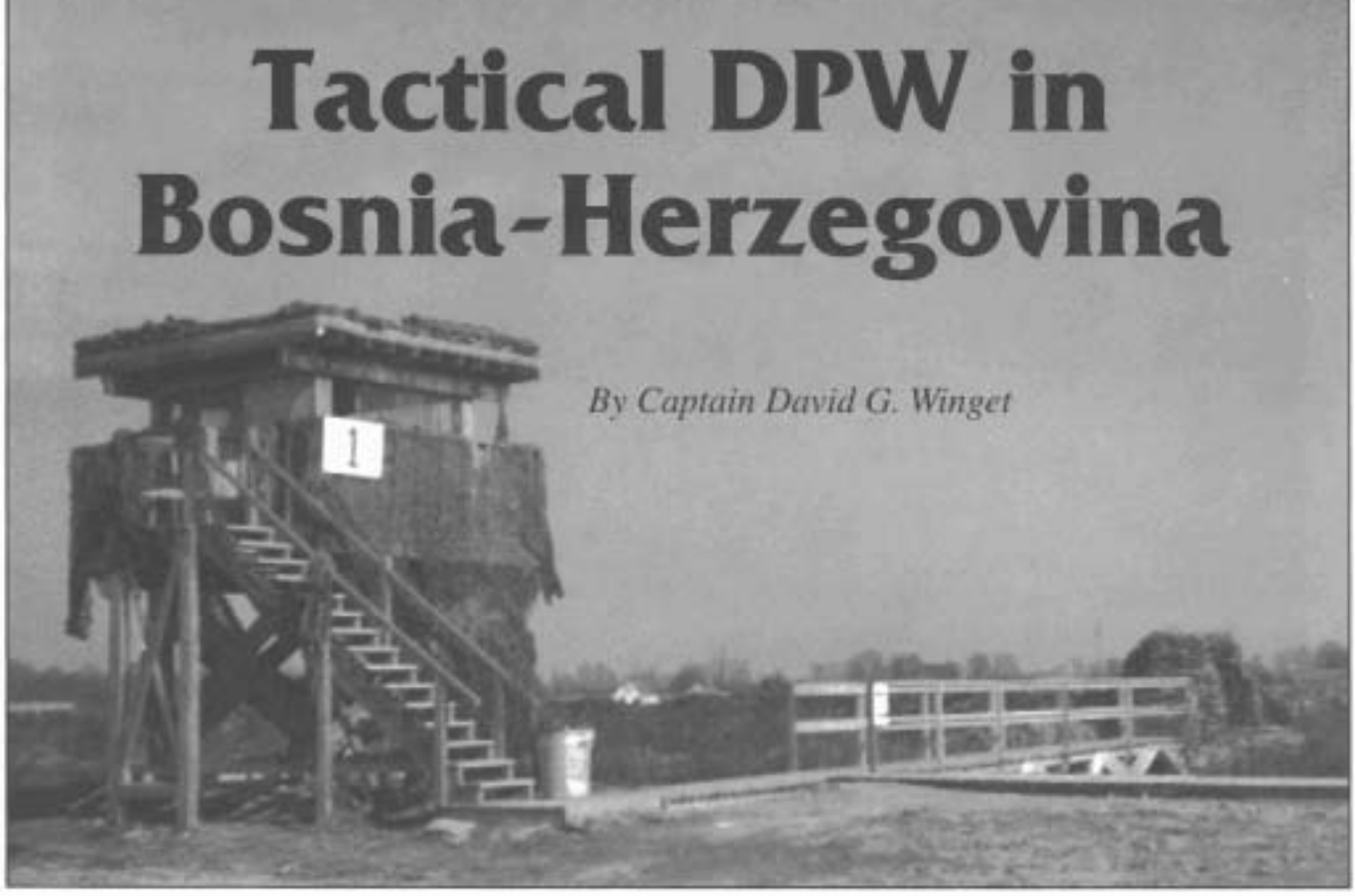
Tactical DPW in Bosnia-Herzegovina



By Captain David G. Winget

On permanent military bases, a Directorate of Public Works (DPW) controls construction projects. The DPW structure—consisting of a military director with mostly civilian engineers—was designed to provide construction support to one base in a secure environment. In a potentially hostile environment such as Bosnia-Herzegovina, the DPW organization is not practical. There, several base camps—ranging from a platoon-sized element on a hilltop to a division headquarters housing more than 2,000 people—are spread over 100 miles. A new structure was required to support the diverse multinational force.

