909B291	Bolt, Lower Aft Attach (T-34B/D45 only)	2 (1 per wing)
35-105111-3	Washer, Aft Upper and Lower under Bolt Head	4 (2 per wing)
MS20002C10	Washer, Upper Forward under Bolt Head	2 (1 per wing)
MS20002-10 or NAS143-10*	Washer, (See Note Below)	As Required
50-105011	Washer, Lower Forward under Nut (next to wing fitting)	2 (1 per wing)

Part Number	Description	Quantity Per Airplane
95-110025-7	Washer, Upper Forward and Aft, Lower Aft under Nut (Figure 1 or Figure 2)	6 (3 per wing)
MS20002-14	Washer, Lower Fwd next to Nut (See Figure 1)	2 (1per wing)
105090A032-10J	Washer, Soft Aluminum between the Wing and Fuselage Upper Fittings	4
12NB-108	Nut, Internal Wrenching	6 (3 per wing)
EB-144 or DHN35-14 or 130909N54*	Nut, External Wrenching	2 (1 per wing)
TT-N-95	Naphtha (Solvent)	A/R
N/A	Methyl Propyl Ketone (Solvent)	A/R
MIL-C-5541	Alodine	A/R
MIL-P-23377	Primer, Polyamide Epoxy	A/R
MIL-C-16173 Grade 3	Corrosion Preventive Lubricant	A/R
45-105121-0001	Decal, Black letters with clear background	A/R
45-105121-0003	Decal, White letters with clear background	A/R
EC-3960	Edge Sealer	A/R
TT-I-735	Isopropyl Alcohol	A/R
N/A	Cheesecloth	A/R

NOTE

The asterisk following the part numbers indicates any of these parts may be used.

NOTE

Bolt P/N 130909B103 is used on the T-34A at both upper positions (forward and aft), on the T-34B/D45 is used at the upper forward position only.

NOTE

Washer P/N MS20002-10 is to be used under the internal wrenching nut if bolt grip length is too long. Do not use against the wing or fuselage fittings.

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 Raytheon Aircraft Company at 1-800-429-5372 or 316-676-3140.

A. Airplane

WARNING

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.

Part I

(1) Inspect the airplane logbooks to determine the date when the wing attach bolts were installed.

(a) If the time in service of the wing attach bolts exceed ten years or cannot be established, the wing attach bolts must be replaced as soon as possible after receipt of this Service Bulletin, but no later than the next scheduled inspection, and not to exceed twelve (12) months.

(b) If the wing attach bolts time in service date is over five (5) years, but less than ten (10) years Time In Service the bolts must be inspected within 12 months.

(c) If the wing attach bolts time in service is less than 5 years, the bolts must be removed at the five (5) year point from the date of installation for inspection as described in **Part II.**

(d) The bolts must be inspected at the five year interval and upon reaching ten years Time In Service the bolts must be replaced.

(2) If bolts do not need replacement or inspection at this time, proceed to **Part II** step (19).

Part II

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

(2) Before removing any wing attach bolt, draw an outline of the wing position on the fuselage with a grease pencil to aid in realignment, should it be necessary.

CAUTION

There should be no bolt binding during removal or installation. Do not drive or screw a bolt in or out of the fittings. If wing attach bolt binding is encountered, place the airplane on a three point jack and raise the airplane until wheels are clear. Place a suitable cradle under each wing and a tail stand under the aft portion of the fuselage. Defuel the wing, loosen the remaining bolts and reposition the wing until the bolt moves freely through the fittings. If the wing is shifted to remove the bolts, the soft aluminium washers between the upper wing and fuselage fittings must be replaced. Replacement of the soft aluminum washers between the upper wing fittings is not required if the wing is not shifted.

NOTE

The procedure is the same for all bolts to be removed, inspected and replaced.

(3) Starting at the lower forward wing attach point on each side, remove inspect, and replace one bolt and nut set at a time until the complete set of eight bolts and nuts have been inspected or replaced.

(4) If bolt removal difficulty is encountered, defuel the wings, raise the airplane on a three point jack and place a suitable support under the wings and remove the bolts.

(5) Use a nonmetallic brush, thoroughly clean the bolt, washers and nut with solvent.

(6) If the bolts and nuts do not exceed the life limits (10 years time in service)**,** visually inspect each bolt and nut with a 10 power or stronger magnifying glass; inspect for corrosion, cracks, and mechanical damage. The cadmium plating may display areas that appear rubbed, discolored or polished. These areas are usually the result of prevailing installation procedures and are of no significance. A bolt should not be rejected because of cadmium plating deterioration; and any component (bolt, washer or nut) that is cracked, corroded or has mechanical damage must be replaced.

