


<b>EASA</b>	<b>EMERGENCY AIRWORTHINESS DIRECTIVE</b>	
	<p><b>AD No.: 2011-0023-E</b>  <b>[Corrected: 10 February 2011]</b></p> <p><b>Date: 09 February 2011</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 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].</p>		
<p><b>Type Approval Holder's Name :</b> Turboméca</p>		<p><b>Type/Model designation(s) :</b> ARRIEL 1 series turboshaft engines</p>
<p>TCDS Number : EASA.E.073</p>		
<p>Foreign AD : Not applicable</p>		
<p>Supersedure : None</p>		
<b>ATA 73</b>	<b>Engine Fuel &amp; Control – Low Pressure Fuel System / Ejector Assembly – Inspection / Replacement</b>	
<p>Manufacturer(s): Turboméca S.A.</p>		
<p>Applicability:</p>	<p>Arriel 1E2, 1S and 1S1 turboshaft engines, all serial numbers, on which Turbomeca Internal Consign (IC) No. 298468 or Turbomeca Service Bulletin (SB) No. 292 73 0826 version A has been accomplished.</p> <p>These engines are known to be installed on, but not limited to, the following helicopters: Eurocopter Deutschland MBB BK117-C2 and BK117-C1, Sikorsky S-76A series and C series.</p>	
<p>Reason:</p>	<p>In October 2009, Turbomeca issued Turbomeca SB No.292 73 0826 version A that instructed operators to check the effectiveness of the bonding of the ejector jet installed on the low pressure fuel system between the tank and the high pressure fuel pump.</p> <p>So far, TURBOMECA have been informed of three discrepancies with the reassembly of the ejector following a maintenance procedure performed during accomplishment of Turbomeca SB No. 292 73 0826 version A.</p> <p>In all three cases, the discrepancies led to a “one-off” abnormal evolution of gas generator (NG) rating during engine starting. In one of these cases, this resulted in an uncommanded in-flight engine shut-down, during a cruising phase at 8 000 feet.</p> <p>In all three cases, the ejector was incorrectly positioned in the ejector assembly body.</p>	

