

A report was submitted to the FAA that a Boeing model 757-200 series airplane had a fuel shutoff valve circuit breaker trip because a wire chafed against the structure in the flammable leakage zone of the aft fairing. The problem occurred on a Boeing Model 757-200 series airplane that had accumulated approximately 10,900 total flight hours and 6,225 total flight cycles. The 10,900 total flight hours of time is low for a 757 commercial airliner and many other 757's with the same wiring configuration and the same amount of total time or more probably already have had this safety problem. The fuel shutoff valve wire bundles are the same on Boeing Models 757-200PF, 757-200CB, and 757-300 which are subject to the same unsafe condition. The causes of the wire bundle chafing is from missing or incorrectly installed wire sleeving, incorrect grommet installation, and incorrect wire clamp installation. The chafing between the fuel shutoff valve wire bundle and the engine strut webs, which is in the flammable leakage zone of the aft fairing could result in electrical arcing and subsequent ignition of flammable vapors and possible uncontrollable fire. The fact that the fuel shutoff valves will trip from the arcing, and render the fuel shutoff valves inoperative means that if the arcing did start a fire, fuel flow could not be shut off and consequently fire could lead all the way up to the main fuel tank.

Correcting the problem would include repairing any damage found, in addition to installing a new support bracket. Inspecting for chafed or missing sleeves at PP STA 278, 290, and 301, and adding a new wrap-on sleeve if the sleeve is chafed or missing. Inspecting the PP STA 278 and 301 bulkheads to ensure correct installation of the caterpillar grommet, and cleaning the area and installing a new grommet if the grommet

is missing or incorrectly installed; and Re-routing the wire bundles. This re-routing of wires and new sleeving for wires is a relatively simple corrective process for such complex safety issue. Service bulletins also describe procedures for a functional test of the engine fuel shutoff valves, which is very important in case a fire did break out and they needed to be operational.

The number of 757 airplanes registered in the United States that would be subjected to the A.D. is 335. The corrections of the problems on each aircraft would take approximately 16 hours of labor at an average labor rate of \$65 per work hour. Parts for the correction would cost approximately \$560 per airplane. Total cost per airplane would be approximately \$1,600. This price per airplane is much cheaper than if the arcing from the problem caused a fire and there was substantial or serious damage to the aircraft and possible loss of passenger life.

This Airworthiness Directive once passed will give the operator of each aircraft 60 months to comply. The compliance will include accomplishing the detailed inspections laid out by Boeing and checking for discrepancies in the those published inspections of the wire bundles in the left and right engine-to-wing aft fairings, and other specified and corrective actions, as applicable, by doing all the actions in the Accomplishment Instructions of Boeing Alert Service Bulletin 757-28A0073 or 757-28A0074 both dated November 20, 2003; as applicable. Any corrective actions must be done before further flight and in accordance with the applicable service bulletin.

The wire chafing is definitely a serious problem and a safety issue. 757's transport many passengers each day and accumulate many flight hours. If an in-flight fire were caused because of arcing between the fuel shutoff valve wires and the metal

engine strut webs of the aircraft in the flammable leakage zone of the aft fairing the results could mean many lives lost. The cost of \$1600 per airplane to fix the problem is relatively inexpensive for a large commercial airline operator, and will save the operator money and a bad reputation later if a fire and subsequent loss of lives occurred because of the safety issue. The A.D. once passed will give the operator 60 months to comply. Five years is plenty of time, almost too much time to comply with the corrective procedures for this problem. I completely agree with this proposed A.D., because any problem like this that has the potential to start an uncontrollable in-flight fire on a commercial airliner that potentially might have many passengers on it needs to be addressed immediately.