

# IED Defeat:

## Observations From the National Training Center

By Lieutenant Colonel Thomas H. Magness

**T**here is no silver bullet. Try as we might, there is no single tool capable of defeating the use of improvised explosive devices (IEDs) on the battlefield—whether in Iraq, Afghanistan, or at the National Training Center (NTC). No amount of armor plating or distribution of electronic countermeasure (ECM) devices will guarantee the safety of our soldiers and the freedom of maneuver of our forces. Old school thinking assumes that the enemy will be successful and friendly forces must be prepared to react—at the point of blast.

Leaders at all echelons who seek *proactive* IED defeat solutions should consider the following nine observations. Based on trends at NTC and framed by the fundamentals of assured mobility, they are a combination of those things that engineer units and leaders (as part of combined arms teams) do well, and must sustain—and do not do well, and must improve. They all carry with them a consistent theme: skills and tools. These are the elements that make engineer soldiers unique. They are the special “brand” that are applied across the entire combat team by those whose principal focus from sunup to sundown is enabling mobility in concert with maneuver. They produce a mentality that resonates throughout the entire formation: *We are all soldiers. We are not all infantry. We are uniquely skilled and equipped for some specific, challenging missions, to include addressing the No. 1 threat to the mobility of the force—IEDs. We are combat engineer sappers!*

**Predict.** Predict actions and circumstances that could affect the ability of the force to maintain momentum.

**Observation No. 1:** Implement rigorous pattern and terrain analysis.

Databases of IED events must be linked vertically and horizontally. They must be searchable and queryable to facilitate analysis at the tactical level. This is not something that is reserved for some theater-level intelligence cell. The need for real-time intelligence and enemy patterns requires tactical-level information management systems and leaders comfortable with the exploitation of this analysis. There is clearly more we can and must know about the enemy and how he fights. Tactical leaders must demand accurate and consistent reporting from every IED incident, as well as every route reconnaissance and clearance mission. Pattern analysis is only as good as the data that feeds it. At a minimum, tactical reports must include the location; date/time; friendly target; IED components; initiation system; friendly/enemy battle damage

assessment (BDA); friendly/enemy actions; names, descriptions, and addresses of suspected or known insurgents; and observations and key lessons learned.

Our terrain analysis must be focused to facilitate not only “seeing the terrain” but also “seeing the enemy (who is using IEDs)...on the terrain.” Our own observations at NTC indicate an erosion of terrain visualization skills and of confidence in our visualization tools. Soldiers and leaders must be able to use tools such as TerraBase, FalconView™, Digital Topographic Support System (DTSS), and Urban Tactical Planner™ (UTP) to identify terrain that favors the enemy’s use of IEDs. They must be able to import imagery, video, and digital products to facilitate real-time “change detection” (the ability to identify differences and possible IED indicators along or adjacent to a route). Topographic products must allow the commander to see the enemy’s patterns of IED employment on the terrain that favors their use. As new tools are developed for urban terrain visualization, engineers must be the terrain visualization masters. (See articles on pages 11 and 14.)

**Observation No. 2:** Conduct postblast reconnaissance.

Too often our IED event databases lack the necessary information to facilitate detailed analysis. We cannot miss the critical step of postevent analysis. Determine the necessary components of postblast reconnaissance and train our engineer soldiers, if not the entire combat formation, on the fundamentals of this requirement. This is evidence collection—a technical reconnaissance task, not higher-level analysis such as that conducted by an explosive ordnance disposal (EOD) technician. Units regularly leave the blast site and assume that the already-stretched EOD assets cannot accomplish this low-priority task. There is much to be gained from each event if a trained analyst has access to digital photographs, measurements, residue, detailed reports, and patrol backbriefs. Again, the output from our enemy pattern analysis is only as good as the input.

**Detect.** Detect early indicators of impediments to battlefield mobility, and identify solutions through the use of intelligence, surveillance, and reconnaissance (ISR) assets.

