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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2006-24447; Directorate Identifier 2005-SW-35-AD; Amendment 39-14562; AD 2006-08-07]

RIN 2120-AA64

Airworthiness Directives; Brantly International, Inc. Model B-2, B-2A, and B-2B Helicopters

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule; request for comments.

SUMMARY: This amendment adopts a new airworthiness directive (AD) for the specified Brantly International, Inc. (Brantly) model helicopters. This action requires certain inspections and measurements of the upper tail rotor vertical gearbox (gearbox), vertical shaft (shaft) and shaft housing (housing) and their associated parts; and of the intermediate gear box bushing (bushing). This amendment is prompted by an accident and an incident report of fatigue cracking of a shaft. The actions specified in this AD are intended to prevent fatigue cracking of a shaft, failure of a shaft, and subsequent loss of control of the helicopter.

DATES: Effective May 2, 2006.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of May 2, 2006.

Comments for inclusion in the Rules Docket must be received on or before June 16, 2006.

ADDRESSES: Use one of the following addresses to submit comments on this AD:

- DOT Docket Web site: Go to <http://dms.dot.gov> and follow the instructions for sending your comments electronically;
- Government-wide rulemaking Web site: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically;
- Mail: Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590;
- Fax: (202) 493-2251; or
- Hand Delivery: Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

You may get the service information identified in this AD from Brantly International, Inc., Wilbarger County Airport, 12399 Airport Drive, Vernon, Texas 76384, telephone 940-552-5451.

Examining the Docket

You may examine the docket that contains the AD, any comments, and other information on the Internet at <http://dms.dot.gov>, or in person at the Docket Management System (DMS) Docket Offices between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in the ADDRESSES section. Comments will be available in the AD docket shortly after the DMS receives them.

FOR FURTHER INFORMATION CONTACT: Marc Belhumeur, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Rotorcraft Certification Office, Fort Worth, Texas 76193-0170, telephone (817) 222-5177, fax (817) 222-5783.

SUPPLEMENTARY INFORMATION: This amendment adopts a new AD for the specified Brantly model helicopters. This action requires certain inspections and measurements of the gearbox, shaft, housing and their associated parts; and of the bushing. This amendment is prompted by an accident and an incident report of fatigue cracking of a shaft. The fatigue cracking may have been caused by higher than expected loads, most likely due to misalignment. Fatigue cracking of the shaft, if not detected, could result in failure of the shaft and subsequent loss of control of the helicopter.

We have reviewed Brantly Service Bulletin No. 105, Revision A, dated August 3, 2005 (SB), which describe procedures for certain inspections of the gearbox, shaft, housing, and bushing for helicopters, serial number 2001 and larger, or any serial-numbered helicopter with a shaft, part number (P/N) 249-10, installed, that was purchased after 1994.

This unsafe condition is likely to exist or develop on other helicopters of the same type design. Therefore, this AD is being issued to prevent fatigue cracking of the shaft, failure of the shaft, and subsequent loss of control of the helicopter. This AD requires, within 10 hours time-in-service (TIS) and before further flight after any hard landing or any main or tail rotor sudden stoppage:

- Removing the gearbox, P/N 278-200; shaft, P/N 249-10; housing, P/N 249-3; and the bushing, P/N 252-4.
- Inspecting and measuring the flange retainer, P/N 15-17, and replacing the flange retainer with an airworthy flange retainer if the part is deformed or if the inside diameter is not 1.5050 to 1.5060 inches.
- Inspecting and measuring the housing, P/N 249-3, and replacing the housing with an airworthy housing if the part is deformed or if any outer diameter not on the flared end is not 1.497 to 1.500 inches or if the outer diameter of the flared end is not 1.844 to 1.875 inches.
- Inspecting and measuring the bushing, P/N 252-4, and replacing it if its length is not .292 to .302 inch or if nicks or scoring is found.
- Inspecting and measuring the bevel pinion gear (gear), P/N 15-8, and replacing the gear with an airworthy gear if certain conditions exist.
- Inspecting each vertical shaft attachment bolt, P/N 15-201 and P/N 249-11, measuring the grip diameter, and replacing any bolt with an airworthy bolt if it has fretting or nicks or if the grip diameter is not .1889 to .1894 inch.
- Inspecting the male coupling, P/N 249-9, and measuring the bolt hole and bore diameter and replacing the male coupling with an airworthy male coupling if certain conditions exist.
- Inspecting the shaft, P/N 249-10, for misalignment; measuring the diameter of the bolt holes; inspecting for straightness of the shaft; magnetic particle inspecting the shaft for a crack; visually inspecting the shaft; and replacing the shaft if certain conditions exist.
- Assembling and inspecting the gearbox, P/N 278-200, the shaft, P/N 249-10, and the housing, P/N 249-3; inspecting the bore for foreign objects or burrs before assembling the pinion gear and the male coupling to the shaft; and replacing any unairworthy parts.

