


<b>EASA</b>	<b>AIRWORTHINESS DIRECTIVE</b>
	<p><b>AD No.: 2012-0261R1</b></p> <p><b>Date: 16 January 2013</b></p> <p>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.</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><b>Type Approval Holder's Name :</b></p> <p>MD HELICOPTERS, INC.</p>	<p><b>Type/Model designation(s) :</b></p> <p>MD900 helicopters</p>
<p>TCDS Number :     United States (FAA) H19NM</p>	
<p>Foreign AD :        None</p>	
<p>Revision:            This AD revises EASA AD 2012-0261 dated 14 December 2012, which superseded EASA AD 2010-0050R1 dated 19 April 2010.</p>	
<b>ATA 62</b>	<b>Main Rotor – Main Rotor Blade Retention Bolts – Inspection / Replacement (Life Limit)</b>
Manufacturer(s):	MD Helicopters, Inc. (MDHI), McDonnell Douglas Helicopter Systems (MDHS).
Applicability:	<p>MD900 helicopters, all serial numbers, if Part Number (P/N) 900R3100001-103 and/or P/N 900R3100001-105 Main Rotor (MR) blade retention bolts are installed.</p> <p>Some helicopters may have the designation MD-900 on the data plate; these helicopters belong to the same type design and consequently, this AD applies to those helicopters.</p>
Reason:	<p>There have been 11 reported failures of P/N 900R3100001-103 MR blade retention bolts; the first in June 2003 and the latest in May 2009. For a variety of reasons, these failures did not result in accidents. However, based on data gathered from the known failures, and after careful consideration of all other available information, EASA determined that an unsafe condition exists or is likely to develop on MD900 helicopters with these P/N bolts installed.</p> <p>Based on these findings, EASA issued AD 2010-0050 (later revised) to require repetitive detailed visual and tactile inspections of the P/N 900R3100001-103 MR blade retention bolts and impose reduced life limits on the affected bolts.</p> <p>Since EASA AD 2010-0050R1 was issued, 4 failures of P/N 900R3100001-105 MR blade retention bolts have been reported in service, the latest in December 2012. Analysis results of the reported failures to date indicate that a similar failure mode exists for the -105 bolt as determined previously for the -103 bolts.</p>

	<p>This condition, if not detected and corrected, could result in in-flight loss of blade retention capability and consequent loss of the helicopter.</p> <p>For the reasons described above, this AD retains the requirements of EASA AD 2010-0050R1, which is superseded, applies those requirements to all helicopters with P/N 900R3100001-103 and/or -105 MR blade retention bolts installed, and requires replacement of any bolts that have already reached or exceeded the life limits.</p> <p>This AD is still considered to be an interim measure, until a cause is established to explain the reported bolt failures, and consequent corrective measures are introduced by the approval holder of the type design.</p> <p>This AD is revised to amend paragraph (8), removing the need to obtain explicit authorisation from MDHI to install a mix of different P/N bolts on a single helicopter.</p>			
Effective Date:	<p>Revision 1: 16 January 2013</p> <p>Original issue: 21 December 2012</p>			
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>(1) Within 30 days after 21 December 2012 [the effective date of the original issue of this AD], amend the applicable Rotorcraft Flight Manual (RFM) Section 4-2 PILOT’S DAILY PREFLIGHT CHECK and Section 4-3 PILOT’S PREFLIGHT CHECK to incorporate the repetitive pre-flight retention bolt visual and ‘touch’ check instructions as detailed in Appendix I and Appendix II of this AD, respectively. This may be accomplished by inserting a copy of Appendix I and Appendix II of this AD into the applicable sections of the RFM.</p> <p>(2) If, during any of the repetitive RFM checks as required by paragraph (1) of this AD, a failed bolt is detected, before next flight, replace the bolt with a serviceable part in accordance with the instructions of the MD900 Rotorcraft Maintenance Manual (RMM), CSP-900RMM-2, Section 62-10-00, Page 401 through 405 inclusive.</p> <p>(3) Within 10 days after replacement of a failed bolt as required by paragraph (2) of this AD, send a full report, including the failed bolt, to MD Helicopters, address indicated in the Remarks section of this AD.</p> <p>(4) Within 30 days after 21 December 2012 [the effective date of the original issue of this AD], for each P/N 900R3100001-103 and -105 MR blade retention bolt, installed on a helicopter, establish the total hours time-in-service (TIS) accumulated since installation on any MD900 helicopter.</p> <p>(5) The new (reduced) life limits for the affected bolts are established in Table 1 of this AD. After establishing the total hours TIS accumulated for each bolt as required by paragraph (4) of this AD, each bolt must be replaced, before exceeding the new life limit, with a serviceable part in accordance with the instructions of the MD900 RMM, CSP-900RMM-2, Section 62-10-00, Page 401 through 405 inclusive.</p> <p style="text-align: center;">Table 1</p> <table><tr><th>Bolt Reduced Life Limit (TIS)</th></tr><tr><td>400 hours TIS, for helicopters operated 80% or more in a salty sea/air environment (*)</td></tr><tr><td>1 500 hours TIS, for all other helicopters</td></tr></table> <p>(*) This is defined as the helicopter being operated into and/or out of an</p>	Bolt Reduced Life Limit (TIS)	400 hours TIS, for helicopters operated 80% or more in a salty sea/air environment (*)	1 500 hours TIS, for all other helicopters
Bolt Reduced Life Limit (TIS)				
400 hours TIS, for helicopters operated 80% or more in a salty sea/air environment (*)				
1 500 hours TIS, for all other helicopters				

