

# Lessons Learned:

## Disaster Assistance Missions

By Major James R. Brannon

**T**he following Lessons Learned address disaster relief. In the past three years (September 1989 - September 1992), U.S. military forces have responded to three hurricanes and two typhoons that struck densely populated areas. After the most recent storms, Hurricane Andrew in Florida and Louisiana and Hurricane Iniki in Hawaii, Army engineer soldiers provided relief services, cleared and hauled debris, produced and distributed water, restored power, and constructed life support centers (tent cities). These missions revealed important lessons in preparedness, leadership, organization, equipment, and safety. For more information write to Commandant, U.S. Army Engineer School, ATTN: ATSE-ESA-L, Fort Leonard Wood, MO. 65473-6630. Or call (314) 563-5303, DSN 676-5303.

**ISSUE:** To rapidly deploy the right combination of forces and equipment tailored for a disaster is difficult. Lack of specific mission guidance and poor engineer intelligence from the disaster zone combine to make such deployments especially challenging.

**DISCUSSION:** A few units that deployed to Florida found they were short of needed tools, sets, kits, and outfits (SKOs). Some also lacked critical haul capability for heavy equipment. While those challenges were overcome through an unprecedented joint operation, some units could have been better prepared.

Engineers responding to natural disasters must be prepared to accomplish a variety of horizontal and vertical missions. For hurricane clean up, a primary task is debris removal. This requires large numbers

of chain saws, dump trucks, and bucket loaders. An unanticipated mission in Florida was the massive effort required to clean up and open several dozen elementary and secondary schools, which entailed extensive electrical and interior work. The requirement to set up life support centers created heavy demands for carpenters and electricians (and their SKOs). Not everyone brought all their tools. One commander observed: "The initial engineer mission NEVER includes all eventual tasks! Nobody is smart enough to define everything in advance."

**RECOMMENDATION:** If possible, units should take their entire TOE to a disaster site. They should take all SKOs, generators, chain saws, pumps, and lighting sets. Anticipate the need for light- and heavy-duty electrical work, temporary tenting, power generation and lighting, carpentry, temporary plumbing, water purification, and road clearance. To increase haul capacity, take side racks for cargo trucks. Take portable lights and generators, which can do double duty for round-the-clock construction and operations.

**ISSUE:** Disaster areas face critical shortages of needed supplies and construction materials. Lumberyards, hardware stores, and other vendors may be closed or destroyed. Items these suppliers normally provide may not be available.

**DISCUSSION:** The scope of the damage from Hurricane Andrew was unprecedented. Almost every item for basic human needs had to be hauled in and distributed. While this was captured in local and national news, the need for plywood, nails, tools, plastic, canvas, electrical wire, and other hardware items

largely went unnoticed. Be aware that in any disaster area some local vendors may engage in price gouging.

**RECOMMENDATION:** Within reason, purchase equipment and materials you are likely to need before deploying. Specifically: Purchase additional chain saws with extra blades and chains (allow for two 24-inch models per squad, and one 30-inch or 36-inch model per platoon). Units will also need plywood, forklift pallets (they make excellent foundations for tent flooring), nails, exterior Romex type electrical cable, duct tape, electrical tape, PVC glue and sealant, 12-foot and 16-foot ladders (for hanging cable and interior electrical work), and some fluorescent lighting fixtures (for tents). Take the National Electrical Code (NEC) book to ensure your work is up to a standard that can be hooked into city power.

**ISSUE:** Hurricanes and other disasters often destroy all major means of communications. Telephone lines, power poles, radio towers and transmitters, and cellular telephone towers may be out of service for days or weeks. Communications will be a premium issue for engineer units.

**DISCUSSION:** Hurricanes Andrew and Iniki knocked out all communications. In Dade County, Florida, only two of five cellular telephone towers survived the storm. Because communications systems for Active, Reserve and state National Guard forces vary widely, cellular phones may be the best way for federal, state, and local agencies to keep in touch. In Florida, for example, Army reserve frequency modulated (FM) communications were not compatible with mobile subscriber equipment (MSE) from the XVIII Airborne Corps. Additionally, local police, fire, county sheriff, ambulance services, hospitals, and municipal governments could not communicate with military forces. Military FM and civilian FM used entirely different frequency bands and were incompatible. While the best overall military communications system for static use was MSE, cellular phones were valuable, especially when communicating with other mobile military forces or civilian agencies. Local police all carried cellular phones. By using cellular phones, Army units increased their operational credibility with many civilian agencies.

