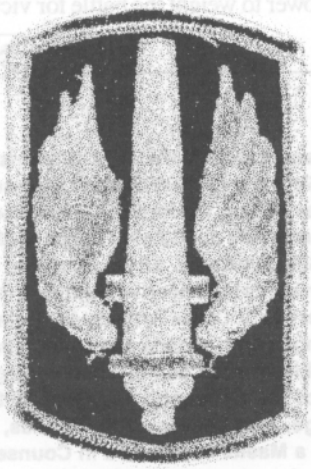
Operations Desert Shield and Storm

A Unique Challenge
for the 18th FA Brigade (Airborne)

by Colonel Freddy E. McFarren and Lieutenant Colonels Lonnie L. Johnson, Jr.; John R. Wood ; and William H. Groening



As the only towed, 155-mm (M198) howitzer brigade in Army Central Command (ARCENT), the 18th Field Artillery (FA) Brigade provided the XVIII Airborne Corps a unique capability. Without heavy equipment transport (HET) support, the brigade can move 72 howitzers vast distances in a short time, thus adding agility to firepower.

The 18th FA Brigade (Airborne) was selected to reinforce the French 6th Light Armored Division on the extreme western flank in Central Command's (CENTCOM's) two-corps flanking move to envelope Saddam Hussein's army. The brigade moved 200+ miles to a final assembly area near Rahfa, Saudi Arabia—in one night, unassisted. Soldiers drove all night at speeds up to 50 miles per hour, in the rain and much of the way in mission-oriented protective posture, Level 4 (MOPP 4) gear. That move culminated five months of the brigade's training and waiting to perform its combat mission. Later, the brigade reinforced the fires of the 24th Infantry Division (Mechanized) Artillery (Div-

Arty) and attached battalions to the 82d Airborne Division and the 101st Airborne Division (Air Assault).

As the brigade moved into Iraq, it controlled five battalions, to include a 155-mm self-propelled National Guard battalion from West Virginia (1-201 FA), a multiple launch rocket system (MLRS) battalion (6-27) FA from III Corps Artillelry, Fort Sill, Oklahoma, more than 2,600 soldiers, 18 rocket launchers, 90 155-mm howitzers and more than 960 vehicles. Roughly 3,000 155-mm rounds, more than 350 rockets and seven Army tactical missile system (Army TACMS) missiles were fired under brigade control during Desert Storm. This article highlights some aspects of the 18th Brigade's experiences.

Brigade Command and Control

Our mission was to reinforce the fires of the French 6th Light Armored Division in its attack to As Salman, Iraq. We would provide fires to the 2d Brigade, 82d Airborne Division, attached to the French. The attack was to be fast-paced and focus on securing the only usable road north as a corps main supply route (MSR). The French identified an intermediate and final objective on which they wanted the entire brigade to fire. During movement, one cannon battalion and one MLRS battery were to be in position to fire at all times.

In analyzing the mission, we decided we couldn't operate the brigade tactical operations center (TOC) with its tactical fire direction system (TACFIRE) per standing operating procedure (SOP). By the time,it was set up, the battalions would be'out of radio range, supporting the forward elements. The solution was to streamline the TOC, make it mobile and be prepared to conduct fire missions on the move.

We configured the back of a high-mobility multipurpose wheeled vehicle (HMMWV) with two large map boards on the walls, a small status chart and five secure VRC-46 radios. The radio mounts were already in place as this was the vehicle we drop during airborne operations for command and control.

We kept most information, such as ammunition and weapon status and unit locations, in a loose-leaf binder. The communications nets were brigade operations and intelligence (O&I), brigade command, brigade fire (voice), target acquisition (OH58D helicopters and Q37 Firefinder radar) and corps artillery command. One officer (a major) and two NCOs (the operations NCO and fire direction NCO) operated in the TOC vehicle. Other vehicles in this TOC complex included those of the brigade commander, S3, French liaison Party, meteorological, two radio teletypewriters (RATTs), retrans and the Air Defense Artillery (ADA) battery headquarters with three Vulcan guns. The TOC processed missions and issued movement orders on the move but made short roadside stops when things got too busy. The S3, French liaison officer (LNO) and TOC vehicles collocated to form the TOC complex. The brigade processed more than 70 fire missions in support of the French, to include seven counterfire targets provided by the Q-37 radar and eyes on the target.

