

**Delta and Boeing plan to test RFID tags on aircraft engines in July to see if they can withstand extreme heat, cold and vibration.**

By Mark Roberti

Mar. 31, 2005—Delta Air Lines and Boeing plan to test UHF RFID tags on 14 Pratt & Whitney 2037 jet engines on Delta-owned Boeing 757 aircraft beginning July 5. The aim is to see whether the tags can withstand temperatures ranging from 900 degrees Fahrenheit to minus 60 degrees and extreme vibrations.

Speaking at the 2005 Global Aviation RFID Forum in Orlando, Fla., on Mar. 30, Judy Harrison, an analyst for engine maintenance and regulatory compliance at Delta Air Lines, said that the airline sees benefits in tracking parts within its maintenance facilities. But one question is whether the data on tags would be corrupted by the harsh conditions that airplane parts endure. There are also concerns about read rates and whether data can be written to the tag after they've been on an engine in flight.



Delta plans to use tags encased in ceramic. Harrison said that one vendor has a 13.56 MHz tag encased in ceramic that could withstand temperatures of up to 1,000 degrees. She said that Delta was working with a vendor to develop a UHF tag encased in ceramic. "We want to use UHF because we want to use the same tag for inventory tracking, and we need the longer read range that UHF delivers," she said.

Delta will install tags on one engine and test them on the ground in Delta's test facility to prove that the tags will not interfere with the operation of the engine or the aircraft. If the results of that proof-of-concept test show no interference, Delta expects to put tags on 14 aircraft engines and test them on planes in service for 90 days.

Delta expects to have results by Dec. 5. The tests follow successful tests done by Boeing and Federal Express using 915 MHz RFID transponders [Intermec Technologies](#) embedded in smart labels. FedEx tagged 40 parts in all zones of one of its aircraft and found no interference with the aircraft's operation. (See [Tests Show UHF Tags Safe for Planes.](#))

Speaking at the same event, Butch Ford, manager of engineering support at FedEx, said that the use of RFID was not only valuable to those tracking parts on the aircraft but also to FedEx's engineers, who don't like using handheld computers and keying in data.

Boeing is exploring the potential of using RFID even in the passenger cabin. Kenneth Porad, automatic identification program manager for Boeing's commercial airplanes, explained how RFID tags could help airline personnel maintain the oxygen canisters that passengers use when the cabin loses pressure.

"Today, airline maintenance personnel have to open a compartment and read the date on each canister to see if any are nearing their expiration date," he said. "We'd liked to have someone walk down the aisle and scan all the tags to identify any canisters to be replaced. We could use the same system to make sure that each seat has a life preserver on overseas flights. This would save our airline customers time and money."

More than 200 representatives from airlines, parts suppliers and Boeing and Airbus attended the two-day event. Boeing and Airbus will also be hosting a preconference at [RFID Journal LIVE!](#) to discuss the issues surrounding RFID adoption in the airplane manufacturing supply chain.