**RECOMMENDATION:** Contract for and take at least enough cellular phones to mimic the unit's command net. Use FM radios, citizen band (CB) radios, and cellular phones to communicate with civilian agencies, people who are stranded and need help, and each other. Be prepared for confusion and disjointed communications in the area of operations. Other "communications" devices you may need in-

clude portable facsimile (fax) machines, personal computers (and lap-tops), MCS computers, copy machines, and MSE fax machines. Be aware that you may need to modify a computer with a fax board to interface with an MSE fax machine.

**ISSUE:** Large natural disasters probably will require more federal military aid than one DOD agency can provide. Joint operations with Army, Navy, Marines, Air Force, Coast Guard, or allied forces may play a role in disaster relief. This type of operation requires unique skills, knowledge, and special duties.

**DISCUSSION:** Throughout the area of operations, military commanders must integrate with several overlapping civil governmental agencies (city, county, and state). Public utilities (water, electrical, phone, gas, sewage, and garbage) operate across broad political and geographic areas, and each has its own organization and relationships with local governmental agencies. Because military units in Florida did not understand these interrelationships and levels of authority and responsibility, it was difficult for them to coordinate work and communications. Maneuver commanders who carved up an area with divisional boundaries found themselves slicing up cities, counties, and municipal and county utility districts. As a result, city and county agency personnel were confused as to which military commander was "in charge." This created a need for multiple liaison officers, burdened communication systems, and caused some duplication of work effort.

**RECOMMENDATION:** By using the intelligence preparation of the battlefield (IPB) process as a guide, engineer commanders should know the level of coordination that exists in the disaster area. They must determine if municipal governments have coordinated utility support and repairs, where the top authority lies, and who is in charge. They must become familiar with police and fire jurisdictions, public utility districts, and hospital districts.

If coordination between agencies is broken, engineer commanders must help "fix" it. The objective is to re-establish the local government's ability to function properly. Thus, normal channels of operations should be employed to the maximum extent possible. Be prepared to commit liaison officers to as many levels of government as necessary to keep communications open and missions orderly. Officers and senior noncommissioned officers should be familiar with the way local governments and public utility districts operate. They should also be familiar with the capabilities and structures of Navy Seabees, Marine engineers, and Air Force base civil engineering squadrons and Prime Beef Units.

*(Continued on page 31)*

*(Lessons Learned, continued)*

**ISSUE:** Many engineer units do not have contingency plans for natural disasters.

**DISCUSSION:** U.S. Army engineers will respond to many disasters. Whether fighting fires in the Rocky Mountains or quelling civil disturbances in inner cities, federal military forces will continue to serve the immediate needs of U.S. citizens and our allies when natural or man-made disasters occur. Some units, such as the 25th Infantry Division (Light), Fort Shafter, Hawaii, have disaster response as one of their contingency missions. Disaster relief is on their division mission essential task list (METL).

Contingency plans are valuable because they can speed up the deployment process, even though they may require some modification for any given disaster. Unit locality has no bearing on the type of disaster you may be assigned to deal with. Units from as far away as Fort Drum, New York, and Fort Riley, Kansas deployed to Florida in response to Hurricane Andrew. Air National Guard units from Alaska supported Operation Garden Isle in Hawaii.

**RECOMMENDATION:** CONUS-based contingency planning and rapid force projection have replaced our Army's forward deployment posture. Contingency planning for natural disasters is good practice and good training. In the absence of guidance from higher headquarters, engineer units should prepare contingency plans to support major disasters (fires, floods, tornados, hurricanes, earthquakes, and civil disturbances). Determine the equipment and material needs for each scenario, organization and manpower requirements, deployment sequencing, and your unit's sustainment needs. Prepare equipment load plans and checklists showing where to obtain critical equipment and materials. And, remember to evaluate your own intelligence needs that may drive the makeup of key personnel in the advance party.

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