



U.S. Army paratroopers assigned to the 54th Brigade Engineer Battalion, 173rd Airborne Brigade, and Italian army soldiers from the 8 Reggimento Genio Guastatori Brigata Paracadutisti Folgore assemble a medium girder bridge 13 February 2017 near Rovigo, Italy. The 173rd Airborne Brigade, based in Vicenza, Italy, is the U.S. Army contingency response force in Europe, capable of projecting forces to conduct the full range of military operations across the United States European, Central, and Africa Commands' areas of responsibility. (Photo by Graigg Faggionato, Training Support Activity Europe)

Enabling Brigade Combat Team Success in Europe

Lessons Learned

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Russia's 2014 illegal occupation of Crimea, its invasion of eastern Ukraine, and its persistent provocations of its neighboring states suggest that it intends to permanently redefine national boundaries within Europe.¹ In response to

this growing threat, the U.S. Army has dramatically increased its presence throughout the region.

As part of that increase, in the past two years, U.S. Army Europe has engaged in an aggressive exercise program designed to demonstrate American

capability and deter further aggression, has established an enduring rotation of an armor brigade within Europe, and has permanently enhanced its presence in the Baltics and Poland.² These initiatives have significantly increased the likelihood that units not permanently assigned to Europe will gain exposure to the European operating environment.

Units generally deploy to Europe as part of a brigade combat team (BCT), and the engineer, intelligence, and signal capabilities of the brigade engineer battalion (BEB) are the backbone of a BCT's expeditionary capability. These assets provide the brigade the ability to locate and anticipate threat activity, increase survivability, provide mobility, and fix adversaries. They give the commander the ability to synchronize the effects on the battlefield and are critical to the success of any BCT operation. The lessons hereafter discussed are distilled from twenty-four months of repeated deployments across the European theater by the 54th BEB of the 173rd Infantry Brigade Combat Team (Airborne), or IBCT (A). These ten lessons are offered as suggestions designed to increase the success of other BCTs operating within the region:

- ◆ Arrive with a plan to build readiness.
- ◆ Become a student of the Russian way of war.
- ◆ Prepare for decentralized operations.
- ◆ Develop an interoperability framework.
- ◆ Integrate strategic messaging into all activities.
- ◆ Be prepared to provide mission command for maneuver elements.
- ◆ Invest in route reconnaissance.
- ◆ Employ the unmanned aerial vehicle (UAV) to build counter-UAV tactics, techniques, and procedures.
- ◆ Develop beyond-line-of-sight mission command expertise.
- ◆ Change the UAV paradigm.

Arrive with a Plan to Build Readiness

Europe provides unparalleled opportunities to build readiness and train leaders. During its two years of deployment experience, the 54th BEB engaged in live-fire exercises in Ukraine, Poland, Germany, Latvia, Lithuania, Estonia, Turkey, Italy, Slovenia, and France. As part of these exercises, the battalion conducted live airfield repair operations in France and Germany, detonated ordnance to create complex abatis countermobility obstacles using live

trees in a forested environment, constructed fuel-oil demolition charges, employed antipersonnel obstacle breaching systems, and developed techniques for the Shadow UAV to observe and adjust fire from 105 mm and 155 mm howitzers. The battalion flew UAVs in the Baltics, Germany, Poland, and along Europe's southern flank. The 54th BEB also supported three *decisive action training environment* (DATE) rotations serving under various multinational headquarters, and it participated in an organic 173rd IBCT (A) DATE rotation at the Joint Multinational Readiness Center (JMRC) in Hohenfels, Germany.

Many of the countries hosting training events with U.S. forces are aggressive in capitalizing on the opportunity and optimizing their time in this unique training environment. Additionally, many countries are unencumbered by the regulatory restrictions present in other training locations. Most partners will invest significant energy and the necessary resources to maximize training opportunities.

Arriving with a predetermined set of key training objectives and ensuring these objectives are integrated into the design of exercises during initial and mid-planning conferences will significantly increase the effectiveness of any training event. Importantly, units should leverage the subject-matter expertise located within 7th Army Training Command and JMRC during such planning. They are tremendous resources able to assist units in locating ranges and other training venues, provide external evaluation, assist in target development, and mitigate risk.

Lastly, there are twenty-four NATO centers

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of excellence located across Europe. These centers are nationally funded and accredited institutions that “train leaders, assist in doctrine development, identify lessons learned, improve interoperability, develop capabilities, and test and validate concepts through experimentation.”³ These centers vary in focus and include counter-improvised explosive devices in Spain, military engineering in Germany, command and control in the Netherlands, human intelligence in Romania, strategic communications in Latvia, cooperative cyber defense in Estonia, and the joint chemical, biological, radiological, and nuclear defense located in the Czech Republic.⁴ The opportunities to train leaders and build readiness in Europe are unparalleled and are often only limited by the creativity of those participating and a unit’s tolerance for risk.

Become a Student of the Russian Way of War

The Asymmetric Warfare Group (AWG) notes that “Russia has observed the American lessons learned in Iraq and Afghanistan, as well as their own from the 2008 invasion of Georgia, and applied these to the development of their own forces.”⁵ As a result, the Russian military has invested heavily in modernizing the technical capabilities of their force and the professionalism of their formation. According to the AWG, “This new [Russian] military barely resembles its former Soviet self and presents a near peer threat unlike any the U.S. military has faced in a generation.”⁶

It is important to ensure leaders at all levels understand the implications of these investments. Notable advancements in Russian capabilities include their ability to employ a “sophisticated blend of unmanned aircraft systems, electronic warfare jamming equipment, and long range rocket artillery.”⁷ For example, as witnessed in eastern Ukraine, Russian forces have become adept at linking their UAV systems and indirect-fire capabilities. They developed and integrated over fifteen separate UAV designs and have demonstrated the ability to link UAV sensor information to multiple indirect-fire systems. As Phillip Karbler has observed, Russian forces “are able to identify a target complex, net multiple sensor inputs, and produce a mass strike with high-lethality area fires.”⁸ In many cases, this transmission from UAV sensor to firing element took place in as little as fifteen minutes and achieved devastating effects.