	<p>This condition, if not detected and corrected, could affect the ejector performance and lead to an increase in fuel system internal leakages that may cause fluctuations of NG and fuel flow disruptions.</p> <p>Over a given amplitude, fluctuations in fuel flow can result in an uncommanded in-flight engine shut-down of one of the engines. In addition, if the ejectors of both engines are incorrectly reassembled, this could result in an uncommanded in-flight engine shut-down of both engines which, on a twin-engine helicopter, could ultimately lead to an emergency autorotation landing.</p> <p>To address this unsafe condition, for engines on which Turbomeca SB No. 292 73 0826 version A or Turbomeca IC No. 298468 has been accomplished, Turboméca have developed Turbomeca Mandatory Service Bulletin (MSB) No. A292 73 0834 version B.</p> <p>For the reasons described above, this AD requires inspection for proper installation of the fuel ejector and, in case of discrepancy, replacement of the part with a serviceable part.</p> <p>This AD is republished to correct a typographical error with the related Turbomeca SBs &amp; MSB reference number.</p>															
Effective Date:	11 February 2011															
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <p>(1) Within the compliance time indicated in Table 1 of this AD, inspect the fuel ejector in the body of the fuel ejector assembly for proper installation in accordance with Paragraph 2.B of Turboméca MSB No. A292 73 0834 version B.</p> <p style="text-align: center;">Table 1:</p> <table border="1" data-bbox="475 1081 1394 1648"> <thead> <tr> <th colspan="2">Engine and aircraft configuration:</th> <th>Compliance time:</th> </tr> </thead> <tbody> <tr> <td rowspan="2" style="text-align: center;">AND</td> <td>SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to the two engines of the same aircraft</td> <td rowspan="2">5 Flight Hours (FH) or 3 days after the effective date of this AD, whichever occurs first</td> </tr> <tr> <td>Starting difficulties (**) have been encountered in at least one of the two engines</td> </tr> <tr> <td rowspan="2" style="text-align: center;">AND</td> <td>SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to only one of the two engines of the same aircraft</td> <td rowspan="2">20 FH or 30 days after the effective date of this AD, whichever occurs first</td> </tr> <tr> <td>Starting difficulties (**) have been encountered on the related engine</td> </tr> <tr> <td rowspan="2" style="text-align: center;">AND</td> <td>SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to one or both engines of the same aircraft</td> <td rowspan="2">100 FH or 90 days after the effective date of this AD, whichever occurs first</td> </tr> <tr> <td>Starting difficulties (**) have <b>not</b> been encountered</td> </tr> </tbody> </table> <p><u>Notes for Table 1 of this AD:</u></p> <p>(*): In the engine log book, this might be recorded "SB No. 292 73 0826" or "SB No. 292 73 0826 version A".</p> <p>(**): Starting difficulties is when N1 stagnation or variation has been encountered. Applicable guidance can be found in Paragraph 1.A.(1) of Turboméca MSB No. A292 73 0834 version B.</p> <p>(2) If, during the inspection as required by paragraph (1) of this AD, the fuel injector is found to be improperly installed, before next flight, replace the ejector assembly with a serviceable unit.</p> <p>(3) As an alternative to the actions required by paragraphs (1) and (2) of this AD, accomplishment of Turbomeca SB No. 292 73 0826 version B is</p>	Engine and aircraft configuration:		Compliance time:	AND	SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to the two engines of the same aircraft	5 Flight Hours (FH) or 3 days after the effective date of this AD, whichever occurs first	Starting difficulties (**) have been encountered in at least one of the two engines	AND	SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to only one of the two engines of the same aircraft	20 FH or 30 days after the effective date of this AD, whichever occurs first	Starting difficulties (**) have been encountered on the related engine	AND	SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to one or both engines of the same aircraft	100 FH or 90 days after the effective date of this AD, whichever occurs first	Starting difficulties (**) have <b>not</b> been encountered
Engine and aircraft configuration:		Compliance time:														
AND	SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to the two engines of the same aircraft	5 Flight Hours (FH) or 3 days after the effective date of this AD, whichever occurs first														
	Starting difficulties (**) have been encountered in at least one of the two engines															
AND	SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to only one of the two engines of the same aircraft	20 FH or 30 days after the effective date of this AD, whichever occurs first														
	Starting difficulties (**) have been encountered on the related engine															
AND	SB No. 292 73 0826 version A (*) or IC No. 298468 has been accomplished to one or both engines of the same aircraft	100 FH or 90 days after the effective date of this AD, whichever occurs first														
	Starting difficulties (**) have <b>not</b> been encountered															

	<p>acceptable to comply with all the requirements of this AD, provided that the actions are taken within the same compliance time of this AD, as applicable.</p> <p>(4) After the effective date of this AD, do not install on a helicopter an engine on which Turbomeca IC No. 298468 or Turbomeca SB No. 292 73 0826 version A has been accomplished, unless in compliance with the requirements of this AD.</p> <p>(5) Inspections / replacements accomplished before the effective date of this AD, in accordance with the instructions of Turbomeca SB No. A292 73 0834 version A, are acceptable to comply with the requirements of this AD.</p>
<p>Ref. Publications:</p>	<p>Turbomeca Mandatory Service Bulletin No. A292 73 0834 version B dated 08 February 2011.</p> <p>Turbomeca Service Bulletin No. 292 73 0826 version B dated 4 February 2011.</p> <p>The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.</p>
<p>Remarks :</p>	<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 safety assessment has requested not to implement the full consultation process and an immediate publication and notification.</li> <li>3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management &amp; Research Section, Certification 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: Turboméca, S.A., ARRIEL 1 Customer Support, 40220 TARNOS, FRANCE. Fax: +33 5 59 74 45 15 or contact your nearest technical representative at <a href="http://www.turbomeca-support.com">www.turbomeca-support.com</a></li> </ol>