# Rapid Runway Repair in Need of Repair

*By Captain Paul Huszar*

Army and Air Force engineer units share responsibility for rapid runway repairs. When conducting such missions, circumstances usually dictate who makes the repairs. In mature theaters—when Air Force assets operate from advanced permanent airfields—Air Force engineers repair the runways to ensure their continuous operation. In forced-entry operations, Army engineers make the repairs so follow-on forces can be airlifted into immature theaters. But when forced-entry operations are into remote theaters with existing advanced runways that need repairs, Army engineers are not equipped or trained to accomplish the mission. They can insert equipment and personnel but lack the proper materials and training to complete the repairs.

This inadequacy was apparent during Operation Restore Democracy—renamed Operation Uphold Democracy when the planned forced entry into Haiti was cancelled. Had a forced entry been necessary, the lack of materials and training could have jeopardized the entire operation.

## Defining Responsibility

The downsizing of our armed forces and reliance on the military to fight two simultaneous major regional conflicts means that the smaller force must be strategically deployable. The few forward-deployed units are required to "do more with less," a familiar phrase in today's military, and must be able to deploy rapidly. Because joint operations are the norm, intense coordination between the services is needed to ensure that the combined effort will cover every contingency. For example, Air Force or Navy units will transport Army or Marine soldiers into a theater of operations from CONUS bases. In this scenario, the roles and responsibilities are fairly well-defined. However, this is not the case in all contingency scenarios.

Army airborne engineer units parachute personnel and equipment onto an existing airfield to conduct rapid runway repairs. The 20th Engineer Brigade, Fort Bragg, North Carolina, includes this task on its mission essential task list (METL) in support of the XVIII Airborne Corps' worldwide contingency mission. Specifically, the 27th and 37th Engineer Combat Battalions (Airborne) train to repair—

- Flight landing strips using air-droppable earth-moving equipment and local sources of soil and aggrgate.
- Small craters in more permanent airfields using rapid runway repair kits and the same earth-moving equipment.

After engineer soldiers fill a crater using the earth-moving equipment, they secure the rapid runway repair kit over the crater to prohibit foreign object damage (FOD). They repair a runway to the standard that allows C-130s to land.

As plans for Operation Restore Democracy unfolded and the intelligence preparation of the battlefield developed, XVIII Airborne Corps planners realized that the Haitian military might crater the runway at Port-au-Prince International Airport. After seizing the airport in an airborne assault, the U.S. military planned to use it as the main point of embarkation for personnel into the theater. One concern was that if the Haitians packed demolitions in the

culverts beneath the runway, the resulting craters would be too large for Army engineers to repair with rapid runway repair kits. The operating strip that remained would be useless for all aircraft except C-130s.

This scenario fits within the realm of missions for Air Force engineers, because the existing concrete runway in Haiti would serve as an international airport. However, the XVIII Airborne Corps' plan included a forced-entry operation with an airborne assault onto Port-au-Prince Airport with follow-on forces arriving immediately in C-141s, C-5s, and Civil Reserve Air Fleet aircraft. Therefore an Army unit—Alpha Company, 37th Engineer Battalion—received the mission to repair the runway at the Port-au-Prince Airport. The unit prepared a heavy airfield repair package (HARP) to be air-dropped onto the airfield (see table).

## Training

The assistant corps engineer section of the 20th Engineer Brigade staff coordinated with units at adjacent Pope and Tyndall Air Force Bases to train soldiers from Alpha Company and provide them with the necessary materials and equipment. Officers from the 37th had seen the Air Force's methods and equipment demonstrated six months earlier, but soldiers from the battalion had never used these tactics, techniques, and procedures. Alpha Company trained on the unique equipment and materials for only three days before leaving Fort Bragg for the intermediate staging base.