The main reason for the success of this TOC concept was our three tactical exercise without troops (TEWT) rehearsals. Four battalion TOCs and the brigade TOC went to areas south of Rahfa and drove distances of up to 70 kilometers across the desert. Each TEWT consisted of preplanned battalion "goose egg" positions. The Brigade TOC "leapfrogged" units to meet the French criteria of one cannon battalion and one MLRS battery in position at all times and all elements available for assault on the primary and intermediate objectives. The French observer teams participated in the TEWTs and sent dry-fire missions to the French LNO, who, in turn, passed the missions to the brigade TOC.

The first rehearsal wasn't successful. Net discipline was poor, and the organization of the TOC needed many changes. The subsequent rehearsals included battery command and control elements, selected gun sections and even combat service support (CSS) vehicles to simulate actual emplacement, displacement and movement times. The final rehearsal was a success. These rehearsals were key to our accomplishing the mission during action in Iraq.

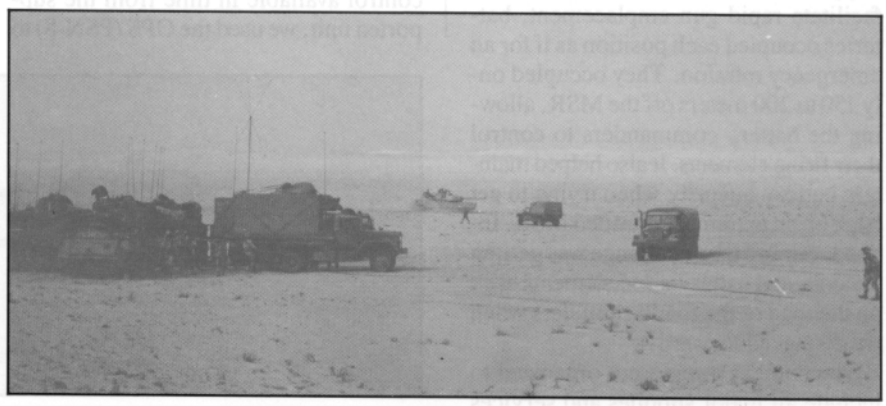
Battalion Movement

Operations in support of the 6th French Division and the other divisions of the XVIII Airborne Corps required revised battalion movement techniques to provide continuous fire support. Operations inside Iraq were characterized by very long distance movements, both between firing positions and across division boundaries when mission assignments changed. The average tactical movement was 30 kilometers between firing positions, and several battalions conducted a terrain march of more than 150 kilometers when missions changed.

The challenge was to achieve speed and distance while providing continuous, accurate fire support and maintaining security. Although trafficability in Iraq was generally suitable for the towed M198, training during Desert Shield had shown that sending any element down an unreconnoitered route could result in many stuck and broken vehicles. Each battalion decided to minimize the number of elements moving on the battlefield, move all elements on a single primary route to increase control, form a battalion advance party and travel as a battalion to increase speed. While two cannon battalions were moving, the third was prepared to accept fire missions.

March Column Organization

A typical battalion advance party was led by the reconnaissance and survey officer (RSO) and was formed from the battalion survey sections augmented by



A Heavy Battalion TOC in Desert Storm. The 18 FA Brigade controlled 5 battalions as it moved into Iraq, including two heavy battalions.

elements of the communications platoon, which provided security and road guards as required. The battery advance parties traveled with the battalion advance party until they reached their firing positions. The battalion advance party had bought signs locally and had a large quantity of chem lights to mark the route. Additionally, it carried mine detectors, nine global positioning system (GPS) devices and several Trimpacks and long-range aid to navigation (LORAN) devices for navigational assistance. The GPS established a survey control point (SCP) if the position and azimuth determining system (PADS) couldn't carry survey data far enough forward.

When movement was planned or anticipated, the RSO was briefed on the axis of advance and desired position areas along the axis. The mission of the battalion advance party was first to identify and mark a single trafficable route that led to the position area and then to prepare positions for occupation by firing battery elements. A simple route-marking SOP was used to identify turns and key points along the route for both day and night operations. The ADA attachments moved either with the advance party or to the flanks of the lead firing battery. Command and control was organized into a light TOC using only HMMWVs, including the light TACFIRE (LTACFIRE) vehicle for an automated interface to both the brigade and the platoon fire direction centers (FDCs). By establishing a standard battalion order of march, the TOC traveled habitually with a firing battery for security.

