The Road to Sayed: Lessons Learned From a Recovery Operation in Northern Afghanistan

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As we pushed our column of four mine-resistant ambush-protected (MRAP) all-terrain vehicle (M–ATV) gun trucks, two wreckers, and an M916 line-haul truck with a flatbed trailer closer to our objective, wheels were skating dangerously close to the sheer dropoffs. The road seemed barely wide enough for the M–ATVs, and one could not help but wonder how the MaxxPro MRAP recovery vehicle (MRV) and heavy expanded-mobility tactical truck (HEMTT) wrecker were faring. As we continued on, cutting deeper into a moonscape land of hills, valleys, narrow wadis, and dry creeks that verged on being considered small canyons, doubts about the feasibility of reaching the objective lingered in each Soldier's mind.

The road to Sayed is little more than a goat trail, a trading route likely used for hundreds of years if not longer. Barely improved, its continued use is indicated by the fact that it is almost inexplicably found on contemporary military maps, including those loaded onto Blue Force Tracker. Generations of use have worn the trail deep into the limestone hills that dominate the Sayed landscape, and wind and water erosion has threatened what little progress has been made in improving the surface.

MRAP Rollover

In August 2011, an RG–31 MRAP in a tactical patrol conducting battlefield circulation through the remote Sayed District west of the town of Sar-e-Pol drove up the steep rock face alongside the narrow trail and rolled over. The vehicle plummeted down a steep slope and settled some 25 meters below in a ditch that ran parallel to the narrow valley.

The patrol had been on the road for nearly 10 hours as it slowly worked its way back toward its headquarters in Mazar-e-Sharif. Possibly weary from the long hours on the road, the driver of the RG–31 likely overcorrected in avoiding potholes; his left front wheel caught the limestone wall along the road and caused the vehicle to tip over.

The MRAP completed two full flips before it became wedged in the ditch below, resting on its passenger side. A trail of debris and Common Remotely Operated Weapons Station components littered the gouged earth above.

Thanks to the fundamentals of vehicle safety, all four crewmembers walked away—they had all been wearing their seatbelts and Kevlar helmets.

Seeking Help for Recovery

The patrol team members secured the site, called for the assistance of locally stationed subordinate units, and relayed the situation to their higher headquarters at Camp Marmal, just outside of Mazar-e-Sharif in northern Afghanistan. Since the supporting task force headquarters had limited logistics capability in theater, it notified the 170th Infantry Brigade Combat Team of the incident; the brigade then activated its area recovery plan. B Company (Field Maintenance), 24th Brigade Support Battalion (BSB), received the mission at approximately 1100 hours.

Meanwhile, the patrol team on the ground in Sayed District was looking at what seemed to be a lost cause. With its nose dug deep into the packed earth, the 11-ton vehicle was wedged into a narrow ditch 25 meters below the road and 15 meters or so above the valley floor. The nearest improved road was approximately 10 miles away. The valley itself was almost unnavigable, crisscrossed by ditches and shallow wadis. The chances of recovering this expensive piece of equipment appeared slim; the dangers of staying on site for hours, if not days, became somewhat higher.

After inventorying the on-hand demolition materials and determining that he did not have nearly enough C4 to blast the vehicle in place, the onsite commander called for an airstrike. The call was denied; recovery help was already on the way.

MRAP Recovery Challenges

The use of MRAP vehicles in the recent Iraq and Afghanistan wars has led to a number of problems for recovery teams. The size and weight of MRAPs mean that they do not fit readily within the pre-9/11 Army's vehicle recovery procedures. MRAPs were too heavy to be lifted by a HEMTT's crane and could not to be reached by the M88A1 or M88A2 recovery vehicles in many locations where they commonly operated.

To meet this new demand, the Army and Marine Corps turned to industry to develop a solution. In the meantime, recovery crews learned to adapt, overcome, and improvise using the M88 and the HEMTT. In both Iraq and Afghanistan, the venerable M984 HEMTT wrecker became the go-to system for combat vehicle recovery. HEMTT teams often worked in pairs to enhance their capabilities. HEMTTs have been regularly employed alongside a variety of supporting systems, including the heavy equipment transporter and the smaller interim Stryker recovery system, which was designed to be used with Strykers but otherwise operates like a heavy equipment transporter.

B Company's recovery team conducts an initial survey of the recovery site of a rolled RG–31 MRAP.

