

36th Engineer Group in Somalia:

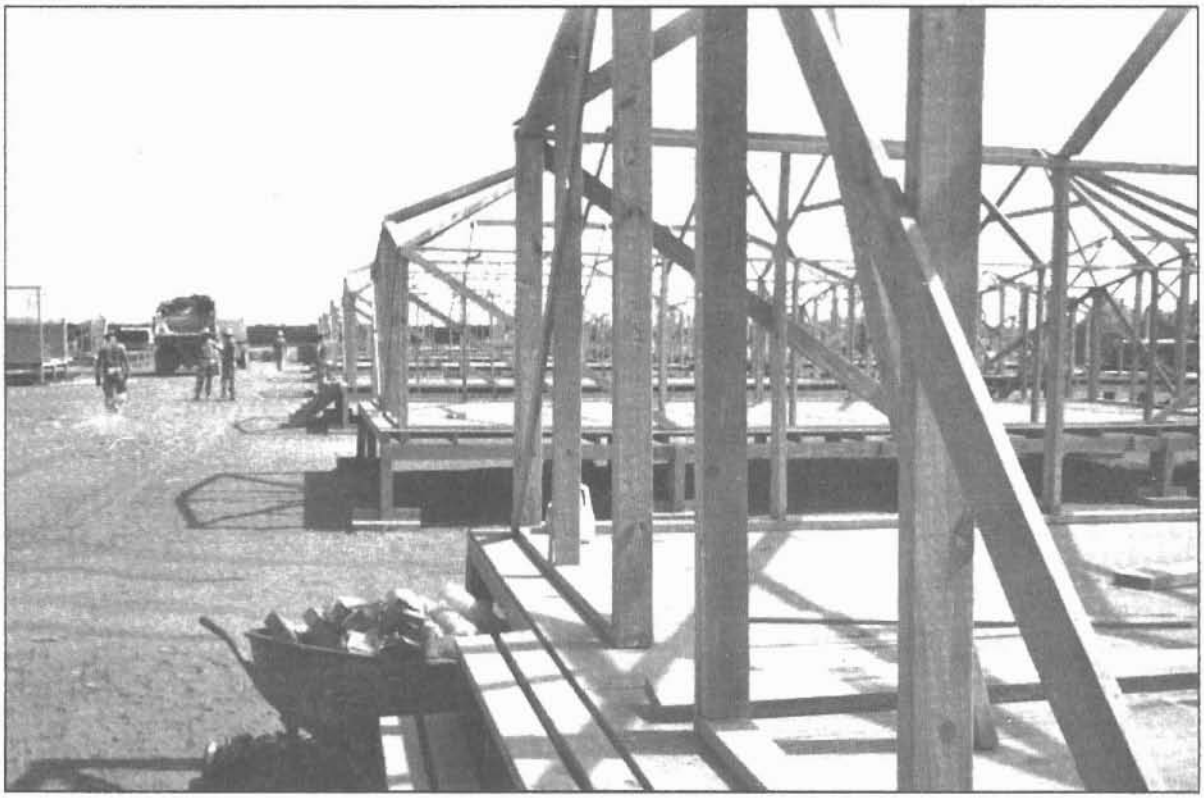
Operation Restore Hope



By Officers of the 36th Engineer Group

Since the fall of the Marxist government in February 1991, Somalia has been torn by civil war. The territory of the former nation was divided among several warlords, who locally filled the void left when the national government ceased to exist. Civil strife, coupled with drought and crop failures, led to severe food shortages and displaced large segments of the population. Beginning in August 1992, the United States participated in UN-sponsored humanitarian relief efforts, primarily flying food shipments to remote areas. From the beginning, banditry and organized resistance from rival clans hampered these efforts. In November 1992, the Bush administration decided that the situation demanded a new approach—a U.S.-led peacemaking mission to pacify the country.

Peacemaking is a relatively new concept in American foreign policy that goes beyond the traditional UN peacekeeping role. In peacekeeping operations, diplomats establish an agreed peace; then the UN provides relatively light forces to monitor the arrangement. Peacemaking, by contrast, involves imposing



Elevated strongback tents in a Bardera base camp.

order on the warring parties as a prelude to diplomatic efforts in achieving a long-term political solution.

