EMERGENCY AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post Emergency ADs on the internet at "av-info.faa.gov"

DATE: October 17, 2002
AD #: 2002-21-51

Send to all U.S. owners and operators of Eurocopter France Model AS355E, F, F1, F2, and N helicopters.

This Emergency Airworthiness Directive (AD) is prompted by four reports of malfunction of the main gear box (MGB) lubrication pump (pump). The bearings of the driven pinion inside the pump case deteriorate resulting in pump failure and loss of oil pressure. This condition, if not corrected, can result in seizure of the MGB, loss of drive to an engine and main rotor, and subsequent loss of control of the helicopter.

The FAA has reviewed Eurocopter France (ECF) Alert Telex No. 05.00.40, dated June 6, 2002 (Telex), which describes procedures for inspecting the MGB magnetic plug for sludge and the MGB for very dark oil and inspecting the pump. The Telex specifies overhauling the MGB if any of the following is found in the pump: bearing crank pin play, bronze bushing out-of-round, offset of the driven gear pinion, certain wear, or metal chips. Pending the results of various investigations and to prevent loss of the drive train of the main transmission linkage, ECF specifies these procedures for all pumps.

The Direction Generale De L'Aviation Civile, the airworthiness authority for France, notified the FAA that an unsafe condition may exist on these helicopter models. The DGAC advises of four reports of pump deterioration. The DGAC advises that, in time, the insufficiently lubricated power transmission assembly deteriorates resulting in loss of the drive train for one or both engines (deterioration of the combiner gearbox gears). The DGAC classified the Telex as mandatory and issued AD No. 2002-331-071(A) dated July 10, 2002, to ensure the continued airworthiness of these helicopters.

These helicopter models are manufactured in France and 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, the DGAC has kept the FAA informed of the situation described above. The FAA has examined the findings of the DGAC, 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 the same type design. Therefore, this AD requires, the following :

- Before the first flight of the day and at intervals not to exceed 10 hours time-in-service (TIS), check the magnetic chip detector plug (chip detector) for metal particles and the MGB oil-sight glass for dark oil.

- If you find metal particles on the chip detector, before further flight, inspect the pump.
- If you observe dark oil through the MGB oil sight glass, before further flight, take an oil sample to confirm that the oil is dark or dark purple.
- If the oil sample is dark or dark purple, before further flight, inspect the pump, part number 355A32-0700-00, -01, or -01M.
- If you find crank pin play, out-of-round bronze bushing, offset of the driven gear pinion, metal chips, or certain wear, replace the MGB and the pump with an airworthy MGB and pump before further flight.
- A different MGB or pump with any TIS must meet the requirements of this AD before installation.

An owner/operator (pilot) may perform the visual check required by paragraph (a) of this AD and must enter compliance with that paragraph into the helicopter maintenance records in accordance with 14 CFR 46.11 and 91.417(a)(2)(v). A pilot may perform this check because it involves only a visual check for magnetic particles on the magnetic plug and an oil-sight for dark-colored oil in the MGB and can be performed equally well by a pilot or a mechanic.

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.

2002-21-51 EUROCOPTER FRANCE: Docket No. 2002-SW-48-AD.

Applicability: Model AS355E, F, F1, F2, and N helicopters, with a main gearbox (MGB) lubrication pump (pump), part number 355A32-0700-00, -01, -01M, installed, certificated in any category.

Note 1: This AD applies to each helicopter identified in the preceding applicability provision, regardless of whether it has been otherwise modified, altered, or repaired in the area subject to the requirements of this AD. For helicopters that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent failure of the MGB pump, seizure of the MGB, loss of drive to an engine and main rotor, and subsequent loss of control of the helicopter, accomplish the following:

(a) Before the first flight of each day and at intervals not to exceed 10 hours time-in-service (TIS), check the MGB magnetic chip detector plug (chip detector) for any metal particles. Also, check for dark oil in the MGB oil-sight glass. An owner/operator (pilot) holding at least a private pilot certificate may perform this visual check and must enter compliance into the aircraft maintenance records in accordance with 14 CFR 43.11 and 91.417(a)(2)(v).

Note 2: Eurocopter France Alert Telex No. 05.00.40, dated June 6, 2002, pertains to the subject of this AD.

(1) Before further flight, if any metal particles are found on the chip detector, inspect the pump.

(2) Before further flight, if dark oil is observed through the MGB oil-sight glass, take an oil sample to confirm that the oil is dark or dark purple. If the oil sample is dark or dark purple, before further flight, inspect the pump.

(3) While inspecting the pump, if you find any of the following, replace the MGB and the pump with an airworthy MGB and pump before further flight:

(i) Crank pin play,
(ii) Out of round bronze bushing (A of Figure 1),
(iii) Offset of the driven gear pinion,
(iv) Metal chips, or
(v) Wear (C of Figure 1).

