Boeing Issues Service Bulletins On 747 Fuel Systems

The Boeing Company today notified all 747 operators that it has released three service bulletins related to the jetliner's fuel system.

The bulletins alert airlines to a forthcoming U.S. Federal Aviation Administration (FAA) Notice of Proposed Rule Making. This advanced notification will assist airlines in scheduling maintenance concurrently.

The service bulletins pertain to the 747 center wing tank inspection; replacement of fuel probe terminal blocks and inspection of wiring in the center wing tank's fuel quantity indication system (FQIS); and the installation of a flame arrestor in the scavenge pump.

The first service bulletin addresses the Boeing recommendation from May 1997, for a center wing tank inspection for all 747 airplanes. When initiated, the purpose of the inspection was to gather data on the in-service condition of 747 fuel tanks, and determine appropriate follow-up activity, if necessary, to ensure the continued airworthiness of the airplane. The inspection includes checking the integrity of wiring and grounding straps, a visual inspection of pumps and fuel lines and fittings, and electrical bonding checks on all equipment. To date, 213 in-service airplanes have been inspected with no significant problems found.

The second service bulletin will include instructions for airlines on the replacement of all Series 3 terminal blocks with the newer Series 4 terminal blocks on fuel probes. For those airplanes with Series 4 or newer FQIS configurations, instructions will be provided to ensure proper wire routing. The bulletin calls for airlines to inspect this wiring, and to replace or repair any damaged wire bundles. This action is only necessary on "classic" 747 models, such as the 747-100/ -200/ -300, including SP and SR versions.

To support the information provided in this service bulletin, Boeing has obtained two full sets of FQIS probes and wiring from 20-year-old in-service 747s. A third set of wiring also is being obtained that will complete this sample base. Boeing is in the process of conducting various tests and analyses on this equipment to address several issues surrounding aging components. Preliminary testing has been completed on one set of wiring and testing has begun on the second. Information obtained has been incorporated into these service bulletins concerning wire routing to probe terminal blocks.

Also being studied is the effect of copper or silver-sulfide contamination on wire bundles. In testing to date, Boeing has not detected sulfide buildup to the extent that this condition would be detrimental to the safety of the airplane. Our testing is continuing on parts removed from in-service airplanes. It is anticipated that this study will be complete by the third quarter of 1998 and any additional procedures to address this issue will be incorporated into service-bulletin revisions.

The third service bulletin pertains to the installation of a flame arrestor at the open end of the scavenge-pump inlet tube. Testing has not revealed a condition that would generate an ignition source. However, the installation of a flame arrestor would provide an additional level of safety. No fuel-vapor ignition in the inlet tube has been reported on any in-service airplanes.

The Boeing Company supports the FAA's efforts and believes that all appropriate actions are being taken to ensure continued safety.

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