From a military standpoint, peacemaking is similar to warfighting. Operation Restore Hope had all the characteristics of a major invasion, with the added challenge of simultaneously supporting humanitarian relief operations. The combat force was built around the 1st Marine Division and the Army's 10th Mountain Division (Light Infantry). Air Force and logistical support packages were tailored to deploy and sustain the joint task force (JTF).

Assembly of a theater engineer element to support the operation was crucial to the support package. Engineer missions included constructing and maintaining more than 2,000 kilometers (km) of main supply routes (MSRs), establishing life-support facilities (base camps) for U.S. and coalition forces, opening and maintaining airfields, and providing other special engineer support such as well drilling, port construction, mapping, and power generation. The two major components of this package were the Naval Construction Regiment (NCR 30), under the Marine Forces (MARFOR), and the 36th Engineer Group, with the Army Forces (ARFOR). This article addresses the ARFOR engineer support in theater.

Task Organization

Because significant engineer forces at nondivisional echelons were required to support the ARFOR, Forces Command selected the 36th Engineer Group as the engineer command and control headquarters. The troop list included the 43rd Engineer Battalion and the 63rd and 642nd Combat Support Equipment (CSE) companies. Those troops joined the 10th Mountain Division's 41st Engineer Battalion (LT) in providing the necessary engineer support for the ARFOR in theater.

The theater was divided into nine humanitarian relief sectors (HRSs) for the command and control of peacemaking coalition forces. For engineer support, Somalia was split into two work sectors. The northern sector was given to the Marine and Navy engineers, under the command of NCR 30. The southern half was designated as the Army engineer sector, under the command of the 36th Group. Supported maneuver forces in the southern sector included a brigade from the French Marines, an Australian Regiment, a U.S. Marine and a Belgian parachute battalion, and a brigade from the 10th Mountain Division.

