

EASA	EMERGENCY AIRWORTHINESS DIRECTIVE
	<p>AD No.: 2013-0284-E</p> <p>Date: 02 December 2013</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>	
<p>Design Approval Holder's Name: EUROCOPTER</p>	<p>Type/Model designation(s): AS 350 helicopters</p>
TCDS Number:	EASA.R.008
Foreign AD:	Not applicable
Supersedure:	This AD supersedes EASA AD 2013-0044-E, dated 27 February 2013.
ATA 63	Rotor Drive – Hydraulic Pump – Inspection / Replacement
Manufacturer(s):	Eurocopter (formerly Eurocopter France, Aerospatiale)
Applicability:	AS 350 B, AS 350 BA, AS 350 BB, AS 350 B1, AS 350 B2, AS 350 B3 and AS 350 D helicopters, all serial numbers, if equipped with single hydraulic system (PRE MOD OP3346 or OP3082) and incorporating Eurocopter modification 079566 (hydraulic pump drive assembly part number (P/N) 350A35-0132-00), except pumps with a pump support P/N followed by the letter "V".
Reason:	<p>Several events were reported on AS 350 helicopters of hydraulic pump drive belt failure caused by seizure of the hydraulic pump drive pulley bearing.</p> <p>Investigations support the conclusion that the failure of the hydraulic pump drive was not the result of a design deficiency, but was caused by incorrect fitting of the bearing that induced an accidental indentation of the raceways. In addition, investigation showed that premature degradation of the bearings could also have been initiated by the excessive dimensional tolerances, and consequent high preloading, identified within a batch of bearings.</p> <p>For helicopters with a single hydraulic system, this condition, if not detected and corrected, could lead to loss of hydraulic servo assistance and increase in pilot work load, consequently resulting in reduced control of the helicopter.</p> <p>For the reasons described above, this AD supersedes EASA AD 2013-0044-E to require a new procedure and to reduce the compliance time for the repetitive inspections of hydraulic pump drive assemblies with P/N 350A35-0132-00, which are equipped with the affected bearing serial numbers (S/N). This AD also mandates marking of pump support assemblies or replacement of affected pump drive assemblies within 4 months at the latest as a terminating action for the requirements of this AD.</p>

Effective Date:	04 December 2013														
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>(1) Before next flight after the effective date of this AD, identify the bearing S/N and the number of flight hours (FH) accumulated since first installation on a drive pump assembly P/N 350A35-0132-00 in accordance with the instructions of Eurocopter (EC) Emergency Alert Service Bulletin (ASB) 05.00.72 Revision 2.</p> <p>(2) Within the compliance times defined in Table 1 and Table 2 of this AD, as applicable, inspect the hydraulic pump drive belt and drive pulley bearing in accordance with the instructions of Section 3 up to 3.B.2.b of EC Emergency ASB 05.00.72 Revision 2.</p> <p>Table 1: Inspection threshold and interval for hydraulic pump drive assemblies defined in Section 1.A.2.a of EC Emergency ASB 05.00.72 Revision 2 (potentially indented bearing) or unidentifiable hydraulic pump drive assemblies</p> <table><tr><th>FH accumulated since first installation on the drive pump assembly</th><th>Inspection threshold</th><th>Inspection interval (since last inspection)</th></tr><tr><td>90 FH or less</td><td>Before exceeding 100 FH since first installation on the drive pump assembly</td><td rowspan="2">25 FH</td></tr><tr><td>More than 90 FH</td><td>Within 10 FH after the effective date of this AD, but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.</td></tr></table> <p>Table 2: Inspection threshold for hydraulic pump drive assemblies defined in Section 1.A.2.b of EC Emergency ASB 05.00.72 Revision 2 (non-indented bearing)</p> <table><tr><th>FH accumulated since first installation on the drive pump assembly</th><th>Inspection threshold (one-time inspection)</th></tr><tr><td>155 FH or less</td><td>Before exceeding 165 FH since first installation on the drive pump assembly.</td></tr><tr><td>More than 155 FH</td><td>Within 10 FH after the effective date of this AD, but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.</td></tr></table> <p>(3) If during any inspection as required by paragraph (2) of this AD, deteriorations are found, before next flight, replace the hydraulic pump drive assembly with a serviceable assembly in accordance with the instructions of paragraph 3.B.4 of Eurocopter Emergency ASB 05.00.72 Revision 2.</p> <p>(4) If during any inspection as required by paragraph (2) of this AD, no deteriorations are found, before next flight, perform a spring balance check and accomplish the corrective actions defined in Table 3 or Table 4 of this AD, as applicable, depending on hydraulic pump drive assembly, and measurement values.</p>	FH accumulated since first installation on the drive pump assembly	Inspection threshold	Inspection interval (since last inspection)	90 FH or less	Before exceeding 100 FH since first installation on the drive pump assembly	25 FH	More than 90 FH	Within 10 FH after the effective date of this AD, but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.	FH accumulated since first installation on the drive pump assembly	Inspection threshold (one-time inspection)	155 FH or less	Before exceeding 165 FH since first installation on the drive pump assembly.	More than 155 FH	Within 10 FH after the effective date of this AD, but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.
FH accumulated since first installation on the drive pump assembly	Inspection threshold	Inspection interval (since last inspection)													
90 FH or less	Before exceeding 100 FH since first installation on the drive pump assembly	25 FH													
More than 90 FH	Within 10 FH after the effective date of this AD, but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.														
FH accumulated since first installation on the drive pump assembly	Inspection threshold (one-time inspection)														
155 FH or less	Before exceeding 165 FH since first installation on the drive pump assembly.														
More than 155 FH	Within 10 FH after the effective date of this AD, but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.														

