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Superfast firefighting required for new jets

Composites used in modern aircraft are poison in blaze

Photo by Rick Benitez

Specially equipped: Atlanta airport firefighters in a Striker vehicle battle a fire during federally required training at a Marietta Dobbins Air Reserve Base training facility in April.

By Larry Copeland
USA TODAY

ATLANTA -- Three minutes.

That's how much time firefighters would have to reach passengers in a fire aboard a jet on the ground at Hartsfield-Jackson Atlanta International Airport. One hundred and eighty seconds.

That's because the lightweight, super-strong composite material in a modern aircraft burns differently from the aluminum of the past. Three minutes, then, from the station to the passengers.

Given that grim reality, it might be natural for Rodney Crook, a firefighter here at the world's busiest airport, to be dogged by nightmares of time running out. But Crook says he sleeps peacefully because of the endless training he does for a disaster he hopes will never happen.

"The way I deal with it is I don't think about it," says Crook, 49. "You train, you prepare, so that in an incident I don't freeze up. That's all you can do. And I pray that everything goes smoothly."

Crook is on the Atlanta airport's Aircraft Rescue and Fire Fighting (ARFF) crew. These specially trained crews are stationed at most major airports in the USA, but few airline passengers even know they exist. They respond to all kinds of airport disasters and are passengers' best hope of surviving a crash.

Nervous fliers fret about the potential for an in-flight crash. But they face a greater risk of death or injury during takeoff and landing, or in a collision on the ground. Dangerous near-collisions on airport runways in the USA climbed for the second year in a row in 2006, to 31 from 29 the year before, according to the Federal Aviation Administration (FAA). The deadliest aviation accident in history came not in the air but on the ground: On March 27, 1977, two Boeing 747s slammed into each other on a runway at the Tenerife airport in the Canary Islands, killing 583.

The USA's most recent major fatal crash occurred at an airport. On Aug. 27, 2006, the pilots of a Comair jet tried to take off from the wrong runway, which was too short, in Lexington, Ky. The jet crashed into trees, killing 49 of the 50 people aboard.

Risks on the runway

Crook's boss, Battalion Chief Sam Dunham, who commands one of three shifts at the five fire stations that serve the 4,700-acre Atlanta airport, worries more about a collision between a plane and a ground vehicle than a collision of two planes.

"My biggest fear is not the aircraft themselves," he says. "It's the vehicle interacting with the aircraft that can directly impact the integrity of the airplane. The nightmare case is, one foggy night, someone driving a

ground vehicle wanders out on a taxiway, and all of a sudden you have a collision that causes a catastrophic incident."

The Atlanta airport firefighters say their job has become more difficult because of two developments in recent years: Planes are now built from a composite material instead of aluminum, and terrorism-related security measures abound at today's airports.

"In the early years, you had aluminum frame aircraft with aluminum skin," says Atlanta Fire Chief Harold Miller, former commander of the Atlanta airport firefighters. "Now, the outer skin is a composite material of five layers. It's lighter than aluminum and a whole lot stronger. But it doesn't perform like aluminum in a fire, which just heats and curls up and melts. It (the new material) puts out a lot of hydrogen cyanide when it burns. That turns to hydrochloric acid when it interacts with water on your skin or water in your lungs.

"They perform very well," he says. "They just don't perform as well once they catch on fire."

Photo by Rick Benitez

Training officer: Lt. J.A. Neal talks to firefighters in April at airport burn certification training required by the Federal Aviation Administration.

Obstacles in the way

Getting to the scene of a fire at the airport has become more difficult since the Sept. 11, 2001, terrorist attacks, Miller says. "As we have made airports more secure and put up more and more fences, we have also created obstacles to crash crews," he says. "Access is our biggest issue."

That's why they have the Striker.

The Atlanta airport fire stations all have standard firefighting equipment such as fire engines, ladder trucks and hazardous materials units. But their most critical piece of equipment is the $800,000 Oshkosh Striker, a sleek yet rugged vehicle equipped with a piercing nozzle that can penetrate the shell of a plane, then spray chemicals or high-pressured water on a fire.

It has thermal-imaging cameras to locate a fire inside a plane and two nozzles. It can plow through chain-link fences, the rear tires turn about 70 degrees, and it goes from 0 to 50 mph in under 30 seconds.

FAA regulations require that firetrucks at the airport stations be able to reach the midpoint of the most distant runway within three minutes. "It takes 45 seconds to one minute for the ARFF teams to get the call and run out the door," Miller says. "That gives you two minutes of drive time. That's the reason they're built so fast."

Each of the five Atlanta airport fire stations has two Striker vehicles. If two of those 10 trucks were ever unavailable for more than 24 hours, wide-body jets, international flights and jumbo jets would not be allowed to take off or land at Hartsfield-Jackson, Miller says.

The Striker's manufacturer, Oshkosh Truck Corp. of Oshkosh, Wis., keeps service teams on standby to fly to any airport equipped with Striker vehicles, says Tim Kiefer, vice president and general manager of the company's ARFF business unit. "Our customers can't afford to be down," he says.

The ARFF crews are firefighting's elite. Only about 3,000 of the nation's 58,000 firefighters are ARFF-certified, Miller says. The Atlanta airport has 235.

Crook has been a Striker operator since the airport got its first vehicle last year. He now trains other firefighters in the vehicle. "We've recently started doing a lot of training at night," says Crook, who has been a firefighter for nearly 20 years. "That's important, because everything looks different at night. You have to follow lights and signage. You have to be able to hit your controls in the dark. That training is what keeps all of us out here sharp."

And it's what allows him to sleep without nightmares.