

# Aircraft Parts Maker Adds Tags to Molds

Nordam Group is using RFID to track high-cost molds used to create certain aircraft.

By Beth Bacheldor

June 8, 2006—RFID has found its way into industrial ovens used to make components for jet airplanes. Nordam Group, an aerospace company that designs, certifies and manufactures integrated propulsion systems, thrust reversers and other aircraft parts, is using RFID to track high-cost molds, also known as bond tools, at one of its production and warehousing facilities. To create certain aircraft components, Nordam loads the molds with layers of material such as fiberglass broadcloth impregnated with epoxy, phenolic or some other resin. The company then bakes the molds.

Nordam, based in Tulsa, Okla., is currently testing the technology. In about two weeks, the firm will apply passive UHF tags based on the ISO 18000-6B standard to 400 molds. Typically, the molds have a fiberglass or graphite-epoxy surface, supported by a steel structure. The tags are rated to withstand temperatures of up to 400 degrees Fahrenheit and pressures of up to 45 pounds per square inch.

The company is working with 3M's Aerospace and Aircraft Maintenance Division, which is supplying the tags and equipment, as well as HighJump Software, also a 3M company, which is supplying the tool-tracking software.

"We really believe there are opportunities for RFID, and we've read a lot of material on it," says Gary Ball, general manager of Nordam's interiors and structures division in Tulsa. "We thought the best thing to do is take a real-life project—one that we needed help with was tool-tracking—and develop something that could benefit us as far as saving costs."

Ball says the company hopes RFID will help it save labor time and lower expenses because more experienced and higher-paid technicians won't have to spend time finding tools. "Now somebody won't have to know what the tool looks like, and a laborer can pull the tool and prep it."

This saved time should also improve capacity, adds Mike Metcalf, a program manager at Nordam. "The skilled people that build parts will have more time to actually build the parts, improving production," he says.

Nordam has placed RFID interrogators in strategic locations throughout the facility, primarily at doorways where tools move from one process to another. Each time a mold passes through a door, an interrogator reads its tag, which contains a unique ID number, then passes the number on to the tool-tracking software to update the tool's location. There's also an RFID reader installed on a tollbooth, the main entry through which molds pass on the way to the facility's four ovens and several others installed on the ovens themselves.

In addition to tracking the molds as they move through the entire process, from pulling them out of storage to moving them into the oven, Nordam will also be able to use the system to collect data for regulatory agencies. For example, the oven readers will contribute to oven logs that record when all the parts being manufactured go into the oven, the temperature of the oven, and more. "When we move the tagged tool into the oven, that

will be registered into the oven log," says Metcalf. "That will help us avoid any data-entry errors."

HighJump and 3M have worked closely with Nordam to build the tool-tracking system, but the vendor is also making it available to other companies in the aerospace industry. "We worked with Nordam to do a proof-of-concept so we could then take the value of this pilot to the industry," says Joel Graf, market business manager for 3M Aerospace, "and Nordam gains experience with RFID and gets ahead of the curve."

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