

EASA	NOTIFICATION OF A PROPOSAL TO ISSUE AN AIRWORTHINESS DIRECTIVE
	PAD No.: 15-079 Date: 23 June 2015 Note: This Proposed Airworthiness Directive (PAD) 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.
In accordance with the EASA Continuing Airworthiness Procedures, the Executive Director is proposing the issuance of an EASA Airworthiness Directive (AD), applicable to the aeronautical product(s) identified below. All interested persons may send their comments, referencing the PAD Number above, to the e-mail address specified in the 'Remarks' section, prior to the consultation closing date indicated.	
Design Approval Holder's Name: TURBOMECA	Type/Model designation(s): ARRIEL 2 engines
TCDS Number:	EASA E.001
Foreign AD:	Not applicable
Supersedure:	None
ATA 72	Engine – Accessory Gear Box Module M01 – Inspection / Replacement
Manufacturer(s):	Turbomeca
Applicability:	ARRIEL 2B, 2B1, 2B1A, 2B1B, 2C, 2C1, 2C2, 2D, 2E, 2N, 2S1 and 2S2 engines, all serial numbers. These engines are known to be installed on, but not limited to, Airbus Helicopters AS350B3, EC130B4, EC130T2, AS365N3, EC155B and EC155B1, Airbus Helicopters Deutschland MBB-BK 117 D-2 (EC145T2 or H145), Avic international AC311 and Sikorsky S-76C helicopters.
Reason:	An uncommanded in-flight shut-down (IFSD) of an ARRIEL 2 engine was reported, caused by rupture of the 41-tooth gear, which forms part of the bevel gear of the accessory gearbox (module M01). The subsequent investigation revealed that wear on the housing of the front bearing of this gear was a major contributor to this rupture. In addition, the investigation showed that this wear mechanism had resulted in positive Spectrometric Oil Analysis (SOA) indications before the event. This condition, if not detected and corrected, could potentially lead to further cases of IFSD, possibly resulting in a forced landing. To address this potentially unsafe condition, Turbomeca issued Mandatory Service Bulletin (MSB) 292 72 2861 to provide SOA check instructions. For the reasons described above, this AD requires repetitive SOA checks and, depending on the results, replacement of the module M01.

Effective Date:	[TBD: 14 days after final AD issue date]															
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: (1) Within the compliance time specified in Table 1 of this AD, perform a visual inspection in accordance with the instructions of Turbomeca MSB 292 72 2861 to identify, if a machined front casing Part Number (P/N) 0292120650 is installed on that engine. (2) For engines equipped with a module M01 fitted with a machined front casing P/N 0292120650 (as identified in Turbomeca MSB 292 72 2861), within the compliance time specified in Table 1 of this AD, and, thereafter, at intervals not to exceed the value specified in Table 2 of this AD, as applicable, depending on the initial SOA check results, accomplish a SOA check in accordance with the instructions of Turbomeca MSB 292 72 2861. Table 1 – Initial SOA check <table><tr><th>Engine Hours (EH) accumulated by the Module M01 (since first installation on an engine or since last overhaul)</th><th>Compliance Time</th></tr><tr><td>Less than 800 EH</td><td>Before exceeding 850 EH since first installation of the Module M01 on an engine, or since last Module M01 overhaul, as applicable</td></tr><tr><td>800 EH or more, or EH not known</td><td>Within 50 EH after the effective date of this AD</td></tr></table> Table 2 – Repetitive SOA checks <table><tr><th>Value Nr.</th><th>Aluminium Concentration</th><th>Interval (not to exceed)</th></tr><tr><td>1</td><td>under 0.8 ppm</td><td>100 EH</td></tr><tr><td>2</td><td>between 0.8 ppm and 1.4 ppm (inclusive)</td><td>50 EH</td></tr></table> (3) If, during any SOA check as required by paragraph (2) of this AD, an aluminium concentration has value 2 (as specified in Table 2 of this AD) in comparison to a value 1 in the previous SOA check, accomplish further SOA checks within the applicable (reduced) interval (50 EH) to comply with paragraph (2) of this AD. (4) If during any SOA check, as required by paragraph (2) or (3) of this AD, the aluminium concentration is above 1.4 ppm, within 50 EH after that SOA check, replace the module M01 with a serviceable module M01 (refer to paragraph (5) of this AD), in accordance with the instructions of Turbomeca MSB 292 72 2861. (5) For the purpose of this AD, a serviceable module M01 is either a module M01 fitted with a machined front casing P/N 0292120650, that is subjected to SOA checks in accordance with paragraph (2) and (3) of this AD, or a module M01 fitted with a casted front casing P/N 0292127020 (6) From the effective date of this AD it is allowed to install a module M01 fitted with a machined front casing P/N 0292120650, provided it is subjected to SOA checks in accordance with paragraph (2) and (3) of this AD.	Engine Hours (EH) accumulated by the Module M01 (since first installation on an engine or since last overhaul)	Compliance Time	Less than 800 EH	Before exceeding 850 EH since first installation of the Module M01 on an engine, or since last Module M01 overhaul, as applicable	800 EH or more, or EH not known	Within 50 EH after the effective date of this AD	Value Nr.	Aluminium Concentration	Interval (not to exceed)	1	under 0.8 ppm	100 EH	2	between 0.8 ppm and 1.4 ppm (inclusive)	50 EH
Engine Hours (EH) accumulated by the Module M01 (since first installation on an engine or since last overhaul)	Compliance Time															
Less than 800 EH	Before exceeding 850 EH since first installation of the Module M01 on an engine, or since last Module M01 overhaul, as applicable															
800 EH or more, or EH not known	Within 50 EH after the effective date of this AD															
Value Nr.	Aluminium Concentration	Interval (not to exceed)														
1	under 0.8 ppm	100 EH														
2	between 0.8 ppm and 1.4 ppm (inclusive)	50 EH														

Ref. Publications:	Turbomeca MSB 292 72 2861 version A dated 24 April 2015. The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.
Remarks:	1. This Proposed AD will be closed for consultation on 21 July 2015. 2. Enquiries regarding this PAD should be referred to the Safety Information Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu. 3. For any question concerning the technical content of the requirements in this PAD, 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).