(7) Perform a magnetic particle inspection on the bolts and nuts. Check the bolts for circumferential crack indications and the nuts for longitudinal crack indications. If the bolts and nuts prove to be free of all damage (corrosion, cracks, crack indications, and mechanical damage), they may be reused after demagnetization and cleaning.

(8) Use a nonmetallic brush, thoroughly clean the fittings, do not strip the paint from this area. Inspect the surface condition of each fitting; focus special attention to the washer seat and the bolt bore area. If scoring, corrosion pitting, or washer impressions are discovered in this area contact the Technical Support Department of Raytheon Aircraft Company at 1-800-429-5372 or 316-676-3140.

(9) If the fitting is satisfactory, coat the bolt bore and bearing faces of the fitting with Alodine. Allow the Alodine to remain on the surface for approximately five minutes, and wash the Alodine from the areas with water and blow dry (do not wipe dry).

(10) Paint the treated areas with primer.

(11) Coat the bearing faces and bolt bores of the fittings, the complete bolt, washers and nut with corrosion preventive compound.

WARNING

The wing attach mounting bolts use special washers, some with a chamfer on the inside hole and a radius on the outer circumference and others have a radius on the outer circumference. The chamfer must go next to the bolt head, and the radius on the outer circumference of the washer must go next to the wing attach fitting.

WARNING

Washer P/N MS20002-10 is to be used for a bolt that might be a grip length too long. This washer is never to be used next to the wing fitting

WARNING

Check the bolt part numbers to ensure that the correct bolts are installed for the particular airplane model.

(12) Install the bolt, washer or washers and nuts in their respective hole (See Figure 1 or Figure 2 to determine the correct hardware for different models) and torque to:

(a) Install soft aluminum washers between the upper wing fittings, if the wings were shifted during bolt removal.

(b) Torque the lower front spar attach bolts to 2880-3000 inch-pounds.

(c) Torque the remaining attach bolts to 1180-1300 inch-pounds.

WARNING

Use only the components specified in the Material Information. Do not install the Black P/N H20 Nuts as these nuts have been dry film lubricated with molybdenum disulfide. When MIL-C-16173 Grade II corrosion preventive compound is added to these nuts, the additional lubrication may cause improper preload in the bolt when it is torqued.

WARNING

Ensure that the wing bolt wrenches do not bottom out on the wing fittings. This cause could erroneous torque readings and damage to the fittings.

CAUTION

The torque value must be calculated for the length of the adapter used with the torque wrench.

(d) Calculate the torque value for the length of the adapter used with the torque wrench. See Figure 3 for torque calculation.

(13) Coat the exposed threads that protrude through the nut with corrosion preventive compound.

(14) At the next 100 hour inspection after the wing bolts have been loosened and torqued, check each bolt for proper torque. See Figure 1.

(15) Affix the decals to the airplane as shown in Figure 4.

(a) Clean the affected surface area thoroughly with soap and water. Rinse with clear water. Isopropyl alcohol may be used to remove difficult dirt. Wipe the area dry with a clean cheesecloth.

(b) Select the decal color for each location which provides the greatest contrast with the airplane color.

(c) If the affected area is two or more colors, it is permissible to cut and mix decals as required for maximum color contrast. If cutting is required, it is important that the combination of white and black decals be carefully matched to one another to appear as a single two-color decal.

NOTE

It is recommended that the surface of the airplane be above 50° degrees Fahrenheit for application of the decals to ensure good adhesion. Make sure that there is no moisture accumulation on the decals and verify that the airplane surface is clean and completely dry before applying the decals.

(d) Position the selected decal(s) on the side of the fuselage (above the wing) and adjacent to the access panels on the lower side of the wing as shown in Figure 2.

(e) Trim excess background from decal(s) as needed.

(f) Peel the backing from the decal(s) and apply it to the airplane surface. Verify that the decal is affixed firmly and that all bubbles are removed.

(g) Apply EC-3960 edge sealer around the perimeter of the decal with a minimum of 1/8th inch sealer overlap.

(16) Remove the support cradles and remove the airplane from jacks.

(17) Reconnect the airplane battery, remove warning notices and restore power.

(18) Ensure all work areas are clean and clear of tools and miscellaneous items of equipment.

(19) Return airplane to service.