Developing a Recovery Plan

In the remote valley in Sayed, the onsite commander and the lieutenant leading the security detail both assumed that the RG–31 could not be recovered. In truth, had a specialist with the additional skill identifier H8 (wheeled vehicle recovery) been on the road with them, he probably would have come to the same conclusion. A few of the Soldiers who later arrived on the scene to help secure the site had maintenance backgrounds and concurred because of the difficulty of the road into the recovery site and the challenging nature of the site itself. They believed that it was highly unlikely that a recovery team would ever make it to them. Even if a recovery team did make it to the site and managed to extract the RG–31, the task of hauling it out of the valley seemed impossible.

Back at Camp Deh Dadi II, west of Mazar-e-Sharif, where the 24th BSB was headquartered, B Company was preparing its on-call recovery team (conducting precombat checks and inspections and rehearsals) for the mission and gathering intelligence. The battalion S–2 shop used satellite imagery tools such as Google Maps (Secret Internet Protocol Router Network version), the Tactical Ground Reporting System, and overhead stills of the recovery site captured by an unmanned aircraft system to develop a thorough route reconnaissance. This aided the recovery team in planning its operation.

Battalion leaders could see that the vehicle was located far off the road and decided to take two recovery vehicles, an MRV and an M984 HEMTT. The road to the recovery site west of Sar-e-Pol would be extremely challenging and possibly push the limits of the heavy recovery vehicles. Planners considered using a recently fielded interim Stryker recovery system to help haul out the RG–31. However, the route reconnaissance helped the battalion and company leaders determine that the

MaxxPro MRV Operations in Afghanistan

In May 2011, units across Regional Command North in Afghanistan received their first MaxxPro MRAP recovery vehicles (MRVs), which were fielded in conjunction with an 80-hour block of instruction for recovery crews. The MRV is a massive vehicle with considerable capability, and experience in the field quickly demonstrated the unmatched potential of the MRV's lifting and towing capability. However, some H8-qualified personnel expressed reservations about the vehicles' utility in some of Afghanistan's more austere terrain.

Developed based on an operational needs statement derived from combat lessons demonstrating the need for a vehicle with improved lifting and towing capability over the HEMTT, as well as improved MRAP crew survivability, the MRV was designed specifically to handle MRAP-class up-armored vehicles and any other wheeled vehicles in the Army or Marine Corps fleets, including Strykers and light armored vehicle (LAV)–25s.

Built around a 30-ton lifting boom, the business end of the MRV also includes an impressive set of 25-ton recovery winches and a 50-ton drag winch. Powered by an International DT 9.3-liter, 375-horsepower engine, the MRV weighs roughly 58,200 pounds, giving it an optimum power-to-weight ratio of 1 to 155.2 compared to the HEMTT's 1 to 77.6.

The MRV's wheelbase, an early concern for recovery crews, spans 408 inches between front and rear axles, with only 10 inches of differential ground clearance, making the possibility for bottoming out on uneven terrain seem high. However, for highway operations supporting logistics convoys and route clearance packages along Afghanistan's arterial lines of communication, where improvised explosive device strikes have been a constant threat, nothing could feasibly match the capability and survivability of the MRV.

interim Stryker recovery system was too long to make some of the hard turns, so the planners opted for the less capable but more maneuverable M916 truck with a lowboy trailer.

Mission Analysis

The hasty mission analysis identified a handful of concerns. The first was security, which would be aided by the presence of various U.S. combat units in the vicinity and the fact that the patrol element had a cordon around the rollover site. The next was fuel consumption, as the time and distance factors would potentially strain the capacity of the M–ATV's fuel tank. Third was life support, since the mission likely would require more than 1 day. Last was communication because the unit lacked the high frequency radios that would allow communication across such a long distance.

En route security would be provided organically by the 24th BSB, which operated a number of convoy security platoons to support the battalion's operations. Added care was advised, however, because the route between the towns of Shirbirgan and Sar-e-Pol was an insurgent hotspot. (The Swedish units that operated in the area had reported multiple troops in contact.)

B Company had a standing quick reaction force (QRF) to serve as the security detail for any unforeseen recovery missions. However, at the time of the recovery call, half the QRF was dedicated to a force protection mission supporting a military transition team at Camp White Horse in Mazar-e-Sharif. As such, the leaders of B Company had to request augmentation from A Company, 24th BSB.

To meet refueling requirements, an M978 fuel tanker was added to the task organization. This tanker would be dropped off at a Swedish provincial reconstruction team base in Shirbirgan. The same base would provide life support for the recovery mission as required.

The battalion tactical operations center coordinated with a supported task force and the Swedes to identify all radio frequency and Blue Force Tracker roles to ensure that the mission commander had all of the points of contact he needed. Blue Force Tracker text would be the primary means for communicating for much of the operation.

