
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.

AlliedSignal (Garrett/AiResearch) Turbine Engines - TPE 331 Series**AD/TPE 331/61****1st Stage Turbine Disk****9/2004**

Applicability: Honeywell International Inc. (formerly AlliedSignal Inc.) TPE331 series engines as detailed in Honeywell International Inc. Alert Service Bulletin (ASB) TPE331-A72-2102, dated 28 March 2002, fitted with 1st stage turbine disk part number (P/N) 3101520-1 or P/N 3107079-1, with serial numbers (SNs) listed in Table 1 of Honeywell International Inc. ASB TPE331-A72-2102.

Note 1: These engines are installed on, but not limited to Mitsubishi MU-2B series, Construcciones Aeronauticas S.A. (CASA) C-212 series, Fairchild SA226 series (Swearingen Merlin and Metro series), Twin Commander 680 and 690 series (Jetprop Commander), Dornier 228 series, Beech 18 and 45 series, Beech Models JRB-6, 3N, 3TM, and B100, Cessna Aircraft Company Model 441 Conquest, and Jetstream 3201 series aeroplanes.

Requirement:

1. Unless previously accomplished perform a initial fluorescent penetrant inspection (FPI) of first stage turbine disks, P/N 3101520-1, in accordance with 2.A. (4)(a) through 2.A. (4)(d) of Accomplishment Instructions of ASB TPE331-A72-2102.
2. Perform repetitive FPIs of first stage turbine disks P/N 3101520-1 and P/N 3107079-1, in accordance with 2.B. (3)(a) through 2.B. (3)(d) of Accomplishment Instructions of ASB TPE331-A72-2102.

Note 2: First stage turbine disks, P/N 3107079-1, do not require initial inspection because they received an initial FPI and ECI at the time of conversion.

3. For first stage turbine disks that pass FPI, perform eddy current inspection (ECI).

Note 3: FAA AD 2004-09-29 Amdt 39-13619 refers.

Note 4: First stage turbine disks that pass FPI must be ECI before they are returned to service. Information on procedures for returning disks to Honeywell Engines, Systems, & Services, for ECI, can be found in ASB TPE331-A72-2102.

Compliance: For Requirement 1:

For first stage turbine disks with 4,100 cycles-since-new (CSN) or less, inspect at next access, but no later than 4,500 CSN.

AlliedSignal (Garrett/AiResearch) Turbine Engines - TPE 331 Series

AD/TPE 331/61 (continued)

For first stage turbine disks with more than 4,100 CSN, inspect at next access, but within 400 cycles-in-service (CIS) after the effective date of this AD.

For Requirement 2:

At each scheduled hot section inspection.

For Requirement 3:

Before return to service following the FPI.

This Airworthiness Directive becomes effective on 2 September 2004.

Background: This Directive requires initial and repetitive FPIs and ECIs of the affected first stage turbine disks. This Directive results from a report of a first stage turbine disk found cracked at the disk bore. The crack originated from a localized; melt related, low-alloy area of the disk. Failure of the disk could lead to uncontained disk separation, resulting in engine damage and shutdown and damage to the aeroplane.



Bernard Malcolm Hole
Delegate of the Civil Aviation Safety Authority

9 July 2004