The American sector of Bosnia, Multinational Division-North, includes elements from the 1st Armored Division, the 2nd Armored Cavalry Regiment, the 401st Expeditionary Air Base Group, a Nordic/Polish Brigade, a Russian Brigade, and a Turkish Brigade. American units form Task Force Eagle, which is spread over 13 main base camps and five hilltops in support of the NATO peacekeeping mission. Because this situation made the usual DPW structure impractical, the Base Camp Coordinating Agency (BCCA) was created in January 1996. Staffed mostly by armed military engineers with up-armored HMMWVs, the BCCA became a tactical DPW responsible for all base camp facilities and occupied hilltops in the American sector.

The BCCA's scope and responsibilities are similar to those of a DPW, but they are modified for use in a deployed environment. The agency supports Operation Joint Guard by providing facility engineer planning and operations, project management, and Joint Acquisition Review Board administration. The BCCA also assists with development and maintenance of base camp standards, base camp assessments, environmental engineering, ammunition surveillance, real estate acquisition, fire inspection and prevention, and financial oversight of the operation's sustainment contract. Located in Tuzla Main, the BCCA staff normally ranges from 11 to 14 personnel. The agency reached a peak of 24 personnel in September 1996 to facilitate base camp decommissioning and closure when the Implementation Force of 20,000 downsized to the Stabilization Force of 8,500. The BCCA currently is staffed by seven active duty military personnel on temporary change-of-station orders and four civilians.

Organization

The BCCA chief, a lieutenant colonel, serves as a special staff officer on the Task Force Eagle staff. He is Task Force Eagle's single point of contact for all base camp facilities, which are managed by six organic and three nonorganic sections within the BCCA.

Plans Section

This section develops plans and orders for future operations, forecasts necessary construction support for these operations, and coordinates with Task Force Eagle staff. Identifying issues, collecting information, and developing courses of action are integral parts of the planning process. When the Operation Joint Guard mission was extended, a process action team was formed to set new standards for construction. The team expects to increase the level of force protection and the standard of living. By proposing and analyzing several courses of action, the team can develop economical solutions to meet future needs in a less temporary

environment. The plans section recently acquired AutoCAD software, which allows it to develop standard designs for projects such as medical aid station bunkers, barracks-style living containers, and chapels. In addition, the section helps each base camp develop a master plan for site layout that will meet future needs with an organized and economical solution.



Multinational Division-North soldiers construct a 100-man bunker.

Operations Section

This section conducts day-to-day operations for the BCCA and collects detailed information on base camp population, capacities, life-support capabilities, and other key factors affecting the success of Task Force Eagle. The section also develops and maintains the *Base Camp Standards*, a document that governs base camp facilities and services and defines the minimum construction standards authorized within the limits of good fiscal stewardship. This document is continually updated to conform to current conditions, military needs, and available resources, based on the changing mission of Operation Joint Guard.

Project Management Section

Construction projects are processed through this section, which validates the need for new work through interaction with the customer. Section personnel determine the scope of work needed and ensure that the work complies with *Base Camp Standards*. The section also provides technical construction expertise and identifies economical ways to meet requirements. After determining requirements, section personnel pass specifications and drawings to contracting officers or military engineers for execution. They also track projects on a theater-wide database and hold weekly in-progress reviews with the contractor to update statuses and identify potential problems.

Base Camp Assessment Team (BCAT)

The BCAT inspects each base camp and occupied hilltop monthly to ensure that occupants comply with standards. Traveling in a convoy of four up-armored HMMWVs, the team focuses its inspections on force protection, environmental compliance, safety, fire prevention, and ammunition storage. After completing an inspection, the BCAT conducts an outbriefing with the base camp mayor and tactical commanders. The team provides guidance and assistance to unit representatives in each area inspected.

Environmental Section

This section provides technical oversight of Task Force Eagle operations to ensure that U.S. personnel conduct operations in a manner that protects human health, complies with appropriate environmental regulations, and is consistent with responsible environmental stewardship. A Corps of Engineers civilian environmental specialist provides guidance on hazardous materials and hazardous waste management, pollution prevention, and waste minimization. He also oversees environmental baseline and closure studies and periodic sampling of Task Force Eagle sites. For new construction, the environmental specialist identifies environmental concerns and develops courses of action to address those concerns.

Contingency Real Estate Support Team (CREST)

These civilian members of the Corps of Engineers secure leases for land to support operational requirements and work with landowners to address their concerns. Team members write leases, investigate property titles, and assess damages to help settle claims.

