State of the Art Equipment Bridges the Gap

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ELMENDORF AIR FORCE BASE, Alaska (AFNS) -- Army Corps of Engineers members along with members of the 84th Engineer Support Company, 6th Engineer Battalion, tested a new bridging system April 28, 2010, at Fort Richardson, Alaska, to help the military travel across a wide variety of terrain quickly.

Testing of the Lightweight Modular Causeway System took place over two days during Arctic Edge 2010, making it the first time this system has been used in this fashion.

"This bridge has been in development for almost six years," said Donald Resio, a senior scientist and technical manager for the development team. "The terrain, the unit and the exercise scenario are perfect to test the capabilities of this system."

The LMCS is a hybrid fixed bridging system and floating causeway system. It consists of 10 by 20 foot modular sections with inflatable pontoons attached that are pieced together to form the bridge.

84th ESC members were tasked with putting this system to use during a simulated 8.5 magnitude earthquake recovery effort, testing its ability to be flown by helicopter and its ability to sustain traffic on a fast flowing river for the first time.

"It's great to be the first unit to test this technology," said 2nd Lt. Alex Veiga, the 84th ESC crossing site manager. "Before it is over we hope to have every unit in our brigade pass over the bridge."

Helicopter sling-load testing of inflated and uninflected bridge sections took place on the first day. Two sections were pieced together and attached to the bottom of a CH-47 Chinook helicopter.

The engineers needed to confirm that pieces could be flown into an area where a bridge was needed.

A vehicle from the 84th Engineer Support Company crosses the Lightweight Modular Causeway System during testing April 28, 2010, at Fort Richardson, Alaska, The LMCS is a hybrid fixed bridging system and floating causeway system. (U.S. Air Force photo/Staff Sgt. Brian Ferguson)

"The sling-load test with the helicopters went very well," Mr. Resio said. "What this shows us is whether used for military applications or natural disaster, we can get the system in place and functioning quickly."

The second day of testing consisted of bridge assembly and use. The exercise scenario pitted approximately 20 Soldiers against Eagle River.

"The Bravo Bridge was damaged during the 'earthquake' and we need to be able to get people and supplies across the river before the end of the day," Lieutenant Veiga said.

The Army Corps of Engineers development team watched as each section of bridge was dropped into place. The team made sure everything was done in accordance to the specifications of the bridge; however, they did not help with the construction.

"It seems to be a great system," said Lieutenant Veiga. "It goes together quickly, and it is very easy to learn."

Lieutenant Veiga said the biggest challenge during construction was the muddy terrain the forklifts encountered near the river.

To cross the river, the Soldiers positioned and pieced together seven modules, spanning a gap of 70 feet. The bridge was

secured with mooring lines attached to anchor points on land.

Safety during the testing was paramount. Only one vehicle was allowed on the bridge at a time and there was a 20-ton limit.

"The bridge is designed to distribute the weight of the vehicles over many flotation devices, not just in one section," Mr. Resio said. "The load capacity of this system is over 70-tons."

Although 70-tons was not tested here, the bridge went up quickly and without incident.

"The system was originally designed for vessel-to-shore bridging applications, however, as development progressed, we saw more and more potential and possibilities," Mr. Resio said. "Really, the main limitation for this system is our imagination of use."

The LMCS has a few more tests before it can go into full operation, but Mr. Resio was confident based on the performance of the prototype.

"Most of us want to make a difference in the world, but never get the opportunity," he said. "To be able to develop this bridge and see all the uses and potential it has is really important and hopefully it will make a difference."

Source: http://www.af.mil/news/story.asp?id=123202740