FAA
Aviation Safety

EMERGENCY AIRWORTHINESS DIRECTIVE

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DATE: October 28, 2015
AD #: 2015-22-52

This Emergency Airworthiness Directive (AD) 2015-22-52 is being sent to owners and operators of Airbus Helicopters Model AS350B3 helicopters.

Background

This Emergency AD was prompted by two accidents and one incident of Airbus Helicopters Model AS350B3 helicopters with a dual hydraulic system installed. From preliminary investigations, loss of tail rotor (T/R) control during take-off was evident in each event. Each event experienced a counterclockwise rotational yaw immediately after takeoff. It was also noted that the anti-torque pedals felt jammed or locked in the neutral position by the pilots in the two non-fatal events. The conditions in the events are indicative of takeoffs without hydraulic T/R assistance control caused by a lack of pressure in the T/R hydraulic system. When taking off without T/R hydraulic assistance with the switch on the collective grip in the "OFF" (aft) position, the yaw load compensator remains discharged and degrades the T/R hydraulic system, which significantly increases the pilot T/R control load and prevents sufficient T/R thrust for takeoff. This Emergency AD prohibits performing the yaw load compensator check (collective switch) during preflight procedures and instead requires performing it during post-flight procedures. This emergency AD also requires the yaw servo hydraulic switch (collective switch) to be in the "ON" (forward) position before taking-off. The actions in this Emergency AD are intended to prevent takeoff without hydraulic pressure in the T/R hydraulic system, loss of T/R flight control, and subsequent loss of control of the helicopter.

Based on the accidents and incident, the European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, issued EASA AD No. 2015-0178, dated August 26, 2015, to correct an unsafe condition for Airbus Helicopters Model AS 350 B3 helicopters, equipped with a dual hydraulic system identified as modification OP 3082 or OP 3346. EASA advises of a perceived loss of T/R control that mimics jamming during take-off if the T/R hydraulic preflight checks are not performed in accordance with the checklist in the Rotorcraft Flight Manual (RFM). According to EASA, performing the T/R hydraulic preflight checks improperly may result in reduced function of the T/R hydraulic system, thereby significantly increasing the T/R control load for the pilot.

FAA's Determination

This helicopter has been approved by the aviation authority of France and is approved for operation in the United States. Pursuant to our bilateral agreement with France, EASA, its technical representative, has notified us of the unsafe condition described in the EASA AD. We are issuing this emergency AD because we evaluated all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other helicopters of the same type design.

Related Service Information

Airbus Helicopters issued Service Bulletin No. AS350-67.00.66, Revision 1, dated October 22, 2015 (SB AS350-67.00.66), which specifies inserting specific pages of the bulletin into the RFM.

These pages revise the preflight and post-flight hydraulic checks by moving the T/R yaw load compensator check from preflight to post-flight. These pages also revise terminology within the flight manuals for the different engine configurations.

Airbus Helicopters also issued Safety Information Notice No. 2944-S-29, Revision 0, dated August 26, 2015 (SIN 2944-S-29), which warns that attempting to take off without T/R hydraulic assistance (the yaw servo hydraulic switch on the collective grip in the "OFF" (aft) position) might be incorrectly perceived as T/R control failure (jam), which could lead to loss of control of the helicopter if not quickly identified and corrected. SIN 2944-S-29 also advises of the RFM update that revises the run-up hydraulic check starting procedures to no longer specify pressing the yaw servo hydraulic switch. Pressing the yaw servo hydraulic switch, which is part of the yaw load compensator check, discharges the yaw load compensator. The yaw load compensator check has been moved from preflight to post-flight procedures. Further, SIN 2944-S-29 states the yaw servo hydraulic switch, which is located on the collective grip, is also called the hydraulic pressure switch or hydraulic cut off switch in various RFMs.

Emergency AD Requirements

This Emergency AD requires, before further flight, no longer performing the yaw load compensator check (collective switch) during preflight procedures and instead performing the yaw load compensator check during post-flight procedures. This Emergency AD also requires the yaw servo hydraulic switch (collective switch) to be in the "ON" (forward) position before taking off. The yaw servo hydraulic switch may also be called the hydraulic pressure switch or hydraulic cut off switch.

Differences Between This Emergency AD and the EASA AD

The EASA AD requires revising the RFM by incorporating procedures contained in Airbus Helicopters Service Bulletin No. AS350-67.00.66, Revision 0, dated August 26, 2015, and informing all flight crew of the RFM changes. This Emergency AD prohibits performing the yaw load compensator check during preflight procedures and requires it to be performed during post-flight procedures. This Emergency AD also requires the yaw servo hydraulic switch (collective switch) to be in the "ON" (forward) position before taking off.

Interim Action

We consider this Emergency AD to be an interim action. The design approval holder is currently developing a terminating action that will address the unsafe condition identified in this Emergency AD. Once this terminating action is developed, approved, and available, we might consider additional rulemaking.

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.

2015-22-52 **Airbus Helicopters:** Directorate Identifier 2015-SW-074-AD.

(a) Applicability

This Emergency AD applies to Airbus Helicopters Model AS350B3 helicopters with a dual hydraulic system installed, certificated in any category.

Note 1 to paragraph (a) of this Emergency AD: The dual hydraulic system for Model AS350B3 helicopters is referred to as Airbus modification OP 3082 or OP 3346.

(b) Unsafe Condition

This Emergency AD defines the unsafe condition as lack of hydraulic pressure in a tail rotor (T/R) hydraulic system. This condition could result in loss of T/R flight control and subsequent 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

Before further flight, stop performing the yaw load compensator check (collective switch) during preflight procedures, and instead perform the yaw load compensator check during post-flight procedures. The yaw servo hydraulic switch (collective switch) must be in the “ON” (forward) position before takeoff.

Note 2 to paragraph (e) of this Emergency AD: The yaw servo hydraulic switch is also called the hydraulic pressure switch or hydraulic cut off switch in various Airbus Helicopters flight manuals.

(f) Special Flight Permit

A special flight permit is prohibited.

(g) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Safety Management Group, FAA, may approve AMOCs for this Emergency AD. Send your proposal to: Stephen Barbini, Flight Test Engineer, Regulations and Policy Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222-5110; email 9-ASW-FTW-AMOC-Requests@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.

(h) Additional Information

(1) For further information contact: Stephen Barbini, Flight Test Engineer, Regulations and Policy Group, Rotorcraft Directorate, FAA, 10101 Hillwood Pkwy, Fort Worth, TX 76177; telephone (817) 222-5110; email stephen.barbini@faa.gov.

(2) Airbus Helicopters Service Bulletin No. AS350-67.00.66, Revision 1, dated October 22, 2015, and Airbus Helicopters Safety Information Notice No. 2944-S-29, Revision 0, dated August 26, 2015, provide additional information about this Emergency AD. For a copy of this service information referenced in this AD, contact: Airbus Helicopters, 2701 N. Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at http://www.airbushelicopters.com/techpub.

(3) The subject of this AD is addressed in European Aviation Safety Agency AD No. 2015-0178, dated August 26, 2015.

(i) Subject

Joint Aircraft Service Component (JASC) Code: 2910, Main Hydraulic System.

Issued in Fort Worth, Texas, on October 28, 2015.

Lance T. Gant,

Manager, Rotorcraft Directorate,
Aircraft Certification Service.