In addition to providing two additional gun trucks (M–ATVs), A Company also provided the M978 HEMTT fueler and an M916 tractor with a lowboy trailer.

The Road to Sayed

After conducting hasty rehearsals and a patrol briefing for all crews, the consolidated recovery mission, consisting of four gun trucks (three M–ATVs and one RG–33 MRAP), two recovery vehicles (a HEMTT wrecker and an MRV), a HEMTT fuel truck, and the M916 tractor with trailer, pushed out at 1600 hours under command of the B Company commander. Concerned about the possibility of a "no go" call on site, which would potentially lead to millions of dollars of Army property being given the "JDAM treatment" (destroyed in place using joint direct attack munitions), the 24th BSB commander had requested that a company commander personally lead the mission, even though recovery and QRF missions are traditionally led by lieutenants.

The B Company commander was a seasoned Ordnance (now Logistics) officer with combat experience in Iraq,

Weighing more than 58,000 pounds, the mine-resistant ambush-protected (MRAP) recovery vehicle (MRV) spans 34 feet between its front and rear axles. Its enormous size made it difficult to drive the vehicle on the roads to get to an MRAP rollover site near a remote road in Afghanistan. The MRV that was used in the recovery mission did not have the "rocket-propelled grenade net" fixed to the cab. With this attachment, the MRV would not have been able to fit on the narrow trail.

including recovery missions. Along with the company commander, the B Company security element noncommissioned officer-in-charge (NCOIC), a senior H8-qualified mechanic, would lead the dismounted element on the objective, while a pair of recovery NCOs commanded the HEMTT wrecker and MRV.

Using the free text capability on its Blue Force Tracker, the recovery team immediately established direct communication with the combat element guarding the recovery site some 6 hours away. The recovery team provided real-time guidance and successful en route coordination that allowed it to continue to develop its plans as it made the long journey toward Sayed District.

As the patrol advanced, it was able to better assess the terrain based on updates from the onsite security elements. This led both units to agree that the risk of accident inherent in a recovery effort during the hours of darkness would far outweigh the tactical risk to the combat elements securing the site for an additional day.

The 24th BSB team made the precoordinated stop at the Swedish provincial reconstruction team base in Shirbirgan just before sunset. There the HEMTT fueler would be staged for the remainder of the effort. The gun truck and wrecker crews were placed into a rest cycle for a predawn departure. The commander's intent was to link up with a small escort team at dawn in Sar-e-Pol, an hour to the south and only 10 miles from the objective.

The team set out before dawn, travelling south from Shirbirgan to Sar-e-Pol. At Sar-e-Pol, the recovery team linked up with a pair of gun trucks from the supported task force and followed them to the recovery site. The 10-mile trek from Sar-e-Pol had appeared challenging on imagery, but the reality of the road proved to be even worse. High hills, sharp turns, deep dropoffs, and narrow passages made for a slow and arduous journey.

Going in, the biggest concern had been the longest

After hours of attempting more delicate procedures to remove the vehicle, the recovery team resorts to pulling the RG–31 from the ditch using a heavy expanded-mobility tactical truck's winch and a 60-ton snatch block.

vehicle, the M916. However, in practice, the M916 was not the problem; the MRV was. Struggling on many of the hills, the MRVs International DT engine showed its limitations. The vehicle also took a beating as it hit repeated dips and potholes, bottoming out numerous times. The crew described the ride as being somewhat reminiscent of a boxing match—they just kept taking hits. It all nearly came to a dramatic halt when the MRV failed five times to surmount a steep hill. Finally, after a running start, the MRV cleared the crest and rocketed over the far side. The mission continued.

"Sure We Will"

Upon arrival at the recovery site, the recovery team linked up with the ground command element, discussed security, and then discussed their plan of action for extracting the vehicle. "Do you really think you can recover it?" the onsite commander asked. "Sure we will," the recovery team commander responded, not bothering to add that getting it out of the valley would possibly be the biggest challenge.

It was immediately evident that the RG–31 would not be able to travel safely out of Sayed on the back of a flat-bed trailer. This meant it had to be recovered in good enough condition to be towed behind the HEMTT or MRV. The vehicle had extensive damage, but although the front axle was bent, the rear axle appeared to be intact. The team conducted a 360-degree assessment of the vehicle, evaluated various connection points, and then developed an initial course of action.

The basic plan called for using the MRV's boom to lift the RG–31 out of the ditch where it was wedged, while the HEMTT winched it forward from a lower position. They would then work it laterally along the hillside until it eventually made it back onto the road. The plan may very well have worked, but the team never got a chance to try.

