



**FAA**  
**Aviation Safety**

# **EMERGENCY**

## **AIRWORTHINESS DIRECTIVE**

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**DATE: October 13, 2011**

**AD #: 2011-22-51**

Emergency airworthiness directive (AD) 2011-22-51 is sent to owners and operators of Sikorsky Aircraft Corporation (Sikorsky) Model S-70, S-70A, S-70C, S-70C(M), and S-70C(M1) helicopters.

### **Background**

This emergency AD was prompted by an accident that resulted from the blockage of the internal oil passages of the intermediate gearbox (IGB). The blockage occurred when a plug was left in the IGB during coating of the IGB housing. The blockage caused insufficient lubrication of the IGB, which overheated, seized-up, and caused a fracture in the output shaft that drives the tail rotor. This condition, if not corrected, could result in loss of tail rotor drive and subsequent loss of control of the helicopter.

### **Relevant Service Information**

We reviewed Sikorsky Alert Service Bulletin No. 70-06-29A, dated October 11, 2011 (ASB). The ASB specifies:

- A one-time borescope inspection of the lubrication passages from the oil scupper to the input and output housing.
- Disassembling the IGB for inspection as an alternative to the borescope inspection.
- Adding an "A" suffix to the serial number of all IGBs that have been inspected.

### **FAA's Determination**

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type designs.

### **AD Requirements**

This AD requires borescope inspecting the IGB for any obstruction in the oil passages. As an alternative to the borescope inspection, this AD allows disassembling the IGB and inspecting the oil passages for any obstruction. If there is any obstruction in any oil passage, replace the IGB with an airworthy IGB before further flight. These actions are required before further flight and must be accomplished in accordance with specified portions of the ASB described previously.

### **Differences Between This AD and the Service Information**

This AD does not apply to the Model H-60 helicopter as it does not have a U.S. type certificate. Also, this AD does not require returning any parts to Sikorsky nor does it require marking the IGB after inspection.

## **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.

## **Presentation of the Actual AD**

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

**2011-22-51 SIKORSKY AIRCRAFT CORPORATION (Sikorsky):** Directorate Identifier 2011-SW-056-AD.

### **(a) Effective Date**

This Emergency AD is effective upon receipt.

### **(b) Affected ADs**

None.

### **(c) Applicability**

Sikorsky Model S-70, S-70A, S-70C, S-70C(M), and S-70C(M1) helicopters with an intermediate gearbox (IGB), part number 70357-06300-044, with 100 or less hours time-in-service since new or overhaul.

### **(d) Subject**

The Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code is 6520: Tail Rotor Gearbox.

### **(e) Unsafe Condition**

This AD was prompted by an accident that resulted from the blockage of the internal oil passages of the IGB. The blockage occurred when a plug installed during coating of the IGB housing was left in the IGB oil passage. The blockage caused insufficient lubrication of the IGB, which overheated, seized-up, and caused a fracture in the output shaft that drives the tail rotor. We are issuing this AD to prevent loss of tail rotor drive and subsequent loss of control of the helicopter.

### **(f) Compliance**

Before further flight, unless accomplished previously.

### **(g) Required Actions**

(1) Borescope inspect the IGB for any obstruction in the oil passages. Borescope inspect in accordance with the following portions of Sikorsky Alert Service Bulletin No. 70-06-29A, dated October 11, 2011 (ASB):

(i) The Accomplishment Instructions, Section 3., paragraphs A.(1) through A.(3)(a);

(ii) Equipment and Materials and Inspection sections of Appendix 1; and

Note 1: This AD does not require returning any parts to Sikorsky.

(iii) Figures 1 through 10 of Appendix 1.

(2) As an alternative to the requirements of paragraph (g)(1) of this AD, disassemble the IGB and inspect the oil passages for any obstruction.

Note 2: Removing any obstruction from the IGB does not make it airworthy.

(3) If there is any obstruction in any oil passage, replace the IGB with an airworthy IGB before further flight.

### **(h) Special Flight Permit**

Special flight permits are prohibited.

### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Boston Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, we suggest that you notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

### **(j) Related Information**

(1) For further information about this AD, contact: Mike Davison, Flight Test Engineer, Boston ACO, FAA, 12 New England Executive Park, phone: (781) 238-7156, fax: (781) 238-7170, e-mail: michael.davison@faa.gov.

(2) For copies of the service information referenced in this AD, contact Sikorsky Aircraft Corporation, Attn: Manager, Commercial Technical Support, mailstop s581a, 6900 Main Street, Stratford, CT, telephone (203) 383-4866, e-mail address [tsslibrary@sikorsky.com](mailto:tsslibrary@sikorsky.com), or at <http://www.sikorsky.com>.

Issued in Fort Worth, Texas, on October 13, 2011.

Jorge R. Castillo,  
Acting Manager, Rotorcraft Directorate,  
Aircraft Certification Service.