Command and control was maintained as far forward as possible. The wheeled capability of the M198 howitzer allowed the battalions to move quickly with the supported maneuver elements. To facilitate rapid gun emplacement, batteries occupied each position as if for an emergency mission. They occupied only 150 to 200 meters off the MSR, allowing the battery commanders to control their firing elements. It also helped maintain battery integrity when trying to get back on an extremely crowded MSR. Indeed, our greatest challenge was getting platoon- and battery-sized elements back on the road or the road's shoulders when we displaced forward.

The combat trains were organized to include all major supplies and services required on less than 24-hours' notice, such as additional ammunition, water, fuel and critical repair parts. Recovery vehicles; nuclear, biological and chemical (NBC) decontamination vehicles; and the battalion aid station usually traveled with this element under the control of the headquarters and headquarters battery (HHB) commander. (During some very long moves, the wreckers and fuel tankers moved with the firing batteries for immediate availability.) All remaining vehicles, as well as most trailers and support attachments, moved as part of the consolidated brigade field trains with the service battery commander.

Battalion Assembly Areas

Several times, the battalions moved into areas where the tactical situation was unclear, and security coordination hadn't been completed before occupation. We developed and rehearsed SOPs for occupation of battalion assembly areas from the march during Desert Shield. These battle drills greatly enhanced security, ensured accountability and minimized confusion when we occupied during Desert Storm.

Survey Operations

The division and corps artillery survey elements moved at our rear and couldn't provide data to use for firing in the fast-paced attack. Survey data was carried forward using PADS, which had been initialized at the French divisional control SCP. Each battery established SCPs in its position with its two PADS when we had enough time for updates. When all units were moving in formation, the distances traveled precluded the accurate use of the PADS.

After arriving in the new battalion position area and with no existing survey control available in time from the supported unit, we used the GPS (PSN-8) to establish the battalion SCP, and PADS carried survey data to the batteries. We used our trimpacks to double-check the surveyed locations. Directional control was established with PADS, once the SCP was emplaced. We used simultaneous observation and magnetic methods with a correction factor based on marginal map information as backups and to check our survey data.

TACFIRE/LTACFIRE Operations

The French fire control and direction system didn't interface with TACFIRE. The missions went from French observers to the French LNO in the brigade TOC. He had a battalion automated system identical to that used by the French battalion FDC. The French LNO passed missions to our brigade TOC, which used voice commands to convey the missions to our battalions.

LTACFIRE was the primary digital interface between the brigade's battalions and their platoon FDCs. While LTACFIRE provided the functional equivalent to TACFIRE, the limited number of modems available on our older configuration prevented us from using it as a complete substitute for TACFIRE. Had four or more modems been available, as will be the case in all light divisions, we could have used LTACFIRE as the full equivalent of TACFIRE.

With both LTACFIRE and TACFIRE on hand, a number of operational enhancements were available. Since both systems maintained identical data bases, an automated backup was always available without a mutual support unit (MSU). LTACFIRE was employed as both a "jump FDC" and as a peripheral device in the TOC, using the graphic display function. During fast-moving operations, the LTACFIRE HMMWV

An M198 gun section moves out during Desert Shield. Batteries occupied positions within 150 to 200 meters of the MSR.

with a tent extension and the operations HMMWV (for additional radios) formed the primary TOC for the battalion. LTACFIRE demonstrated full interoperability with existing systems and is more mobile and easier to setup than TACFIRE.

Fire Support for French LNO Operations

Without organic observers, the brigade established liaison with the French Division, the 2d Brigade, 82d Airborne Division and two of the forward French maneuver regiments (battalions). While most missions were passed and cleared through the division LNO, the LNOs operating with the leading regimental TOCs provided the best picture of the battlefield. The LNOs passed vital and immediate information on the front line trace (FLT) and changes to maneuver plans well before this information was available through the division. On several occasions, the LNO with the leading regiment stopped brigade elements from moving beyond forward of the forward line of own troops (FLOT) into active engagement areas.