See the following Figure 1:

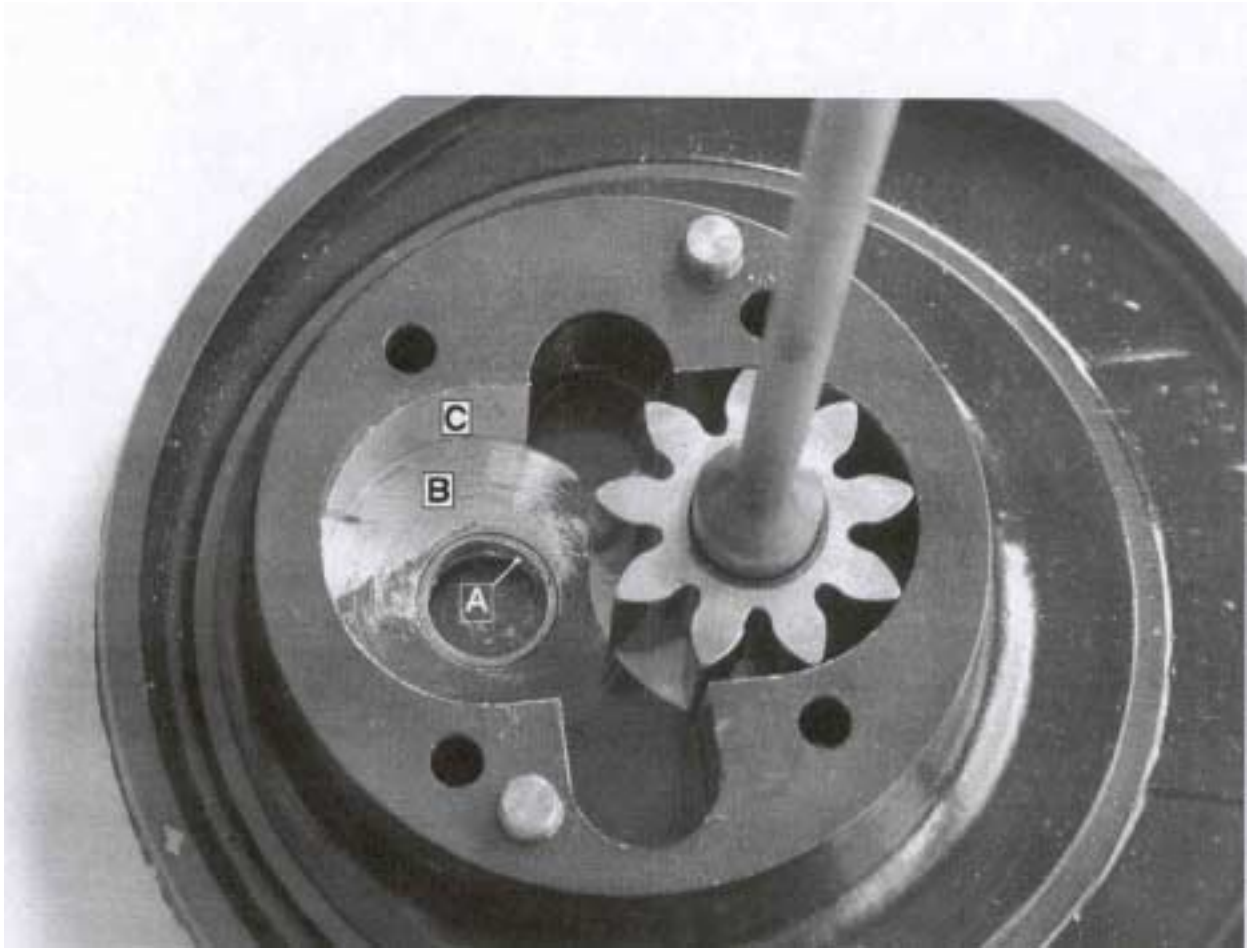


Figure 1

Note 3: If wear occurs in B only in Figure 1, replacing the MGB and the pump is not necessary.

(b) Before installing a different MGB or a pump with any TIS, accomplish the requirements of paragraph (a) of this AD.

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Regulations Group, Rotorcraft Directorate, FAA. Operators shall submit their requests through an FAA Principal Maintenance Inspector, who may concur or comment and then send it to the Manager, Regulations Group.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Regulations Group.

(d) Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199 to operate the helicopter to a location where the requirements of this AD can be accomplished.

(e) Copies of the applicable service information may be obtained from American Eurocopter Corporation, 2701 Forum Drive, Grand Prairie, Texas 75053-4005, telephone (972) 641-3460, fax (972) 641-3527.

(f) **Emergency AD 2002-21-51, issued October 17, 2002, becomes effective upon receipt.**

Note 5: The subject of this AD is addressed in Direction Generale De L'Aviation Civile, France, AD No. 2002-331-071(A), dated July 10, 2002.

FOR FURTHER INFORMATION CONTACT: Ed Cuevas, Aviation Safety Engineer, FAA, Rotorcraft Directorate, Regulations Group, Fort Worth, Texas 76193-0111, telephone (817) 222-5355, fax (817) 222-5961.

Issued in Fort Worth, Texas, on October 17, 2002.

David A. Downey,
Manager, Rotorcraft Directorate,
Aircraft Certification Service.