

EASA	AIRWORTHINESS DIRECTIVE	
	<p style="text-align: center;"><b>AD No.: 2007- 0018R1</b></p> <p style="text-align: center;"><b>Date: 14 August 2007</b></p>	
<p>No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise agreed with the Authority of the State of Registry.</p>		
<p><b>Type Approval Holder's Name :</b> TURBOMECA, S.A.</p>	<p><b>Type/Model designation(s) :</b> ARRIEL 1 turboshaft engines</p>	
<p>TCDS Number: EASA E.073</p>		
<p>Foreign AD: Not applicable.</p>		
<p>Revision/Supersedure: This AD revises EASA AD 2007-0018 which superseded DGAC France AD F-2004-047 R1 (EASA Approval No.2005-6374)</p>		
<b>ATA 72</b>	<b>Engine - Gas Generator 2nd Stage Turbine - Inspection/Replacement</b>	
<p>Manufacturer(s):</p>	<p>Turbomeca, S.A.</p>	
<p>Applicability:</p>	<p>all ARRIEL 1B post-mod TU 148, ARRIEL 1D, ARRIEL 1D1 and ARRIEL 1S1 turboshaft engines, not modified with Turbomeca modification TU347 or Service Bulletin (SB) 292 72 0347 [Installation of turbine Part Number (P/N) 0 292 25 039 0]</p> <p>These engines are known to be installed on, but not limited to:</p> <p>Eurocopter AS 350 B, AS 350 BA, AS 350 B1 and AS 350 B2 helicopters; and Sikorsky S-76C (commercial designation S-76C++) helicopters.</p>	
<p>Reason:</p>	<p>Several cases of release of gas generator 2nd stage turbine blade occurred in service, with full containment of debris. These events resulted in an uncommanded In-Flight Shut Down (IFSD) of the engine. While awaiting terminating actions, it has been decided to implement mandatory check and replacement of the turbine in order to reduce the probability of uncommanded engine IFSD.</p> <p>This AD retains the requirements of previous DGAC AD F-2004-047 and includes changes with regard to ARRIEL 1B engines only. Reduction of the turbine blade life limit from 6 000 hours to 3 000 hours has been taken as a precaution measure following additional events.</p>	

	<p>The present Revision 1 reduces the original AD applicability following introduction of a new Turbine P/N 0 292 25 039 0 available for all Arriel 1 engine models through Turboméca Modification TU347 or SB 292 72 0347. This new Turbine incorporates improvements that are likely to be the terminating action for this AD. Therefore inspections and replacement requirements defined in this AD do not apply any longer to engines equipped with the new Turbine P/N 0 292 25 039 0.</p>
<p>Effective Date:</p>	<p>29 January 2007</p>
<p>Compliance:</p>	<p>Unless already accomplished, the following actions are made mandatory from the effective date of this AD. The technical work must be performed in accordance with the instructions of the Service Bulletins referenced below.</p> <p><b>1. ARRIEL 1B engines which have been modified per TU 148:</b></p> <p>1.1. Once the 2nd stage turbine has accumulated 1 200 hours or 3 500 cycles since new or since inspection in a repair centre:</p> <ul style="list-style-type: none"> <li>- if no check has been previously performed or if the blades have been in operation for more than 150 hours since a check performed according to SB A292 72 0263, carry out a check, according to SB A292 72 0807, within 50 operating hours;</li> <li>- if the blades have been in operation for less than 150 hours since a check performed according to SB A292 72 0263, carry out a check, according to SB A292 72 0807, within 200 operating hours since the last check.</li> </ul> <p>1.2. Then carry out a check according to SB A292 72 0807 every 200 operating hours until receipt of an inspected turbine sent by Turbomeca.</p> <p>1.3. For 2nd stage turbines having accumulated more than 2 200 operating hours since new or since last inspection in a repair centre, replace the turbine, according to SB A292 72 0807 immediately on receipt of an inspected turbine sent by Turbomeca, but not later than 31 August 2006 [the original compliance date of DGAC AD F-2004-047]. After 31 August 2006, the turbine disks and blades must be inspected every 2 200 operating hours.</p> <p>1.4. For 2nd stage turbines fitted with blades having accumulated more than 3 000 operating hours since new, replace the turbine, according to SB A292 72 0807 immediately on receipt of an inspected turbine fitted with blades having accumulated less than 3 000 operating hours since new, sent by Turbomeca, and at the latest on May 30, 2007. Starting 30 May 2007, the 2nd stage turbine must be replaced when the blades accumulate 3 000 operating hours since new. The life limit for 2nd stage turbine blades is 3 000 operating hours.</p> <p><b>2. ARRIEL 1D and 1D1 engines</b></p> <p>2.1. Once the 2nd stage turbine has accumulated 1 200 hours or 3 500 cycles since new or since inspection in a repair centre:</p> <ul style="list-style-type: none"> <li>- if no check has been previously performed or if the blades have</li> </ul>

