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Contact: Darrell Waller
E-mail: darrell.waller1@navy.mil
Voice: (805) 982-1069
Fax: (805) 982-4541

1100 23rd Avenue
Naval Base Ventura County
Port Hueneme, CA 93043-4370
*Photo Available upon request*

# Navy Engineers Test New Runway Repair System

## *Innovative Foam Injection Process Promises Effective Fixes for Existing Runways*

**PORT HUENEME, CALIF.** – The Naval Facilities Engineering Command's Engineering Service Center (NAVFAC ESC) has successfully tested the Foam-Injection System for Airfield Damage Repair (ADR), a revolutionary new method to rapidly repair damaged runways.

The system was demonstrated at the August 2008 Critical Runway Assessment and Repair (CRATR) Joint Capabilities Technology Demonstration (JCTD) at Tyndall Air Force Base, Florida. Testing was made more difficult due to wet field conditions following hurricane activity, but the system easily overcame those hurdles.

"This new airfield repair system incorporates a two-part, high expansion polyurethane foam to compact sub-grade soil in bomb craters," said Naval Facilities Engineering Service Center Commanding Officer, Capt. Gregory J. Zielinski. "Combined with a fast-setting concrete cap, this system eliminates the difficult and time consuming process of compacting soils in thin layers inside craters. This means airfields can be quickly repaired and returned to service, ensuring continuous air support for our warfighters."

The crater repair test was plagued by the presence of sub-grade soil, which included overly saturated sand and organic material. Standing water created swamp-like conditions, adding an element of realism to the scenario.

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The foam injection system was tested on two such craters. After both craters were capped with a fast-setting concrete, foam was injected into the backfill of each crater. As foam was injected into the craters, large quantities of water were forced out of the backfill through vent holes drilled into the concrete cap.

After injection was completed, the craters were immediately trafficked with a C-17 load cart. At the conclusion of load cart testing the first crater had sustained 1800 passes with only a crack and the second sustained 590 passes before failure. This far exceeds the required expedient repair threshold of 100 passes and the objective of 200 passes.

Based on lessons learned from this testing, the performance specifications for the expandable foam and the injection system are being revised as well as the documentation for tactics, techniques and procedures. The system will now be added to the Seabee's Table of Allowance (TOA), purchased and delivered to the field.

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