
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.1 (1) of CASR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

Turbomeca Turbine Engines - Arriel Series**AD/ARRIEL/20****Digital Engine Control Unit - Torque Measurements****2/2005**

Applicability: Arriel 2S1 turboshaft engines whose Module 01 serial number is listed in Turbomeca Mandatory Service Bulletin (MSB) A 292 72 2816.

Requirement: Unless previously accomplished, perform the following in accordance with MSB A 292 72 2816:

Check the torque measurements made by the production Digital Engine Control Unit (DECU) installed on the engine and compare them to those obtained from a prototype DECU, installed in parallel with the production DECU, and

Recalculate the new conformation resistance values and recalibrate the torque conformation box.

Note: DGAC AD F-2004-192 (EASA approval 2004-12118) refers.

Compliance: Before 31 January 2006.

This Airworthiness Directive becomes effective on 17 February 2005.

Background: The Direction Générale de l'Aviation Civile of France has advised the following:

“The DECU used on the TM-USA engine test bench during final acceptance testing of Arriel 2S1 engines between April 1999 and July 2004 revealed an inaccuracy. This inaccuracy was corrected in August 2004. However, for the affected engines, the consequence is a conformation error of the engine torque meter on Module 1 that can lead to an overestimation of the torque.

This conformation error results in:

- a possible overestimation up to 27 N.m (3.0% torque) of the indicated torque compared to the real torque of the engine;
- a possible overestimation of the power margin during the Power Assurance Check as specified in the aircraft flight manual;

Turbomeca Turbine Engines - Arriel Series

AD/ARRIEL/20 (continued)

- a possible power limitation below the minimum declared levels of the "OEI 30s", "OEI 2min" and "OEI continuous" ratings in a limited part of the flight envelope."

This Directive requires the checking of torque measurements and recalculation of the conformation resistance values.



David Punshon
Delegate of the Civil Aviation Safety Authority

6 January 2005