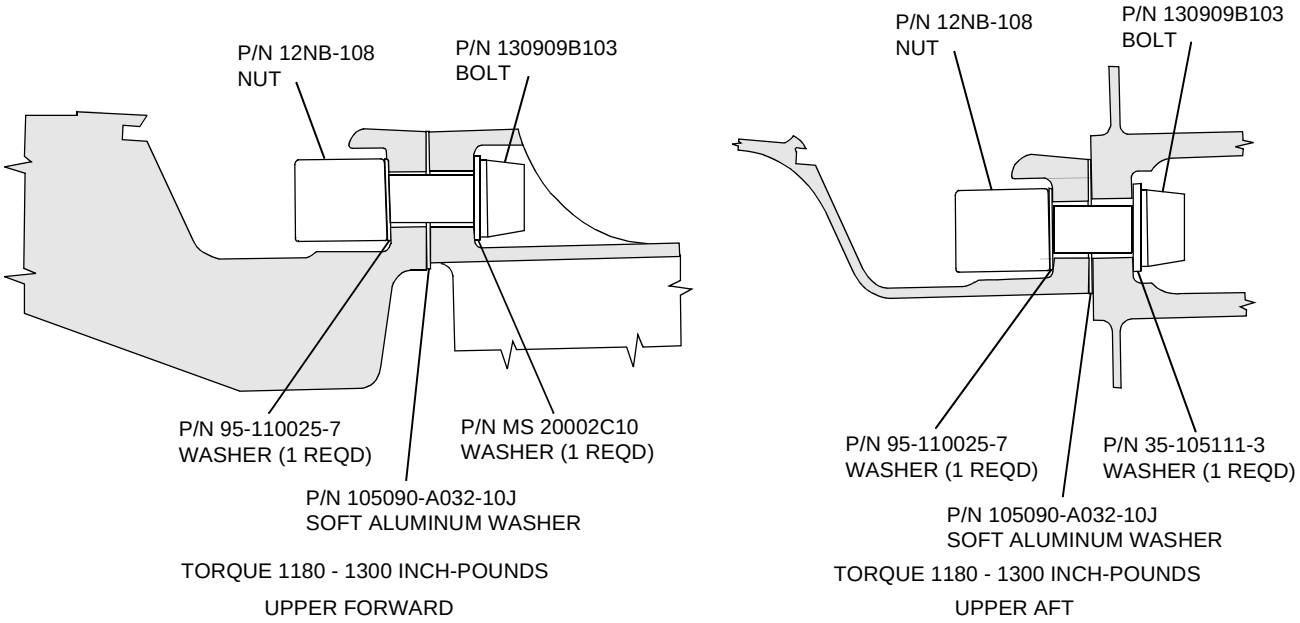
B. Spares

Not applicable.

C. Record of Compliance

Upon completion of this Service Bulletin, make an appropriate maintenance record entry. It is recommended that the parts list contained in this Service Bulletin be filed for future reference until the listing of parts has been incorporated into the Parts Catalog.

