



DATE: January 13, 2017

AD #: 2017-02-51

This Emergency Airworthiness Directive (Emergency AD) 2017-02-51 is being sent to owners and operators of Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters.

Background

This Emergency AD was prompted by three reports of operators losing tail rotor (TR) control caused by a failed tail rotor pitch change shaft (TRPCS) assembly bearing. Following the first two reports, the FAA issued and subsequently published as a final rule Emergency AD 2016-24-51 (81 FR 95425, December 28, 2016). That AD applies to Sikorsky Model S-92A helicopters with a TRPCS assembly that has less than 80 hours time-in-service (TIS) with bearings that were manufactured prior to November 3, 2016. Emergency AD 2016-24-51 is intended to address an unsafe condition with low-time bearings by requiring removal of TRPCS assemblies that have less than 5 hours TIS and one-time inspections for certain conditions.

Actions Since Emergency AD 2016-24-51 Was Issued

Since Emergency AD 2016-24-51 was issued, a third report of an S-92A helicopter losing TR control was reported, and a preliminary investigation determined that the bearing failed despite having more than 80 hours TIS. We have determined that the unsafe condition can exist on TRPCS bearings regardless of hours TIS. Therefore, this Emergency AD applies to all TRPCS assemblies. This Emergency AD requires a one-time visual inspection and a repetitive borescope inspection of the TRPCS assembly bearing. The repetitive inspection is intended to detect bearing deterioration. The actions in this Emergency AD are intended to detect a binding bearing, prevent loss of TR control, and possible loss of control of the helicopter.

FAA's Determination

We are issuing this Emergency 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 design.

Related Service Information

We reviewed Sikorsky Alert Service Bulletin 92-64-011, Basic Issue, dated January 10, 2017 (ASB). The ASB describes procedures for inspecting the TRPCS and bearing assemblies for ratcheting, binding, and rough turning. The ASB also specifies periodic review of the health and usage monitoring system (HUMS) tail gearbox bearing energy tool.

Emergency AD Requirements

This Emergency AD requires, before further flight, removing the TRPCS assembly and inspecting the bearing. If the bearing does not rotate freely; the bearing sounds rough or chatters; there is any purged grease with metal particles; a nick or dent; or if there is a cut, tear, or distortion in

the bearing seal, before further flight, replacing the TRPCS assembly is required. This Emergency AD also requires, within 10 hours TIS, and thereafter at intervals not to exceed 10 hours TIS, inspecting the TRPCS assembly with a borescope. If the white Teflon seal or snap ring is missing, or if there is a rip, tear, or heat damage on the seal or if there is no gap in the snap ring, replacing the TRPCS assembly is required before further flight.

Differences Between This Emergency AD and the Service Information

This Emergency AD requires repetitive borescope inspections of the TRPCS; the ASB does not. The ASB specifies that operators review HUMS data in addition to the one-time inspection and specifies contacting Sikorsky if any discrepancies are found; this Emergency AD does not.

Interim Action

We consider this Emergency AD to be an interim action. If final action is later identified, we might consider further rulemaking then.

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.

Adoption of the Emergency Airworthiness Directive (AD)

We are issuing this Emergency AD under 49 U.S.C. Sections 106(g), 40113, and 44701 according to the authority delegated to me by the Administrator.

2017-02-51 **Sikorsky Aircraft Corporation:** Directorate Identifier 2017-SW-003-AD.

(a) Applicability

This Emergency AD applies to Sikorsky Aircraft Corporation (Sikorsky) Model S-92A helicopters, certificated in any category, with a tail rotor pitch change shaft (TRPCS) assembly part number (P/N) 92358-06303-041 or P/N 92358-06303-042 installed.

(b) Unsafe Condition

This Emergency AD defines the unsafe condition as a binding TRPCS bearing. This condition could result in loss of tail rotor (TR) control and possible loss of control of the helicopter.

(c) Effective Date

This Emergency AD is effective upon receipt.

(d) Compliance

You are responsible for performing each action required by this Emergency AD within the specified compliance time unless it has already been accomplished prior to that time.

(e) Required Actions

(1) Before further flight, unless already done, remove the TRPCS assembly and inspect the SB2310 angular contact bearing for free rotation, purged grease with metal particles, a nick or a dent, and any cut, tear, or distortion on the bearing seal. If the bearing does not rotate freely; the bearing sounds rough or chatters; there is any purged grease with metal particles; a nick or dent; or if there is a cut, tear, or distortion in the bearing seal, before further flight, replace the TRPCS assembly.

(2) Within 10 hours time-in-service (TIS), unless already done within the last 10 hours TIS, and thereafter at intervals not to exceed 10 hours TIS, on the TR side of the TRPCS bearing, remove the plug from the end of the TRPCS, insert the borescope into the TRPCS, and determine whether the white Teflon seal and snap ring are installed. If the white Teflon seal or snap ring is missing, or if there is a rip, tear, or heat damage on the seal or if there is no gap in the snap ring, before further flight replace the TRPCS assembly.

(f) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Boston Aircraft Certification Office, FAA, may approve AMOCs for this Emergency AD. Send your proposal to: Blaine Williams, Aerospace Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 1200 District Avenue, Burlington, Massachusetts 01803; telephone (781) 238-7161; email blaine.williams@faa.gov.

(2) For operations conducted under a 14 CFR part 119 operating certificate or under 14 CFR part 91, subpart K, we suggest that you notify your principal inspector, or lacking a principal inspector, the manager of the local flight standards district office or certificate holding district office, before operating any aircraft complying with this Emergency AD through an AMOC.

(g) Additional Information

(1) For further information contact: Blaine Williams, Aerospace Engineer, Boston Aircraft Certification Office, Engine & Propeller Directorate, 1200 District Avenue, Burlington, Massachusetts 01803; telephone (781) 238-7161; email blaine.williams@faa.gov.

(2) For a copy of the service information referenced in this Emergency AD, contact: Sikorsky Aircraft Corporation, Customer Service Engineering, 124 Quarry Road, Trumbull, CT 06611; telephone 1-800-Winged-S or 203-416-4299; email: wcs_cust_service_eng_gr-sik@lmco.com.

(h) Subject

Joint Aircraft Service Component (JASC) Code: 6720 Tail Rotor Control System.

Issued in Fort Worth, Texas, on January 13, 2017.

Lance T. Gant,
Manager, Rotorcraft Directorate,
Aircraft Certification Service.