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October 21, 2014

TPE Technical
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Agenda

- TPE331 History and Applications
- Released Service Bulletins
- Combustor Plenum Update
- Special Use Operations
- Duplex Fuel Nozzles
Current Production Platforms

- TPE331-12UAN for the An2 in Production
- Predator B “Reaper”
- Caravan Retrofits
- CASA 212-400
- RUAG Dornier 228 NG
TPE is Reliability!

- 45+ years of service
- 123,700,076 operating hours (as of 4-2014)
- Over 13,000 engines produced
  - 11,745 still in operation
  - Shipped over 1000 -12 engines
- Over 40 different applications
Released Service Bulletins

- **TPE331-72-2226  Engine Reduction Gear and Shaft Assembly**
  - Replace output gearbox housing gasket PN 3103751-7 with PN 3103751-9 on TPE331-1 -2 -5 -6 -8 -10 -11 -12 series engines

- **TPE331-72-2208  Engine Compressor Section**
  - Replace second stage impeller PN 893482-1 thru -5 and PN 3107056-1 -2 with second stage impeller PN 3108387-1 or PN 3107167-1 thru -5 on TPE331-3 -5 -6 -8 -10 -11 engine series

- **TPE331-72-2194  Engine Controls**
  - Reset propeller governor maximum speed setting stop from approximately 103 percent to 101 percent speed
Released Service Bulletins

• TPE331-72-2171 Reduction Gear and Shaft Section
  – Replace/rework propeller governor assembly, to incorporate a return spring

• Overhaul Manual with IPC (72-10-17 Rev 10)
  – Revise manual and IPC to reflect improved bearing used in torque sensor gear assembly

• TPE331-72-2203 Engine Oil Tube Assembly
  – Replace oil tubes PN 3102790-1 -2 -3 with PN 3102790-4 -5 -6
Combustion Case Assembly (Plenum)

• Issue
  – Combustor Plenum welds may crack in service
  – Some cracks may lead to ruptures in the field
  – For -1 through -12 engine

• Action
  – Designed new plenum

• Status for old and new design plenum
  – SB 72-2178 issued for visual inspection (old design)
  – Nine incorporation bulletins for FAA certified engine models are released (new design)
    – TPE331-72-2218 TPE331-72-2228 TPE331-72-2229 TPE331-72-2230 TPE331-72-2231 TPE331-72-2232 TPE331-72-2233 TPE331-72-2234 TPE331-72-2235
  – New part is life tracked
Combustion Case Assembly (Plenum)

- Status for old and new design plenum (cont.)
  - Temporary revision to Inspection/Repair Manuals to add new plenum configurations are released
  - 72-IR-10 TR72-213, 72-IR-15 TR72-351, 72-IR-20 TR-72-9
  - Same inspection requirements as existing plenums
  - No weld repairs allowed
  - Metal spray repairs allowed
  - Service life bulletins revisions to add new plenum part numbers for issue of Component Maintenance (CMMC) record cards
Special Use Operations

• Issue
  – Partial Cycle Counting incorporation into life cycle bulletins

• Action
  – Honeywell has released new partial cycle counting life bulletins at request of the FAA
    – TSETPE331-72-0019, TPE331-72-0117, TPE331-72-0180, TPE331-72-0476

• Status
  – Continue to use stand alone partial cycle count bulletins for already installed life limited components
  – Transition authority to the new partial cycle count bulletins for newly installed life limited components
Duplex Fuel Nozzles

• Issue
  – Fractured braze joints allow leakage from primary to secondary fuel path

• Action
  – Inspection Interval reduction from 450 to 350 hours for -10/-11 engines
  – Improved cross leakage check to be required to check for primary to secondary fuel cross leakage

• Status
  – Root cause for braze joint fracture under investigation
  – Draft SB in process to address change to inspection interval and additional requirements
Questions?