The LNOs' information cued movements, based on progress of the FLT. They coordinated positions directly with the regiment that owned the ground and ensured integration of operational plans. All LNOs worked alongside a French artillery officer in the maneuver headquarters to form a regimental fire support section for each front-line regiment. Language problems were overcome by using bilingual officers in these key positions. We added resources (radios, vehicles and personnel) to give our LNO teams the means to provide this useful information. The LNOs' information was a major contributor to our overall effort.

Meteorological Support

The meteorological (Met) section was an integral part of all operations. First-round accuracy had to be achieved without the benefit of registrations.

Before Desert Storm, the Met section used the AN/GMD-1 meteorological system and the Marwin-12 Rawinsonde system, which is the heart of the proposed meteorological measuring system (MMS) for airborne and light units. The older system has been in the Army inventory for more than 37 years. The technology lacks repair parts, resulting in a low operational rate. We got the Marwin system during Operation Just Cause in Panama. Fortunately, the brigade had the new meteorological data system, (MDS) AN/TMQ 31, which was fielded in Saudi Arabia.

A howitzer section in B Battery, 5th Battalion, 8th FA fires a mission in Desert Storm. Batteries fired missions originating from US and French forces.

After the Iraqi invasion of Kuwait on 2 August, 1991, part of the Met section deployed with 82d Div Arty, with what we like to call "Met Light." This consists of the Marwin-12 Rawinsonde system mounted in a HMMWV, a PU620 5-kilowatt generator set and a 2 1/2-ton cargo truck to carry expendables. The Marwin-12 Rawinsonde system is a highly-mobile, one-man portable unit. It can operate in a 120V AC mode or 24V DC mode and produce all standard artillery weather messages with the exception of target acquisition Met and fallout messages (although the software is available). It also can produce an air weather service message that we used to create an atmospheric profile for the desert environment.

The MDS has many advantages over the prototype Marwin-12 Rawinsonde system. It has a TACFIRE interface, allows for mobile operations and includes a sophisticated radio direction-finder antenna. This system performed very well throughout Desert Shield and Storm.

During Desert Storm, the Marwin-12 was the primary means of gathering atmospheric data on the battlefield. It was very reliable, accurate, easy to use and greatly improved our artillery first-round fire-for-effect capabilities. The light system, used in conjunction with the MDS helped solve our altitude problem. By using the large balloon that carries the larger radiosonde for the MDS and the small Marwin-12 Radiosonde, we collected data to a much greater altitude for the Army TACMS unit.

Although it was an unique experience to deploy and operate with three Met systems, we look forward to fielding the lightweight MMS, which incorporates the features of the Marwin-12 and the MDS.

Logistical Support

Logistical support for non-divisional FA units was a tough challenge for combat units as well as the corps support units. The most significant problems were having enough haul capability and the availability of Class IX (Repair Parts). We used the vehicle of choice—the heavy expanded-mobility tactical truck (HEMTT)—to increase our haul capability. The HEMTT carried not only all types of munitions, but also water blivets, rations and supplies required for sustainment in a desert environment.

As the Southwest Asia Theater matured, the Class IX dilemma improved. But the audit trail of repair parts was sometimes

unresponsive. As a non-divisional FA unit, we changed direct support (DS) units five times based on the area support concept. The willingness of the DS units to try and keep up with the demands of the extreme environment on their vehicles and equipment was admirable. We should consider having a habitually associated DS unit with the authorized supply list (ASL) and proper maintenance MOS in the Active or Reserve Components.

Maintenance support was likewise frustrating due to the changes in DS units. It was very difficult to find the expertise and equipment for our "one-of-a-kind" weapon throughout the theater. We had to tow unrepaired equipment to our new DS unit each time we changed.

The fact that we were able to accomplish our mission can be attributed to our soldiers and the resourcefulness of our supporting units.

OH58D Helicopters

In the desert, accurate target location is a tough problem. The OH58D proved to be the best system for providing targets, but flying conditions in the desert dictate two pilots instead of a pilot and observer. Pilots can easily learn to do what's necessary to support the FA. The OH58D is the best lasing system for Copperhead rounds. It's also very easy to establish common survey with the OH58D.

Rehearsals with OH58Ds proved invaluable to successful execution in combat. Call-for-fire procedures, both voice and digital, were reviewed with the aviation units. These basic techniques yielded timely, accurate fires and target hits.

Throughout our Gulf War experience, the OH58D-FA team proved itself a significant modern FA tool and combat multiplier available to provide commanders fast, accurate target location.