This AD further requires:

- Ensuring that the intermediate gearbox, P/N 278-100, its cover, P/N 252-3, and the bushing, P/N 252-4, the long horizontal shaft housing, P/N 14-13, and its retainer flange, P/N 15-17, are aligned and bolted down without any adjustment being made for the gearbox (upper), shaft (vertical), or housing.
- Installing and inspecting the gearbox, P/N 278-200, and correcting any installation that does not comply with the installation tolerances.
- Following an airworthy installation of the gearbox, inspecting the tail rotor rigging control and correcting it, if necessary.
- Reporting discrepancies to the Rotorcraft Certification Office within 7 work days. The inspections, installation procedures, and assembly of the gearbox must be done by following the specified portions of the SB described previously.

The short compliance time involved is required because the previously described critical unsafe condition can adversely affect the structural integrity and controllability of the helicopter. Therefore, inspecting and measuring the gearbox, shaft, housing, and bushing are required within 10 hours TIS. Also, replacing any unairworthy part found during any inspection is required before further flight, so 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.

This AD is an interim action that covers initial inspections and measurements of the gearbox, shaft, housing, bushing, and their associated parts. We plan to follow this AD with a superseding Notice of Proposed Rulemaking to propose adding recurring 200-hour inspections of the shaft until the cause of the shaft cracking can be determined.

We estimate that this AD will affect 194 helicopters, and inspecting, measuring, and replacing the tail rotor drive system parts will take about 13.4 work hours to accomplish at an average labor rate of \$65 per work hour, assuming the upper gearbox (which includes the shaft) and the intermediate gearbox are replaced, which would be the worst case scenario. Under this assumption, required parts will cost approximately \$5,775 (cost of the upper and the intermediate gearbox) per helicopter. Based on these figures, we estimate the total cost impact of the AD on U.S. operators to be \$1,289,324.

Comments Invited

This AD is a final rule that involves requirements that affect flight safety and was not preceded by notice and an opportunity for public comment; however, we invite you to submit any written data, views, or arguments regarding this AD. Send your comments to an address listed under ADDRESSES. Include "Docket No. FAA-2005-XXXXX; Directorate Identifier 2005-SW-35-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the AD. We will consider all comments received by the closing date and may amend the AD in light of those comments.

We will post all comments we receive, without change, to <http://dms.dot.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of our docket Web site, you can find and read the comments to any of our dockets, including the name of the individual who sent the comment. You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78), or you may visit <http://dms.dot.gov>.

Regulatory Findings

We have determined that this AD will not have federalism implications under Executive Order 13132. This AD 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.

For the reasons discussed above, I certify that the regulation:

1. Is not a "significant regulatory action" under Executive Order 12866;
2. Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared an economic evaluation of the estimated costs to comply with this AD. See the DMS to examine the economic evaluation.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

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 part 39 of the Federal Aviation Regulations (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**

www.faa.gov/aircraft/safety/alerts/

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).

2006-08-07 Brantly Helicopter, Inc.: Amendment 39-14562. Docket No. FAA-2006-24447; Directorate Identifier 2005-SW-35-AD.

