



TPE331 SERVICE INFORMATION LETTER

NF-TPE331-SIL-11031 - ENGINE - Inspect Turbine Plenum Assembly.

Applicability

This Service Information Letter is applicable to operators of the following turboprop/turboshaft engines: Honeywell International Inc. (formerly AlliedSignal Inc., Garrett Turbine Engine Company and AiResearch Manufacturing Company of Arizona) TPE331-1, -2, -3, -5, -6, -8, -10, -11 and -12 series turboprop and TSE331-3 series turboshaft engines regardless of whether engines are new, repaired, overhauled or modified in accordance with FAA approved Supplemental Type Certificates.

Discussion

A recent accident has highlighted that undetected plenum cracking may lead to plenum ruptures, causing loss of engine power or flameout due to plenum failures on Honeywell TPE331 series engines prompting in service field evaluation and review of service information pertaining to TPE331 plenum(s). National Flight Services has reviewed available FAA Service Difficulty Reports, FAA Alerts, FAA Airworthiness Directives, engine and airframe manufacturer service information in addition to National Flight records pertaining to the turbine plenum. Plenum cracks and failures have been reported across the entire engine model series.

National Flight has determined that turbine plenum assemblies installed on TPE331-1 through -12 series engines may be subject to cracking around fuel nozzle, P3, plenum drain(s) and ignitor bosses in addition to bleed-air ports. Engineering review indicates that installation attachment design and maintenance practices may induce stresses on the plenum boss/port attachments resulting in cracking. Continued propagation of these cracks can result in plenum failure and subsequent engine flame-out.

To provide additional field evaluation and avoid potential plenum failures while ensuring continued safe, reliable operation, National Flight has developed recommendations for initial and periodic visual inspection to evaluate and monitor the in service condition of the turbine plenum assembly and provide supplemental information for installation and/or removal of external items on the plenum assembly.

These recommendations are intended only to supplement approved aircraft and engine instructions for continued airworthiness. Applicable engine and aircraft instructions for continued airworthiness shall prevail.

Recommendations

Inspections

(1) Initial Visual Inspection.

Within 25 flight hours after receipt of this Service Information Letter National Flight recommends all TPE331 engine operators perform visual inspection of turbine plenum for cracks in accordance with applicable Engine Maintenance Manual, 72-00-00 General - Inspection Check. No Cracks Allowed.



TPE331 SERVICE INFORMATION LETTER

(2) Recurrent Periodic Inspection.

At each manufacturers recommended periodic inspection (see engine Maintenance Manual, Table 601- Periodic Inspection Requirements or Service Bulletin 72-0180 Rev 31, Table 2 – Periodic Inspection Requirements as applicable) following initial visual inspection National Flight recommends operators perform visual inspection of turbine plenum for cracks in accordance with applicable Engine Maintenance Manual, 72-00-00 General –Inspection Check. No Cracks Allowed.

Maintenance Practices

- (1) National Flight recommends all personnel performing maintenance on TPE331 series engines review installation/removal instructions contained in the applicable engine and aircraft maintenance manuals for plenum mounted items including, but not limited to, ignitors, plenum drains, P3 line fittings, bleed air ports and fuel nozzles.

CAUTION: Do not overtorque attachments during installation or removal. Excessive removal torques are suspected as a contributing factor in plenum cracking. Refer to applicable engine Maintenance Manual, 70-00-00, Standard Practices, for recommended general torque values unless otherwise specified. Add frictional drag (run-down) torque of self-locking devices to recommended values.

NOTE: Review applicable engine/aircraft maintenance manual instructions for use of high temperature anti-seize compounds.

Equivalent substitutes may be used for listed items.

Fel-Pro C5-A
High temperature compound Fel-Pro Inc
Div of Felt Products Mfg Co
7450 N McCormick Blvd
Skokie, IL 60076

or

Part No. NPC60301-1 from Garrett
General Aviation Services Division,
Sales Administration, P.O. Box 29003,
Phoenix, AZ 85038

NOTE: To remove bleed air tube assemblies from the plenum, it may be necessary to remove the attachment flange assembly at the bleed air mount boss to avoid damage to plenum. Visually inspect bleed air mounting boss following removal.

- (2) National Flight recommends operators inspect airframe components attached to the engine turbine plenum in accordance with applicable aircraft maintenance manuals to ensure proper fit. Attachments should connect to plenum without binding (placing load on the plenum).

NOTE: Ensure serviceable flexible tube assemblies are installed where applicable.



TPE331 SERVICE INFORMATION LETTER

National Flight Visual Inspection Program (VIP)

National Flight will complete the initial external visual inspection of the turbine plenum at no charge at a National Flight facility only. Operators of Honeywell TPE331 Series engines should contact the nearest National Flight facility to schedule the recommended Initial Visual Inspection. The "No Charge" Initial Visual Inspection Program applies to all TPE331-1 through -12 engines regardless of where prior maintenance, repair, overhaul or modifications were performed.

Call (800) 669-2704 to locate the nearest National Flight facility.

Report Findings

National Flight requests operators complete the inspection form below upon initial visual inspection and forward to:

National Flight Services, Inc.
Attn: Engineering
10971 East Airport Service Road
Swanton, Ohio 43558

OR

e-Mail: engineering@nationalflight.com

Fax: (419) 867-4224

TURBINE PLENUM INSPECTION FORM

Company Name: _____ Contact: _____

Phone: _____ Email: _____

Aircraft Make: _____ Model: _____

Registration # : _____ ATT: _____

Left Engine

Right Engine

Engine S/N: _____

Engine Model No. _____

Engine TSN/TSO _____

Engine CSN/CSO _____

Plenum P/N _____

Plenum condition _____