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Top Stories

## Halvorsen Loader Proves Reliable for Aircrews that Support Troops

### *Cargo Loaders in Desert Undergo Corrosion Testing*

By Cynthia Greenwood

(This article is first of a two-part series about Air Force corrosion data collection and testing on the Halvorsen cargo loader.)

Next to Balad Airbase in Iraq, Charleston Air Force Base (AFB) is the busiest cargo hub in the Air Force. Billed as the FedEx for U.S. Army and Marine troops stationed in Iraq and Afghanistan, the 437<sup>th</sup> Aerial Port Squadron at Charleston AFB loads and transports 300 tons of cargo daily.

"We send the soldiers anything from Juicy Fruit gum to marine transport vehicles, and everything in between, like AC units, gym equipment, camel backs (for drinking water), and things to do with making a soldier's life better," said Lt. William Minor, who leads Combat Readiness and Resources Flight for the squadron.

"The huge key for the troops is the add-on armor that you see on all Humvees," Lt. Minor said. "That's saving lives every day."

"Between January 1 and August 26, Charleston Air Force Base has moved more than 72,500 tons of cargo and logged 9,981 departures," said Lt. Bryan Lewis, Chief of Media Relations for the 437th Airlift Wing Public Affairs Office. To keep up its relentless pace in supporting troops overseas, the Air Force relies on a mechanical beast of burden that rarely sees the limelight. The Halvorsen cargo loader is small, weighs 25,000 pounds, and can reach the cargo doors of military and commercial aircraft. (See sidebar.)



cargo loaders.

The Halvorsen loader's versatility is proven. Staff Sergeant Damion Hankins of the 615<sup>th</sup> Air Mobility Squadron at Travis Air Force Base has used it to download Marine and Army equipment during the build-up for Operation Iraqi Freedom. "I worked with the Halvorsen in Kuwait City at the international airport, unloading 747s, C-5s, C-17s, C-130s, you name it. We basically used it for small loads from C-130s, but when we had to work a 747 belly, we would use the Halvorsen because it was the only thing we had that could get in there real easy."



*The Halvorsen Cargo Loader, preparing for a storage experiment. Photo courtesy of the Air Force Tunner/Halvorsen Systems Squadron.*

## Air Force Assesses Loaders' Corrosion Resistance

The Halvorsen loader has an average life span of 30 years in moderate working and climate conditions. Today the Air Force is taking steps to improve its performance and minimize its susceptibility to corrosion. Engineers based at Warner Robins Air Force Base in central Georgia have begun corrosion tests on the fleet of Halvorsen loaders used for major air command operations worldwide.

As Halvorsen Lead Engineer in the Tunner/Halvorsen Systems Squadron at Warner Robins Air Logistics Command, John Harmon works with FMC Airport Systems to coordinate the retrofitting of auto lube and cab cooling systems on the Air Force's fleet of Halvorsen loaders. To make that process more time- and cost-efficient, FMC Airport Systems has authorized maintenance specialists to conduct mini-health checks simultaneously for corrosion.

"In the corrosion study we're taking a look at loaders that have been in the field from two to four years and drawing conclusions about how the components stand up to a variety of operational and mild-to-severe environmental conditions," said Harmon, a contractor for Modern Technologies Corp., working in the Tunner/Halvorsen Systems Squadron.

"During the mini-health check, Air Force and FMC maintenance specialists examine the loaders for bent guide rails, broken top locks, air transport pin damage, water-damaged electrical boxes, hazardous material placards, and headlights clouded by ultraviolet light and sand penetration," Harmon explained. "The teams also look at the general corrosion of the cab, deck, scissors, and frame, and then rate the acceleration of corrosion on each loader using a scale of 0 to 4."

"Today we have 30 fielded loaders in Areas of Operational Responsibility (AOR) in Southwest Asia, such as Iraq, Egypt, Afghanistan, Qatar, Kuwait, Saudi Arabia, and Bahrain," Harmon said.

"The silt and sand you find in that AOR consist of tiny particles that get into nooks and crannies, and when the silt gets damp it creates a conductive path that accelerates corrosion," Harmon said. While the loader fleet appears structurally sound based on the mini-health checks, maintenance teams are finding that components such as aluminum manifolds, hydraulic line fittings, and uncoated metal surfaces are bearing the brunt of corrosion, he said.



*On a runway in Baghdad, Iraq, Air Force aerial port crews unload a C-130 cargo plane using a Halvorsen loader.*

"To date, we have collected corrosion data on 179 out of 223 loaders that we're going to retrofit in the AOR and on air bases in the U.S., Europe, and the Pacific. Our goal is to conduct mini-health checks on 223 Halvorsen loaders worldwide by October, 2005," Harmon said. "The goal of this corrosion study is to take a look at loaders that have been in the field and recommend long-term solutions. Once we identify and prioritize the most critical corrosion problems we can allocate funds to correct them."

Keeping the fleet of Halvorsen loaders in good working order is a worthy goal for engineers in the Tunner/Halvorsen Systems Squadron. "The loader is so critical to the Air Force because its real mission is to be deployed in very remote, semi-improved airfields, like the situation in Iraq, where it has to go into really small airfields with very little infrastructure," said Bryce Mannen, General Manager of Military Programs at FMC Airport Systems. "It needs to be very reliable and to be able to operate 24 hours a day, seven days a week without much support."

Reports from the field suggest that the loader stands up well to the desert. "I have worked with the Halvorsen here at Travis AFB in northern California, at Miramar Naval Air Station in San Diego, and in Baghdad," said Staff Sergeant Dan Reynosa of the 615<sup>th</sup> Air Mobility Operations Group at Travis AFB. "In Baghdad, we were using it to move supplies for the troops and to get more food and water for the soldiers as well as for civilians."

"On the average day, the temperature was around 115°F in the morning and would go up to around 130°," Reynosa said. "The Halvorsen was somewhat temperamental in the heat. But it ran really good."

*Photos courtesy of the Air Force Tunner/Halvorsen Systems Squadron.*