Applicability

Model B-2, B-2A, and B-2B helicopters, serial number 2001 and larger, with a vertical shaft (shaft), part number (P/N) 249-10, or any serial-numbered helicopter with a shaft, P/N 249-10, that was purchased after 1994, certificated in any category.

Compliance

Required as indicated, unless accomplished previously.

To detect fatigue cracking of the shaft and prevent failure of the shaft and subsequent loss of control of the helicopter, accomplish the following:

(a) Within the next 10 hours time-in-service (TIS) and before further flight after any hard landing or any main or tail rotor sudden stoppage:

(1) Remove the tail rotor vertical gearbox (gearbox), P/N 278-200; shaft, P/N 249-10; vertical shaft housing (housing), P/N 249-3; and the intermediate gearbox bushing (bushing), P/N 252-4, from the helicopter.

(2) Inspect the flange retainer, part number (P/N) 15-17, located at the top of the shaft housing for deformation and measure the inside diameter. Before further flight, replace the flange retainer with an airworthy flange retainer if the part is deformed or if the inside diameter is not 1.5050 to 1.5060 inches.

(3) Inspect the housing, P/N 249-3, for deformation and measure the outer diameter at each end and at the center of its span. Replace the housing with an airworthy housing if:

(i) The housing is deformed;

(ii) Any outer diameter not on the flared end is not 1.497 to 1.500 inches; or

(iii) The outer diameter of the flared end is not 1.844 to 1.875 inches.

(4) Inspect the bushing, P/N 252-4, for nicks or scoring, and measure the bushing's length. If the length of the bushing is not .292 to .302 inch or if nicks or scoring is found, replace the bushing with an airworthy bushing before further flight.

(5) Inspect the bevel pinion gear (gear), P/N 15-8, paying particular attention to the bore, for nicks, scoring, burrs, or misalignment. Measure the diameter of the bolt hole and the bore. Before further flight, replace the gear with an airworthy gear if:

(i) You find misalignment,

(ii) You cannot remove all nicks, scoring, or burrs with light hand polishing using Scotch Brite (maroon or white) and maintain all tolerances and a 32 root mean square (rms) finish,

(iii) The diameter of the bolt hole is not .1894 to .1899 inch, or

(iv) The bore diameter is not .6248 to .6250 inch.

(6) Inspect the shaft attachment bolt, P/N 15-201, that inserts into the pinion, and the attachment bolt, P/N 249-11, that inserts into the male coupling, for fretting or nicks in the area where the bolts contact the shaft and measure the grip diameter. If a bolt has fretting or nicks or if the grip diameter is not .1889 to .1894 inch, replace the bolt with an airworthy bolt before further flight.

(7) Inspect the male coupling, P/N 249-9, paying particular attention to the bore for nicks, scoring, keyway elongation, burrs, or misalignment and measure the bolt hole diameter and the bore diameter. Before further flight, replace the male coupling with an airworthy male coupling if:

(i) You find misalignment;

(ii) The keyway has elongation;

(iii) You cannot remove all nicks, scoring, or burrs with light hand polishing using Scotch Brite (maroon or white) and maintain all tolerances and a 32 rms finish;

(iv) The diameter of the bolt hole is not .1894 to .1899 inch; or

(v) The bore diameter is not .6250 to .6260 inch.

(8) Inspect the shaft, P/N 249-10, for misalignment. Measure the diameter of the bolt holes. Inspect for straightness of the shaft by placing the shaft on a flat surface plate calibrated to work surface accuracy tolerance of .001 inch, rolling the shaft, and measuring the greatest gap between the shaft and the flat surface table. Magnetic particle inspect the shaft for a crack, paying particular attention to the bolt holes. Visually inspect the shaft, paying particular attention to a circular area of .500 inch radius from the center of the bolt holes for the following damage: nicks, scoring, fretting, burrs, or misalignment. Before further flight, replace the shaft if:

(i) You find misalignment,

(ii) You cannot remove all nicks, scoring, fretting, or burrs with light hand polishing using Scotch Brite (maroon or white) and maintaining all tolerances and a 32 rms finish,

(iii) The diameter of the bolt hole is not .1894 to .1899 inch,

(iv) The outer diameter of the shaft is not .6240 to .6250 inch at all points,

(v) The shaft is not straight and the maximum gap between the shaft and the flat surface table exceeds .007 inch, or

(vi) You find a crack, a surface or subsurface discontinuity, or pitting.

