



*Bradley fighting vehicles move forward to a refuel on the move site on March 30, 2015, during the 1st Armored Division's exercise Iron Focus 15 at Fort Bliss, Texas. (Photo by Maj. Leslie Grayham)*

## Maintaining Momentum Through Refuel on the Move

The 1st Armored Division provides lessons learned from conducting refuel on the move operations for the first time since Operation Desert Storm.

■ By Maj. Leslie A. Grayham

**R**efuel on the move (ROM) allows a unit to sustain long distance movements and is normally found at the end of an approach march from the corps support area to the division tactical assembly area.

During World War II, enemy forces found themselves stranded along main supply routes because their

equipment had run out of fuel. The U.S. Army overcame the same problem by tactically refueling its vehicles while on the move.

While Lt. Gen. George S. Patton's Third Army marched across France to face Hitler's forces, it was forced to halt at one point as it ran dangerously low on fuel. Patton's fuel allocation fell 100,000 gallons short of

what was needed to sustain onward movement.

Only when fuel trucks were brought forward as part of the Red Ball Express to resupply Patton's tanks were his forces able to continue their advance.

In today's Army, ROM operations are no longer practiced regularly. During a training exercise in 2015,

the 1st Armored Division executed a ROM for the first time since Operation Desert Storm.

## ROM Doctrine

According to Army Techniques Publication 4-43, Petroleum Supply Operations, the primary purposes of ROM operations are to provide “a ‘fuel splash’ for convoy movements to extend maneuverability to reach the intended destination when complete refueling operations are either not practical or unneeded” and to provide “fuel between engagements to extend the time that U.S. forces can spend on the objective.”

Increasing units’ time on the objective by decreasing their need to return to the rear to replenish fuel allows them to sustain an extended engagement with the enemy.

A ROM is not meant to operate like a gas station where you fill your fuel tank until it is full. Instead, each vehicle receives a predetermined quantity of fuel or an amount of time to receive fuel at the ROM site and then rejoins its formation to continue its journey.

## Iron Focus 15

In March and April 2015, the 1st Armored Division sponsored Iron Focus, an annual field training exercise in which a heavy or Stryker brigade combat team (BCT) and its enabling units spend two weeks in the deserts of Texas and New Mexico conducting decisive action operations.

In keeping with the division commander’s intent, the 1st Armored Division executed a 16-point ROM during the exercise.

The ROM occurred on March 30, 2015, and refueled 234 military vehicles including Bradley fighting vehicles, Abrams tanks, and Strykers.

An armored or Stryker BCT packs a heavy punch with its powerful tanks, Bradley fighting vehicles, or Strykers. However, the capability comes at a price; these assets use an enormous amount of fuel when they are conducting battlefield operations.

ROM operations become a force multiplier for maneuver units by enabling the combatant commander longer operational reach deep into the enemy’s battlespace, potentially catching them out of position and off guard.

During contingency operations, the decision to conduct a ROM is

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carefully analyzed by the commander because it involves allocating a large percentage of direct support fuel assets that would normally be used to support a brigade.

Additionally, a ROM presents a high-value target to the enemy. A huge portion of the division’s fuel assets, as well as its maneuver units, could be caught while assembled in one location, making them very vulnerable to attack.

Factors such as the commander’s intent, terrain, enemy situation, troops, and time available all contribute to the decision of conducting a ROM and the location.

The ROM operation for Iron Focus 15 was conducted in three phases: planning and preparation, training and rehearsals, and execution.

## Planning and Preparation

Preparation for the ROM started with a rigorous planning process approximately four months prior to the March execution date. It began with the receipt of the division’s operation order, which stipulated the ROM operation as a key task of Iron Focus 15.

The 142nd Combat Sustainment Support Battalion (CSSB) at Fort Bliss, Texas, was given the lead role in executing this task.

Upon receipt of the operation or-

der, the fuel sections of the 504th Quartermaster Company, the 142nd CSSB, and the 501st Brigade Support Battalion (BSB) from Fort Bliss were given a warning order to be prepared to execute a 16-point ROM during the decisive action portion of the training exercise.

Although conducting a ROM

is normally under the direction of a BSB, the division’s order placed the CSSB in charge of this mission with augmentation from the 501st BSB.

Next, a deliberate military decisionmaking process (MDMP) commenced. Representatives from the 1st Armored Division Sustainment Brigade and the 142nd CSSB support operations (SPO) sections and the S-3 and S-4 sections came together to war game and plan the ROM. The representatives identified the personnel and equipment needed to successfully execute the ROM and possible shortages using mission requirements based on the commander’s scheme of maneuver nested in the division commander’s intent.

The division commander’s intent was for the 142nd CSSB to conduct a 16-point ROM in an austere location in the maneuver area using M978 heavy expanded-mobility tactical trucks (HEMTTs). M978 HEMTTs were chosen based on the rugged terrain anticipated for the decisive action portion of the exercise.

The M978 HEMTT has a capacity of 2,500 gallons of fuel and, when fitted with a modified ROM kit, is capable of distributing fuel through four points at a rate of approximately 20 to 25 gallons per minute depending on terrain and other factors, in-



*A Soldier extinguishes a fire on a 5,000-gallon fuel tanker just two miles into its 120-mile journey to the refuel on the move site during Iron Focus 15 at Fort Bliss, Texas. (Photo by Maj. Leslie Grayham)*

cluding the size of the hoses used to distribute the fuel from the fuel tanker, the distance from the tanker to the location of each of the four fuel points, and whether or not all points are running simultaneously.

The 142nd CSSB and 501st BSB's ROM kits are designed to be used with the M969 semitrailer, which has a 5,000-gallon capacity and can distribute fuel from eight points at rate of approximately 30 to 35 gallons per minute.

