

Testing the Petroleum

Last Summer, the Army successfully tested a new tactical petroleum distribution system in an exercise called OPERATION YAKIMA '86. The equipment tested is part of the Inland Petroleum Distribution System (IPDS), an Army initiative to improve petroleum distribution capabilities. The exercise took place over 3 1/2 months at the Yakima Firing Center, Washington, in what was the largest military petroleum distribution operation since World War II.

The IPDS is designed for use in arid and semiarid climates, in mountainous and difficult terrain, and in areas where local transportation is primitive or nonexistent. Such adverse conditions are characteristic of an undeveloped theater of operations. The sun-baked and rocky desert hills of the Yakima Firing Center proved to be an ideal location for the first practical exercise with the system. As the project officer, Captain Paul Daily of the Army Materiel Command, noted, "If we can use it here, we can use it anywhere!"

The Yakima exercise was headquartered in a typical "tent city" set up on the banks of the Columbia River. Nearby, 210,000-gallon inflatable fuel storage bags lay in rows, capable of holding a maximum of 3.6 million gallons for transfer up the pipeline.

For the exercise, water from the Columbia River was used to simulate petroleum. The water was pumped from the storage area across the desert through the pipeline at a flow rate of 600 gallons

per minute. Four in-line pumping stations maintained this rate as the grade of the terrain increased. The pipeline reached a maximum elevation of 3,720 feet, at which point it looped around the crest of the hill and ran back down to the Columbia. The entire circuit covered 30 miles. On the downhill leg of the pipeline, gravity forced the water pressure to a rate over double that of the uphill section. To keep seals and pipes from bursting, pressure-reduction stations were installed along the pipeline.

The petroleum distribution system was designed and built according to Army specifications. The latest technologies in removable couplings and modular components help make the system fully deployable. The system's quick install-and-release coupler can join two lengths of pipe with a leak-free seal in 25 seconds.

Each of the pumping stations is a completely modular, sled-mounted system. The pumping stations can be transported intact by truck or ship and then airlifted into place by heavy-lift helicopters. For this test, the pumping stations were placed along the pipeline by CH-54 helicopters from the Nevada Army National Guard and CH-47 helicopters from Fort Lewis, Washington.

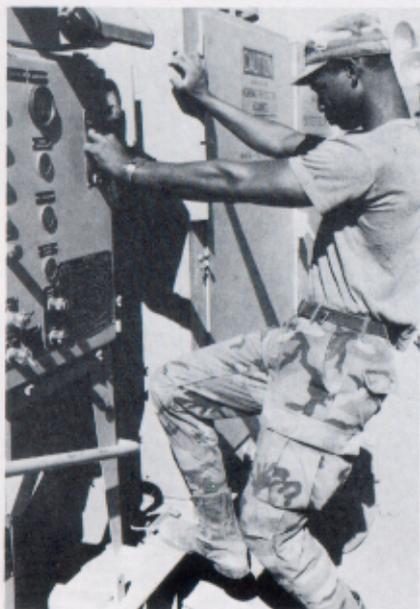
The test was conducted by a composite unit under the operational control of the 240th Quartermaster Battalion from Fort Lee, Virginia, commanded by Major Raymond Rodon. Working alongside his troops was the 515th Engineer Company from Fort Leonard Wood, Missouri, the only pipeline con-

□ Soldiers of the 109th Quartermaster Company deploy one of the 210,000-gallon fuel storage bags at Yakima.



Pipeline

by Bob Rosenburgh



□ A communications operator of the 240th Quartermaster Battalion dispatches orders to the pumping stations along the pipeline (above). In response, a soldier operates an 800-gallon-per-minute pump (left).

construction unit in the Active Army today. The base camp was constructed by elements of the 864th Engineer Battalion from Fort Lewis, Washington, while helicopter support was provided by the 9th Aviation Battalion from Fort Lewis and the 841st Medical Detachment (Helicopter Ambulance) of the Washington Army National Guard in Spokane. A potpourri of additional troops performed various support and security tasks, from a platoon of military police to cooks, drivers, and administrative specialists.

OPERATION YAKIMA consisted of two distinct phases. The first phase was the systems integration test, in which the 240th Quartermaster Battalion and the 515th Engineer Company soldiers installed the entire system and brought it on line with guidance from a civilian contractor. The Army Materiel Command and the contractor then studied how well the new components functioned. Starting from scratch, this took only 7 days to accomplish.

The second phase was the force development test and experimentation. This phase allowed the troops who will take the system to war to get further hands-on experience in breaking the pipeline down and moving and reconstructing it. All work was accomplished by the soldiers, with no supervision or guidance from the contractor. Major Rodon described this phase of the test as a tremendous training opportunity for the troops.

During the 3 1/2 months of the test, the training site was visited by congressmen, senators, generals, dignitaries from various levels of government and industry, and reporters from the regional and national press. Army officials attributed such widespread interest to the profound significance of the petroleum distribution system. Because of this system, support units will no longer face the tactical constraints imposed by limited port facilities and inadequate roads when supplying fuel to combat units in the field.

This totally deployable, quickly installed pipeline system will pump precious fuels directly to where they are needed, without long truck convoys or expensive and hazardous airlifts. Everything needed to install, operate, and service miles of the IPDS will be ready for use in a storage facility. And ready to do the job will be the petroleum logistics soldier.

ALOG

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