Navigation

In a land where severe weather conditions change geographic formations at nature's whim, a controlled military movement overland becomes a challenge. In much of northern Saudi Arabia and southern Iraq, frequent wind storms move land masses, cover paved roads and erase recent trails. This land erosion process often makes map spotting and terrain association a futile method of getting from Point A to Point B.

We overcame this navigational obstacle by using satellite, radio and rotating gyro technology. The battalions used HMMWVs equipped with the GPS, LORAN, and the PADS to ensure accurate locations for firing elements.

These systems were not only practical for navigating, but also establishing rapid common survey for an artillery battalion, easily out-pacing the slower methods of conventional survey. One of the major lessons of Desert Shield and Storm operations was that these modern methods of navigation and survey were much more valuable on the offensive, where the battlefield is a highly technical and dynamic environment, than on the defensive, a less dynamic environment.

To minimize errors, system redundancy entails using PADS and GPS simultaneously to cross check each other. Significant differences between the two systems in survey or navigation data alert the operator to a possible problem with one of the systems. The cross check called for two PADS and one GPS used simultaneously to minimize errors during movements.

Platoon versus Battery Operations

The attack was fast-paced and called for quick, responsive fire support. Due to limited trafficability for towed artillery, the battalions had to move on, or in the vicinity of, improved roads. To increase command and control, we moved and employed firing units as eight-gun batteries instead of split platoons on most occasions. The decision to use the "battery" concept was based on a minimal counterfire threat from the Iraqi 45th Infantry Division and the requirement for fast battalion-sized moves and highly accurate massed fires.

As offensive operations began, each battalion received its proposed goose-egg position to occupy. These positions went through both the intermediate and final objectives. Our tactical maneuver plan was to move to one of the goose eggs and get off the MSR into position ready to fire as fast as possible. As each battalion moved along the MSR, it occupied as a battalion in a hasty occupation similar to a battery eight-gun hip shoot.

As stated earlier, the battalion convoy was led by the RSO. With GPS, he led the battalion rapidly to a release point along the MSR, and the firing batteries and TOC immediately dispersed. The mission called for rapid movement of "battalions" of artillery along the axis of advance of an Allied armored division; moving by platoons was too slow. By combining the command and control of both platoons, we enhanced operational control over the batteries and reduced the span of control by one layer, increasing our ability to keep up with armor and mechanized infantry.

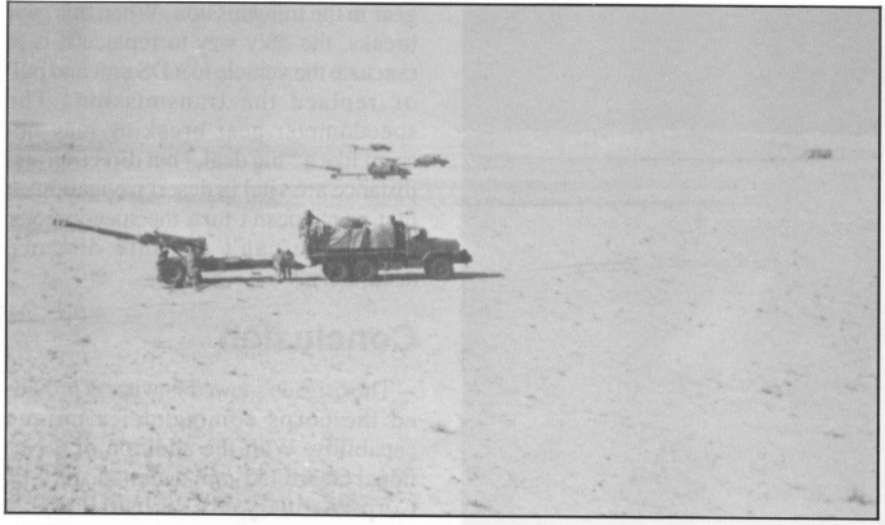
Towed Howitzer Mobility

Off-road M198 howitzer mobility was tricky. Only the C5A Galaxy aircraft can transport M198 howitzers with wide tires; therefore, the 18th FA Brigade usually deploys with narrow, 10-inch wide tires. The narrow tires can handle short moves around Fort Bragg, North Carolina. But during the first convoy in Saudi Arabia, one battalion had blowouts in about 25 percent of its howitzers. The tires are the shock absorbers for the M198. This stress and the intense heat built up on the move caused our 10-inch tires to fail very quickly. We tried changing the tire pressure to the different recommended levels for on- and off-road driving with limited success. We spent 30 to 45 minutes changing our tires' pressure each time we switched road surfaces.

