Boeing and FedEx Introduce Radio Frequency Identification on MD-10 Freighter

Boeing [NYSE: BA] and FedEx have jointly initiated an in-service evaluation of the use of radio frequency identification (RFID) "smart labels" on some major airplane parts for a newly converted FedEx MD-10 Freighter.

"The RFID technology is designed to help airlines reduce ownership costs by managing repairs and modifications and minimizing inventories," said Kenneth Porad, program manager of the in-service evaluation for Boeing Commercial Airplanes. "This program is part of the Spares Engineering Initiative to improve configuration management for our airline customers."

Similar to a bar code, RFID is an automated identification and data collection technology that uses radio frequency waves to transfer data between a reader and items that have RFID devices affixed. These "smart labels" or tags store such data as part and serial numbers, manufacturer codes and date of installation. In addition, the tags can also store maintenance and inspection data, so airlines can tell when a particular part needs replacing and thus have adequate inventories on hand.

The smart labels contain a microchip and antenna and operate at 13.56 MHz -- an internationally recognized standard frequency. The label offers significant advantages over other types of identification; specifically, no line of sight requirement and a dynamic read/write capability. Until now, RFID technology has been used extensively in applications within the retail industry as well as employee identification badging and access control.

The test airplane is to be used in domestic revenue service following its recent conversion from a passenger aircraft to a freighter. During the next 90 days, FedEx mechanics will use a portable data terminal to read and write inspection data to the smart labels during scheduled visits to its Memphis, Tenn., base. The 40-installed passive labels used in the evaluation each contain 10 kilobits of memory. The labels have been installed in all zones of the airplane including the flight deck, avionics compartment, cargo compartment and wheel wells. The testing phase will also identify potential electromagnetic interference and detrimental environmental effects.

Boeing is actively working with the FAA to certify that passive RFID devices do not adversely affect the simultaneous operation of any aircraft systems or interfere with continued safety of flight. Both Boeing and Airbus have agreed to collaborate on developing commercial aviation industry standard requirements for RFID by joining forces on the Air Transport Association's (ATA) Automated Identification and Data Capture Task Force.

The conclusion of the 90-day program will allow assessment of the concept and suitability for widespread use in the FedEx fleet.

Porad said, "By working together on these non-competitive standards initiatives, both Boeing and Airbus benefit by avoiding conflicting requirements with mutual suppliers and customers."

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