Threat

The threat to engineer forces varied by geographic area

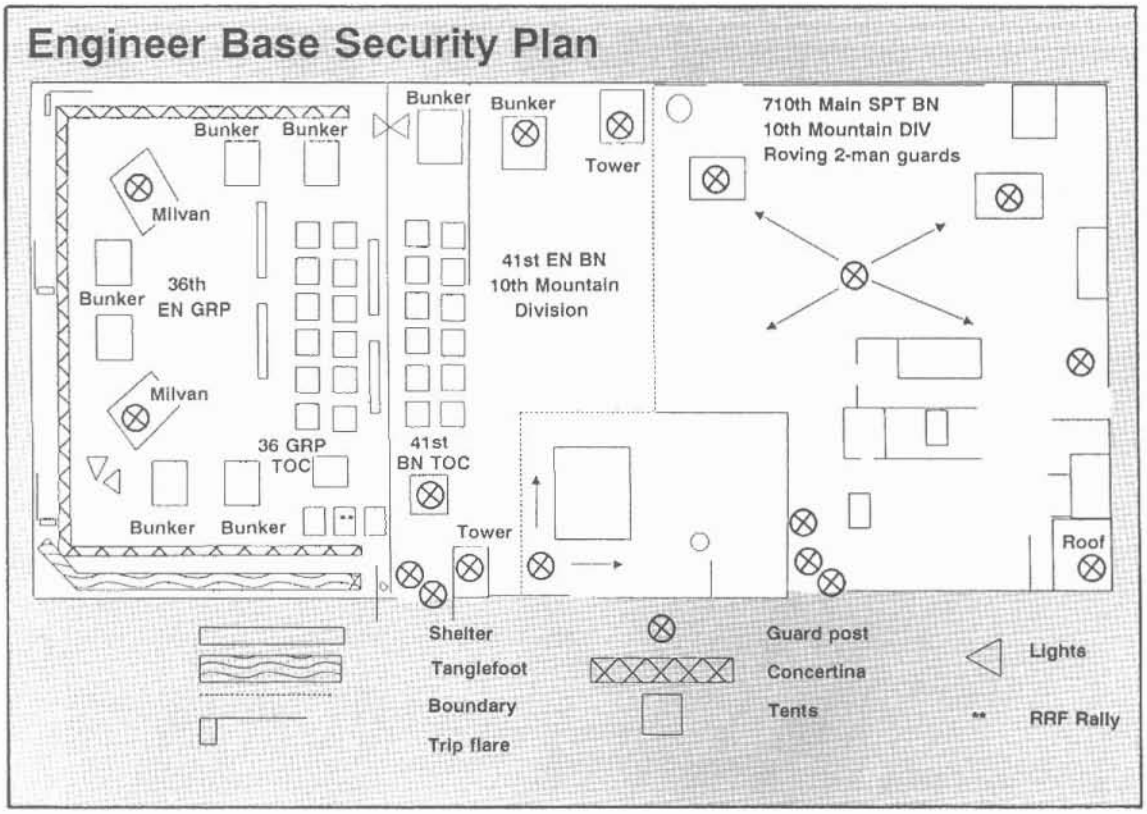


Figure 1

and included random violence, organized sniping, ambushes, criminal activity, and localized civil unrest. Criminal activity, the primary threat, included petty theft and rock throwing. Engineer Class IV items were a prime target for thieves.

Base defense and job-site security were major concerns. The base cluster in Mogadishu, as portrayed in Figure 1, included the 36th Engineer Group headquarters; HHC, 41st Engineers; and the 10th Mountain's 710th Main Support Battalion. The 36th used floodlights, trip flares, triple-standard concertina fences, and guard towers extensively. The base cluster security force ranged from 10 personnel during the day to 20 at night. Off-duty security personnel comprised the base cluster's quick reaction force (QRF). Shelters (bunkers) were built for personnel not on security or part of the QRF. The HRS commanders provided job-site security and the QRF to defeat levels two and three threats. Level two response was usually military police, while response to a level three threat was a tactical combat force. Depending on the HRS, that force included light infantry, armor, or attack helicopters.

Mission

The mission for theater engineers was to construct roads, airfields, and base camps to meet the end state conditions for transition to a follow-on UN command. The 36th Group staff developed a plan to complete the assigned missions in the ARFOR engineer sector by February 28, 1993. (See article, p. 8.)

Execution

In developing the road network for MSRs, towns were identified where food distribution was critical to keep thousands of Somalis from starving. The MSR upgrade mission included more than 1,000 kilometers (km) of roads linking critical towns, construction of 150 km of new roads through virgin terrain, maintenance of two airfields, and mine clearing operations.

Vertical construction focused on providing better living conditions for coalition security forces. Engineer forces conducted site surveys throughout the sector, while supported commanders of the coalition forces determined their base camp requirements. The vertical effort included construction of 300 latrines and showers, 110 tent floors, 55 wooden tent frames, 13 Southeast Asia (SEA) huts, and 75,000 square feet of roofing on existing buildings.

The ARFOR engineers also completed 35 civic action projects for many towns and nongovernmental organizations (NGOs),