But regulating our tire pressure wasn't the answer. When off road, the narrow tires proved less than adequate as they followed in the tracks of the M925A1 5-ton truck. Often the tires wouldn't even roll, causing the howitzer to act like a 15,000-pound anchor.

The wide balloon tire was the answer. When the balloon tire and rims arrived, we saw a significant increase in the off-road mobility of our howitzers. The off-road skills of our drivers increased, and their confidence in themselves and their trucks grew. Section members learned to recognize terrain that gun trucks could and couldn't traverse. They also recognized when their gun trucks were beginning to bog down and what actions to take to keep the trucks from burying themselves in sand. But the M925A1 towing a howitzer with wide tires was nearly impossible to get stuck and balloon tires didn't blow out as often as the narrow ones.

Once a howitzer became stuck, rapid self-recovery was difficult, at best. Until sand ladders were built by unit maintenance sections, the howitzer was unhitched and rotated 90 degrees. This allowed the prime mover to approach for hookup through undisturbed sand. If the



The M925A1 5-ton truck with balloon tires is nearly impossible to get stuck towing a howitzer in the desert, and the wide tires don't blow out as often.

howitzer remained stuck, a wrecker or HEMTT extracted the vehicle and howitzer. Attempts to "rock" or snatch a howitzer and prime mover from deep sand generally resulted in broken equipment.

The HEMTT is useful in extracting stuck howitzers but isn't an effective prime mover. It wasn't designed to tow a howitzer, and the howitzer isn't designed to be pulled safely behind it. The height of the towing pintle pushes the center of balance past the axle and places unneeded strain on the inside of the howitzer's lowering carriage. This stress is compounded by the howitzer's bouncing like an M102 howitzer when it's towed over rough terrain.

Met, Calibration and MVV

Desert Shield and Storm presented some unique challenges in the areas of calibration, Met and muzzle velocity variation (MVV) management. We identified those areas as possible problems even before deploying to Southwest Asia. Staff studies were conducted and guidance sought from the FA School at Fort Sill, Oklahoma. Our primary concern was for Met.

Meteorological Data. Extreme weather conditions in the theater of operations caused non-standard effects on the ballistic trajectory of the round. Our major concern was the possibility that the meteorological section, for short periods, would be unable to provide current Met.

Anticipating this possibility, the brigade TACFIRE sections compiled meteorological data during the months before Desert Storm. We then categorized this data and compiled a "standard Met" for different weather conditions and times. This information was passed down to the platoon level for use in case we couldn't get or disseminate the current meteorological information. Fortunately, the meteorological sections did an outstanding job of providing our units with current Met on an hourly basis during combat operations.

Calibration and MVV. A second concern was for calibration and MVV management. Our basic load consisted of many munitions and propellants, but because of peacetime safety restrictions on firing ranges, we couldn't determine the calibration data for all of them.

Calibration was the brigade's top shooting priority once the unit deployed to the desert. In October 1990, the brigade had the opportunity to calibrate our largest lot of propellant. Our M90 chronographs were difficult devices to use because of their high failure rate. The M90 is a dated piece of equipment that we ought to replace with the velocimeter. As programmed, every howitzer should have a velocimeter as part of its section equipment.

One week before the Ground War started, while firing on Iraqi observation posts, all three battalions were able to calibrate with M203 Red Bag propellants for rocket assisted projectiles (RAP). We calibrated with other smaller lots of M119A2 and M203 propellants in ground combat operations during the Ground War.

Unlike peacetime exercises, we found ourselves with a large number of different lots for each type of propellant. For the M119A2 propellant, we had 23

An 18th FA Brigade gun crew fires its M198 howitzer in Desert Storm. In the desert, the M198's mobility off road was tricky.

The 18th FA Brigade's battalions gave the corps commander unique capabilities, including the devastating fires of 6-27 FA's MLRS.

different lots. This was a challenge in that the battalion TACFIRE system and battery computer system (BCS) only allow 16 different lots for each propellant type.