Table 3:
Corrective action for hydraulic pump drive assemblies defined in Section 1.A.2.a of EC Emergency ASB 05.00.72 Revision 2 (potentially indented bearing) or unidentifiable hydraulic pump drive assemblies

Average Spring Balance Measurement Values	
$\leq 6 \text{ N (1.348 lbf)}$	$> 6 \text{ N (1.348 lbf)}$
Accomplish a coupling of the hydraulic pump in accordance with the instructions of EC Emergency ASB 05.00.72 Revision 2, paragraphs 3.B.2.c and 3.B.3.	Replace the affected bearing with a serviceable bearing in accordance with the instructions of EC Emergency ASB 05.00.72 Revision 2, paragraph 3.B.4.

Table 4:
Corrective action for hydraulic pump drive assemblies defined in Section 1.A.2.b of EC Emergency ASB 05.00.72 Revision 2 (non-indented bearing)

Average Spring Balance Measurement Values		
$\leq 6 \text{ N (1.348 lbf)}$	$> 6 \text{ N (1.348 lbf)}$ and $\leq 12 \text{ N (2.697 lbf)}$	$> 12 \text{ N (2.697 lbf)}$
Accomplish a coupling of the hydraulic pump in accordance with the instructions of EC Emergency ASB 05.00.72 Revision 2, paragraphs 3.B.2.c and 3.B.3. Mark the pump support assembly in accordance with the instructions of EC Emergency ASB 05.00.72 Revision 2, paragraph 3.C	Accomplish a coupling of the hydraulic pump in accordance with the instructions of EC Emergency ASB 05.00.72 Revision 2, paragraphs 3.B.2.c and 3.B.3.	Replace the affected bearing with a serviceable bearing in accordance with the instructions of EC Emergency ASB 05.00.72 Revision 2, paragraph 3.B.4.

- (5) Within the compliance time defined in Table 5 of this AD, as applicable, replace the hydraulic pump drive assembly with a serviceable assembly in accordance with the instructions of paragraph 3.B.4 of EC Emergency (ASB) 05.00.72 Revision 2, unless the bearing has been replaced or the pump support assembly has been marked with letter "V" as required by paragraph (4) of this AD.

Table 5:
Compliance time for replacement of hydraulic pump drive assemblies

Bearing S/N	Compliance time
As defined in Section 1.A.2.a of EC Emergency ASB 05.00.72 Revision 2 (potentially indented bearing) or unidentifiable	Within 4 months after the effective date of this AD
As defined in Section 1.A.2.b of EC Emergency ASB 05.00.72 Revision 2 (non-indented bearing)	Within 4 months after the effective date of this AD or before accumulating 400 FH since first installation on the drive pump assembly, whichever occurs first

	(6) Replacement of the hydraulic pump drive assembly as required by paragraph (3) of this AD, or replacement of the bearing or marking of the pump support assembly as required by paragraph (4) of this AD, constitutes terminating action for the inspections required by this AD.
Ref. Publications:	<p>Eurocopter AS 350 Emergency ASB 05.00.72 Revision 2, dated 02 December 2013.</p> <p>The use of later approved revisions of this document is acceptable for compliance with the requirements of this AD.</p>
Remarks:	<ol style="list-style-type: none"> 1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD. 2. The results of the safety assessment have indicated the need for immediate publication and notification, without the full public consultation process. 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 - Customer Service Technical Support Department, Aéroport de Marseille, Provence 13725 Marignane Cedex – France, Phone: + 33 (0)4 42 85 99 51, Fax: + 33 (0)4 42 85 99 66, E-mail: Directive.technical-support@eurocopter.com.