


<b>EASA</b>	<b>EMERGENCY AIRWORTHINESS DIRECTIVE</b>
	<p><b>AD No.: 2012-0257-E</b></p> <p><b>Date: 05 December 2012</b></p> <p>Note: This Emergency 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.</p>
<p>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].</p>	
<b>Design Approval Holder's Name:</b> EUROCOPTER	<b>Type/Model designation(s):</b> AS 350 and AS 355 helicopters
TCDS Number:	EASA.R.008, EASA.R.146
Foreign AD:	Not applicable
Supersedure:	None
<b>ATA 64</b>	<b>Tail Rotor – Laminated Half-Bearings – Inspection / Replacement</b>
Manufacturer(s):	Eurocopter (formerly Eurocopter France, Aerospatiale)
Applicability:	<p>AS 350 B, AS 350 BA, AS 350 BB, AS 350 B1, AS 350 B2 and AS 350 D helicopters, all serial numbers (s/n).</p> <p>AS 350 B3 helicopters, all s/n, except helicopters that embody modification (MOD) 075601.</p> <p>AS 355 E, AS 355 F, AS 355 F1, AS 355 F2, AS 355 N and AS 355 NP helicopters, all s/n.</p> <p>Note: MOD 075601 is an integral part of a specific AS 350 B3 model configuration, commercially identified as "AS350B3e" and is not fitted on AS 350 B3 model helicopters of other configurations.</p>
Reason:	<p>Premature failures of laminated half-bearings equipping tail rotor blades have recently been detected on several AS 350 B3 helicopters post-MOD 075601. Three cases of vibrations originating from the tail rotor were also reported, detected in flight on affected helicopters, following which precautionary landings were performed. The cause of vibration was identified as failure of the laminated half-bearings.</p> <p>As the laminated half-bearing deterioration is a progressive process - Eurocopter issued Safety Information Notice (SIN) No. 2482-S-64 and AS350 Service Bulletin (SB) No. 05.00.71 and AS355 SB 05.00.63 to remind all operators of the particular attention that must be given during the visual check of the elastomeric part of the laminated half-bearings during the "after the last flight of the day" (ALF) check.</p>

	<p>After publication of these documents, an accident occurred involving an AS 350 B3 post-MOD 075601 helicopter. During the affected flight, the pilot felt strong vibrations originating from the tail rotor before losing control of the helicopter. After the accident all four laminated half-bearings were found failed. Additionally – a fourth case of laminated half-bearing malfunctioning in flight on AS 350 B3 post-MOD 075601 helicopter was reported.</p> <p>Following analyses it was confirmed by Eurocopter that premature deterioration of laminated half-bearings on AS 350 B3 helicopters was related to the embodiment of MOD 075601.</p> <p>Further analyses conducted by Eurocopter following the accident described above led Eurocopter to reconsider the criticality of laminated half-bearing failure on all AS 355 and AS 350 helicopters, i.e. without limiting applicability of conclusions drawn to only post-MOD 075601 AS 350 B3, although service experience with the pre-MOD 075601 AS 355 and AS 350 fleet has not evidenced premature deterioration of laminated half-bearings such as what has been observed on the post-MOD 075601 helicopters.</p> <p>It has finally been determined that deterioration of laminated half-bearings, if not detected and corrected, could lead to failure of the tail rotor in flight, possibly resulting in loss of control of the helicopter.</p> <p>To address this unsafe condition:</p> <ol style="list-style-type: none"> <li>1) Eurocopter issued AS350 Emergency Alert Service Bulletin (EASB) No. 01.00.65 for the AS 350 B3 post-MOD 075601 helicopters.</li> </ol> <p>Publication of that document was followed by issuance of EASA Emergency AD 2012-0207-E, superseded then by EASA Emergency AD 2012-0217-E, applicable to AS 350 B3 post-MOD 075601 helicopters, to require changes to the Rotorcraft Flight Manual (RFM), imposing limitations of the flight envelope in order to reduce the dynamic loads on the tail rotor, and a one-time pre-flight inspection, a one-time ALF check inspection (including tail rotor disassembly), and repetitive post-flight inspections of the laminated half-bearings to detect damage and, depending on findings, replacement of all 4 laminated half-bearings.</p> <ol style="list-style-type: none"> <li>2) Eurocopter issued AS350 EASB No. 05.00.71 at Revision 1 and AS355 EASB No. 05.00.63 at Revision 1 (i.e. revised were existing, above mentioned AS350 SB No. 05.00.71 and AS355 SB 05.00.63, respectively) to redefine and make mandatory existing repetitive post-flight inspections of the laminated half-bearings on AS 350 and AS 355 helicopters which do not embody MOD 075601.</li> </ol> <p>The inspections required in AS350 EASB No. 05.00.71 and AS355 EASB No. 05.00.63 at intervals defined therein are preventive measures driven by the laminated half-bearing criticality pending incorporation in Airworthiness Limitations Sections for affected helicopters with suitable substantiation supported by test.</p> <p>For the reasons described above, this AD requires repetitive inspections of the tail rotor laminated half-bearings installed on AS350 and AS355 helicopters not embodying MOD 075601 and, depending on findings, accomplishment of applicable corrective actions.</p>
Effective Date:	07 December 2012
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> <li>(1) During the next ALF check after the effective date of this AD, and thereafter, during each ALF check, without exceeding 10 flight hours between two consecutive inspections, visually inspect the laminated half-bearings in accordance with the instructions of paragraph 3.B.1 of Eurocopter AS350 EASB No. 05.00.71 or AS355 EASB No. 05.00.63, as</li> </ol>

	<p>applicable to helicopter type.</p> <p>(2) If, during any inspection as required by paragraph (1) of this AD, any deficiencies are found, defined as “Deterioration requiring replacement” in paragraph 3.B.2 of AS350 EASB No. 05.00.71 or AS355 EASB No. 05.00.63, as applicable to helicopter type, before next flight, replace the deficient laminated half-bearings in accordance with the instructions of Maintenance Manual Work Cards No. 64-10-00, paragraph 4-3 and No. 64-10-00, paragraph 4-4 or MET 64.10.00.704 and 64.10.00.771.</p> <p>(3) Replacement of laminated half-bearings on a helicopter, as required by paragraph (2) of this AD, does not constitute terminating action for the repetitive inspection as required by paragraph (1) of this AD for that helicopter.</p>
Ref. Publications:	<p>Eurocopter AS350 EASB No. 05.00.71 Revision 1 dated 26 November 2012.</p> <p>Eurocopter AS355 EASB No. 05.00.63 Revision 1 dated 26 November 2012.</p> <p>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.</p>
Remarks:	<ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.</li> <li>2. The results of the safety assessment have indicated the need for immediate publication and notification, without the full public consultation process.</li> <li>3. Enquiries regarding this AD should be referred to the Safety Information Section, Executive Directorate, EASA. E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a>.</li> <li>4. For any question concerning the technical content of the requirements in this AD, please contact: EUROCOPTER (STDl) – Aéroport de Marseille Provence, 13725 Marignane Cedex, France; telephone +33 (4) 12 85 97 97; facsimile +33 (4) 85 99 66; E-mail: <a href="mailto:Directive.technical-support@eurocopter.com">Directive.technical-support@eurocopter.com</a>.</li> </ol>