ALERT SERVICE BULLETIN

REVISION NOTICE

Bell Helicopter TEXTRON

A Subsidiary of Textron Inc.

DATE MAR 18, 2005

TO: **All Owners/Operators of Bell 205B Helicopters**

SUBJECT: **REVISION "D" TO ALERT SERVICE BULLETIN 205B-00-34 (TAIL ROTOR BLADE 212-010-750-009 THROUGH -129 TIP BLOCK MODIFICATION)**

Revision "A" to this bulletin adds additional serial numbered prefix blades ATR-xxx and A3-xxx. All blades with serial number prefix ATR or A3 must also comply with the bulletin requirements.

Revision "B" to this bulletin adds a number of serial numbered blades for the tip block modification. All blades with serial number A or A-FS-11530 to 13594, 13603 to 13618 are now subject to PART B of this ASB.

This revision also adds the procedure for removal of the tip closure rivets.

Revision "C" to this bulletin changes the effectivity of the Tail Rotor Blades affected by this ASB.

Revision "D" to this bulletin provides an alternate fastener for the tail rotor blade tip closure rivets installation.

This alternate rivet P/N NAS9307M-4-01 has a monel sleeve which is more erosion-resistant. Installation of this rivet with sealant MIL-PRF-81733 in lieu of adhesive 299-947-100 TY2 CL 2 will offer a better protection against water contamination and corrosion. An oversize rivet P/N NAS9310M-4-01 is also added to the material list.

Tip closure rivets installations accomplished prior to this revision are acceptable as is.

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DATE MAR 18, 05
REV D

NO. 205B-00-34
DATE NOV 10, 00
PAGE 1 of 8

MODEL AFFECTED: **205B**

SUBJECT: **TAIL ROTOR BLADE P/N 212-010-750-009 THROUGH –129, TIP BLOCK RETENTION MODIFICATION**

HELICOPTERS AFFECTED: **All Model 205B Helicopters with Tail Rotor Blades P/N 212-010-750-009 through -129, (All serial numbers) installed require accomplishment of this bulletin.**

PART A of this bulletin is required only if any of the countersunk screws are installed below the surface of the abrasion strip. Refer to the inspection procedure.

PART B of this bulletin is required on all tail rotor blades P/N 212-010-750-009 through –129.

PART C of this bulletin provides instruction for the removal of the tip closure rivets if required.

[Tail rotor blade S/N A or AFS-11926, 13351, 13367, 13393, 13400, 13402, 13515, 13540, 13568, 13595 to 13602 and 13619 and subsequent will have the intent of this bulletin accomplished prior to delivery.]

COMPLIANCE: Within the next 100 hours after receipt of this bulletin but no later than Dec 31, 2004.

DESCRIPTION:

Bell Helicopter has recently investigated the in-flight loss of a 212-010-750-105 tail rotor blade tip block. Investigation has revealed that the countersunk screws retaining the tip block were installed incorrectly resulting in little or no tip block retention. Additionally reports have been submitted of the loss of the tail rotor tip closure. Investigation revealed that there is a possibility of a poor adhesive bond in this area allowing for voiding and eventual closure loss.

This bulletin addresses these two issues by incorporating additional fasteners in the tip area to prevent future loss of either the tip block or tip closure.

APPROVAL:

The engineering design aspects of this bulletin are FAA/DER approved.

MANPOWER:

Approximately 3 man-hours are required to complete this bulletin. Man-hours are based on hands-on time, and may vary with personnel and facilities available.

MATERIAL:

Required Material:
The following material is required for the accomplishment of this bulletin and may be obtained through your Bell Helicopter Textron Supply Center.

PART A

Part Number	Nomenclature	Quantity
100-159-6-2	Titanium Hi-lok Pin	2 per blade

PART B

Part Number	Nomenclature	Quantity	
M7885/2-4-01	Blind Rivet	4 per blade	
Alternate			
NAS9307M-4-01	Blind Rivet	4 per blade	
M7885/6-4-01	Blind Rivet	NOTE 1	D
ALTERNATE			
NAS9310M-4-01	Blind Rivet	NOTE 1	

NOTE 1: Oversize rivet if required.

Consumable Material:

The following material is required to accomplish this bulletin, but may not require ordering, depending on the operator's consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

Part Number	Nomenclature	Quantity	Reference	
299-947-100TY2CL2	Adhesive Magnobond 6398 or EA934	A/R	C-317	
Denatured Solox	Denatured Alcohol	A/R	C-326	
299-947-100TY2CL3PT	Adhesive Magnobond or EA956	A/R	C-363	
180 GRIT CLOTH	Abrasive Cloth 180/220	A/R	C-423	
TT-N-95,TYII 1GAL	Aliphatic Naptha	A/R	C-305	D
MIL-PRF-81733 (4 OZ)	Corrosion-Inhibiting Sealant	A/R	C-392	

SPECIAL TOOLS:

None required

ELECTRICAL LOAD DATA:

Not affected

REFERENCES:

BHT-212-IPB Illustrated Parts Breakdown

BHT-212-MM Maintenance Manual
BHT-212-CR&O Component Repair and Overhaul Manual

PUBLICATIONS AFFECTED:

BHT-212-IPB Illustrated Parts Breakdown
BHT-212-CR&O Component Repair and Overhaul Manual

ACCOMPLISHMENT INSTRUCTIONS

- NOTE -

Removal of the hub assembly from the output shaft is not required to remove the T/R blades. Note location and quantity of span balance washers for reinstallation. Remove any defective tail rotor blades from the T/R hub assembly in accordance with 212 CR&O.

