

Mobile Tower System delivers life-saving upgrades

U.S. Army

REDSTONE ARSENAL, Ala. (May 24, 2013) -- When Soldiers and aircraft deploy in any part of the world, air traffic control operations become one of the most important functions to ensure that all aircraft supporting military operations maintain safe, orderly and expeditious flow of air traffic.

The Mobile Tower System, or MOTS, provides the effective and reliable solution that can be deployed anywhere in the world, in any weather condition and will support both military and civilian air operations. MOTS will also network with other air control and battle-management systems, and complies with Federal Aviation Administration/International Civilian Aviation Organization regulations.

The Air Traffic Control Product Office, under the Project Office for Aviation Systems, manages the MOTS, and is led by Lt. Col. Michael Rutkowski, product manager for ATC. Together with his team, Rutkowski developed a phased strategy to divest and replace the original system, the AN/TSW-7A, which was built in the late 1960s.

Just like an old computer system, "It was simply outdated and virtually unsustainable," said Rutkowski. Everything associated with refurbishing the 7A became very costly, even with its basic maintenance.

"Plus all the manufacturers that built the original system are no longer in business," he added.

So the Army initiated a requirement for a mobile air traffic control system in 1999. The program passed a Milestone C decision in January 2012, which gave Rutkowski and his team approval to proceed with a Low Rate Initial Production for the first 10 of a 39 system requirement.

In fall of 2011, a trip to visit the 3rd Infantry Division in Savannah, Ga., led to important changes and leaps with the program. Rutkowski spoke with the 3rd Infantry Division's General Support Aviation Battalion Commander and discussed the state of their 7A.

"The system was having problems, and they couldn't get parts for it," said Rutkowski. Using out-of-the-box thinking and knowing he had capable air traffic control tower systems with two Engineering Development Models, Rutkowski felt he could provide an operational system to support their upcoming deployment. He offered the idea of fielding MOTS early so that the unit could take it into theater.

"The commander not only loved the idea but saw it was a perfect opportunity to see how it handles in an operational environment," Rutkowski explained.

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To Rutkowski and his team, it was a rare opportunity in Army acquisition to gain an operational assessment straight from the users 20 months ahead of First Unit Equipped (FUE), which will be the 82nd Airborne Division out of Fort Bragg, N.C. FUE is scheduled to take place in November 2013.

"I thought it would help tremendously in creating one production-like standard from taking both EDMs into theater for one complete system," said Rutkowski. "It helps in flushing out the manuals and spare parts required using the best metric of all -- our own Army Aviation Air Traffic Controllers and Maintainers, and it also provides us the confidence that our system is combat certified before production begins."

A few months before 3ID's deployment in 2012, Rutkowski conducted an after action review with Soldiers from the 101st Airborne Division (Air Assault), who had recently returned from deployment and were using the old 7A tower system.

What the PM ATC team discovered was that when they traveled to Afghanistan in late 2011 to visit the 101st, the unit took a direct hit on their 7A, which destroyed their electrical power unit and rendered the 7A system combat ineffective.

"It destroyed all the glass in it," said Rutkowski, "and there was a huge hole on the left hand side due to the attack."

The 7A was classified as 'battle damaged' and was not reparable, an occurrence that contributes not only to the shortage of mobile air tower systems but also the need to build newer and better ones.

The ATC Tower is a valued target for enemy combatants due to the antennas that are placed all around it. The lessons learned from the AAR with the 101st, the PM ATC team applied to the MOTS tower that deployed with the 3ID.

In addition to the up-armored carrier, PM ATC rapidly up-armored the tower which doesn't exist in any tower today, in addition to integrating significantly improved capabilities with the system. 3ID deployed with the system in December 2012 and continues to provide valuable feedback to the PM office.

"The tower has performed well above standard in theater," said Capt. Evelyn Valesquez, ATC company commander who deployed with the 3ID in 2012. "It's maintaining an operational readiness rate of above 99 percent."

"The MOTS has provided our Soldiers with a sense of security from the added armor and ballistic windows, along with the additional upgrades, making it easier for maneuver and communication," Velasquez added.

The primary difference between the old and new tower is its updated technology, said Velasquez. The system's digital features make it a 'user-friendly' system.

"The four different operating positions are capable of monitoring up to 11 different radio frequencies and multiple land-line communications," said Velasquez.

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Among the tower's other modernized key features are its secure and non-secure digital voice recording system, automated weather information from the Meteorological Measuring System, Environmental Control Units that are attached to the shelter aiding in the systems movement and transportation, which also decreases the number of personnel required for transportation.

Eddie Spivey, the TRADOC capability manager for the MOTS, said that he is very pleased with the system and looks forward to completing the fielding to all the units as planned.

"The MOTS has an interface to control pre-existing airfield lighting and although not deployed, comes with an airfield lighting system beginning in second quarter of (fiscal year 2014) when that capability is fielded." Additionally, an ATC simulator will come with the MOTS that will allow Soldiers to hone and maintain their skills or conduct training when live air traffic is not present.

Rutkowski and his team also added a few more features such as a ladder to the tower and an M4 gun mount.

"We were able to really partner with the unit and get down to exactly what the unit needed. And, we began to receive instant and direct feedback from the users, good, bad or indifferent," said Rutkowski.

So what's next for the team?

"Our goal has always been: How do we influence the production line to ensure we capture the lessons learned from Afghanistan and what 3ID has done for the past year with this system, and how do we make positive changes into the current tower," said Rutkowski.

The biggest challenge: the PM office can't field it fast enough.

"Our greatest hurdle is the number of units out there that have seen MOTS or heard about it," said Rutkowski. "I've received so many questions from unit commanders asking us, 'When can I have it? What do I need to do to have it faster?'"

"It's been a good 'problem' to have, and we're working hard on getting the units' what they need."

The first complete MOTS rolled off the production line in March 2013 from Sierra Nevada Corporation who won the competitive selection for the first 10 LRIP production systems. Additional systems will be fielded beginning this summer. The Army will compete the remaining systems in a competitive source selection that will help to drive the cost further down.

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