The MDMP also allowed the 142nd CSSB to integrate enablers into the planning process. This included A Company, 1st Battalion, 35th Armored Regiment, from Fort Bliss, which was tasked with providing force protection for the ROM

site, and a fuel platoon from the 501st BSB.

### **Training and Rehearsals**

Site selection was critical. The location had to be practical, have a good avenue of approach and reasonable natural protection, and still fall within the commander's scheme of maneuver.

Site reconnaissance (recon) and an initial rehearsal of concept drill were conducted using a convoy comprising two M978 HEMTTs (each containing 2,500 gallons of fuel), two light medium tactical vehicles (one transporting the ROM kit and the other transporting the 25-Soldier fuel platoon), two M1151 humvees, gun trucks for security, and an M998

humvee that was used as a command vehicle.

At the site, Soldiers from the fuel platoon rehearsed setting up an eight-point ROM and pumped fuel through all points to test the equipment. This procedure was designed to uncover any leaks in hoses or equipment faults. Conducting the recon in conjunction with a hands-on rehearsal gave Soldiers a chance to experience the environment and ROM equipment assembly and disassembly before the actual event.

Two more rehearsals were conducted in the 504th Quartermaster Company motor pool. The events included players from the BSB and the CSSB to ensure that everyone was prepared to carry out their roles.

## Complications

A fragmentary order was released two days before the ROM, changing its location to accommodate last-minute changes to the mission and scheme of maneuver. Because there was no time to conduct recon at the new site, the team had no idea what to expect. The 142nd CSSB commander, the ROM's mission commander, pulled the team together and prepared to execute the mission.

Because the ROM was conducted in an austere location far forward on the battlefield, the ROM team had to transport 25,000 gallons of fuel by tactical convoy 120 miles forward from the logistics support area.

Approximately two miles into the journey along the main supply route, the right rear wheel hub of a 5,000-gallon fuel tanker caught on fire. The quick reaction of the tanker's crew and the Soldiers following behind it helped to extinguish the huge flame that had developed and saved the tanker and the 5,000 gallons of fuel on board. After fighting the flames for about an hour and subsequently switching tankers, the convoy continued to the ROM site.

Once on site, the team discovered that the location was heavily overgrown with shrubs and brush. Soldiers had to carefully position the fuel tankers to avoid damaging the tires. While assembling the fuel points, the team discovered that two of the nozzles were damaged and could not be used. Luckily, extra nozzles were on hand, and the team was able to continue the mission.

Heavy dust conditions on the trail leading to and at the actual fuel points were also an issue. These conditions lived up to the 1st Armored Division commander's intent of "tough, realistic training," so the team adapted and overcame.

## Execution

The 142nd CSSB was task organized with an armor company to provide security for the ROM site. This unit, A Company, 1st Battalion,

35th Armored Regiment, cleared and secured the site prior to the fuel team's arrival and arrayed its Bradley fighting vehicles and tanks to form a 360-degree security perimeter around the site for the duration of the ROM operation.

Additionally, intelligence, surveillance, target acquisition, and reconnaissance assets were on site to provide air cover.

The 501st BSB and 142nd CSSB team conducted the ROM at a point in the battle when the maneuver units were transitioning into their attack positions on the battlefield. The ROM configuration depended on several factors: the equipment being used (for instance two M978s for an eight-point ROM versus one M969 for the same eight points), location, and the enemy and security posture in the area.

The layout of the ROM during Iron Focus consisted of a staging area where all vehicles assembled into columns of similar vehicles while they waited to receive fuel, the fueling site where the 16 points were set up in a linear configuration, and a marshaling area where vehicles reassembled after receiving fuel.

## Lessons Learned

Based on feedback from the maneuver units that participated and the Soldiers that ran the ROM operation for Iron Focus 15, the ROM was a great success. The BSB and CSSB learned several lessons from the operation.

**Good communication.** Every unit participating in the event needed to know and understand the plan in order to help it run smoothly. Good communication was essential among all the players, including the maneuver units going through the ROM.

**Clear signs and leaders.** Having a well laid out ROM site with each area clearly marked and a noncommissioned officer-in-charge for each section worked well for Iron Focus 15. This facilitated better management of the maneuver vehicles flow-

ing through the ROM.

Using a "follow me" vehicle to lead the columns of vehicles from the staging area to the fuel points also worked well. This was done because the staging area was far from the fuel points.

**Weekly in-progress reviews.** Weekly in-progress reviews allowed all stakeholders to come together for an azimuth check on how preparation and training were progressing.

Some of the issues faced were equipment shortages, competing mission requirements, and shortages of qualified fuel handlers in the BSB and CSSB. These challenges were resolved by asking for assistance from higher headquarters and reaching across other brigades and sustainment units in the division for help.

Having weekly meetings kept everyone informed. Finally, by conducting rehearsals with all players, the team was able to hone its skills before the day of actual execution.

The Army has been able to achieve and maintain its status as the greatest fighting force because of its ability to tactically and efficiently extend its operational reach deep into the battlefield through outstanding logistics. ROM is one logistics capability that allows the Army to take the fight to the enemy with relentless pursuit, overwhelming firepower, and confidence.

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Maj. Leslie A. Grayham is the battalion support operations officer for the 142nd Combat Sustainment Support Battalion, 1st Armored Division Sustainment Brigade, at Fort Bliss, Texas. He holds a bachelor's degree in computer information systems and business management and a master's degree in transportation and logistics management. He is graduate of the Officer Candidate School and the Combined Logistics Captains Career Course, and he is currently enrolled in distributed learning Intermediate Level Education.