



FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: NM-12-40

Date: August 3, 2012

SUBJ: External Power System Connector

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin advises registered owners and operators of **The Boeing Company Model 747-400 series airplanes** of an airworthiness concern regarding external power that is incorrectly connected to the external power receptacle due to damage to the safety guide on the receptacle.

Background

Boeing and the Federal Aviation Administration received numerous reports of smoke, damage, and/or fire on Model 747-400 series airplanes due to external power being incorrectly connected to the external power receptacle. The extent of the damage ranged from minor wire damage to severe electrical cable/connector damage, structural damage to the fuselage, and damage to onboard computers due to the use of fire extinguishers. The external power receptacle includes safety guides which are designed to protect against any misalignment by only allowing the plug to be connected in the correct orientation. However, in each of these events, the external power receptacle safety guides were damaged, allowing the plug from the ground power unit to be misaligned and causing the wires to short circuit.

There is no in-flight risk because ground power is only connected on the ground while the airplane is parked at the gate or during maintenance; however, severe damage to the external power connector wires can cause a fire in the avionics compartment, which poses a risk to passengers embarking and disembarking the airplane as well as ground support personnel. This issue has not resulted in any injuries to personnel, but there has been extensive aircraft downtime and major repairs due to damage in the avionics compartment.

Due to these factors, a production change was made at line number 1334 which replaced the existing receptacle safety guide having part number (P/N) 66-9236, with an improved safety guide having P/N MS17845-1, which has thicker, stronger walls and provides a tighter fit with the plug.

At this time, the airworthiness concern is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Aviation Regulations (14 CFR) part 39.

Recommendations

The FAA recommends that all owners and operators of Model 747-400 series airplanes replace the external power connector safety guide, having P/N 66-9236, which is made of plastic and only encloses the receptacle on three sides, with an improved guide having P/N MS17845-1, which has a metallic housing enclosed on all four sides. This task typically requires one person for one hour with no follow-on testing required. We also recommend that owners and operators reinforce maintenance procedures for proper ground power connection.

For additional guidance refer to Boeing Fleet Team Digest, 747-400-FTD-24-01001, “External Power Neutral Wires Shorted,” and Boeing Aircraft Maintenance Manual, Section 24-41-03, titled “External Power Receptacle – Removal/Installation/Inspection.”

For Further Information Contact

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For Related Service Information Contact

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