**Observation No. 3:** Follow the rules of Reconnaissance and Surveillance (R&S) 101.

Pattern and terrain analysis, along with other intelligence products and data, must result in a focused tactical R&S plan. This is no change from the way we have conducted tactical operations for years. Areas in which the terrain favors the

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enemy's use of IEDs, and that are consistent with previous patterns, become named areas of interest (NAIs). Observers (scouts, patrols, unmanned aerial vehicles [UAVs], and aerial observers) must be specifically tasked to answer IED-specific priority intelligence requirements (PIR). Command posts manage the execution of this focused R&S plan and provide vertical and horizontal situational awareness of the results. Similarly focused targeting processes must result in PIR/NAI/observer linkages tied to proactive reconnaissance of IED recruiters, trainers, suppliers, financiers, bomb makers, and leaders in the IED "food chain." We do not need new doctrine in this area—we need the focus and execution embraced by our current field manuals.

Engineer staff officers bring focus to this process. Engineer leaders leverage all of the reconnaissance tools and special equipment within their respective organizations (see Figure 1). Terrain visualization products are developed to facilitate the proposed observer plan. Patrol debriefs and other intelligence from subordinate units conducting route reconnaissance provide updates to the R&S plan as it is developed. The technical analysis of IED patterns; bomb making material; initiating systems; and enemy tactics, techniques, and procedures (TTP) help focus NAIs and observers at points far "left of blast."

**Observation No. 4:** Conduct focused route reconnaissance.

Each combined arms formation must have dedicated units in which unique skills and tools for the reconnaissance task reside. These units should be experts in the various reconnaissance and react-to-contact battle drills associated with this mission. They must know their route intimately from multiple repetitions of disciplined travel. They must be "human change detectors." They are drilled in the ways of the enemy and regularly updated on enemy patterns and emergent friendly

and enemy TTP. These units are the first to gain the skills associated with the Explosives Ordnance Control Agent (EOCA) Course that spans the gap between combat units and EOD and are prepared to respond to some battlefield explosive threats. These units are the first to receive the equipment and associated training to conduct this focused task to include ECM devices, robotics, and mobile counter-IED technologies. These skills and tools cannot be randomly distributed across the formation. Nor can this critical reconnaissance mission be randomly assigned to units that lack the skills and tools for it. Engineer reconnaissance and clearance units and sapper organizations focused on these tasks must be formed, focused, resourced, and trained now.

**Prevent.** Prevent potential impediments to maneuver from affecting the battlefield mobility of the force by acting early.

**Observation No. 5:** Focus your targeting.

The most effective way to prevent the effects of IEDs on friendly forces is to deny the enemy the opportunity to ever get an IED on the ground. Be proactive. Focus the targeting process on insurgents and enemy operatives associated with any link in the IED chain (see Figure 2, page 30). Use terrain and pattern analysis tools and products to focus operations to deny the enemy the use of key terrain to his advantage. Combined arms organizations must own their respective battlespace. Do not cede it back to the enemy.

Engineers must be engaged in the targeting process, especially at the brigade and task force levels. Masters of the terrain help planners visualize key areas for R&S. Engineer leaders bring a detailed understanding of key routes from repetitive reconnaissance by subordinate units. They also leverage a "family" relationship with the EOD community and bring an understanding of technical explosives issues to the



**Figure 1. Conducting route clearance in a Buffalo mine-protected vehicle**

targeting process, as well as current and projected EOD unit capabilities.

At NTC, the No. 1 predictor of the ability to prevent the enemy use of IEDs is the quality and depth of relationships within the communities of the friendly unit area of operation. Human intelligence networks will identify insurgents and the locations of their bomb making supplies. Local leaders will root out troublemakers within their towns and villages. Build and maintain efficient, two-way communication channels, and provide incentives for informants. Include these key relationship elements in the lethal and nonlethal targeting processes.

Consider the following proactive suggestions for preventing IED emplacement:

- Develop good relationships with the local populace.
- Coordinate with local police; conduct joint patrols.
- Use patrols, observation points, and checkpoints; deny access to key terrain.
- Use counter-IED—ambush teams and scout-sniper teams.
- Reduce availability of bomb making materials.
- Clean routes of trash, brush, vegetation, and abandoned vehicles.

