Ingenuity enhances TACSAT system capability

5th wheel boosts strength, weight

by Jacqueline Boucher
Assistant Editor

Tobyhanna fielded the first Army fifth wheel Humvee towable trailer as part of an upgrade program for the AN/TSC-93 Tactical Satellite (TACSAT) Terminal.

The Fifth Wheel Tactical Trailer (FTT) is the depot’s solution to mounting heavy shelters on up- armored Humvees. As part of a Service Life Extension Program, engineers here found a way to enhance the capability of military vehicles carrying the added weight of armor, which compromised the Soldier’s ability to get critical communications and electronic equipment to the field.

Tobyhanna partnered with Silver Eagle Manufacturing Company in Portland, Ore, and Product Managers at Fort Monmouth to design and develop the FTT.

New technologies and up armoring were taxing the Humvee’s payload which was already approaching its weight capability before the armor was added. The new tactical trailer distributes the weight of the shelter over the axle allowing the vehicle to tow up to 7,000 pounds.

Early on, Lead Mechanical Engineer Gene Curran saw the value of this product for transporting shelters. Even though plans to move the AN/TSC-93 to a larger truck were underway, he approached a civilian company with his idea. According to Curran, Silver Eagle was the only manufacturer of the fifth wheel trailer and they already had a prototype that could be refined to suit the system’s mission.

“Over the years, I’ve always been involved in downsizing systems,” Curran said. “Our job is to keep them tactical— make sure they can get into the field fast and light.” Curran works in the Production Engineering Directorate’s Engineering Design Development and Manufacturing Division.

Curran worked closely with depot subject matter experts to ensure the new design met mission requirements.

“We told him what specifications needed to be met,” said John Morelli, lead technician working on the AN/TSE-93. “This trailer is a unique piece of equipment with a lot of advantages.”

The Humvee and new tactical trailer system can haul larger payloads, which enables the warfighter to mobilize equipment where it is needed, without the need of repackaging or weight variances.

Another advantage to the trailer is the ability to disconnect it, freeing the Humvee for additional duty.

“The equipment works flawlessly with up armored and standard Humvees, allowing the vehicle to tow up to 67 percent more weight than the standard trailer configuration,” said Jay Wilson, Silver Eagle chief executive officer. “This means we can do a better job of protecting the warfighter and at the same time we can mobilize equipment that otherwise would compromise the integrity and life of the Humvee.”

Dozens of transportability and environmental tests were performed on the trailer prior to fielding. Plus, all the qualifications tests that are required for a vehicle to be used by the Army.

“Curran and his team were instrumental and invaluable in helping get this improved shelter transport system through the test phase and into a program that could profit from the benefits of the trailer,” Wilson said. “Team Tobyhanna is a true partner in this program. They understood the concept and worked side-by-side with us to make the system a reality. Silver Eagle could not have gotten the system to this point without their help and guidance. Had it not been for the teamwork between Curran and Mike Jarvelin, Silver Eagle’s program manager for military products, this project never would have come to fruition.”

The TACSAT system used to be transported using two Humvees; each towed a trailer carrying support equipment. “Curran has been a pleasure to work with,” said James Collery, program analyst, MILSATCOM Tactical Multi-Band, Fort Monmouth. “His contributions to the AN/TSC-93E program have become the signature components of this program. They have been so well received it will only be a matter of time before other systems start taking advantage of their force multiplier effect.”

The fifth wheel trailer is a universal design that can support other military systems. Curran explained that there is room for future expansion.

“It feels good to see everything come together,” Curran said. “This was a good solution to the problem and it’s an exciting product for us because we can fit several different configurations on the trailers increasing its capability.”

Left, Gene Curran, lead mechanical engineer and John Morelli, lead technician, verify the AN/TSC-93 Tactical Satellite Terminal system will fit inside the C-130 Hercules transport aircraft using Tobyhanna’s test fuselage. (Photo by Tony Medici)