AIRWORTHINESS DIRECTIVE

Eurocopter AS 355 (Twin Ecureuil) Series Helicopters

AD/AS 355/67
Amdt 4
Main Gearbox Lubrication Pump

Applicability: Eurocopter AS 355 E, F, F1, F2 and AS 355 N helicopters, all serial numbers, equipped with lubrication pumps Part Number (P/N) 355A32-0700-01, 355A32-0700-02 and 355A32-0701-00 installed on the Main Gearbox (MGB).

Requirement: 1. Inspect the MGB magnetic plug and MGB oil sight glass in accordance with Paragraph 2.B.1 of Eurocopter AS 355 Alert Service Bulletin (ASB) No. 05.00.40R2 dated 20 December 2006, or later DGAC approved revisions.

Requirement 1 of this Directive may be carried out and certified by the pilot provided the pilot has completed an approved training program.

2. Depending on the results of the inspection in accordance with Requirement 1 of this AD, comply with Para 2.B.2. of ASB 05.00.40R2 or later DGAC approved revisions.

3. For pumps listed in the Applicability section of this AD that have logged flying hours since new, overhaul or repair, comply with paragraph 2.B.2. of ASB 05.00.40R2 or later DGAC approved revisions.


Compliance: 1. Repetitively, following the last flight of the day, but no later than 10 hours time in service since last inspection.

2. Before further flight.

3. Before installation of the lubrication pump on a helicopter.

This Amendment becomes effective on 22 December 2006.
Background: DGAC France, the type certificating authority for Eurocopter rotorcraft issued AD F-2006-027 following four reports of MGB lubrication pump deterioration. These cases had occurred on pumps with serial numbers relatively close to each other and with few operating hours (less than 610 hours). Accordingly, Amendment 3 of CASA AD (based on French AD F-2006-027) limited the monitoring to MGB oil pumps with certain serial numbers, i.e. those serial numbers corresponding to a machining modification concerning the shape of the pump casing.

A further incident has recently occurred on an MGB fitted with a pump that had not been subject to this machining modification. This event shows that the machining modification is not the only reason for early deterioration of the oil pumps and makes the monitoring of all the oil pumps mandatory. After a period of operation of insufficient lubrication, the Combining Gearbox assembly could deteriorate resulting in the loss of the drive train from one or possibly both engines (deterioration of the combiner gearbox gears).

Consequently, the current amendment of this AD, while retaining the basic requirements, extends the applicability to all the pumps mentioned in the Applicability and requires compliance with latest Revision of the referenced Service Document.

Amendment 3 added additional serial number MGB pumps to the Applicability section and amended Requirement 3. Amendment 3 of this AD became effective on 23 November 2006.

Amendment 2 changed the Applicability section of the AD by incorporating additional details in that section. Amendment 2 of this AD became effective on 17 February 2005.

Amendment 1 reflected updated information from the regulatory authority and the manufacturer. Amendment 1 of this AD became effective on 17 April 2003.

This Directive was originally issued to require the daily inspection of the helicopter main gearbox for evidence of impending failure of the gearbox lubrication pump. The requirement reflects four reports of evidence of lubrication pump deterioration traced to a manufacturing defect. Failure of the lubrication pump could result in the loss of gearbox drive train for one or both engines.

The original issue of this AD became effective on 10 July 2002.