

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

[Docket No. 2002-SW-14-AD; Amendment 39-13015; AD 2003-01-04]

RIN 2120-AA64

### Airworthiness Directives; Bell Helicopter Textron, Inc. Model 204B, 205A, 205A-1, 205B and 212 Helicopters

**AGENCY:** Federal Aviation Administration, DOT.

**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](mailto: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 intervals not to exceed 2400 hours TIS, inspecting the surface of each grip for corrosion or other damage and conducting a fluorescent-penetrant inspection of the grip for a crack.
- Before further flight, replacing any grip with a crack, corrosion, or damage with an airworthy grip or repairing a grip with damage or corrosion if the damage or corrosion is within certain limits.
- Reporting certain inspection results and information to the FAA in accordance with Appendix 1 of this AD.

These AD actions are intended to be interim actions. The FAA is collecting data for further analysis to assist in determining appropriate terminating action.

The UT inspection of the grip must be performed by a UT Level I Special, Level II, or Level III inspector, qualified under the guidelines established by MIL-STD-410E, ATA Specification 105, AIA-NAS-410, or an FAA-accepted equivalent for qualification standards of Nondestructive Testing inspection/evaluation personnel. Recurrent training and examinations are part of the qualification requirements.

The short compliance time involved is required because the previously described critical unsafe condition of cracking in the grips can adversely affect the controllability and structural integrity of the helicopter. Therefore, this AD requires, before 10 hours TIS, visually inspecting the exposed surfaces of each grip for a crack and, before further flight, replacing or repairing the grip, and this AD must be issued immediately.

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

The FAA estimates that this AD will affect 110 helicopters and that it will take approximately 7 work hours to create and maintain the records, 6.25 work hours to conduct the inspections, and 10 work hours to replace the grip, at an average labor rate of \$60 per work hour. Required parts will cost approximately \$18,390 per grip replaced. Based on these figures, the total cost impact of the AD on U.S. operators is estimated to be \$315,330, assuming replacement of a total of 12 grips.

### Comments Invited

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their mailed comments submitted in response to this rule must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket No. 2002-SW-14-AD." The postcard will be date stamped and returned to the commenter.

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and that it is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends 14 CFR part 39 as follows:

#### **PART 39—AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. Section 39.13 is amended by adding a new airworthiness directive to read as follows:

# AIRWORTHINESS DIRECTIVE

Aircraft Certification Service  
Washington, DC



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "www.faa.gov"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2003-01-04 Bell Helicopter Textron, Inc.:** Amendment 39-13015. Docket No. 2002-SW-14-AD.

**Applicability:** The following model helicopters with the listed part number (P/N) installed, certificated in any category:

Model	With main rotor grip (Grip) P/N
(1) 205B	204-011-121-005, 009, -113, -117, or -121.
(2) 212	204-011-121-009 or -121.
(3) 204B	204-011-121-005 if the grip was ever installed on a Model 205B helicopter.
(4) 205A and 205A-1	204-011-121-005 or -113 if the grip was ever installed on a Model 205B helicopter.
(5) 204B, 205A, and 205A-1	204-011-121-117.
(6) 205A-1	204-011-121-009 or -121 modified in accordance with Supplemental Type Certificate (STC) SH5132NM.

**Note 1:** This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (h) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

**Compliance:** Required as indicated, unless accomplished previously.

To prevent failure of a grip, separation of a main rotor blade, and subsequent loss of control of the helicopter, accomplish the following:

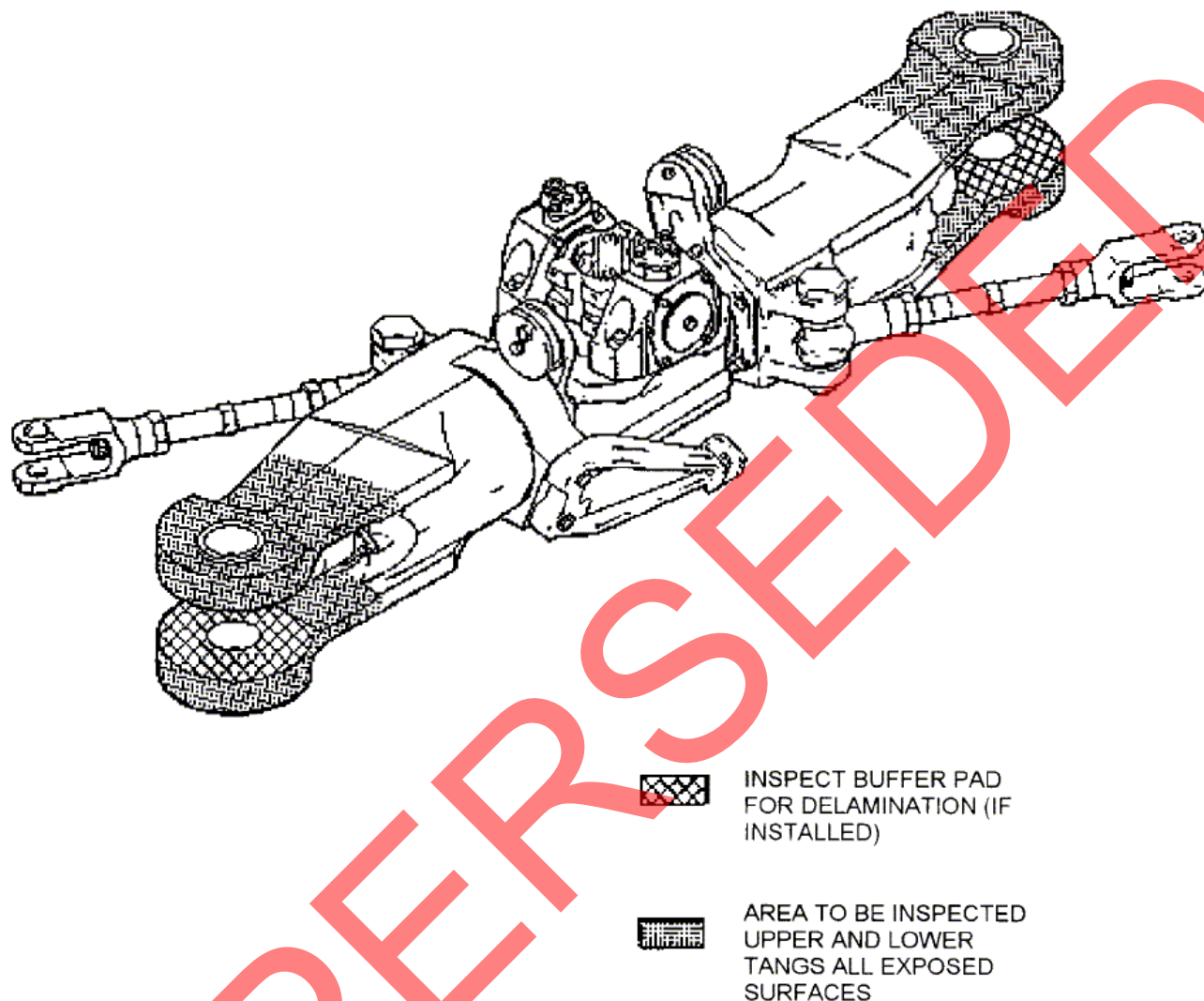
(a) Within 10 hours time-in-service (TIS), create a component history card or equivalent record and determine and record the total hours TIS for each grip. If the total hours TIS cannot be determined from the helicopter records, assume and record 900 hours TIS for each year the grip has been installed on any helicopter. Continue to count and record the hours TIS and begin to count and record the number of times the helicopter engine(s) are started (engine start/stop cycles).

(b) Within 10 hours TIS, and thereafter at intervals not to exceed 25 hours TIS, without removing the main rotor blades:

(1) Clean the exposed surfaces of the upper and lower tangs of each grip with denatured alcohol. Wipe dry.



(2) Using a 10-power or higher magnifying glass, visually inspect the exposed surfaces of the upper and lower tangs of each grip for a crack. Pay particular attention to the lower surface of each lower grip tang from the main rotor blade bolt-bushing flange to the leading and trailing edge of each grip tang. See Figure 1 as follows:



**Figure 1. Inspection of Main Rotor Hub Grip Tangs**

(c) Ultrasonic (UT) inspect each grip shown in the following table of this AD in accordance with the Bell Helicopter Textron, Inc. (BHTI) Nondestructive Inspection Procedure, Log No. 00-340, Revision E, dated April 9, 2002.

**TABLE 1**

UT Inspect Grip P/N	Within 30 days, for a Grip with the following or more hours TIS	Thereafter, at intervals not to exceed the following hours TIS or the engine start/stop cycles, whichever occurs first	
		Hours TIS	Engine start/stop cycles
(1) 204-011-121-009	4000	400	1600
(2) 204-011-121-121	500	150	600
(3) 204-011-121-005, or -113 if the grip was EVER installed on a Model 205B helicopter	4000	400	1600
(4) 204-011-121-117 if the grip was NEVER installed on a Model 205B helicopter	4000	150	600
(5) 204-011-121-117 if the grip was EVER installed on a Model 205B helicopter	500	150	600
(6) 204-011-121-009 if the grip is installed on a Model 205A-1 helicopter modified in accordance with STC SH5132NM	4000	400	1600
(7) 204-011-121-121 if the grip is installed on a Model 205A-1 helicopter modified in accordance with STC SH5132NM	500	150	600

The UT inspection of the grip must be performed by a Non-Destructive Testing (NDT) UT Level I Special, Level II, or Level III inspector who is qualified under the guidelines established by MIL-STD-410E, ATA Specification 105, AIA-NAS-410, or an FAA-accepted equivalent for qualification standards of NDT Inspection/Evaluation Personnel.