## Repair Technique

The Air Force repair technique includes filling cratered holes in much the same way as Army units do. However, the FOD cover is much different for large craters. The flexible fiberglass matting is 30 feet wide and is stacked accordion style. Two Air Force 10K John Deere forklifts and a crew of soldiers unfold the matting. These forklifts differ greatly from the Army's Caterpillar 950B 2.5-cubic-yard loaders with detachable buckets and attached tines. The tines on the Army's Caterpillar are less maneuverable than the forks on the Air Force's John Deere, which makes positioning the flexible fiberglass matting more difficult. However, the Army's loaders are air-droppable. The air compressor, tools, and materials required to anchor it to the existing surface are included with the matting. The matting does not distribute a load but provides the necessary FOD cover, essential to the jet transports used in the XVIII Airborne Corps deployment.

Personnel and the HARP, except for the matting, were loaded on 13 C-130s. If the Haitians cratered the runway and the airborne assault force called the HARP forward, it would be air-dropped onto Port-au-Prince International Airport.

The Airborne Test Board at Fort Bragg develops procedures to air-drop new equipment. The agency had rigged and tested the matting for the airdrop but had not refined the procedure. Therefore, the matting could not be parachuted in with the rest of the equipment.

### Heavy Airfield Repair Package

| Quantity | Equipment |
|---|---|
| 2 | 950B loaders |
| 2 | D5B bulldozers |
| 1 | 130G grader |
| 1 | Small emplacement excavator |
| 2 | M929A2 5-ton dump trucks |
| 1 | HMMWV |
| 1 | 250-CFM air compressor |
| 1 | 13-wheel towed roller |
| 3 | 500-gallon fuel blivets with pumps and hoses |
| 2 | 12-foot mass supply boxes with tools and supplies |
| 3 | Sections of flexible fiberglass matting with tools and materials |



Soldiers from the 37th Engineer Battalion (Cbt) (Abn) prepare a D5 bulldozer to be air-dropped.

Air Force loadmasters and Army riggers decided to rig the matting on a pallet train consisting of four 463L pallets and load it on a C-130, which would land at Port-au-Prince Airport. They rigged the sections individually, each with a two-loop, 20-foot nylon sling attached. This would allow the top section to be unhooked and dragged off while the rest remained attached to the pallet train, which was locked in place in the aircraft.

Since the 25K loaders normally used to load and unload C-130s would not be available in Haiti, soldiers would use equipment air-dropped to the island to unload the matting. They would drag the sections off with a 950B loader hooked to the nylon slings on each section.

Delivery of the flexible fiberglass matting relied on the assumption that the runway in Haiti would be C-130-capable. If the Haitian Army cratered the runway at the culverts, then they might also crater it in other places to prohibit a C-130 from landing. This risk was accepted. Using the air-dropped equipment to make minimal repairs would bring the runway up to C-130 standards and allow the first plane to land with the matting needed to make additional repairs to the runway. However, this procedure would slow the arrival of follow-on forces and interfere with the XVIII Airborne Corps' plan and synchronization.

## Ensuring Mobility

Planning and preparing for Operation Restore Democracy highlighted the need to refine the rapid-runway-repair capabilities of Army engineers. Further coordination among all the services is necessary to ensure that Army engineers can perform rapid-runway-repair missions in a forced-entry operation—the type formerly thought to be solely an Air Force engineer responsibility. Army engineer units with rapid runway repair as part of their METL need the same equipment, materials, and training as Air Force engineers with similar missions. Army engineers also need a comparable method of air-dropping flexible fiberglass matting.

A primarily CONUS-based force that is strategically mobile will rely on airlifts into theaters of operation. This mobility increases the need for rapid runway repair so that U.S. armed forces can deploy rapidly regardless of the type of arrival airfield. With the proper equipment, training, and materials, we can ensure the strategic mobility of our armed forces.

*Captain Huszar is the assistant S3 for the 168th Engineer Battalion, 3rd Brigade, 2d Infantry Division, Fort Lewis, Washington. Previous assignments include S4, 168th Engineer Battalion; and platoon leader, company executive officer, and S3 Air Officer, 37th Engineer Brigade (Combat) (Airborne), Fort Bragg, North Carolina.*