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Pentagon Rolls Out 'Latest, Greatest Prototype' Soldier System

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WASHINGTON, May 23, 2002—DoD engineers are developing the 2010-era Objective Force Warrior even before the next-generation Land Warrior is fielded in 2004.

Project managers from the Natick Soldier Center in Natick, Mass., rolled out a prototype Objective Force Warrior for the Pentagon press corps today.

Project Engineer Dutch Degay called the prototype the "latest and greatest" individual soldier system. He explained the Army Chief of Staff, Gen. Eric Shinseki tasked the Natick lab to "completely rebuild the [combat] soldier as we know him."

Historically, researchers have devised upgrades to current equipment. The Objective Force Warrior program tossed out the current system of individual equipment in its entirety and designed a new "integrated, holistic" system from the skin out, Degay said.

He explained that the Land Warrior system adds many new capabilities to the current system of field gear through an electronic component soldiers will carry.

The Objective Force Warrior system, scheduled for fielding in 2008, completely integrates these electronic capabilities. Degay explained that soldiers will never again have to wear cumbersome night-vision or infrared goggles or heavy laser training components on their helmets. These and other features—thermal sensors, day- night video cameras, and chemical and biological sensors—are fully integrated within the helmet. It also includes a visor that can act as a "heads-up display monitor" equivalent to two 17-inch computer monitors in front of the soldier's eyes.

A mannequin wears the prototype Objective Force Warrior system. Photo by Sgt. 1st Class Kathleen T. Rhem, USA

The uniform system is a multi-functional garment working from the inside out, Degay said. It incorporates physiological sensors that allow the soldier, the chain of command, and nearby medics to monitor the soldier's blood pressure, heart rate, internal and external body tempera-

ture, and caloric consumption rate. Commanders and medics can access the information through a tactical local area network.

Heat and cold injuries are responsible for a large percentage of casualties in both battle and training, Degay said. But if a medic can monitor a soldier's vital signs, many of these types of injuries can be prevented.

If a soldier is injured, medics can start making an assessment before they even get to an injured soldier. "And that saves time on the battlefield," Degay said.

The Objective Force Warrior system has a built-in "microclimate conditioning system." Degay explained the private climate-control system has a "spacer fabric" that's a little bit thicker than a regular cotton T-shirt. The garment has "capillaries" that blow hot or cold air through the system.

The system's many functions are powered by fuel cells, which Degay described as "cell phone batteries on steroids."

A primary concern in designing the Objective Force Warrior system is overall weight carried by individual soldiers. Soldiers on combat patrols in Afghanistan today typically carry 92 to 105 pounds of mission-essential equipment, Degay said. This can include extra ammunition, chemical protective gear, and cold-weather clothing.

The requirement for the Objective Force Warrior system is to weigh no more than 45 to 50 pounds. Many of the system's built-in functions do away with the need to carry extra equipment. The climate-control feature eliminates the need to carry extra clothing. The outer garment has some biological and chemical protection capabilities, reducing the need to carry extra protective gear.

"What we are trying to do at the very fabric uniform level is consolidate all those systems into one so we lessen the overall bulk and weight" carried by soldiers, Degay said.

Anything else that's mission-essential but not built-in to the individual soldier system will be carried on a "robotic mule." Degay explained the mule is part of the system. Each squad will have one of the small, remote-controlled wheeled vehicles that can perform a multitude of functions for the soldiers.

"[The mule] will assist with not only taking some of the load carriage off the individual soldier, but [it] also provides a host of other functions," he said. "Primarily water generation [and] water purification. [It's] a recharging battery station for all the individual Objective Force Warriors in the squad. [It] acts as a weapons platform. [It] has day and night thermal, infrared and forward-looking imaging systems inside the nose of the mule, as well as chemical-biological sensors."

The mule can also communicate with unmanned aerial vehicles to give the squad members a true 360-degree image of the battlefield. Currently this capability isn't available below the battalion level, Degay said.

"It's a follower, and it can be manipulated and brought forth by any member of the squad," he said. "It's essentially a mini load-carriage system that's there for them all the time, which allows us to lighten the load for the individual soldier, but [the soldier] has resupply available at a moment's notice."

Degay said that in the past, such foresight and interchangeability has only gone into major weapons and vehicle platforms.

"Historically we have spent millions of dollars on platforms," he said. But, "the soldier is the centerpiece of our Army, and we are finally making that investment for [the soldier] individually."

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