Inspection Procedures

1. Deleted

2. Inspect forward tip weight retention block and aft tip closure for voids. Remove any blade from service that exhibits voids in excess of CR&O limitations.

3. Inspect forward tip block attachment countersink screws. 4 locations. See Figure 1. Inspect to insure that the head of the countersunk screw is flush with the surface of the abrasion strip.

4. T/R blades that have the screws flush with the surface of the abrasion strip in all 4 locations do not require shear pin installation. T/R blades with one or more of the screws that are set below the surface of the abrasion strip or are covered with filler material may not provide acceptable retention of the tip block in the event of adhesive failure and will require shear pin installation. The limit is flush to 0.010 inch (0.0254 mm) high.

5. The aft tip closure rivet installation must be accomplished on all tail rotor blades.

PART A

Shear Pin Installation

- NOTE -

Only those blades identified with countersink screws below the surface of the abrasion strip require the shear pin installation. **Do not use cutting oil during drilling operation. Do not drill through opposite side of blade.**

1. Using a clean, sharp No. 7 drill bit, drill a **.50** inch deep shear pin installation hole as shown on Figure 1. The upper surface of the blade can be identified as the curved side of the blade and is same side as the data plate. Likewise the lower surface of the blade is the most flat side of the blade. The shear pin installation holes are located at 2.0 inches (projected) aft of the leading edge on the upper surface and 1.5 inches (projected) aft of the leading edge on the lower surface.

2. When drilling, it is acceptable to have contact with brass master balance weights installed in the tip block. Once drilling is completed insure that the hole is thoroughly deburred and the depth and fit of the shear pin is verified.

3. Clean shear pins 100-159-6-2 and drilled holes in blade with denatured alcohol or naphtha. Mix adhesive 299-947-100 TY 2 CL 2 (Hysol EA 934 or Magnobond 6398) in accordance with manufactures instructions. Coat shear pin shanks and drilled hole with adhesive. Insert shear pin into hole insuring that head of shear pin is seated firmly with the surface of abrasion strip. Clean off excess adhesive leaving a small filet of adhesive squeeze-out around shear pin head to insure blade is sealed. Allow to cure at room temperature for 24 hours at 70-80 degrees F.

PART B

Aft Tip Closure Rivet Installation

- NOTE -

All tail rotor blades must have the following accomplished. **Do not use cutting oil during drilling operation. Do not drill through opposite side of blade.**

1. Using a clean, sharp no.30 drill bit, drill two rivet installation holes on both the upper and lower surface of the blade tip as shown in Figure 1. It is not necessary to remove the paint in the area.

2. De-burr drilled holes and verify rivet fit. Clean M7885/2-4-01 or NAS 9307M-4-01 rivets and drilled holes with Aliphatic Naphtha. Wipe dry before solvent evaporates.

3. Obtain a kit of sealant per MIL-PRF-81733. Thoroughly mix the accelerator, add it to the base product, then thoroughly mix the mixture until a uniform color, devoid of streaks, is achieved.

4. Coat rivet-shanks with MIL-PRF-81733 sealant and install verifying that rivet heads are seated firmly with blade skin. Allow a fillet of adhesive to squeeze out around rivet heads to insure blade is sealed.

5. Allow sealant to cure for 24 hours at room temperature. Refinish rivet heads in accordance with 212 MM for blade refinishing. Re-identify the modified blade by the addition of "FM" after the part number (i.e., 212-010-750-109FM).

6. Reinstall T/R blades onto the T/R hub assembly in accordance with 212 CR&O. Note the location of the span balance washers removed and reinstall in exact location where removed.

7. Dynamically balance T/R in accordance with 212 MM and annotate historical records to indicate compliance with this bulletin.