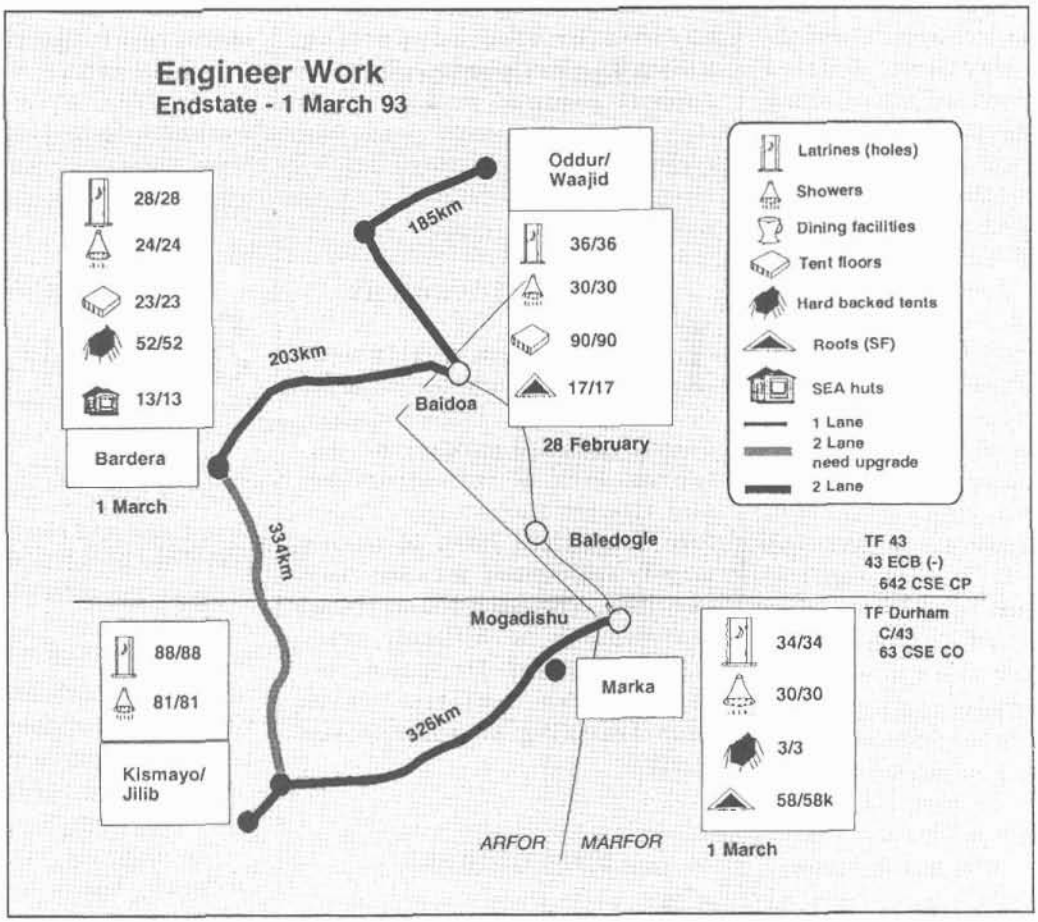


Figure 2

including school construction and renovations, well upgrades, land clearing, and building renovations. Civic action projects were important to support initiatives by local leaders and humanitarian-relief NGOs. Financial and legal constraints limited the construction support U.S. engineer forces could provide. The key criteria for evaluating civic action projects were that they must—

- Support relief organization initiatives.
- Benefit the community as a whole.
- Promote self-help in the area.
- Require little or no materiel investment.
- Not interfere with mission accomplishment.

To facilitate mission accomplishment, the 36th Group split the ARFOR engineer sector in half and task-organized for two battalion-sized task forces. In the north, TF 43 consisted of Headquarters and Support Company, A and B Companies of the 43rd, and the 642nd. In the south, TF Durham, commanded by the group executive officer, included elements from HHC, 36th Group; C Company, 43rd; and the 63rd. The two task forces developed individual plans for accomplishing their engineer missions. Progress was tracked graphically and portrayed work accomplished and remaining (Figure 2). This provided the ARFOR commanding general and his staff with a single document to track the engineers' progress.

Service Support

Somalia was an immature theater where austerity was the rule. The 36th took a conservative approach for planning purposes, with the goal of sustaining itself for at least 15 days in all classes of supply except Class III (bulk). Bulk POL was so scarce that they were allowed to ship full tank and pump units, but this provided only two days of supply (DOS). Based on guidance from the JTF engineer, the 36th deployed with 30 DOS of Class III, Class VI, select Class IX items, and enough materials to build two AFCS 1,000-man base camps. Each company had one 400-gallon water trailer with processed water for personal hygiene from the reverse osmosis

water purification unit. Throughout the deployment, bottled water was procured for drinking and cooking requirements.

To visualize the needed extras, the S-4 section thought through a typical day in Somalia. This approach helped anticipate necessities such as "Australian" showers, laundry pails, clothespins, and sundries packs. In addition, the Fort Benning central issue facility provided a special CTA-50 issue, (including desert camouflage uniforms, mosquito nets and poles, 2-quart canteens, goggles, and sunglasses), plus plenty of Deet and Permethrin for insect control. These supplies, plus sets, kits, and outfits, filled 270 containers. Each container was marked with equilateral triangles on all sides to facilitate rapid identification and follow-on movement from port facilities. Accurate inventories were critical because containers were ultimately transported on three ships. With no reception facilities in country, passenger airflow was keyed to the ships' docking dates. This ensured that soldiers flying in to theater would not exceed the capacity of the life-support supplies and equipment on the ground. Once in theater, the advanced echelon (ADVON) S-4 section immediately began to prepare for the three logistical phases of the operation: reception, onward movement, and sustainment.