	<p>been in operation for more than 100 hours since a check performed according to SB A292 72 0263 or A292 72 0808, carry out a check, according to SB A292 72 0809, within 50 operating hours;</p> <ul style="list-style-type: none"> <li>- if the blades have been in operation for less than 100 hours since a check performed according to SB A292 72 0263 or A292 72 0808, carry out a check, according to SB A292 72 0809, within 150 operating hours since the last check.</li> </ul> <p>2.2. Then carry out a check according to SB A292 72 0809, every 150 operating hours until receipt of an inspected turbine with new blades sent by Turbomeca.</p> <p>2.3. For 2nd stage turbines having accumulated more than 1 500 operating hours since new, replace the turbine, according to SB A292 72 0809 immediately on receipt of an inspected turbine and fitted with new blades, sent by Turbomeca and at the latest on August 31, 2006. After 31 August 2006, the turbine disk must be inspected every 1 500 operating hours and the turbine blades must be replaced by new blades every 1 500 operating hours. The life limit for 2nd stage turbine blades is 1 500 operating hours.</p> <p><b>3. ARRIEL 1S1 engines</b></p> <p>3.1. Once the 2nd stage turbine has accumulated 1 200 hours or 3 500 cycles since new or since inspection in a repair centre:</p> <ul style="list-style-type: none"> <li>- if no check has been previously performed or if the blades have been in operation for more than 100 hours since a check performed according to SB A292 72 0263, carry out a check, according to SB A292 72 0810, within 50 operating hours;</li> <li>- if the blades have been in operation for less than 100 hours since a check performed according to SB A292 72 0263, carry out a check, according to SB A292 72 0810, within 150 operating hours of the last check.</li> </ul> <p>3.2 Then carry out a check, according to SB A292 72 0810, every 150 operating hours.</p>
<p>Ref. Publications:</p>	<p>Turbomeca, S.A. Alert Service Bulletins: A292 72 0807 update 1, or A292 72 0809 update 1, or A292 72 0810 original Issue, as applicable to engine variant; and Turbomeca Service Bulletin 292 72 0347 original Issue.</p> <p>any later approved revision of these documents is acceptable.</p>
<p>Remarks :</p>	<ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated the responsible EASA manager for the related product has the authority to accept Alternative Methods of Compliance (AMOCs) for this AD.</li> <li>2. The initial AD 2007-0018 released on 15 January 2007 was posted as PAD 06-252 on 12 December 2006 for consultation until 12 January 2007. No comments were received during the consultation period.</li> </ol>

	<p>3. Enquiries regarding this AD should be referred to the AD Focal Point - Certification Directorate, EASA; E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a> .</p> <p>4. For any question concerning the technical content of the requirements in this AD, please contact:</p> <p>Turboméca, S.A., ARRIEL 2 Customer Support, 40220 TARNOS, FRANCE. Fax: +33 5 59 74 45 15, or your usual or nearest TURBOMECA technical representative (refer to <a href="http://www.turbomeca-support.com">http://www.turbomeca-support.com</a>)</p>
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