

EASA	NOTIFICATION OF A PROPOSAL TO ISSUE AN AIRWORTHINESS DIRECTIVE
	PAD No.: 10-094 Date: 31 August 2010 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.	
Type Approval Holder's Name : Turboméca	Type/Model designation(s) : ARRIEL 2 series turboshaft engines
TCDS Number : EASA.E.001	
Foreign AD : Not applicable	
Supersedure : None	
ATA 72	Engine – Module M03 (Gas Generator) – Turbine Blade – Modification
Manufacturer(s):	Turboméca S.A.
Applicability:	Arriel 2B, 2B1, 2B1A turboshaft engines, if not modified by TU166 modification. These engines are known to be installed on, but not limited to: Eurocopter AS 350 B3, EC 130 B4 helicopters and Changhe Z11 helicopters.
Reason:	Several cases of Gas Generator (GG) Turbine Blade rupture occurred in service on ARRIEL 2 twin engine applications and recently one on a single engine helicopter. For the case occurring in flight on a single engine helicopter (ARRIEL 2B1 engine), the pilot performed an emergency autorotation, landing the helicopter without further incident. The design of ARRIEL 2 engines (containment shield around the GG turbine) allows debris from a blade or the disc inter-blade area to be contained in the event of rupture. However the rupture of a GG Turbine Blade may lead to an uncommanded In Flight Shut-Down which, on a single-engine helicopter, could ultimately lead to an emergency autorotation landing. The most probable root cause of the ruptures is an excitation of one of the vibration modes of the GG Turbine Blade in conjunction with several secondary contributing factors which are deemed sufficient to reduce the stress margin of the blade to a level consistent with the rate of occurrences

	of ruptures encountered. Turboméca has released TU166 modification which consists in inserting Blade dampers between the GG Turbine Disc and the GG Turbine Blade platform. Introduction of these dampers minimizes the effects of HP blade vibratory excitation and increases the blade tolerance for this type of stress. For the reasons stated above, this AD requires the accomplishment of TU166 modification on ARRIEL 2 single engine applications.
Effective Date:	[TBD: 14 days after final AD issue date]
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: Accomplish TU166 modification in accordance with the instructions specified within Turboméca Mandatory Service Bulletin (MSB) A292 72 3166 version A: when the GG Turbine is replaced (at approved Operator or Service Center) or when the engine or Module M03 is going through overhaul or repair (at approved Maintenance or Repair Center), whichever occurs first, but no later than 25 months after the effective date of this AD.
Ref. Publications:	Turboméca Mandatory Service Bulletin (MSB) A292 72 3166 version A dated 17 August 2010. 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 28 September 2010. 2. Enquiries regarding this PAD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail: ADs@easa.europa.eu. 3. 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 Turboméca technical representative at www.turbomeca-support.com