EASA AIRWORTHINESS DIRECTIVE AD No.: 2013-0037 Date: 22 February 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:** Type/Model designation(s): EUROCOPTER EC 225 LP helicopters TCDS Number: EASA.R.002 Foreign AD: Not applicable Supersedure: None Rotor Drive – Main Gear Box / Emergency Lubrication System / **ATA 63** Pressure-Switches – Identification / Replacement / Modification Eurocopter (formerly EUROCOPTER France) Manufacturer(s): EC 225 LP helicopters, all serial numbers. Applicability: Two separate events occurred in 2012 of EC 225 LP helicopters carrying out an Reason. emergency ditching in the North Sea after warning indication of Main Gear Box (MGB) loss of oil pressure and subsequent additional red alarm on the MGB emergency lubrication system (EMLUB) (refer to EASA AD 2012-0250-E for further information). In both cases, false EMLUB failure indications were identified. The subsequent investigation results revealed that discrepancies between the electrical outputs of the Air & Glycol pressure-switches of the EMLUB system and the helicopter wiring had caused the false EMLUB warnings. This design non-conformity only exists on helicopters equipped with pressure-switches manufactured by Industria. The investigation results further determined that certain electrical areas of the EMLUB system are not functionally tested when applying the task of work card "63-26-00-721" of the applicable maintenance manual, which means that possible electrical failure condition in the EMLUB system could remain undetected. This condition, if not detected and corrected, could lead to a false red EMLUB warning during MGB emergency lubrication system operation, compelling the flight crew to perform an immediate landing, or ditching, in accordance with the rotorcraft flight manual (RFM) emergency procedures, which could, depending on the operational environment, result in hazardous landing or ditching.

	To address this potentially unsafe condition, Eurocopter issued Emergency Alert Service Bulletin (ASB) No 05A032.
	For the reasons described above, this AD requires identification of the installed EMLUB Air and Glycol pressure-switches and, depending on findings, replacement, as mixing between pressure-switch manufacturers is prohibited, and modification of the wiring harness (MOD 07.53028), depending on the EMLUB pressure-switches configuration. In addition, this AD requires repetitive electrical functional testing of the EMLUB system.
Effective Date:	25 February 2013
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously:
	(1) Within 25 flight hours (FH) or 2 months, whichever occurs first after the effective date of this AD, identify the Part Numbers (P/N) and manufacturer (Auxitrol or Industria) of the Air and Glycol pressure-switches installed on the MGB of the helicopter in accordance with the instructions of Eurocopter ASB No 05A032. A review of the helicopter delivery or maintenance records is acceptable to identify the installed Air and Glycol pressure-switches, provided the P/N and manufacturer name (Auxitrol or Industria) can be determined from that review.
	(2) If, during the identification as required by paragraph (1) of this AD, it is determined that pressure-switches from different manufacturers, Auxitrol and Industria, are installed, within 25 FH or 2 months, whichever occurs first after the effective date of this AD, replace Air or Glycol pressure-switches, as applicable, to ensure that both pressure-switches from only one manufacturer (Auxitrol or Industria) are installed, (not mixed-up between Auxitrol-type and Industria-type), in accordance with the instructions of paragraph 3.B.2.a of Eurocopter EC225 ASB No.05A032.
	(3) After accomplishment of identification and replacement, as applicable, as required by paragraph (1) or (2) of this AD, for helicopters equipped with Air and Glycol pressure-switches manufactured by Industria, within 25 FH or 2 months, whichever occurs first after the effective date of this AD, accomplish the following actions:
	(3.1) Modify and re-identify the helicopter wiring harness in accordance with the instructions of paragraph 3.B.2.b. of Eurocopter EC225 ASB No. 05A032 (accomplishment of MOD 07.53028); and
	(3.2) Accomplish an electrical functional test of the EMLUB system in accordance with the instructions of paragraph 3.B.5 or 3.B.6, as applicable, of Eurocopter EC225 ASB No.05A032.
	(4) After accomplishment of identification and replacement, as applicable, as required by paragraph (1) or (2) of this AD for helicopters equipped with Air and Glycol pressure-switches from Auxitrol, within 25 FH or 2 months, whichever occurs first after the effective date of this AD, accomplish an electrical functional test of the EMLUB system in accordance with the instructions of paragraph 3.B.3 or 3.B.4 of Eurocopter EC225 ASB No.05A032.
	(5) After accomplishment all actions as required by paragraphs (1), (2), (3) or (4) of this AD, as applicable to installed Air and Glycol pressure-switches configuration, during accomplishment of EMLUB system maintenance in accordance with Task MMA 63-26-00-721 at scheduled intervals of 800 FH (margin of 25 FH), as required by the Airworthiness Limitations Section of the aircraft maintenance program, MSM section 04-20-00, additionally perform the electrical functional test of the EMLUB system in accordance with the instructions of paragraph 3.B.3 or 3.B.4, or paragraph 3.B.5 or 3.B.6 of Eurocopter EC225 ASB No.05A032, as applicable to helicopter configuration of Air and Glycol pressure-switches.
	(6) After the effective date of this AD, if one or both Air and Glycol pressure-

	switches of the EMLUB system need to be replaced:
	(6.1) It is prohibited to install a mix of Auxitrol-type pressure-switches and Industria-type pressure-switches.
	(6.2) If installed Air and Glycol pressure-switches from <u>Auxitrol</u> are both replaced by Air and Glycol pressure-switches from Industria, before next flight after that replacement, modify and re-identify the helicopter wiring harness in accordance with the instructions of paragraph 3.B.2.b. of Eurocopter EC225 ASB No. 05A032 (accomplishment of MOD 07.53028).
	(6.3) If installed Air and Glycol pressure-switches from <u>Industria</u> are both replaced by Air and Glycol pressure-switches from Auxitrol, before next flight after that replacement, modify and re-identify the helicopter wiring harness in accordance with the instructions of paragraph 3.B.7 of Eurocopter EC225 ASB No. 05A032 (removal of MOD 07.53028).
	(6.4) Before next flight after any pressure-switch replacement, check the EMLUB system in accordance with maintenance Task MMA 63-26- 00-721 and accomplish an electrical functional test in accordance with the instructions of paragraph 3.B.3 or 3.B.4, or paragraph 3.B.5 or 3.B.6 of Eurocopter EC225 ASB No. 05A032, as applicable to helicopter configuration of Air and Glycol pressure-switches.
	(7) If during any functional test as required by paragraphs (3.2), (4), (5) or (6.4) of this AD, a failure is detected, before next flight, accomplish all applicable corrective actions in accordance with instructions of Eurocopter EC225 ASB No. 05A032.
Ref. Publications:	Eurocopter EC225 ASB No. 05A032, revision 0, dated 22 February 2013.
	The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.
Remarks:	 If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
	2. Based on the required actions and the compliance time, EASA have decided to issue a Final AD with Request for Comments, postponing the public consultation process until after publication.
	3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: <u>ADs@easa.europa.eu</u> .
	 4. For any question concerning the technical content of the requirements in this AD, please contact: EUROCOPTER (STDI) – Aéroport de Marseille Provence 13725 Marignane Cedex, France; telephone +33 (4) 42 85 97 97; facsimile +33 (4) 42 85 99 66; E-mail: <u>Directive.technical-support@eurocopter.com</u>.
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