EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2012-0104 **Date: 11 June 2012** 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 EC 1702/2003, Part 21A.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 helicopters

TCDS Number:	EASA.R.002
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA Emergency AD 2012-0087-E dated 18 May 2012.

ATA 63	**Main Rotor Drive – Main Gear Box Bevel Gear Vertical Shaft – Inspection / Limitation**
Manufacturer(s):	Eurocopter (formerly EUROCOPTER France)
Applicability:	EC 225 LP helicopters, all serial numbers, if equipped with Main Gear Box (MGB) bevel gear vertical shaft Part Number (P/N) 332A32.5101.00, 332A32.5101.05, 332A32.5101.10 or 332A32.5101.15 with a serial number M370 or higher, and the part has accumulated less than 500 flight hours (FH) since new.
Reason:	A report has been received following the ditching of an EC 225 LP helicopter in May 2012 in the North Sea. The flight crew carried out an emergency ditching after warning indication of MGB loss of oil pressure and subsequent additional red alarm on the MGB emergency lubrication system. The preliminary findings of the investigation have shown a full circumferential crack of the lower vertical shaft of the MGB bevel gear. As a result, the vertical shaft ceased to drive the main and backup oil pumps. The vertical shaft failed after a low number of accumulated flight hours (FH) and although the investigation is still in progress, at this early stage a manufacturing defect of the part must be considered. The investigation has also determined that prior to the flight during which the helicopter ditched, the Vibration Health Monitoring (VHM) system installed on the helicopter had identified a rising trend in certain monitoring parameters

	associated with the MGB oil pump drive system. To address the potential unsafe condition, EASA issued Emergency AD 2012-0087-E to require, for helicopters operating over water which are equipped with Eurocopter VHM system, to monitor some VHM data and when not equipped with this system, to limit the operation to day visual flight rules (Day VFR). Since that AD was issued, it was realised that the affected helicopters equipped with a VHM system could still be operated over water in day Visual Meteorological Conditions (VMC) without the need for repetitive VHM data reviews, or flown equally with the VHM system inoperative. Additionally, further analysis showed that the interval for downloading and reviewing VHM data could be slightly increased for the helicopters subject to that requirement. Lastly, it was noted a minor typo on the S/N of the vertical shaft defined in the Applicability paragraph of the AD and found furthermore that definition of the shaft P/N was incomplete. For the reasons described above, this AD, which supersedes Emergency AD 2012-0087-E, retains its requirements, extends its applicability and requires the monitoring of VHM data at less stringent compliance time, only for helicopters with a serviceable VHM system when flying over water in either Instrument Meteorological Conditions (IMC) or under night visual flight rules (Night VFR).
Effective Date:	25 June 2012
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) For helicopters equipped with a serviceable Eurocopter VHM system, and operated over water either in IMC or under Night VFR, before next flight over water after the effective date of this AD and thereafter at intervals not to exceed 4 FH, download VHM data to review the two indicators named MOD-45 and MOD-70 and before next flight over water, report to Eurocopter any increasing trend indication or unusual behaviour of these two parameters and accomplish Eurocopter instructions accordingly. If a helicopter combines operations over water in IMC or under Night VFR with any other operation, the requirements of this paragraph (1) apply. **Note 1**: For further advice regarding interpretation of the VHM data, contact Eurocopter Technical Support. **Note 2**: No action is required by paragraph (1) of this AD for helicopters equipped with a serviceable Eurocopter VHM system, when only operated over water in Day VMC. (2) For helicopters not equipped with a Eurocopter VHM system, and helicopters equipped with an unserviceable Eurocopter VHM system, before next flight over water after the effective date of this AD, accomplish the following actions: (2.1) Install a placard “DAY VFR ONLY FOR FLIGHT OVER WATER” in the full view of the pilots; (2.2) Insert a copy of this AD in the Rotorcraft Flight Manual of the helicopter. (3) For a helicopter equipped with an unserviceable Eurocopter VHM system as specified in paragraph (2) of this AD, after rectification of the VHM system, depending on type of operations, paragraph (1) of this AD applies to the helicopter. Concurrently, the placard and copy of the AD as previously required by paragraph (2) of this AD can be removed from the helicopter. (4) Helicopters equipped with bevel gear vertical shaft P/N 332A32.5101.00, P/N 332A32.5101.05, P/N 332A32.5101.10 or P/N 332A32.5101.15 with a serial number M370 or higher, which accumulated equal to or more than

	500 FH since new are no longer affected by the requirements of this AD.
Ref. Publications:	Eurocopter SIN No.2455-S-00, revision 0 dated 23 May 2012.
Remarks :	1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. The required actions and the risk allowance have granted the issuance of a Final AD with Request for Comments, postponing the public consultation process after publication. 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 (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: Directive.technical-support@eurocopter.com.