**Avoid.** Avoid detected impediments to battlefield mobility of the force, if prevention fails.

**Observation No. 6:** Develop and maintain information management systems.

Our ability to see first, understand first, act first, and finish decisively is directly related to our ability to develop and

maintain information management systems. The technology exists now to provide critical mobility information (route status, known and suspected IED locations, and enemy IED templates based on terrain and pattern analysis) as input into the common operational picture (COP). The Army Battle Command System (ABCS), when fully leveraged, gives commanders and leaders the ability to provide relevant, near-real-time information about the battlefield. Engineer leaders must consider the following:

- Do we have staff engineers at *all* task force and higher command posts to facilitate vertical and horizontal information flow?
- Do we have clearly understood reporting requirements and a headquarters empowered to demand timely and accurate reports from (maneuver and engineer) subordinate units?
- Do we have a common understanding of route status assessment criteria?
- Do route status changes result in action by maneuver units to confirm, deny, or mitigate the impediment to friendly maneuver?
- Are route statuses serving as input to the targeting and planning processes?
- How do we alert friendly units to the change of the mobility picture? Do we have redundant digital and analog means to alert all friendly units—to include adjacent and higher-echelon units operating in our battlespace?

**Neutralize.** Neutralize, reduce, or overcome (breach) impediments to battlefield mobility that cannot be prevented or avoided.

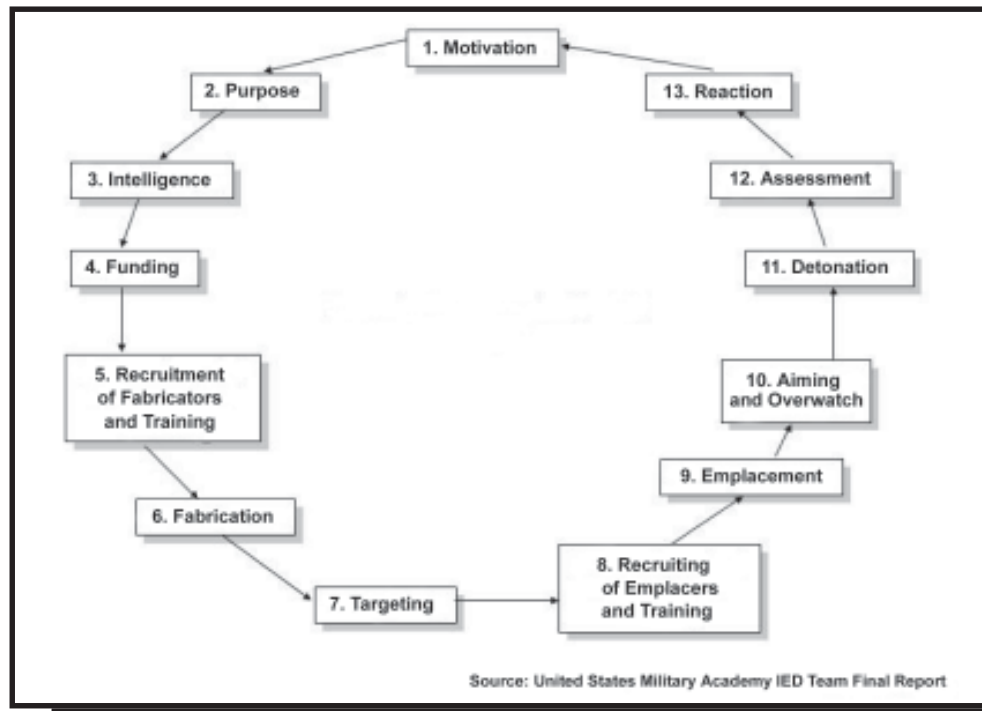


Figure 2. Components of an IED life cycle

**Observation No. 7:** Integrate EOD units into brigade combat team operations.

Maneuver units continue to be challenged with the integration of EOD units. For most organizations, whether deploying to NTC or into theater, the first opportunity to work with these professionals is upon arrival. Engineer leaders, as the closest “relative” to an explosives technician with whom most maneuver units will habitually train and work, must take some degree of ownership of EOD and its associated tactical mobility implications. Whether a combat engineer battalion or brigade troop battalion, there must be a node resourced and trained to be the socket into which units like EOD can plug. Engineer units and leaders must be comfortable operating with EOD units and accounting for their unique battlefield requirements.