**Note 2:** You can find the Nondestructive Inspection Procedure attached to BHTI Alert Service Bulletin (ASB) 205B-02-39, Revision B, dated November 22, 2002, or BHTI ASB 212-02-116, Revision A, dated October 30, 2002.

(d) At intervals not to exceed 1200 hours TIS or 24 months, whichever occurs first:

- (1) Remove each main rotor blade, and
- (2) Inspect each grip buffer pad on the inner surfaces of each grip tang for delamination (see Figure 1 of this AD). If there is any delamination, remove the buffer pad and inspect the grip surface for corrosion or other damage.

**Note 3:** This inspection interval coincides with the main rotor tension-torsion strap replacement times.

(e) Within 2400 hours TIS or at the next overhaul of the main rotor hub, whichever occurs first, and thereafter at intervals not to exceed 2400 hours TIS:

- (1) Remove each main rotor blade.
- (2) Remove each grip buffer pad (if installed) from the inner surfaces of each grip tang.
- (3) Inspect the grip surfaces for corrosion or other damage.
- (4) Fluorescent-penetrant inspect (FPI) the grip for a crack, paying particular attention to the upper and lower grip tangs. When inspecting grips, P/N 204-011-121-005, -09, and -113, pay particular attention to the leading and trailing edges of the grip barrel.

**Note 4:** FPI procedures are contained in BHTI's Standard Practices Manual, BHT-ALL-SPM.

- (f) Before further flight:
- (1) Replace with an airworthy grip any grip with a crack.
  - (2) Replace with an airworthy grip or repair, if within maximum repair damage limits, any grip with any corrosion or other damage.

**Note 5:** The maximum repair damage limitations are found in the applicable Component and Repair Overhaul Manual.

**Note 6:** BHTI Operations Safety Notice 204-85-6, 205-85-9 and 212-85-13, all dated November 14, 1985, and BHTI ASB 212-94-92, Revision A, dated March 13, 1995, also pertain to the subject of this AD.

(g) Within 24 hours for any grip found with a crack and within 7 days for any grip inspected per paragraph (e) of this AD, report to the FAA Rotorcraft Certification Office the information requested in Appendix 1 to this AD. The information collection requirements of this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(h) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Rotorcraft Certification Office, Rotorcraft Directorate, FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Rotorcraft Certification Office.

**Note 7:** Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Rotorcraft Certification Office.

(i) Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the helicopter to a location where the requirements of this AD can be accomplished.

(j) The inspections shall be done in accordance with the Bell Helicopter Textron Nondestructive Inspection Procedures of Log No. 00-340, Rev. E, dated April 9, 2002. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Bell Helicopter Textron, Inc., P.O. Box 482, Fort Worth, Texas 76101, telephone (817) 280-3391, fax (817) 280-6466. Copies may be inspected 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.

(k) This amendment becomes effective on January 30, 2003.

#### **Appendix 1 to AD 2003-01-04**

#### **AD Compliance Inspection Report (Sample Format)**

Provide the following information and mail or fax it to: Manager, Rotorcraft Certification Office, Federal Aviation Administration, Fort Worth, Texas, 76193-0170, USA, Fax: 817-222-5783.

Aircraft Registration No:

Helicopter Model:

Helicopter Serial Number:

Owner and Operator of the Helicopter:



Contact Phone Number:  
Grip Part Number:  
Grip Serial Number:  
Grip Total Hours Time-in-Service (TIS) at Inspection:  
Grip Hours TIS since Overhaul:  
Grip Start/Stop Cycles and Associated Hours TIS since Last Reported:

### **Description of Findings**

Who performed the inspection?

Date and location the inspection was performed:

Crack Found (Y/N)? If yes, describe the crack size, location, orientation (provide a sketch or pictures with the grip part and serial numbers).

Which inspection was being performed when the crack was discovered?

Has the grip ever been installed on another model helicopter? If so, provide the models and associated hours.

Provide any other comments.

Issued in Fort Worth, Texas, on December 31, 2002.

David A. Downey,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 03-328 Filed 1-14-03; 8:45 am]

BILLING CODE 4910-13-P