(9) Assemble and inspect the gearbox, P/N 278-200, the shaft, P/N 249-10, and the housing, P/N 249-3, by following Part 2, paragraph 2.6 of Brantly International Inc. Service Bulletin No. 105, Revision A, dated August 3, 2005 (SB). Before assembling the pinion gear and the male coupling to the shaft, thoroughly inspect the bore for foreign objects or burrs. Clean and deburr the bore. If the assembly fails any inspection required by this paragraph, replace the gearbox, shaft, and housing with airworthy parts before further flight and before complying with the remainder of this AD. When the SB uses the term "check", for purposes of this AD, it means "inspect." Also, you are not required to contact the factory as stated in the SB.

(b) Before installing the gearbox (upper):

(i) Align and bolt down the intermediate gearbox, P/N 278-100, its cover, P/N 252-3, and the bushing, P/N 252-4, the long horizontal shaft housing, P/N 14-13, and its retainer flange, P/N 15-17, without making any adjustment for the gearbox (upper), shaft (vertical), or housing.

Note 1: See the applicable maintenance manual for installation instructions.

(c) Before further flight, install and inspect the gearbox, P/N 278-200, by following paragraphs 2.7 1) through 4) and Figure SB-105-2 of the SB. If the gearbox fails any portion of the installation procedures or any inspection tolerance required by this paragraph, the installation is not airworthy and the helicopter is grounded until the installation complies with the requirements of this paragraph.

(d) After an airworthy installation of the gearbox is complete, inspect the tail rotor rigging control and correct it, if necessary, before further flight.

Note 2: See the applicable maintenance manual for tail rotor control rigging instructions.

(e) Within 7 work days of conducting the inspections and measuring the affected parts, report any discrepancies for the item listed in Appendix A of this AD to the Rotorcraft Certification Office at the address specified in Appendix A. Information collection requirements contained in this AD have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) and have been assigned OMB Control Number 2120-0056.

(f) To request a different method of compliance or a different compliance time for this AD, follow the procedures in 14 CFR 39.19. Contact the Rotorcraft Certification Office, FAA, for information about previously approved alternative methods of compliance.

(g) Assemble, inspect, and install the gearbox and associated parts by following the specified portions of the instructions in Brantly International, Inc. Service Bulletin No. 105, Revision A, dated August 3, 2005. The Director of the Federal Register approved this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Brantly International, Inc., Wilbarger County Airport, 12399 Airport Drive, Vernon, TX 76384, telephone 940-552-5451. Copies may be inspected at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Appendix A—Results of Gearbox Assembly Inspection and Wear Measurements for the Brantly Model B-2, B-2A, and B-2B, Helicopters

Point of Contact Information:

Name: _____

Company Name: _____

Address: _____

City/State/Zip: _____

Telephone: _____

Gearbox Part Inspection and Measurement Information (Report any discrepancies found per the AD): _____

Flange Retainer part number (P/N) 15-17 _____

Shaft Housing, P/N 249-3 _____

Bushing, P/N 252-4 _____

Bevel Pinion, P/N 15-8 _____

Bolt, P/N 15-201 _____

Bolt 249-11 _____

Male Coupling, P/N 249-9 _____

Shaft, P/N 249-10 _____

Tail Rotor Gearbox Assembly, P/N 278-200 _____

Installation of Tail Rotor Gearbox Assembly _____

Mail or Fax Results to: Federal Aviation Administration, ATTN: Marc Belhumeur, Rotorcraft Certification Office, Fort Worth, TX 76193-0170, FAX: (516) 222-5783.

(h) This amendment becomes effective on May 2, 2006.

Issued in Fort Worth, Texas, on April 5, 2006.

David A. Downey,

Manager, Rotorcraft Directorate, Aircraft Certification Service.

[FR Doc. 06-3536 Filed 4-14-06; 8:45 am]

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