A Textron Company

ALERT SERVICE BULLETIN 505-20-19

16 November 2020
Revision A, 9 December 2020

MODEL AFFECTED: **505**

SUBJECT: **MAIN ROTOR BLADES P/N 206-015-001-119 ROOT END DOUBLERS, INSPECTION OF.**

HELICOPTERS AFFECTED: **Serial numbers 65011 and subsequent having an affected main rotor blade installed as a spare replacement. All affected main rotor blades listed in Table 1 of this bulletin have been manufactured in the 2006 – 2007 timeframe and have been sold through Spares. No Model 505 helicopter has been, or will be, delivered from the factory with a main rotor blade affected by this ASB.**

COMPLIANCE: Within the next 100 flight hours or 90 days, whichever comes first, following the release date of this bulletin and every 100 flight hours or 12 months thereafter.

DESCRIPTION:

Bell has received reports of main rotor blades with excessive disbond of root end grip plates and doublers. Disbond may occur on both upper and lower surfaces. Investigation revealed a bonding failure due to a reformulation of the adhesive primer. Suspected main rotor blades are listed in the Table 1 of the Accomplishment Instructions. **PART I** of this bulletin mandates a serial number verification of the main rotor blades installed on the helicopter or in spares stock. **PART II** provides instructions to perform initial and recurring inspection of the affected main rotor blades.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

Revision A clarify the helicopter affected statement, correct the omission of the description spare parts paragraph and modify **PART I** accomplishment instructions.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

MANPOWER:

Approximately 0.5 man-hour is required to complete **PART I** of this bulletin. Approximately 1 man-hour is required to complete **PART II** of this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIAL:

Required Material:
None 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 Supply Center.

Part Number	Nomenclature	Qty (Note)	Reference *
2100-00006-00	Cleaning Compound	1 liter	C-318
5300-61653-01	Preservative Oil	12 OZ	C-125
2100-06673-00	Isopropyl Alcohol	1 GAL	C-385
5060-60154-00	180-Grit Cloth	AR	C-406

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTE 1: Quantity indicated is the format that the product is delivered in. Actual quantity required to accomplish the instructions in this bulletin may be less than what has been delivered.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Not affected

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-505-MM Maintenance Manual
BHT-ALL-SPM Standard Practices Manual

PUBLICATIONS AFFECTED:

BHT-505-MM Maintenance Manual

ACCOMPLISHMENT INSTRUCTIONS:

PART I. Main rotor blades serial number verification.

Table 1. List of affected blades (Note 1)

5925 to 5932	5938 to 5940	5946 to 5947	5957	5961 to 5964
5977 to 5978	5980	5987	5989	5991
5994	6005	6009 to 6010	6012 to 6020	6032 to 6035
6042 to 6045	6050	6059 to 6061	6066 to 6067	6074 to 6078
6085 to 6086	6095 to 6097	6102 to 6103	6116 to 6122	6124 to 6133
6135 to 6139	6144 to 6149	6157 to 6159	6167 thru 6168	6176 to 6180
6186 to 6188	6195	6199	6213 to 6214	6217
6220 to 6221	6231 to 6232	6263	6425	

NOTE 1: All blades listed above have the prefix A.

1. Prepare the helicopter for maintenance.

2. Determine if main rotor blades installed on the helicopter or in spares stock are affected by this bulletin (Table 1).

   a. If no affected main rotor blade is installed, make an entry in the helicopter logbook and historical service records indicating findings and compliance with this Alert Service Bulletin.

   b. If an affected main rotor blade is installed, make an entry in the helicopter logbook and historical service records indicating findings and that a blade recurring inspection is required. Make also an entry in the main rotor blade historical

service records indicating compliance with this Alert Service Bulletin and that a recurring inspection is required until retirement from service.

-NOTE-

Optionally, in order to provide a quick visual reference and identify the “blades affected” by this ASB, apply a decal with the ASB number on to the top grip plate, near the data tag of the blade. The decals are locally manufactured using letter of white color no 17875 on black background color no 17038. All characters to be 12-point Spartan black font, color per FED 595. To prolong the life of the decal, apply Edge sealer (C-349) on the decal.