Nonorganic Sections

Nonorganic sections that work closely with the BCCA include a prime power platoon, a military fire-fighting platoon, and a quality-assurance specialist, ammunition surveillance (QASAS) representative. The prime power unit operates the tactical power plant for Tuzla Main and provides liaisons to the BCCA to assist with electrical projects. Firefighters participate in BCAT inspections, develop the fire-fighting plan for Task Force Eagle, and provide expertise in fire-protection standards for contingency projects. The QASAS representative serves on BCATs and helps plan ammunition holding areas.

Construction Projects

The BCCA divides construction work assignments into three categories: troop labor; Brown & Root Services Corporation, which holds the sustainment contract for Operation Joint Guard; and local contractors. Military construction assets located in Multinational Division-North

include elements from a mechanized combat engineer battalion and an attached Navy Seabee company. The engineer battalion reviews all approved construction requests before the BCCA gives them to a contractor to determine if it has the assets required for the job. If the engineer battalion does not, projects are given to Brown & Root. The BCCA occasionally deals directly with local contractors.

Construction projects originate with work requests from units, base camp mayors, or division staff members. The project management section validates the requests, assigns a priority to them, and forwards them to military engineers or the Defense Contracting Management Command for execution by Brown & Root. Projects costing less than $2,500 are executed immediately under the authority of the BCCA chief. For those costing more than $2,500, a Rough Order of Magnitude is prepared and sent to the Joint Acquisition Review Board for consideration. The board recommends approval or disapproval to the division chief of staff, who holds approval authority for projects costing up to $50,000. Projects exceeding $50,000 are approved by the United States Army-Europe.

Foreign nation support is another type of construction request. Foreign units in the American sector sometimes must rely on Brown & Root for construction support. As long as Americans do not benefit from the project, this type of request requires no approval and is paid for by the foreign nation. After a Rough Order of Magnitude is prepared, a representative from the nation signs an agreement to reimburse the United States for expenses.

The BCCA handles a variety of projects, such as force-protection upgrades, quality-of-life improvements, and mission support. Base camp design is focused on force protection to withstand terrorist attacks as well as provide a safe working environment for soldiers. Several projects involve hardening structures with a force-protection wall of bastions and constructing bunkers, crash-resistant gates, and fighting positions. The average tour of duty in Bosnia ranges from 6 to 12 months, so quality-of-life improvements are critical to maintaining morale. Current quality-of-life projects include upgrading 48 living tents to wooden seahuts (512-square-foot, plywood, one-room structures with electrical outlets and a heating, ventilation, and air-conditioning unit); constructing a morale, welfare, and recreation tent for soldiers; and upgrading gyms and TV/game rooms. Mission support includes a wide range of construction projects—from a railhead loading site to a life-support area for a gunnery range.

Construction Challenges

Political, military, and environmental conditions in Bosnia-Herzegovina cause several engineering challenges. Therefore, the BCCA must constantly re-evaluate and improve construction designs to ensure they are compatible with the ever-changing environment. As with all engineering projects, the overriding factor is cost, and the goal is to achieve the best solution for the lowest price.

Temporary Construction

Army engineers must restore land to its original state after closing a base camp, so a major engineering challenge for the BCCA is that all construction must be temporary. As a result, concrete is used only occasionally in prefabricated slabs or barriers. Gravel over geotex is often substituted for concrete because it is easily removed. Most structures also are temporary and are easily removed—such as tents, wooden seahuts, or containerized units—but a few are pre-existing permanent facilities. When a base camp closes, construction materials are reharvested for future projects. An environmental survey is then conducted and compared to the baseline survey conducted before occupation, while the CREST team gathers photographs to assist in settling damage claims with landowners.

Winterization

Due to the extremely cold winters in Bosnia-Herzegovina, winterization techniques are incorporated in construction projects. For guard towers, a sliding plexiglass window that can be closed to contain heat or opened during emergencies is installed on each wall. Three coats of paint are applied to wooden structures to protect them from rain, snow, and ice. Tents are upgraded to tier three standards, which include plywood floors and walls, roof trusses to support snow loads, electrical outlets, and lights. They are heated with two kerosene heaters. Tents that are not occupied for a few days—and therefore not heated—often require repairs due to heavy snow loads that accumulate on roof trusses.

Ground Conditions

A high water table and poor soil conditions in Bosnia also present challenges. Sand for sandbags and soil for fill material must be purchased and transported to construction sites. Perhaps the largest cost associated with most construction projects is the enormous amounts of gravel used to stabilize soil. Bunkers and fighting positions must be constructed aboveground, and all structures must have large footings on a thick foundation of gravel.

