
AIRWORTHINESS DIRECTIVE

On the effective date specified below, and for the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive AD/MAKILA/10.

Turbomeca Turbine Engines - Makila Series

AD/MAKILA/10

Time Limits - Maintenance Checks

4/2009

Requirement: CANCELLED.

This AD is cancelled on 9 April 2009.

Background: There have been three occurrences of MAKILA 2A centrifugal compressor blade loss during acceptance testing of new engines. The preliminary results of the investigations suggest that the rupture of the blades could have resulted from high frequency vibrations. The fatigue crack initiation at the origin of the rupture and subsequent propagation may occur at a blade resonant frequency. This potential resonance could occur within a small band of gas generator speeds (N1) at the high end of the rated N1 speed range, depending on the particular characteristics of each centrifugal compressor. The centrifugal compressors thought most likely to be susceptible to blade loss are from a limited manufacturing batch. These compressors have been identified, and have been, or will soon be, removed from service. A new compressor has been designed in which the potential resonance is eliminated. This compressor, when available, will be incorporated through modification TU 38. The occurrence of compressor blade loss in the remainder of the current fleet cannot be ruled out, however. As compressor blade loss could lead to an uncommanded or commanded in-flight engine shut-down, this AD required the introduction of a limitation on the cumulative use of the 2-minute OEI rating, until modification TU 38 has been incorporated.

Since the issue of this AD, other airworthiness limitations have been imposed. The new limitations which include those previously detailed in this AD are now included in AD/MAKILA/11.



James Coyne
Delegate of the Civil Aviation Safety Authority

24 February 2009