FAA
Aviation Safety

EMERGENCY AIRWORTHINESS DIRECTIVE

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DATE: May 11, 2010
AD #: 2010-11-51

This Emergency Airworthiness Directive (EAD) is prompted by several reports of cracking in a tail gearbox (TGB) control lever, part number (P/N) 350A33-1058-03, including an accident involving an AS350B2 helicopter. An investigation revealed that a few surface anomolies may lead to a crack in the TGB control lever. This condition, if not detected could result in failure of the TGB control lever, loss of tail rotor control, and subsequent loss of control of the helicopter.

We have reviewed Eurocopter Emergency Alert Service Bulletin (EASB) No. 05.00.62, for Model AS350 helicopters and EASB No. 05.00.57 for Model AS355 helicopters. Both EASBs are Revision 1, dated April 23, 2010, and both describe procedures for a visual inspection of the TGB control lever for a crack that must be performed after the last flight of each day and prior to exceeding 10 flying hours for each inspection. The EASBs also describe a rework procedure for affected TGB control levers which must be accomplished within 660 flying hours or no later than June 30, 2011, or before installing an affected TGB control lever on a helicopter. The one Eurocopter EASB contains four different service bulletin numbers (Nos. 05.00.62, 05.00.57, 05.00.38, and 05.00.35) applicable to four different Eurocopter model helicopters. EASB No. 05.00.38 relates to Eurocopter Model AS550 helicopters, and EASB No. 05.00.35 relates to Eurocopter Model AS555 helicopters. Eurocopter Model AS550 and AS555 helicopters are military models and are not type-certificated in the United States. This AD does not incorporate EASB No. 05.00.38 nor EASB No. 05.00.35.

The European Aviation Safety Agency (EASA), which is the Technical Agent for France, notified the FAA that an unsafe condition may exist on these helicopter models. EASA advises of a crack discovered in a TGB control lever, which could lead to a loss of tail rotor control and subsequent loss of control of the helicopter. EASA classified the service bulletin as mandatory and issued EASA Emergency AD No. 2010-0082-E, dated April 27, 2010, to ensure the continued airworthiness of these helicopters. This AD differs from EASA Emergency AD No. 2010-0082-E as follows:

- We include the Eurocopter Model AS350C and AS350D1 helicopters that may contain the affected TGB control lever;
- We use the term “hours time-in-service” rather than “flight hours”;
- We do not require replacing the TGB control lever within 660 hours TIS or 14 months, but instead offer optional terminating actions for the repetitive inspection requirements; and
- We do not require you to contact Eurocopter if a crack is found during any inspection.

These helicopter models are type certificated for operation in the United States under the provisions of 14 CFR 21.29 and the applicable bilateral agreement. Pursuant to the applicable bilateral agreement, EASA has kept the FAA informed of the situation described. The FAA has examined the findings of EASA, reviewed all available information, and determined that AD action is necessary for products of these type designs that are certificated for operation in the United States.

This unsafe condition is likely to exist or develop on other helicopters of these same type designs. Therefore, this AD requires, within 10 hours time-in-service (TIS), and thereafter at intervals not to exceed 10 hours TIS, a visual inspection for cracking in the TGB control lever in accordance with the EASB. If a crack is found, replacing the cracked TGB control lever with an airworthy TGB control lever is required before further flight. Optional terminating action for the inspection requirements of this AD can be accomplished by either:

- Replacing a TGB control lever with an airworthy TGB control lever that is marked with an "X" near the P/N; or

- Stripping the rework area "B" as shown in Figure 4 of each EASB and performing a dye-penetrant inspection on that area for a crack. If no crack is found, reworking and marking the TGB control lever before further flight is required. If a crack is found, before further flight, removing and replacing the cracked TGB control lever with an airworthy TGB control lever is required.

These actions are required to be accomplished in accordance with specified portions of the EASBs described previously.

This rule is issued under 49 U.S.C. Section 44701 pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2010-11-51 EUROCOPTER FRANCE: Directorate Identifier No. 2010-SW-053-AD.

Applicability: Model AS350B, BA, B1, B2, C, D, and D1 helicopters and Model AS355E, F, F1, F2, and N helicopters, with a tail gearbox (TGB) control lever, part number (P/N) 350A33-1058-00, P/N 350A33-1058-01, P/N 350A33-1058-02, or P/N 350A33-1058-03, that is <u>not</u> marked with an "X" near the P/N, installed, certificated in any category.

Compliance: Required as indicated.

To detect cracking in a TGB control lever and prevent failure of the TGB control lever, loss of tail rotor control, and subsequent loss of control of the helicopter, accomplish the following:

(a) Within 10 hours time-in-service (TIS), unless accomplished previously, and thereafter at intervals not to exceed 10 hours TIS, visually inspect the affected TGB control lever for cracking in accordance with the Accomplishment Instructions, paragraph 2.B.1.a., in Eurocopter Emergency Alert Service Bulletin (EASB) No. 05.00.62, Revision 1, dated April 23, 2010, for Model AS350 helicopters or EASB No. 05.00.57, Revision 1, dated April 23, 2010, for Model AS355 helicopters.

(b) If a crack is found, before further flight, remove and replace the cracked TGB control lever with an airworthy TGB control lever in accordance with the Accomplishment Instructions, paragraph 2.B.2., in the EASB appropriate for your model helicopter.

(c) Either of the following options constitutes a terminating action for the inspection requirements of this AD:

(1) Replace a TGB control lever with an airworthy TGB control lever that is marked with an "X" near the P/N; or

(2) Strip the rework area "B" as shown in Figure 4 of each EASB and perform a dye-penetrant inspection on that area for a crack. If no crack is found, rework and mark the TGB control lever in

accordance with paragraph 2.B.3.b. of the EASB appropriate for your model helicopter, except you are not required to contact Eurocopter France. If a crack is found, before further flight, remove and replace the cracked TGB control lever with an airworthy TGB control lever in accordance with the Accomplishment Instructions, paragraph 2.B.2., in the EASB.

Note 1: One Eurocopter EASB contains four different service bulletin numbers but only portions of 2 EASBs are being incorporated.

Note 2: Installing a reinforced TGB control lever, P/N 350A33-1524-00 or P/N 350A33-1526-00, that does not need to be marked with an "X" constitutes compliance with paragraph (c) of this AD.

(d) 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 Manager, Safety Management Group, FAA, ATTN: J.R. Holton, Jr., Aviation Safety Engineer, ASW-112, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-4964, fax (817) 222-5961, for information about previously approved alternative methods of compliance.

(e) *S*pecial flight permits may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the helicopter to a location where the inspection requirements of paragraph (a) of this AD can be accomplished.

(f) The Joint Aircraft System/Component (JASC) Code is 6720: Tail Rotor Control System.

(g) Copies of the applicable service information may be obtained from American Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, Texas 75053-4005, telephone (800) 232-0323, fax (972) 641-3710, or at http://www.eurocopter.com.

(h) Emergency AD 2010-11-51, issued May 11, 2010, becomes effective upon receipt.

Note 3: The subject of this AD is addressed in European Aviation Safety Agency (France) Emergency AD No. 2010-0082-E, dated April 27, 2010.

FOR FURTHER INFORMATION CONTACT: J.R. Holton, Jr., Aviation Safety Engineer, FAA, Rotorcraft Directorate, Safety Management Group, 2601 Meacham Blvd., Fort Worth, Texas 76137, telephone (817) 222-4964, fax (817) 222-5961.

Issued in Fort Worth, Texas, on May 11, 2010.

Judy I. Carl,
Acting Manager, Rotorcraft Directorate,
Aircraft Certification Service.