

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) for the specified Bell Helicopter Textron Inc. (BHTI) model helicopters. This action requires conducting various inspections associated with the main rotor grip (grip). If a crack is found, this AD requires replacing the grip before further flight. If delamination of the buffer pad on the grip tang inner surface is found, this AD requires inspecting the grip surface for corrosion or other damage and repairing or replacing the grip if corrosion or other damage is found. This AD also requires determining and recording the hours time-in-service (TIS) and the engine start/stop cycles for each grip on a component history card or equivalent record. Also, this action requires reporting certain inspection results and information to the FAA. This amendment is prompted by the discovery of 13 grips that cracked in the lower tang, three of which cracked in flight. The actions specified by this AD are intended to prevent failure of a grip, separation of a main rotor blade, and subsequent loss of control of the helicopter.

DATES: Effective January 30, 2003.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of January 30, 2003.

Comments for inclusion in the Rules Docket must be received on or before March 17, 2003.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), Office of the Regional Counsel, Southwest Region, Attention: Rules Docket No. 2002-SW-14-AD, 2601 Meacham Blvd., Room 663, Fort Worth, Texas 76137. You may also send comments electronically to the Rules Docket at the following address: 9-asw-adcomments@faa.gov.

The service information referenced in this AD may be obtained from Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, Texas 76101, telephone (817) 280-3391, fax (817) 280-6466. This information may be examined at the FAA, Office of the Regional Counsel, Southwest Region, 2601 Meacham Blvd., Room 663, Fort Worth, Texas; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Michael Kohner, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Rotorcraft Certification Office, Fort

Worth, Texas 76193-0170, telephone (817) 222-5447, fax (817) 222-5783.

SUPPLEMENTARY INFORMATION: This amendment adopts a new AD for the specified BHTI model helicopters. This AD is prompted by 3 in-flight grip failures and 2 recent incidents of cracked grips discovered during a 1200-hour inspection and on a scheduled 2400-hour overhaul, which brings the total to 13 grips that have cracked in the lower tang. The two recent cracks originated in the lower tang blade bolt bore. No anomalies or damage to the blade, blade bolt bore, or buffer pad tang surface was found. Cracking for all of the grips has been attributed to mechanical damage from improper blade bolt bushing installation, improper rework of the buffer pad tang surface, or subsurface fatigue damage. All of the fatigue cracks have occurred on grips, part number (P/N) 204-011-121-009 and -121, installed on BHTI Model 212 helicopters; P/N 204-011-121-005, -009, and -113 are also very similar in design. Based on the failures that have occurred on grips, P/N 204-011-121-009 and -121, the manufacturer performed a fatigue analysis on grip, P/N 204-011-121-117, and discovered that the assigned life limit was inaccurate.

Hence, the FAA has determined that the other similarly-designed grips that are subjected to the same forces and loads as well as those grips adversely impacted by the inaccurate life limit may be susceptible to the same fatigue cracking as occurred on the Model 212 helicopter. Therefore, in addition to the repetitive ultrasonic (UT) inspection required for the Model 212 helicopter, the UT inspection also needs to be performed on the Model 204B, 205A, and 205A-1 helicopters with grip, P/N 204-011-121-117, installed. Additionally, when the service life for grips, P/N 201-011-121-005, -113, and -117, was established, we did not anticipate that these grips would be installed on the Model 205B helicopters, which has a higher power rating that is equivalent to the power rating of the twin-engine Model 212 helicopter. Operations at the higher power rating cause additional fatigue stresses on those grips installed on the Model 205B helicopter. Further, Supplemental Type Certificate (STC) SH5132NM, in part, allows the installation of grips, P/N 204-011-121-009 and -121, on the Model 205A-1 helicopter. This STC also allows the installation of additional dynamic components, including heavier main rotor blades, which add greater fatigue stresses to the P/N 204-011-121-009 and -121 grips. The actions

specified in this AD are intended to prevent failure of a grip, separation of a main rotor blade, and subsequent loss of control of the helicopter.

The FAA has reviewed the following BHTI service information:

- Operations Safety Notices 204-85-6, 205-85-9, and 212-85-13 all dated November 14, 1985.
- Alert Service Bulletin (ASB) 212-94-92, Revision A, dated March 13, 1995, which describes procedures for inspection and overhaul requirements of certain grips.
- ASB's 212-02-116, Revision A, dated October 30, 2002, and 205B-02-39, Revision B, dated November 22, 2002, which specify a UT inspection of certain grips; and the attached Nondestructive Inspection Procedure, Log No. 00-340, Revision E, dated April 9, 2002.

A crack in a grip creates a critical unsafe condition. This unsafe condition is likely to exist or develop on other helicopters of these same type designs. Therefore, this AD is being issued to prevent failure of a grip, separation of a main rotor blade, and subsequent loss of control of the helicopter. This AD requires the following actions:

- Within 10 hours TIS, determining and recording the hours TIS and the engine start/stop cycles for each grip on a component history card or equivalent record. On the single-engine model helicopters, one "engine start/stop cycle" occurs when the engine is started. On the Model 212 helicopter, one "engine start/stop cycle" occurs when either one or both engines are started. The intent is to add one "engine start/stop cycle" each time helicopter power starts the main rotor system turning.
- Within 10 hours TIS and thereafter at intervals not to exceed 25 hours TIS, visually inspecting the exposed surfaces of the upper and lower tangs of each grip for a crack, using a 10-power or higher magnifying glass.
- Initially and at specified intervals depending on the hours TIS or the engine start/stop cycles, whichever occurs first, conducting initial and repetitive UT inspections for the grips in accordance with the Nondestructive Inspection Procedure, Log No. 00-340, Revision E, dated April 9, 2002.
- At intervals not to exceed 1200 hours or 24 months, whichever occurs first, inspecting each buffer pad on the tang inner surfaces for delamination and removing the buffer pad and inspecting the grip surface for corrosion and other damage if delamination is found.
- Within 2400 hours TIS or at the next overhaul of the main rotor hub, whichever occurs first, and thereafter at