

DUNCAN INTELLIGENCE

Service Bulletin TFE731-72-3691

•*Doug Alleman*

Honeywell released Service Bulletin 72-3691 in August of 2004. This bulletin is written to replace 3rd Low Pressure Turbine (LPT3) blades P/N 3060690-1/-2 installed in specific TFE731-4 & -5 engines.

There have been airfoil separations due to high stress levels in the LPT3 blades. These separations lead to unscheduled blade replacement and in some cases engine in-flight shutdowns. Honeywell's analysis has found the majority of the failures are from blades manufactured in a specific time period, January 1, 1999, through December 31, 2000.

Honeywell recommends replacing LPT3 blades P/N 3060690-1/-2 with screened blades P/N 3060788-1. The replacement blades incorporate manufacturing process improvements to eliminate high stress contributors. Installation of LPT3 blades P/N 3060788-1 will eliminate the potential for an in-flight shutdown or failure of the LPT3 blades.

This bulletin applies to LPT3 assemblies that meet one of the following criteria.

1) The LPT3 rotor assembly P/N and S/N listed in table one of TFE731-72-3691. A copy of this bulletin can be downloaded at Honeywell's web site www.e-engines.honeywell.com.

2) One of the following service bulletins was accomplished between January 1, 1999, and December 31, 2000; TFE731-3587, TFE731-72-3657, or TFE731-72-3689.

3) The LPT3 assembly in your engine had blades P/N 3060690-1/-2 installed in it between January 1, 1999, and December 31, 2000.

Honeywell recommends this bulletin be complied with in accordance with the following schedule.

Hawker 800/800XP: Whichever occurs first, airframe "B" inspection, MPI, MPI/CZI, or anytime the LP tie rod is un-stretched for maintenance.

Falcon 20-5/900/900B: Whichever occurs first, airframe "2A" inspection, MPI, MPI/CZI, or anytime the tie rod is un-stretched for maintenance.

Citation VII: Whichever occurs first, airframe "Phase B" inspection, MPI, MPI/CZI, or anytime the tie rod is un-stretched for maintenance.

Honeywell has issued Special Program No. 49 in regards to pricing of Service Bulletin TFE731-72-3691. Please contact your Duncan Aviation Engine service sales representative for details of this program or any questions you may have.

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Fan Blade Cropping and Fan Inlet Nacelle Excitation

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Honeywell's preferred method to repair FOD to fan blades is not to blend them but replace them with blades that have not been blended or cropped. After the damaged blades have been replaced and the fan has been balanced, an acoustic survey is recommended to ensure an undesirable acoustic signature is not being generated.

Honeywell has completed extensive investigations into the root cause of inlet nacelle fatigue with OEMs and nacelle manufacturers. The result of this testing has indicated one source of this problem is high cycle fatigue partially attributed to acoustic excitation of the inlet nacelle. This fatigue is partially the result of combinations of inlet nacelles and cropped fan blades. Cropped fan blades may cause an acoustic signature to be generated resulting in excitation of the inlet nacelle. This excitation can result in cracks in the skins of the nacelle and cracked or missing rivet heads resulting in extensive and costly repairs to the nacelle.

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