



# Environmental Lessons Learned for the Engineer Regiment



**E**ngineers are expected by maneuver commanders to be ready to address and work the full gamut and all aspects of combat and construction engineering. Engineers are being called on to handle environmental issues and threats in support of mission objectives. Engineer commanders must be prepared to conduct missions associated with site assessment for environmental baseline surveys (EBSs), environmental risk analysis, waste management and mitigation, remediation and cleanup, dust suppression, and support requests for assistance from civilian authorities.

Engineer officers, regardless of their rank or background, must be adequately prepared for construction and environmental tasks in theater. The two disciplines compliment one another. When the maneuver commander needs construction expertise, he expects his engineers to provide it—whether or not they have spent their entire career working combined arms or combat engineering. The following is a list of subjects that engineer officers need to know, or they need to know where to find the information. These were identified during Operations Desert Shield and Desert Storm in Iraq, Operation Joint Endeavor in the Balkans, and specifically mentioned in a Memorandum for Record from the Combined Forces Land Component Command Staff Engineer Section Forward (CLFCC–C7 FWD) Plans and Operations.

- Functions and capabilities of departments of the US Army Corps of Engineers (USACE), as well as differences in division/district offices.
- Facility Engineer Team (FET) capabilities.
- Organization of regional contracting commands and what they provide.
- Multinational Forces–Iraq (MNFI), Multinational Coalition–Iraq (MNCI), Coalition Forces Command–Afghanistan (CFC–A), Combined Joint Task Force–76 (CJTF–76)—who they are and what they do.
- Knowledge of where funding is available, how to justify a project, what level of command approves project funding (for example, corps commanders can approve projects of \$750K or less), how legal reviews work, and what a DD 1391, *Military Construction Project Data*, is and how it works.
- Standards for detainee facilities.
- The role of civil affairs in construction; how civil repair projects work.

- Captains and lieutenants must have a knowledge of strategic-level planning (“awareness”); for example, know how we influence the information operations campaign with construction capabilities.
- Capabilities of sister services.
- Master planning for base camps.
- Environmental planning for base camps.

Specifically, in the environmental arena, environmental management in theater cannot be a neglected engineer function. Battalions have to implement environmental programs and plans for conducting EBSs prior to units occupying sites, perform compliance inspections and closure reports, and know whether these reports are being properly completed. The importance of conducting an initial EBS to verify conditions at the outset of operations cannot be overstated. An EBS needs to be conducted in conjunction with an Army unit occupying a location for any extended period of time. This will ensure that the site is safe for soldiers to occupy, and it will validate the conditions at the time of the occupation. This will save the government from being “held hostage” by these countries once the nation-building piece (often known as Phase IV) is complete. Millions of dollars in the future can be saved if we, as engineers, take the proper steps now to maintain compliance. Engineers must understand the legal ramifications of environmental issues. As units in theater begin to consolidate into fewer, larger forward operating bases (FOB), complete FOB closure will become a large issue with the host nation countries. Consistent closure standards must be clearly understood by all Army units to avoid disputes when it comes time to close a base camp or FOB.

In addition to the above-mentioned issues, the following lessons have also been observed as part of our contingency operations.

Geographic Information Systems can be a significant tool to help engineers support base camp master planning, construction design, and environmental planning. This capability is usually only found in the engineer topographic companies or terrain teams and must be made readily available for other supporting engineer functions.

Maneuver commanders need to realize that environmental stewardship is equal to force protection. Improper storage or disposal of hazardous and solid waste can pose as much of a risk to soldier health and safety as regular operations.

Resources for environmental management must be prioritized accordingly. The environment into which our soldiers have been deployed is rife with environmental hazards. Contamination of the soil and water is common, and hazards such as asbestos, PCBs from electrical transformers, and unidentified drums of chemicals present challenges to the health and well-being of our troops. While not immediate, the health effects from exposure may have long-term implications on soldier health.

Hazardous waste (HAZWASTE) storage is a significant issue. Units must prepare field storage facilities early to accommodate huge volumes of HAZWASTE—primarily for petroleum, oil, and lubricants (POL) and batteries—until proper disposal can be arranged. In many cases, units will be required to set up base camps where significant waste issues already

exist. Prior planning and evaluation is essential to ensure the safety of the force. Colocating solid waste and HAZWASTE disposal facilities and recycling areas will make disposal easier, allowing greater compliance by soldiers and units.

Poorly constructed and located solid waste burn pits create an unacceptable hazard to soldiers. During initial base camp development, burn pits should—

- Be large enough to ensure standoff from burning debris.
- Have controlled access to prevent unauthorized burning.
- Be located downwind of life support areas to reduce exposure to smoke.

As camps develop, other disposal methods—such as on-site incinerators or contract hauling and disposal—should be implemented.

The US Army Engineer School (USAES) is the Army's proponent for environmental integration across the domains of doctrine, organization, training, materiel, leader development, personnel, and facilities (DOTMLPF). The Directorate of Environmental Integration (DEI) performs this mission for USAES on a daily basis. DEI has doctrine, environmental, and training development professionals, as well as an engineer and support staff to accomplish this mission. DEI canvassed the Army community for the feature articles in this issue of *Engineer* and appreciates the input and sharing of information for the Engineer Regiment. For further information on DEI, go to their Web site at <http://www.wood.army.mil/dei>.

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Articles should be concise, straightforward, and in the active voice. If they contain attributable information or quotations not referenced in the text, provide appropriate endnotes. Text length should not exceed 2,000 words (about eight double-spaced pages). Shorter after-action-type articles and reviews of books on engineer topics are also welcome.

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