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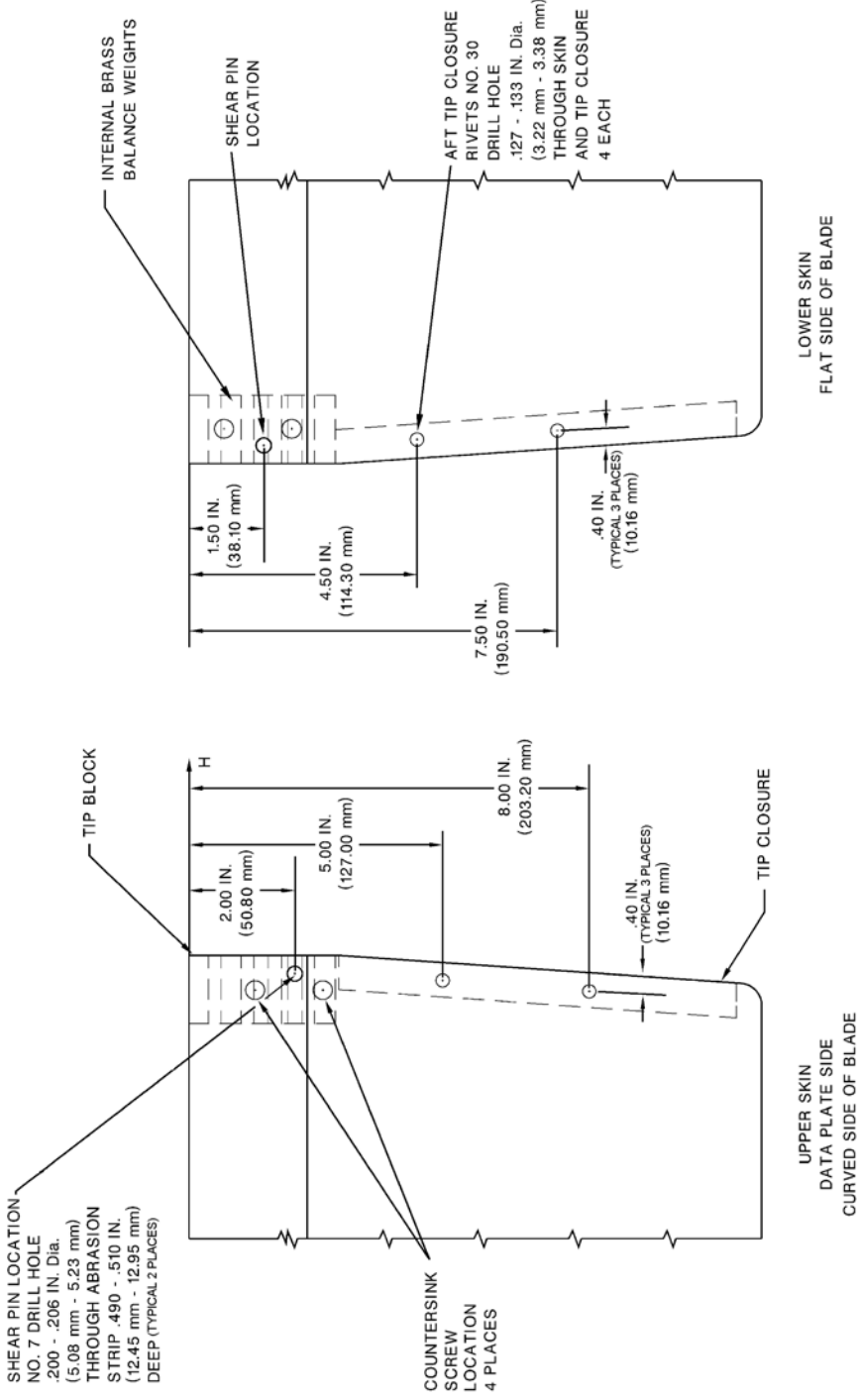

NOTE

Dimension tolerances are +/-.030 IN. (0.762 mm) unless otherwise specified.

Figure 1
212-010-750-ALL
TAIL ROTOR TIP RETENTION MOD

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PART C

Removal of tip closure rivets

1. Remove paint and filler from around rivets using 180/220-grit sandpaper without damaging the skin.

2. Using a sanding disk, carefully remove approximately half the rivet head(s) (in height).

3. Using a 3/32-inch parallel punch, tap the stem(s) inside the tip closure area.

4. Using the same punch, pry out the remainder of the stem locking ring(s).

5. Using a clean sharp #30 drill bit, drill nearly through the remainder of the rivet head(s) to weaken them.

6. Break the head(s) off, using a small chisel or the parallel punch.

7. Using a 1/8-inch parallel punch, carefully drive the rivet shank(s) inside the tip closure area.

8. Clean area to receive new rivet(s).

9. Inspect hole(s) for size. The hole diameter should be 0.129 to 0.132-inch. If any hole is elongated but no larger than 0.146-inch diameter, oversize rivets P/N M7885/6-4-01 or P/N NAS9310M-4-01 are permissible. Drill hole(s) using a clean sharp #27 drill bit and deburr. **D**

Note

It is recommended that the loose stem(s) and shank(s) be glued inside the closure area to prevent rattling. Inject a small quantity of C-363 adhesive through one rivet hole and move the blade in all directions until all loose parts stop rattling. Allow adhesive to cure.

10. Refer to PART B for rivet installation.