Our solution for this lot management problem was a manual tracking system, but it was time-consuming and cumbersome during the heat of battle. To ensure that mission processing and firing didn't slow down, the battalions directed that all lots be distributed equally down to platoon levels using internal lot designators for each. Fire direction personnel were briefed and trained on proper lot management. Large calibrated lots were used for battalion fire-for-effect (FFE) missions while the smaller lots were set aside for adjust fire missions. As MVVs became available for these odd lots, battalions compiled and disseminated the information down to the battery or platoon level.

Equipment Upgrades

The overall quality of our equipment was very high. The Army certainly has gotten its money's worth.

M925A1 Drop-Side, 5-Ton Truck. Our experience in Saudi proved that the M925A1 isn't good enough as a prime mover for an M198 howitzer. It works fine on hard-packed or paved roads, but its cross-country capability is limited. The howitzer, loaded only with section equipment, exceeds the truck's maximum pintle towing weight by at least 600 pounds. When you add ammunition, food and water and a crew of 10, you quickly exceed the vehicle's ability to travel cross country.

To try to make it more mobile, we deflated the tires. We made sand ladders. We lightened the load by leaving behind section equipment that wasn't absolutely mission-essential, and we reduced the ammunition basic load on the truck. The bottom line: the M925A1 isn't up to the task of pulling a 15,750-pound howitzer.

The transfer cracks if you put the transmission in reverse when a howitzer is attached and the transfer is in low. Of course, the -10 operators manuals say not to use reverse in low transfer, but a driver only has to get it wrong *once* to deadline the howitzer system. Our experience shows the M925A2 5-ton drop-side truck with the improved transfer and more torque and air pressure should replace the M925A1.

HEMTT. This vehicle was an outstanding asset. It could travel through all types of terrain—deep sand, mud and rocks—with a full load. We loaded HEMTTs to their maximum gross weight capability. They never got stuck and didn't break down. They were worth their weight in gold.

HMMWV. This is another great vehicle, but not without some faults. First, the HMMWV has a plastic speedometer gear in the transmission. When this gear breaks, the only way to replace it is to evacuate the vehicle to a DS unit and pull or replace the transmission. The speedometer gear breaking may not seem like a "big deal," but direction and distance are vital in desert navigation. If that gear doesn't turn the speedometer cable, you can't measure distance accurately.

Conclusion

The brigade's towed howitzers provided the corps commander a unique capability. With the addition of a National Guard 155-mm battalion and a III Corps Artillery MLRS battalion, we wielded a devastating firing capability.

We used new techniques and tactics to meet the challenges of combat in the desert, but our focus on gunnery basics proved to be the key to our success.

Colonel Freddy E. McFarren commanded the 18th Field Artillery Brigade (Airborne), Fort Bragg, North Carolina, until recently and deployed the brigade to Southwest Asia for Operations Desert Shield and Storm. He's currently the G3 of the XVIII Airborne Corps at Fort Bragg. Previous Field Artillery assignments include a battery command in the XVIII Airborne Corps Artillery and one in the 82d Airborne Division, both at Fort Bragg; and Battalion Commander of 1-319th Airborne Field Artillery Regiment, also in the 82d Division.

Lieutenant Colonel Lonnie L. Johnson, Jr., has commanded the 5th Battalion, 8th Field Artillery, 18th Field Artillery Brigade, from 17 June 90 to the present, during its deployment to Desert Shield and Storm. He also has commanded B Battery, 1st Battalion (Airborne), 319th Field Artillery, 82d Airborne Division and was the battalion's Executive Officer and, later, the Plans Officer, G3 Plans for the 82d Division.

Lieutenant Colonel John R. Wood commands the 3d Battalion, 8th Field Artillery, 18th Field Artillery Brigade, deploying the battalion to Desert Shield and Storm. He previously served as the Division Artillery S3 and Battalion Executive Officer with the 1st Armored Division Artillery in Germany.

Lieutenant Colonel (P) William H. Groening commanded the 1st Battalion, 39th Field Artillery (Airborne), 18th Field Artillery Brigade, until recently and deployed the battalion to Desert Shield and Storm. He's currently the Assistant G3 of the XVIII Airborne Corps. He also commanded two batteries in the 82d Airborne Division Artillery and served as the S2, 82d Division Artillery and Executive Officer of the 18th FA Brigade.