



# FOD for thought

Boeing comes together to help eliminate debris in airplanes

By MARY JO BECKER

One stray washer, one unaccounted wrench, one snippet of errant wire. How best to attack these otherwise innocent items—known as Foreign Object Debris—that, once lost in an aircraft, can pose a danger to pilots, passengers and employees?

One team of FOD fighters from across Boeing has been working the past year to raise awareness and strengthen a personal sense of responsibility among employees for preventing FOD. The outcome of the team's efforts includes a Web site of shared resources and a 15-minute online training program. A traveling FOD exhibit is well into a year-long tour organizers hope will draw 25,000 employee viewers at multiple Commercial Airplanes and Integrated Defense Systems sites.

And all it took to get started was a conversation between the FOD best practice representatives from Boeing's two main business

units—and an open spirit of collaboration to improve FOD prevention across the company.

"The value came when we agreed to work together on something common," said Kim Brumble, FOD exhibit integration manager for BCA. "And though it seemed that might be difficult to do, once we got together, it worked like magic."

## LEVELING OFF CYCLES

Brumble and Maryfrances Wolf, IDSexecutive sponsor of the FOD exhibit, organized a FOD summit in early 2007 in Everett, Wash., to bring together FOD focals from across the company. Grouped into small teams, the 50 attendees focused on four themes: performance, culture, accountability and knowledge. These "table teams," as they were known, met each day of the week-long summit, examining various site processes and approaches, brainstorming ideas and summarizing their discussions, which

were further distilled into common FOD-prevention messages.

The traveling exhibit features 3-foot-by-6-foot (91-centimeter-by-183-centimeter) panels showing BCA and IDS products and employees, and also features videos and brochures exploring each of the four themes. In addition, real-life examples, such as an engine damaged by loose parts and a tire pierced by a nail, bring home the dangers of FOD. The exhibit's overarching theme is one FOD focals believe employees will remember: "I Can Make It Happen."

"That theme of personal responsibility is critical and underlies all FOD prevention," Wolf said. "We wanted anyone who saw the exhibit to walk away and know what they individually could do within the next eight hours to make the FOD situation better."

FOD prevention efforts traditionally include such practices as "FOD walks" and sweeps, tool control programs and a clean-as-you-go



Jorge Sanchez, a Commercial Airplanes Flight Test technician, examines the damage that can be caused by just one loose part. This GE engine, destroyed in 2001 by a test instrument ingested during an on-ground test, will travel with a Foreign Object Debris prevention exhibit this year as a reminder to secure all parts and equipment.

JIM COLEY PHOTO

emphasis in work areas so no stray trash or work materials are left behind. But such approaches can fall victim to a pattern of cyclical attention: When a serious incident occurs, the attention rises; once it's addressed, interest can wane.

With a common approach, maintained awareness campaign and ongoing networking, "we want to level off that cycle," said Dan Swanburg, FOD exhibit process integration for BCA. "It should never drop off our collective radar screen."

### NEXT SUMMIT APPROACHING

To that end, FOD focals attending the next summit—which takes place this month in Huntington Beach, Calif.—will break into table teams once again and delve into new topics, Swanburg said. These include policies and practices, metrics, systems, and tool services and controls. Focals will once again review how these are approached at various sites and programs and make recommendations for commonality.

In preparation for that next step, IDS FOD focals will eliminate 36 different site procedures with the release of one common IDS FOD and tool control procedure, PRO-6865, said Mike Stevenson, St. Louis FOD focal.

"Being part of this effort has been really rewarding," Stevenson said. He estimated that 600 employees viewed the exhibit when it came to St. Louis. "We had lots of good feedback and some we didn't expect—for instance, people in some areas weren't aware of their metrics related to FOD."

Stevenson placed a sign-up sheet by the exhibit for viewers to note any current FOD concerns or issues—another measure to make the exhibit relevant to employees. Each item listed is being followed up for resolution.

In Wichita, Kan., John Mull, tool control and ground safety FOD focal at the site, incorporated items in the exhibit that employees had picked up on a FOD walk, including bits of concrete and metal.

"By adding a personal touch to the training we do regularly, the exhibit will really help to drive a culture where FOD awareness, prevention and ownership are part of everyday life at Boeing," Mull said.

Employees in St. Louis and Wichita also shared suggestions to improve the exhibit. One recommended an interactive display that would challenge employees to find the FOD in a work setting. Another suggested that adding more examples of FOD found inside aircraft would help drive home the message that

## 'Like a chewed-up ear of corn'

Here's another tale of how Foreign Object Debris can create tremendous damage.

Dave Desmond, chief test pilot in St. Louis, recalled an incident about 10 years ago when one of the two engines on the fighter he was flying experienced a massive, flaming compressor stall. He landed safely, but the engine, destroyed by a stray piece of metal that ricocheted across the blades, "looked like an ear of corn after someone has chewed off the kernels."

"As operators, we are always concerned about potential damage or even catastrophic loss of an aircraft because of FOD," said Desmond. "But there's been a long and arduous effort to make people very conscious of foreign object damage. All of us in Flight Operations are extremely grateful for the many people working on and around our aircraft who make FOD control an integral part of their jobs."

—Mary Jo Becker

## For more information

To learn more about the enterprisewide effort to eliminate Foreign Object Debris, visit the new FOD Control Web site on the Boeing intranet at <http://fod.web.boeing.com>

Among this site's features is an itinerary of the traveling FOD exhibit. Look for the Events tab in the left column, which links to the current exhibit schedule. In addition to visiting various Boeing work sites, the exhibit will be at the Spring 2008 Lean+ Conference in St. Louis on May 7-9.

FOD poses real danger. The FOD focal team is reviewing such input for future modifications to the exhibit.

"There is an intense effort among the team to make the exhibit relevant, interesting and real," said Dan Jerome, BCA Fabrication's Integrated Aerostructures FOD focal in Auburn, Wash., and Auburn host for the exhibit. "FOD isn't the most exciting concept to think about when we come to work every day. But it becomes pretty exciting when you're flying at 35,000 feet and 550 miles per hour with your family. In the end, our single focus on FOD prevention is critical in providing our customers with a safe aircraft and preserving Boeing's reputation of integrity." ■

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