



G-5's "Eye on AMC" U.S. Army Materiel Command

Essential in Peace, Indispensable in War

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Membrane pouch changes dirty water into purified drink

Contaminated water can go in, but only pure water seeps through the self-hydrating membrane pouch in development at the Department of Defense Combat Feeding Directorate at the U.S. Army Soldier Systems Center in Natick, Mass.

The prototype pouch is designed to take water from any available freshwater source—rivers, lakes, ponds or puddles—to hydrate beverages or dry ration foods and reduce combat weight and logistics of potable water.

"With Future Force Warrior, (researchers) are looking at ways to reduce weight and volume," said Andre Senecal, a senior food technologist and project officer for the membrane pouch. "Food is what troops usually like to sacrifice when paring down their load weight. They're also not carrying enough water."

Based on hydration requirement data, a physically active soldier requires about 10 liters per day in a hot environment, he said. Soldiers now carry about five liters.

Drinking water can be purified using reverse osmosis, where it is forced by a powered pump through a semi-permeable membrane to remove contaminants from a solution within 15 minutes. The same membranes are used in the self-hydrating pouch in a process called forward osmosis.

RRAD members provide critical training to Soldiers

As part of a continuing project, Red River Army Depot personnel are performing modifications to the 25-ton crane and providing operating instructions to various military units.

The modification project includes disassembling the crane and reconditioning sheet metal. A computerized electronic weight-load detection system is also installed to alert operators when they are approaching an unsafe status during the operation process.

In addition, Soldiers receive training on the modifications applied to the cranes. The instruction provides information on the capabilities of the system and proper use of the different techniques. Although RRAD personnel program the system, the training includes limited programming instructions so the Soldiers can make adjustments and variations.

"If we don't have the computer system we have to guess," said Sgt. Edwin Uwanaka. "This system will eliminate accidents and make us more comfortable during loading operations. The computer tells us exactly what is going on. You can operate with assurance that you are in control."

According to RRAD personnel, the new system is less complicated than the old mechanical system and will extend the useful life of the crane. While the new system still leaves the decision making to the operator, it does provide a four-level warning system. The cost for the overhaul and modification is approximately \$160,000 depending on the condition of the crane when it is delivered. A new comparable crane costs in excess of \$300,000.

Army Campaign Plan materials on the Web

The Army Campaign Plan directs the planning, preparation and execution of Army operations and addresses how the Army is transforming into a joint and expeditionary force while we remain at war. Because this transformation is so comprehensive and impacts on the entire U.S. Army, the Chief of Staff of the Army has directed all Army personnel (military and civilian) to make themselves familiar with this plan.

The official web site for the plan is <http://www.army.mil/thewayahead/acp.html>. There you will find the ACP overview video, ACP briefing, references, links, and other items of interest.