


<b>EASA</b>	<b>AIRWORTHINESS DIRECTIVE</b>
	<b>AD No.: 2013-0284R1</b>  <b>Date: 25 July 2014</b>  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].	
<b>Design Approval Holder's Name:</b> AIRBUS HELICOPTERS	<b>Type/Model designation(s):</b> AS 350 helicopters
TCDS Number:	EASA.R.008
Foreign AD:	Not applicable
Revision:	This AD revises EASA Emergency AD 2013-0284-E dated 02 December 2013, which superseded EASA Emergency AD 2013-0044-E dated 27 February 2013.
<b>ATA 63</b>	<b>Rotor Drive – Hydraulic Pump – Inspection / Replacement</b>
Manufacturer(s):	Airbus Helicopters (formerly Eurocopter, 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 Airbus Helicopters 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", and - except helicopters which embody modification 079568 (hydraulic pump drive assembly P/N 350A35-0132-01 fitted with bearing P/N 704A33651269).
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>To address this potential unsafe condition, EASA issued AD 2013-0044-E to require repetitive inspections and, depending on findings, replacement of the</p>

	<p>affected hydraulic pump drive assembly.</p> <p>Since that AD was issued, a new inspection procedure was developed and a reduction of the inspection interval was found necessary.</p> <p>Consequently, EASA issued AD 2013-0284-E, retaining the requirements of EASA AD 2013-0044-E, which was superseded, to require the new inspection procedure and to reduce the inspection interval for hydraulic pump drive assemblies with P/N 350A35-0132-00, which are equipped with the affected bearing serial numbers (S/N). That AD also required marking of pump support assemblies or replacement of affected pump drive as a terminating action for the requirements of this AD.</p> <p>This AD is revised to exclude helicopters which embody modification 079568 (hydraulic pump drive assembly P/N 350A35-0132-01 fitted with bearing P/N 704A33651269) from the Applicability.</p>								
Effective Date:	Revision 1: 08 August 2014 Original issue: 04 December 2013								
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>(1) Before next flight after 04 December 2013 [the effective date of the original issue 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, or Emergency Airbus Helicopters (AH) ASB 05.00.72 Revision 4.</p> <p>(2) Within the compliance times defined in Table 1 (potentially indented bearing, or unidentifiable hydraulic pump drive assemblies) or Table 2 (non-indented bearing) 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 or AH ASB 05.00.72 Revision 4.</p> <p>Table 1 - Hydraulic pump drive assemblies defined in Section 1.A.2.a of ASB 05.00.72</p> <table><tr><th>FH accumulated (on 04 December 2013) 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 04 December 2013 [the effective date of the original issue 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>	FH accumulated (on 04 December 2013) 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 04 December 2013 [the effective date of the original issue 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 (on 04 December 2013) 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 04 December 2013 [the effective date of the original issue of this AD], but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2								

Table 2 - Hydraulic pump drive assemblies defined in Section 1.A.2.b of ASB 05.00.72

FH accumulated (on 04 December 2013) 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 04 December 2013 [the effective date of the original issue of this AD], but not exceeding 25 FH since the last inspection in accordance with EC Emergency ASB 05.00.72 Revision 2.

- (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 Emergency ASB 05.00.72 Revision 2.
- (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.

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

Average Spring Balance Measurement Values	
$\leq 6$ N (1.348 lbf)	$> 6$ 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 ASB 05.00.72 (non-indented bearing)

Average Spring Balance Measurement Values		
≤ 6N (1.348 lbf)	> 6N (1.348 lbf) and ≤ 12 N (2.697 lbf)	> 12 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 ASB 05.00.72 (potentially indented bearing) or unidentifiable	Within 4 months after 04 December 2013 [the effective date of the original issue of this AD]
As defined in Section 1.A.2.b of ASB 05.00.72 (non-indented bearing)	Within 4 months after 04 December 2013 [the effective date of the original issue 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>Airbus Helicopters AS 350 Emergency ASB 05.00.72 Revision 4, dated 15 July 2014.</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"> <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:  Airbus Helicopters - 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: <a href="mailto:Directive.technical-support@eurocopter.com">Directive.technical-support@eurocopter.com</a>.</li> </ol>

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