Effective EOD integration requires a dedicated security element. EOD personnel cannot secure themselves during tactical employment for an IED event. The security force must be sufficiently briefed on known or suspected threats, well-rehearsed on all react-to-contact and IED-event battle drills, and appropriately resourced with firepower and counter-IED tools for this critical mission. Units that approach the security requirement as a low priority or assign random units often regret having done so. Maneuver units are forced to “wait for EOD”—painful words for friendly forces who themselves become vulnerable in likely enemy target or ambush areas.

**Protect.** Protect against enemy countermobility effects.

**Observation No. 8:** Protect moving forces versus a stationary threat.

At NTC, this is where we are seeing units having measurable success in countering the enemy’s intentions for his use of IEDs. Disciplined soldiers, realistic training, and the hard work of our noncommissioned officer corps are proving daily the value of these tactical considerations to protect the force:

- Treat every movement as a combat patrol. Prepare and rehearse accordingly.
- Be deliberate about the positioning of key systems and vulnerable team members within the formation.
- Maintain low profiles in vehicles and appropriate vehicle spacing within moving formations.
- Use all available protective gear, to include body armor, eye and hearing protection, and seat belts.
- Rehearse, rehearse, and rehearse. Prepare to react to all forms of contact. Ensure that all members of the patrol understand the mission, the threat, and all contingency plans. Assume nothing.
- Ensure that load plans are standardized and enforced. Tie down all loose equipment.
- Communicate—before, during, and after each combat patrol. Identify redundant means of communication along routes and within urban population centers.


- Identify all echelons of medical support available to the combat patrol. Provide combat lifesavers and medical personnel with the best available medical gear. Check and replenish all medical stocks immediately upon returning from each trip “outside the wire.”

**Observation No. 9:** Protect stationary personnel and facilities versus a moving threat.

A desperate enemy is increasingly leveraging the vehicle-borne improvised explosive device (VBIED) against coalition forces. Friendly units must continue to maintain vigilance against a mobile enemy weapon that can be experienced anywhere on the battlefield. Key tactical considerations include standoff while conducting operations such as patrols and checkpoints and heightened situational awareness built on known VBIED indicators and enemy pattern analysis. Soldier discipline and the items mentioned above for combat patrols will also protect soldiers on the battlefield against a mobile threat.

Recent battlefield lessons have also been a classic opportunity to showcase “One Regiment, One Fight” and leverage the knowledge and expertise of the US Army Corps of Engineers® to protect facilities and equipment. Personnel at the Engineer Research and Development Center (ERDC) have done some terrific work to develop plans and specifications for hardening entry control points and vulnerable facilities. They have also tested a variety of materiel solutions, many of which are now being used to protect soldiers and their equipment. Fundamental considerations of material strength, explosive resistance, flame retardants, access control, standoff, and hardening—areas of expertise in various centers and cells across the Engineer Regiment—are proving daily their importance in protecting the force.

## Summary

Observations at NTC confirm that successful units take a holistic, proactive, broad-based approach to IED defeat solutions based on the fundamentals of assured mobility. And while the various responsibilities nested within the fundamentals of predict, detect, prevent, avoid, neutralize, and protect are distributed across the combined arms team, it is the engineer—the Chief of Mobility—who pulls it all together and employs the tools and technologies, appropriately focused, to defeat the IED threat. There truly is no silver bullet, but there IS a silver castle! *Train the Force!* 

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*Note:* This article reflects the personal opinions of the author and are based entirely on lessons learned at NTC.