


EASA	AIRWORTHINESS DIRECTIVE
	<p>AD No.: 2013-0079R1</p> <p>Date: 27 January 2014</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>	
Design Approval Holder's Name: TURBOMECA	Type/Model designation(s): ARRIEL 2 engines
TCDS Number:	EASA E.001
Foreign AD:	Not applicable
Revision:	This AD revises EASA AD 2013-0079 dated 22 March 2013, which superseded EASA AD 2012-0141 dated 31 July 2012.
ATA 73	Engine Fuel & Control – Hydro-Mechanical Metering Unit – Replacement
Manufacturer(s):	Turboméca S.A.
Applicability:	ARRIEL 2D engines, all serial numbers. These engines are known to be installed on, but not limited to, Airbus Helicopters (formerly Eurocopter) AS 350 B3 and EC 130 T2 helicopters.
Reason:	<p>During an ARRIEL 2D endurance test, the illumination of the Low Fuel Pressure warning light was observed. The investigation of the High Pressure / Low Pressure (HP/LP) pump assembly within the Hydro-Mechanical Metering Unit (HMU), removed following this occurrence, revealed a deterioration and a loss of the LP pump drive function.</p> <p>This condition, if not corrected, could lead to the illumination of the Low Fuel Pressure warning light in flight, possibly resulting in an uncommanded in-flight shut-down (if the booster pumps are not switched on or under high load factor manoeuvres). For a single-engine helicopter, it may result in an emergency autorotation landing.</p> <p>To address this potential unsafe condition, EASA issued AD 2012-0141 to reduce the service life of the HMU, requiring replacement before exceeding a defined limit of operating hours.</p> <p>Since that AD was issued, further cases of deterioration of HMU rotating components have been reported, which occurred before the replacement interval required by that AD.</p> <p>Prompted by these findings, Turboméca revised Mandatory Service Bulletin</p>

	<p>(MSB) A292 73 2847, providing additional instructions for an inspection of the HMU, to be accomplished prior to rotating part replacement and EASA issued AD 2013-0079, retaining the requirements of EASA AD 2012-0141, which was superseded, and required inspection of the HMU and, depending on discrepancies, replacement with serviceable parts and replacement of the HMU rotating components before exceeding newly defined limits of operating hours.</p> <p>Since issuance of EASA AD 2013-0079, Turboméca developed a new HP/LP pump and metering valve assembly through modification TU177, which has demonstrated an improved robustness of the HP/LP inter-pump drive link splines. Turboméca issued MSB A292 73 2851, which provides instructions for part replacement for engines incorporating TU177.</p> <p>This AD is revised to exclude engines incorporating Turboméca modification TU177 from the required intermediate inspections of the HMU inter-pump sleeve and splines, while retaining the requirements for repetitive component replacement.</p>
Effective Date:	<p>Revision 1: 03 February 2014</p> <p>Original issue: 05 April 2013</p>
Required Action(s) and Compliance Time(s):	<p>Required as indicated, unless accomplished previously:</p> <ol style="list-style-type: none"> (1) For engines not incorporating modification TU177, before exceeding 400 HMU operating hours since new, or since replacement of LP and HP fuel pumps rotating components in accordance with the instructions of Turboméca MSB A292 73 2847, whichever occurs later, and, thereafter, at intervals not to exceed 400 HMU operating hours, accomplish the following in accordance with the instructions of paragraph 2.B.(1) of Turboméca MSB A292 73 2847 version C: <ul style="list-style-type: none"> - Inspect and replace the HMU inter-pump complete sleeve (female splines); and - Inspect the HMU HP Pump and LP Pump male splines. <p>Note 1: a maximum of 25-hour tolerance can be applied to the defined inspection interval.</p> (2) If, during any inspection as required by paragraph (1) of this AD, a discrepancy is detected, before next flight, replace the affected HMU with a serviceable HMU in accordance with paragraph 2.B.(1) of Turboméca MSB A292 73 2847 version C. <p>Note 2: For the purpose of this AD, a serviceable HMU is an HMU that has accumulated less than 800 operating hours since new, or since replacement of LP and HP fuel pumps rotating components in accordance with the instructions of Turboméca MSB A292 73 2847, and has accumulated less than 400 operating hours since new or since the last inspection of the rotating components in accordance with the instructions of Turboméca MSB A292 73 2847.</p> <ol style="list-style-type: none"> (3) For all engines, before exceeding 800 HMU operating hours since new, or since replacement of LP and HP fuel pumps rotating components in accordance with the instructions of Turboméca MSB A292 73 2847 or MSB A292 73 2851, as applicable, whichever occurs later, and, thereafter, at intervals not to exceed 800 HMU operating hours, replace the rotating components of the HP and LP Pumps including the complete sleeve, or replace the HMU with a serviceable HMU, in accordance with the instructions of paragraph 2.B.(1) of Turboméca MSB A292 73 2847 version C or MSB A292 73 2851 version A, as applicable. (4) Inspections and replacement of parts, accomplished before the effective date of this AD in accordance with the instructions of Turboméca MSB A292 73 2847 version A or version B is acceptable to comply with the initial requirements of paragraphs (1), (2) and (3) of this AD.

	(5) From the effective date of this AD, do not install an HMU on an engine, or an engine on a helicopter, unless in compliance with the requirements of this AD.
Ref. Publications:	<p>Turboméca MSB A292 73 2847 version A dated 29 May 2012, or version B dated 06 March 2013, or version C dated 03 December 2013.</p> <p>Turboméca MSB A292 73 2851 version A dated 03 December 2013.</p> <p>The use of later approved revisions of these documents 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. 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. 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: 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 http://www.turbomeca-support.com).

Superseded