The MRV suffered a total power takeoff failure, leaving anything attached to the internal hydraulics system, including the lifting boom, inoperable. [Power takeoff refers to using power from an operating power source, such as a running engine, to operate an attachment, such as the MRV's boom.] Rather than lifting the RG–31 out of its trap, the MRV became a 29-ton roadblock, guarding the hill against the meandering trail of herders and nomads who passed by at frequent intervals.

Plan B

Without the benefit of the MRV, the recovery team hooked up the HEMTT to see what could be achieved with that asset alone. The original plan was modified to use the HEMTT's drag winch to pull the RG–31 up and out of the ditch along the side of the road. The HEMTT was powerful enough to pull the RG–31 up the incline. However, the HEMTT's angle above the ditch created a complex geometric problem; the mechanical force of the winch served only to dig the RG–31 deeper and deeper into the earth, thus increasing resistance and risking severe damage to the RG–31. After attempting to use a variety of hook-up points, a process that took hours, the RG–31 had moved perhaps 5 meters of a required 50.

Plan C

Into the valley went the HEMTT. The team NCOIC, an H8-qualified sergeant first class with 17 years of experience, determined that towing from a lower angle would negate the RG–31's inclination to dig in. Getting the HEMTT in place took some careful driving and a good amount of time. Operating now in a mid-morning sun that was driving temperatures well above 100 degrees, the only good thing was the arrival of a pair of Apache attack helicopters to provide aerial weapons coverage.

The first efforts to drag the RG–31 from a low angle showed some progress, but the truck was still dug deeply into the ground. The recovery crews relented and pulled out their "ace in the hole," the 60-ton snatch block.

Although the snatch block was certain to give the HEMTT enough mechanical force to winch the RG–31 free, the recovery team was concerned about damaging the truck in the process. Having deemed use of the flatbed inadvisable given the terrain, the only legitimate hope of getting the RG–31 out of the valley was to tow it behind the HEMTT. For that to happen, the rear axle had to be preserved. (The front axle was already snapped in half and the right-front tire folded under the chassis.)

To minimize the risk of added structural damage, the team hooked up the towing winch high on the RG–31, hoping to roll the truck out of the ditch and onto the valley floor. This still risked bending or breaking the rear axle; however, the chance of the vehicle landing upright was almost as good. Time and the tools available left little in the way of alternatives.

The RG–31 was hooked up to the HEMTT, with the drag winch cable looped through the snatch block theoretically doubling the winching capacity. Slowly and steadily, the HEMTT pulled on the RG–31. Rock and soil began to shake loose, and the MRAP began to move forward, breeching the top of the ditch in a plume of dust as hundreds of pounds of earth gave way. Cresting the ditch, the RG–31 pitched nose down and slid into the valley, surprisingly enough still on its side.

The recovery team next deliberately tipped the RG–31 as gently as possible, using both the HEMTT and the winch of an M–ATV to stabilize it. Resting awkwardly on 3 wheels, the RG–31 was at last free. The mechanics of hooking it up to the HEMTT and getting it out of the valley would take another hour or so, but the balance of the problem had been overcome. With a final low-level pass from the guardian Apaches, the patrol would soon be on the road away from Sayed and toward Sar-e-Pol.

The reliability of the MRV, like many new Army systems, came into question. Weeks later, after hours of troubleshooting by Army mechanics and field service representatives, the source of the power takeoff failure was found to be a simple fuse, which had been knocked loose in the rough drive into the Sayed valley.

The importance of a backup plan in recovery operations cannot be overemphasized because unexpected factors nearly always come into play during a dedicated recovery mission. Recovery plans, like any other operation, should be categorized into primary, alternate, contingency, and emergency courses of action.

Intelligence preparation of the battlefield, a factor that is not often emphasized with sustainment operations, is more important than ever in a recovery operation. If limited assets are available, intelligence preparation of the battlefield is that much more critical because it can help commanders make decisions with minimum risk.

Assigning H8-qualified personnel to a recovery section is important, but equally important is practical field training in a complex and realistic environment that replicates the chaos and unexpected nature of combat operations. B Company's crews were lucky enough to receive a very high level of predeployment training while at the Hohenfels Training Area in Germany. The recovery experiences there, as well as the institutional experience brought by the NCOIC onsite, proved invaluable. Throughout combat operations in Regional Command North, the 24th BSB also benefited from individual and like-vehicle training for all vehicle crews conducting operations outside the wire.

Finally, the Warrior Ethos, a never quit, never accept defeat mentality is absolutely vital. Recovery operations can be daunting, dangerous, exhausting, and frustrating. Discipline, mental fortitude, and physical toughness are often at a premium and should never be discounted.

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