	<p>airfield located within 2 miles (3 km) from the sea or expanse of salt water.</p> <p>(6) Based on the determination as required by paragraph (4) of this AD, for each bolt that has already reached or exceeded the new life limit as established in Table 1 of this AD, within 30 days after 21 December 2012 [the effective date of the original issue of this AD], replace the bolt with a serviceable bolt in accordance with the instructions of the MD900 RMM, CSP-900RMM-2, Section 62-10-00, Page 401 through 405 inclusive.</p> <p>(7) Within 30 days after removal of a bolt as a result of the replacement action as required by paragraph (5) or (6) of this AD, as applicable, return the bolt to MD Helicopters (address indicated in the Remarks section of this AD).</p> <p>(8) Replacement of bolts does not constitute terminating action for the requirements of this AD. Replacement of all the bolts on a helicopter with P/N 900R3100001-101 bolts is an acceptable terminating action, as this AD does not apply to those bolts. Installation of a mix of different P/N bolts on a single helicopter is only allowed within the criteria as specified in the MD900 RMM, CSP-900RMM-2, Section 62-10-00.</p>
Ref. Publication(s):	MD900 Rotorcraft Maintenance Manual, CSP-900RMM-2.
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. 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.</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: MD Helicopters Inc., Attn: Customer Support Division, 4555 East McDowell Road, Mail Stop M615, Mesa, Arizona 85215-9734, The United States of America. Telephone +1-800-388-3378, fax +1-480-346-6813, or on the Web at <a href="http://www.mdhelicopters.com">http://www.mdhelicopters.com</a>.</li> </ol>

## Appendix I

**4-2. PILOT'S DAILY PREFLIGHT CHECK**

**Note:** This check is in addition to the checks as specified in section 4-2 of the basic RFM.

- Blade attach pins (bolts):

Carry out a 'touch check' (e.g. light hand pressure) of each blade bolt cam handle/spring clip to detect easy sideways movement, i.e. lack of bolt tension.

- If any movement (shift) is detected, before further flight, contact maintenance for corrective action.

## Appendix II

**4-3. PILOT'S PREFLIGHT CHECK**

**Note:** This check is in addition to the checks as specified in section 4-3 of the basic RFM.

- Rotor Blades:

Accomplish a visual check of each MR blade retention bolt vertical position relative to its neighbour, and the lower and upper surface of the pitch case. This check must include a 'touch check' (e.g. light hand pressure) of each blade bolt cam handle/spring clip to detect easy sideways movement, i.e. lack of bolt tension.

- If any movement (shift) is detected, before further flight, contact maintenance for corrective action.