Reception

The morning after the ADVON's arrival, they began to ready the engineer base in Mogadishu for arrival of the main body. Battalion and company staging areas were laid out to link the soldiers with their equipment, establish accountability, and perform maintenance. While these linkups were taking place and soldiers were acclimating to their new environment the S-4 briefed supporting units on the mission and the support required to accomplish it. These meetings laid the groundwork for onward movement and sustainment.

Onward Movement

Forward area deployment was necessary before units could begin work. Logistical challenges included geographic distances, lack of infrastructure, and theater immaturity. Therefore, logistical base locations largely influenced forward base locations. The 36th found transportation to be difficult, with stiff competition for limited assets and frequent tire losses from traveling on unimproved roads.

Sustainment

Sustaining the force during mission execution would not have been possible without the superb support of the 593rd Area Support Group (ASG). Multiclass resupply logistical packages met the sustainment needs for seven companies spread over 1,100 km of road, with rations, one to three DOS of potable water, and one to two DOS of bulk fuel carrying capacities. Units within 50 miles of a logistical base provided their own vehicles to shuttle supplies. Outside that radius, the 593rd hauled three DOS, leaving required tankers and bladders with the companies.

To assist the 593rd in its initial planning, the S-4 developed a graphic portrayal of consumption rates. The number of soldiers at each location drove the ration and potable water consumption quantities (10 gallons per soldier per day). The ASG was notified daily of specific support requirements through a simplified logistical status report that permitted units to submit reports via tactical satellite (TACSAT). The system worked well, and all engineer missions were completed on schedule with no supply delays.

Maintenance

36th Group equipment maintainers knew the challenges that lay ahead because they had recently tested their equipment while participating in Hurricane Andrew relief efforts. Long logistical lines and the harsh environment required a beefed-up prescribed load listing (PLL) and authorized stockage list. Before deployment, the 36th purchased major assemblies, numerous tires, and commercial construction equipment repair parts and loaded them into containers bound for Somalia.

The engineer mission was well underway before the ASG became fully operational; therefore, repair parts had to last. The 36th sent two soldiers to Mombasa, Kenya, to purchase repair parts from a local Caterpillar dealer. The plan called for parts to be identified, purchased, and shipped to the requesting unit within 72 hours after equipment was determined not mission capable. Unfortunately, the 36th's demands were too large for the dealer's supplies, and the 72-hour criteria was seldom met. Still, procurement from Kenya saved valuable time when compared with the time required to ship parts from the U.S.

The long distances over which the 36th operated, coupled with the high operational tempo and the late arrival of several unit PLL containers, caused additional maintenance challenges. The 43rd established a direct-support (DS) engineer maintenance base in Baidoa, where they worked with an Australian contingent to replace major assemblies. Along with their organic DS, the 43rd had a

Engineer Tasks

Residual Engineer Force METL	Priority of Responsiblity		
	Somali Labor	Coalition Forces	Engineer Force
Force Protection	2	1	3
Countermine Operations	- - -	1	2
Maintain Airfields to C-130 Standards	3	2	1
Maintain All-Weather MSRs	1	- - -	2
Other Major MSR Maintenance (Dry Season)	- - -	- - -	1
Maintain Base Camps Beyond Self Help	- - -	- - -	1

five-man team from the 598th Maintenance Company. This team provided valuable DS automotive service to engineer units in theater. The 63rd and their DS engineer maintenance team, along with a DS automotive maintenance support team from the ASG's 602nd Maintenance Company, were deployed to Jilib to support TF Durham.

Communications

Operation Restore Hope was complicated by extensive distances and austere communications packages. The 36th's organic FM vehicle communications needs were met by installing a new single-channel, ground-to-air radio subsystem (SINCGARS) just before deployment. The SINCGARS radios operated well in the hot, arid, dusty environment. After nearly two months, the only SINCGARS radio to experience operational failure was found to have been installed incorrectly.