3. If the main rotor blade is affected, accomplish **PART II**.

PART II. Main rotor blade inspection.

-NOTE-

Accomplishment of this inspection does not require removal of blades from the main rotor hub.

1. Wash the upper and lower main rotor blade surfaces with a cleaning compound (C-318) and water solution (DMC-505-A-62-10-01-00A-250A-B).

-NOTE-

Hair line cracks in the paint finish should be suspect for possible cracks/voids.

-NOTE-

Any potential cracks in the bond lines between the doublers or grip plates will be indicated by the presence of excess alcohol bleeding out of an edge void. This excess alcohol in the void will appear as a dark line between the bond lines of the doublers. Proceed with the inspection of an area immediately after the alcohol wipe.

2. Wipe the area to be inspected (Figure 1 and 2) with an alcohol-soaked cloth (C-385) and wipe dry with a clean cloth.

3. Visually inspect the main rotor blade upper and lower grip plates and doublers for signs of cracks, corrosion, and edge voids as follows. Pay particular attention to the bond lines between the doublers, grip plates, and skin:

   a. Using a 3X power magnifying glass and strong light source carry out a detailed visual inspection of the top and bottom inspection areas (Figure 1).

   b. Check for evidence of a dark line between the doublers, grip plates, and skin with excess alcohol bleeding out for possible edge voids (Figure 2).

CAUTION

Pay particular attention not to remove any parent material from the skin/doublers during the sanding operation.

   c. If cracks in the finish are found between doublers, grip plates and skin edges, sand the affected area in a spanwise direction with an abrasive cloth or paper (C-406) 180 to 220 grit to determine if the grip plate/doublers are cracked or voided.

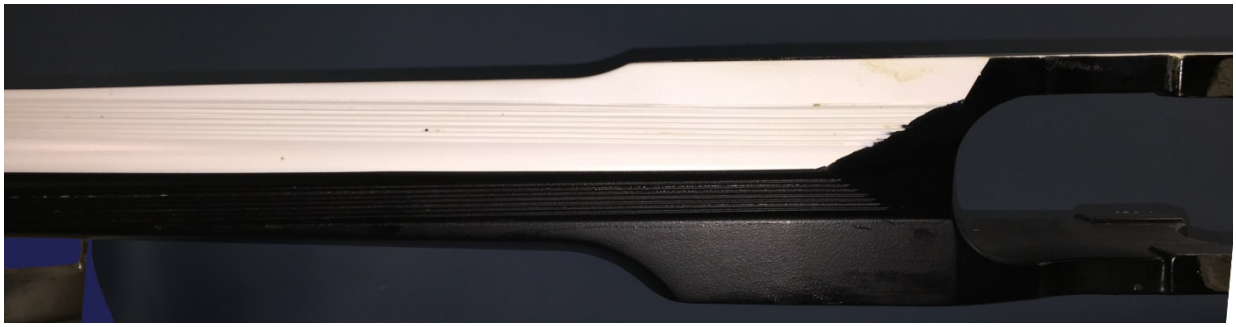
   d. If edge voids between the grip plate/doublers/skin are found, determine the depth and length with a 0.0015 inch (0.038 mm) feeler gauge. If edge voids are suspected near the outboard tip of the grip plate/doublers, carry out a tap test of the affected area. Contact Product Support Engineering for voids limits and repair instructions.

   e. Refinish the sanded area (DMC-505-A-62-10-01-00A-250A-A).

4. Following the inspection, apply a light coat of preservative oil (C-125) to all surfaces of the blade (DMC-505-A-62-10-01-00A-250A-B).

5. Make an entry in the helicopter logbook and historical service records of the helicopter and the main rotor blade indicating findings and compliance with **PART II** of this Alert Service Bulletin.

Figure 1. Area to be inspected with 3X- power magnifying glass, from STA 15.0 to STA 58.0 (upper and lower surfaces).



(Leading edge)

(Trailing edge)

Figure 2. Inspect the leading edge from STA 15.0 to STA 58.0 and trailing edge from STA 15.0 to STA 56.0 of the blade for crack between each doublers and the grip plates.