

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2013-0069 Date: 18 March 2013 Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.
This AD is issued in accordance with EU 748/2012, Part 21.A.3B. In accordance with EC 2042/2003 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].	
Design Approval Holder's Name: EUROCOPTER	Type/Model designation(s): AS 332 and EC 225 helicopters
TCDS Number:	EASA.R.002
Foreign AD:	Not applicable
Supersedure:	None
ATA 29, 67	Hydraulic Power / Rotors Flight Control – Main Gearbox Compartment / Hydraulic Flexible Pipes – Inspection / Replacement
Manufacturer(s):	Eurocopter (formerly EUROCOPTER France).
Applicability:	AS 332 C, AS 332 C1, AS 332 L, AS 332 L1, AS 332 L2 and EC 225 LP helicopters, all serial numbers.
Reason:	In-flight loss of left hand (LH) hydraulic pressure was reported on a helicopter equipped in the Main Gearbox (MGB) compartment with hydraulic flexible pipes fitted with surrounding fire-resistant protection sheath. The subsequent investigation revealed that the pressure loss was caused by a hydraulic fluid leakage from an hydraulic pressure pipe of the MGB compartment located between the forward main rotor servo-control and the hydraulic manifold. The failed flexible pipe, supplied by TECALEMIT, burst due to severe corrosion on the metal braid of the pipe underneath its fire-resistant protection sheath. This corrosion was a result of a large tear damage found on the pipe fire-resistant sheath, enabling humidity to enter between the sheath and the metal braid. Following this incident, Eurocopter issued Service Bulletin (SB) No.AS332-05.00.92 and SB No.EC225-05-027, as applicable to helicopter model, recommending repetitive inspection of the fire-resistant sheath of all the hydraulic flexible pipes located in the MGB compartment, and launched the update of both Aircraft Maintenance Manual and Maintenance Program accordingly. In the meanwhile, new cases of in-flight hydraulic pressure loss were reported, for which the same root cause, significant tears on the protection sheath of other MGB hydraulic flexible pipes manufactured by TECALEMIT, was identified. This repetition of similar incidents evidenced the potential of a higher number of damaged hydraulic pipes than initially appreciated and the reanalysis of the issue concluded that severe sheath damages are more critical

	on TECALEMIT hydraulic flexible pipes than on other equivalent parts from different supplying sources. This condition, if not detected and corrected, could lead, in case of simultaneous LH and right hand (RH) hydraulic system leakage, to loss of hydraulic systems and consequent loss of helicopter control. For the reasons described above, this AD requires a one-time inspection of the TECALEMIT flexible pipes installed on both LH and RH hydraulic system circuits located in the MGB compartment and, depending on findings, replacement of damaged pipes.								
Effective Date:	01 April 2013								
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Within 110 flight hours (FH) or 3 months, whichever occurs first after the effective date of this AD, inspect to identify hydraulic flexible pipes installed on both LH and RH hydraulic circuits in the helicopter MGB compartment. A review of helicopter delivery or maintenance records is acceptable to determine the installed hydraulic flexible pipe manufacturer, provided the flexible pipe manufacturer can be determined from that review. (2) If, during the identification as required by paragraph (1) of this AD, TECALEMIT flexible pipes are found to be installed <u>on both, LH and RH</u>, hydraulic circuits in the helicopter MGB compartment, within 110 FH or 3 months, whichever occurs first after the effective date of this AD, inspect all TECALEMIT hydraulic flexible pipes installed in the MGB compartment in accordance with the instructions of paragraph 3 of Eurocopter SB No.AS332-05.00.92 or SB No.EC225-05.027, as applicable to helicopter model. Note 1: The name of the flexible pipe manufacturer may not be indicated on the pipe. However, the Part Number (P/N) of a TECALEMIT hydraulic flexible pipe starts with "66". (3) If, during the inspection as required by paragraph (2) of this AD, at least one TECALEMIT pipe is found damaged <u>on both LH and RH</u> hydraulic circuits, within the compliance time as specified in Table 1 of this AD, as applicable, replace each damaged hydraulic flexible pipe with a serviceable part in accordance with the instructions of paragraph 3.B.3 of Eurocopter SB No.AS332-05.00.92 or EC225 SB No.EC225-05.027, as applicable to helicopter model. Table 1 <table border="1"> <thead> <tr> <th>Hydraulic Flexible Pipe Condition / Location</th><th>Compliance Time</th></tr> </thead> <tbody> <tr> <td>Severe sheath damage (see note 2) detected on the RH hydraulic system</td><td>Before next flight after the inspection as required by paragraph (2) of this AD</td></tr> <tr> <td>Less critical sheath damage (see note 3) detected on the RH hydraulic system</td><td>Within 300 FH or 6 months, whichever occurs first after the effective date of this AD</td></tr> <tr> <td>Any damage detected on the LH hydraulic system</td><td>Within 600 FH or 12 months, whichever occurs first after the effective date of this AD</td></tr> </tbody> </table> Note 2: Severe sheath damage is defined as any sheath tear or cut or open cracking that shows the pipe metallic braid underneath, when pinching or twisting the sheath. Note 3: Less critical sheath damage is defined as any other sheath damage	Hydraulic Flexible Pipe Condition / Location	Compliance Time	Severe sheath damage (see note 2) detected on the RH hydraulic system	Before next flight after the inspection as required by paragraph (2) of this AD	Less critical sheath damage (see note 3) detected on the RH hydraulic system	Within 300 FH or 6 months, whichever occurs first after the effective date of this AD	Any damage detected on the LH hydraulic system	Within 600 FH or 12 months, whichever occurs first after the effective date of this AD
Hydraulic Flexible Pipe Condition / Location	Compliance Time								
Severe sheath damage (see note 2) detected on the RH hydraulic system	Before next flight after the inspection as required by paragraph (2) of this AD								
Less critical sheath damage (see note 3) detected on the RH hydraulic system	Within 300 FH or 6 months, whichever occurs first after the effective date of this AD								
Any damage detected on the LH hydraulic system	Within 600 FH or 12 months, whichever occurs first after the effective date of this AD								

	(e.g. notch, light tear or crack, friction mark, gaping) as specified in paragraph 3 of Eurocopter SB No.AS332-05.00.92 or SB No.EC225-05.027, as applicable to helicopter model.
Ref. Publications:	Eurocopter SB No.AS332-05.00.92, revision 0 dated 24 September 2012, Eurocopter SB No.EC225-05.027, revision 0 dated 24 September 2012. The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.
Remarks:	1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. This AD was posted on 27 February 2013 as PAD 13-039 for consultation until 13 March 2013. No comments were received during the consultation period. 3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: ADs@easa.europa.eu. 4. For any question concerning the technical content of the requirements in this AD, please contact: EUROCOPTER (STD1) – Aéroport de Marseille Provence, 13725 Marignane Cedex, France; telephone +33 (4) 42 85 97 97; facsimile +33 (4) 42 85 99 66; E-mail: Directive.technical-support@eurocopter.com.