While SINCGARS provided basic FM communications for short distances, additional systems were required to connect widely dispersed construction teams. This support came from a combination of single-channel TACSAT radios, older high- frequency radios (AN\GRC-106), SINCGARS FM retransmission stations, and telephone communications provided by mobile subscriber equipment. All units in sector had redundant communications capability. By using a network of old and new technologies, the 36th retained command and control of the engineer force throughout the operation.

Health and Safety

No serious injuries or deaths occurred within the 36th during the two-month operation. Units obtained excellent intelligence information before deployment regarding safety and health risks soldiers would face in this hazardous environment.

Preventive medicine classes were incorporated into readiness processing. Soldiers received instruction on health hazards and preventive measures necessary to minimize them. Chain-teaching classes were given on rules of engagement and medical evacuation procedures, and all soldiers received situation training. Standards on safety, proper wear of the uniform, and preventive medicine were printed and distributed to soldiers in a pocket-sized format. Unit success was attributed to minimizing risks through intelligence and assessment, providing training, and enforcing standards.

Residual Engineer Force

Engineer staffs at the JTF, ARFOR, and 36th Group worked together to develop the residual engineer force's (REF's) mission statement to maintain minimum acceptable MSRs, airfields, and base camps until United Nations Operation Somalia, Phase II was established. Analysis of work requirements

identified six major tasks (see table, page 7), which were matrixed against who had primary, secondary, and tertiary responsibility for each. Primary responsibility for half the tasks lay with local labor or coalition forces, not with the REF.

Based on this analysis, engineer force requirements included one vertical platoon to accomplish force protection and base camp repair tasks, and two horizontal platoons to complete countermine operations, airfield maintenance, and all-weather and dry-season MSR maintenance. This force could be best provided by a CSE Company augmented with a combat heavy vertical platoon. The 63rd and a platoon from B Company, 43rd, remained in theater as the residual engineer force. The 63rd was attached to the JTF Support Command to maintain the infrastructure necessary for continued logistical support to the coalition forces in theater.

Conclusion

Operation Restore Hope, a historic undertaking for the U.S. armed forces, may be typical of the military's mission in the post cold-war era. The deployment was a unique opportunity for the soldiers of the 36th Engineer Group, joint, and combined forces to make a difference in a country desperate for assistance. By constructing roads, base camps, and airfields in Somalia, engineer units continued a legacy of providing assistance to nations throughout the world.

Coauthors include COL Phillip R. Anderson, LTC Dwight S. Durham, MAJ Chris Buswell, MAJ Earnest Brown, MAJ Mario Carrillo, MAJ Mark Feierstein, MAJ Michael Meeks, and MAJ Albert Bleakley.

Determining the Engineer End State

By Colonel Robert Flowers

"It is hard to get there if you don't know where you are going."

A Wise Man

One of the most difficult tasks facing a tactical commander deployed in a contingency operation is to envision the end state his force must achieve in order to accomplish the mission. In combat operations such as Operation Desert Storm, the destruction of the enemy's force or controlling specified terrain may be key indicators of success and victory. In operations with less clear objectives, such as Operation Restore Hope in Somalia, gaining a clear vision of the objective end state is significantly more difficult. This article describes the process the Joint Task Force (JTF) used to define the engineer end state for coalition forces and to assist the commander in developing his operational end state.

The austerity of the theater's infrastructure drove the operations tempo for JTF Somalia. The country lacked nearly everything. There was no civil government. Basic utilities such as water and electricity were nonexistent. Seaports, roads, and airfields were severely limited in capability and were in serious disrepair. Buildings of all kinds were rubbled, bullet-ridden, vandalized, and in most cases had no roofs. Such problems meant the engineer mission would be extensive. Further, the mission would be oriented to providing mobility and sustainment engineering operations in support of the JTF's employment in country, self-sustainment, and humanitarian relief efforts.

For engineers, an end state had to be defined in terms of the amount of work to be done and the construction standards to be met. To gain a vision of the engineer end state, the JTF engineer staff coordinated fully with other JTF staff sections and developed several options for theater engineer operations. The J2 staff and the engineers jointly analyzed intelligence on the condition of the infrastructure and the security situation. They obtained the commander's intent and the concept of the operation from the J3, both verbally and through the basic operations order. The J4 provided planned main supply routes. Available resources such as engineer soldiers, construction materials, and civilian contract construction support were also carefully considered.