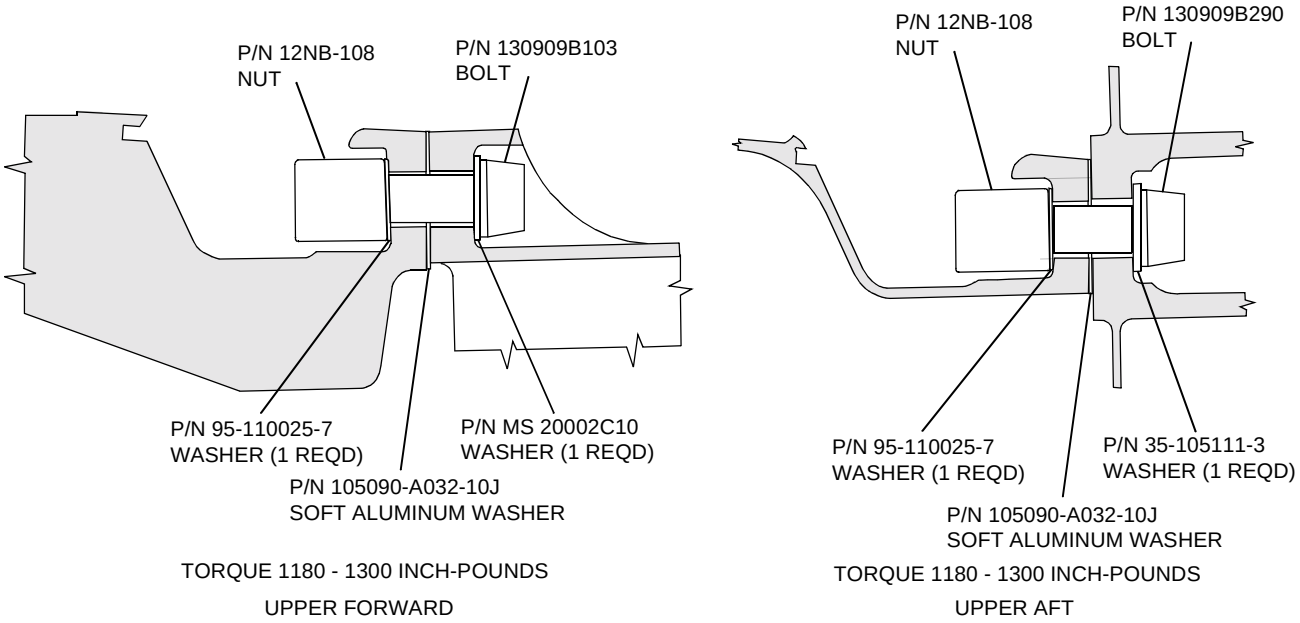
SERVICE BULLETIN



T-34A Wing Attach Bolt Installation

Figure 1

SERVICE BULLETIN



T-34B/D45 Wing Attach Bolt Installation

Figure 2

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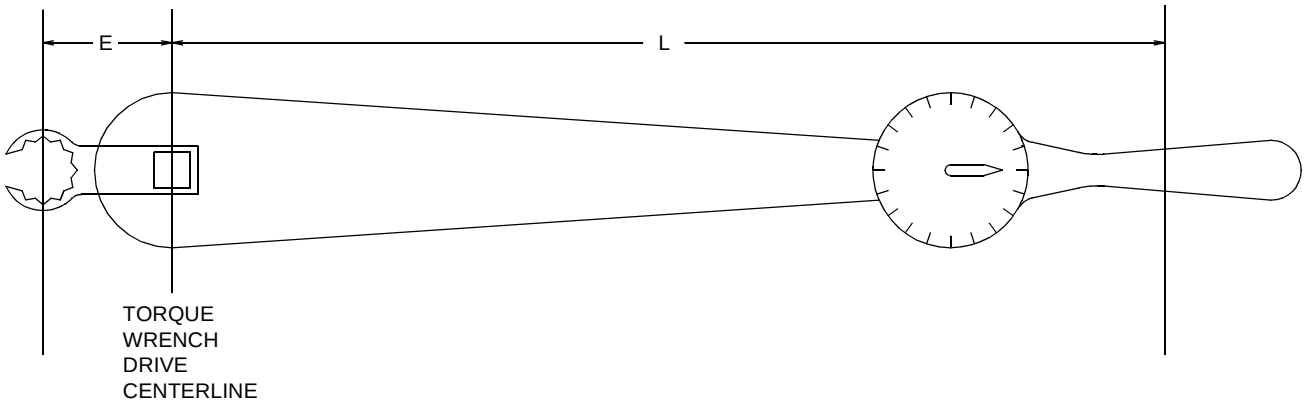

$$\frac{T \times L}{L + E} = Y$$

T = ACTUAL (DESIGN) TORQUE
Y = APPARENT (INDICATED) TORQUE
L = EFFECTIVE LEVER LENGTH
E = EFFECTIVE LENGTH OF EXTENSION

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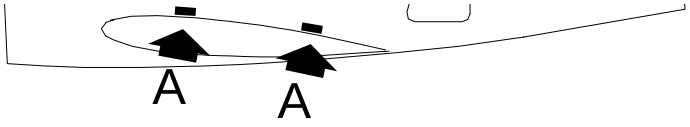
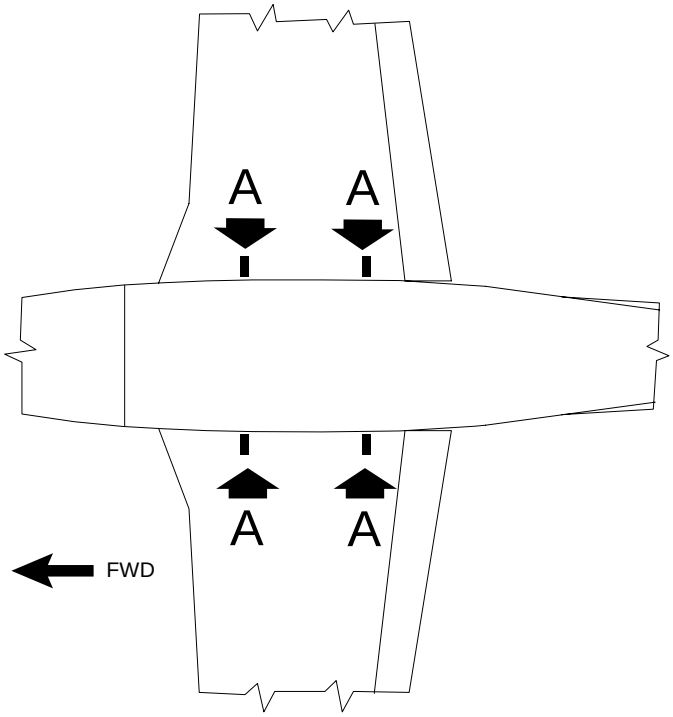
Torque Wrench and Adapter
Figure 3

SERVICE BULLETIN



LOOKING INBOARD AT LEFT SIDE (TYPICAL)



LOOKING UP AT LOWER WING SURFACE

NOTICE

WING BOLTS ARE LUBRICATED
SEE SERVICE BULLETIN 57-3458
FOR CORRECT TORQUE VALUES

DETAIL A

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Location for Decal Installation
Figure 4