Utility Costs

Since Operation Joint Guard has been extended, the BCCA is seeking ways to reduce utility costs. One method under consideration is to convert from generator to commercial power where feasible and use generators for backup power in critical areas. Another option is to convert to well water rather than use bottled potable water and nonpotable water delivered by Brown & Root. The BCCA is investigating the feasibility of digging test wells at some base camps. For force-protection reasons, however, a water source outside the base camp is not practical. To save heating costs while upgrading soldiers' quality of life, the BCCA may discontinue using tier three tents and use seahuts or containerized living units, which are electrically heated. Finally, mobile generator-powered sets on base camp perimeters are being replaced with fixed poles with lights that operate from commercial power or a central generator.

Coordination

When a project is assigned to both Brown & Root and military engineers, the BCCA must ensure that they coordinate

between construction phases through preconstruction conferences and in-progress reviews. Details are worked out with a representative from the engineer battalion and a Brown & Root liaison, and any conflicts are resolved. For example, approximately one million landmines and various unexploded ordnances remain in Bosnia-Herzegovina from the war. New construction sites that have not been cleared of mines require surface clearance. Before Brown & Root can start a new project in an uncleared area, they must coordinate through the BCCA to have military engineers clear the ground.

Conclusion

The BCCA is a nondoctrinal organization that has served and continues to serve its purpose in support of Operation Joint Guard. The agency continues to assess the evolving mission and to plan for future requirements, while providing construction support and base camp assessments to Task Force Eagle. Faced with many challenges in construction design and changes in standards, the agency maintains flexibility and continually seeks to provide the best possible product at the lowest cost. It accomplishes this goal by maintaining a close working relationship with Brown & Root, the Defense Contracting Management Command, military engineers, base camp mayors, and the tactical commanders. The BCCA organization provides a template that can be used for base camp management during future multinational stability and support operations.

Captain Winget is attending the Engineer Officer Advanced Course. He was assigned to the 20th Engineer Battalion, 1st Cavalry Division, and was on temporary orders to support the 1st Armored Division as Project Manager for the BCCA during Operation Joint Guard. From February to June 1997, he supported Operation Intrinsic Action in Kuwait. CPT Winget is a graduate of the United States Military Academy.

Lessons Learned

The following lessons learned during Operation Joint Guard may assist units deploying to support other stability operations:

Sustain

- ❒ Ensure that troop engineer units, the contractor, and the BCCA coordinate daily to resolve problems and develop better solutions.
- ❒ Allow troop engineers first choice of every project to reduce costs and sustain unit training.
- ❒ Colocate the troop engineer construction management section and the BCCA in the same building to facilitate information flow and shared assets and equipment.
- ❒ Staff the BCCA with officers holding a degree in engineering and who understand tactical operations.
- ❒ Develop a thorough and regular base camp inspection program to maintain high levels of safety, force protection, environmental standards, ammunition safety, and fire prevention.
- ❒ Establish a mayor (who is not occupied with command responsibility) to be the single point of contact for each base camp. That individual will assist in communication with customer units and resolve issues between units at each camp.
- ❒ Obtain support from the Corps of Engineers for equipment, personnel (real estate and environmental specialists), and other expertise.
- ❒ Ensure that the BCCA works directly for the senior commander on the ground, not for a higher headquarters, to ensure that construction supports the commander's intent.

Improve

- ❒ Provide additional personnel so the BCCA can expand its responsibilities and provide a better product at a lower price. For example, provide engineers to perform independent government estimates on projects and clerical and administrative personnel to assist in day-to-day operations so engineers can focus on construction.
- ❒ Create a BCCA structure as early as possible in the deployment to manage initial base-camp construction and develop a plan for overall base-camp layouts. Base camps built without detailed plans often must be relocated at additional expense.
- ❒ Develop a flexible master plan for base-camp layout that allows for expansion.
- ❒ Determine the initial standards of living and level of force protection—in as much detail as possible—and establish a board to review these standards quarterly to consider changes in funding and mission requirements.
- ❒ Organize personnel into two teams—with all personnel in each team from the same unit if possible—and replace only one team at a time to maintain continuity.
- ❒ Plan for a minimum overlap of two weeks between outgoing and replacement personnel.
- ❒ Delegate approval authority for projects costing less than $100,000 to the highest commander on the ground, because he has a better picture of the situation than higher headquarters. This method allows for quick approval of high-priority projects.
- ❒ Ensure that all military engineers in a joint operation (Army, Navy, Air Force, and Marines) work together under one engineer commander for facilities construction. This alignment facilitates a coordinated engineer effort, maximizes efficient use of assets, and prevents differing standards of living for military personnel.