Dispersion, concealment, the ability to rapidly displace, and redundant mission-command systems are critical to survival in this environment. Any rotation to JMRC will replicate this environment and will afford units multiple opportunities to develop this expertise. Focusing leader professional development activities on Russian capabilities, tactics, techniques, and procedures will assist in ensuring leaders at all levels understand the implications of Russian advancements. *The Russian New Generation Warfare Handbook* produced by the AWG (available from the Center of Army Lessons Learned) and Karbler’s “Lessons Learned from the Russo-Ukrainian War” are good primers and are recommended as required reading prior to operating in this environment.⁹

Prepare for Decentralized Operations

No other battalion within the BCT will experience the same level of decentralized operations as the BEB. Wherever the BCT is employed, it is likely that elements within the BEB are present to provide support. On several occasions, the 54th BEB has deployed elements to seven different countries simultaneously. To effectively mitigate risk, a clear understanding of approved activities must be established at each echelon of command. Leaders at all levels must clearly understand what risks can be underwritten at what levels and who is responsible for approving specific activities. Clear reporting expectations and command-and-support relationships established prior to any training event, with a deliberate confirmation mechanism at each echelon of command, will significantly mitigate confusion.

Notable examples where misunderstanding can cause delay and potential conflict are with the execution of UAV and demolition operations. Both of these activities have risk mitigation elements that may not be readily identifiable by those not routinely responsible for their employment. A technique worthy of consideration is to route deliberate risk assessment worksheets through the supporting unit for acknowledgment prior to sending to the supported unit for final approval. This approach serves to ensure that those headquarters ultimately responsible for executing certain high-risk training events are able to capitalize on the resident subject-matter expertise within the supporting unit and ensure the activity is being conducted within acceptable margins of safety. This helps ensure that both the supporting elements and



the supported maneuver units have a clear understanding of expectations so that misunderstandings are minimized and risk ownership is clearly defined.

Develop an Interoperability Framework

The vast majority of U.S. training conducted in Europe will involve the participation of at least one NATO ally, and often several. A key objective of any multinational training event is to increase interoperability among elements. Increased interoperability between allies and partners helps to assure access to contested environments, to deter conflicts, and to assist in maintaining security and stability; and it is a critical component of our national strategy.¹⁰ Critical to this endeavor is developing a deliberate framework for identifying interoperability opportunities and achieving interoperability objectives. A deliberate approach provides intellectual focus, minimizes the likelihood of missed opportunities, and increases the probability of achieving tangible and measurable interoperability gains. This framework should leverage the expertise of allies and focus within a doctrinal construct.

NATO defines interoperability as having three dimensions: the procedural dimension, the human

dimension, and the technical dimension. These apply to the strategic through tactical levels of warfare and describe three categories of interoperability challenges. The procedural dimension focuses on doctrine and procedures with the goal of standardizing execution between formations. The human dimension describes education, training, and cultural influences; and the technical dimension focuses on the interoperability of equipment.¹¹

Units should capitalize on opportunities to build interoperability by learning from the other nations in Europe. There is a tremendous amount of resident expertise within NATO. For example, the French 11th Airborne Regiment conducted a real-world contested rapid runway repair operation in Mali in 2014, a skill of critical importance to U.S. airborne engineers. In another example, the Lithuanian army is extremely

U.S. paratroopers assigned to the Company D, 54th Brigade Engineer Battalion, 173rd Airborne Brigade, conduct preflight checks on an RQ7B Shadow tactical unmanned aircraft system (UAV) 20 October 2015 at Aeroclub Postonja in Slovenia during Exercise Rock Proof V. The author contends that the strict requirements for setting up this UAV before use make it especially vulnerable to indirect fire attack in the modern operational environment. (Photo by Paolo Bovo)



proficient at building countermobility obstacles utilizing timber materials prevalent throughout the Baltics (knowledge that will be critical in any defense of the Baltics scenario). Additionally, the Latvians possess significant expertise using high frequency (HF) communication systems, which are generally less susceptible to jamming. Identifying these areas of expertise and establishing training opportunities to absorb the knowledge of partner formations increases interoperability while also increasing the readiness and effectiveness of U.S. formations.

Integrate Strategic Messaging into All Activities

Strategic messaging is not the sole responsibility of a brigade public affairs office. It is the responsibility of leaders at every level and should be integrated into the organizational culture. As Gen. Philip Breedlove, former commander of U.S. European Command noted,

Strategic communication is the most powerful tool European Command has to challenge Russian disinformation and propaganda. Russia overwhelms the information space with a barrage of lies that must be addressed

Engineers from 3rd Platoon, Bastion Company, 54th Brigade Engineer Battalion, 173rd Airborne Brigade, and 1 Troop, 1 Field Squadron, 1 Canadian Combat Engineer Regiment, pose between abatis and crater obstacles they created with demolitions in Pabrade, Lithuania, during Exercise Iron Sword 2016. Eleven NATO countries participated in the exercise, held 20 November to 2 December 2016 in Rukla and Pabrade, Lithuania. Iron Sword exercises validate mission command systems and tactical capabilities at the battalion level through offensive and defensive operations. (Photo by 1st Lt. Sarah Melville, U.S. Army)

by the United States aggressively in both public and private sectors to expose the false narratives pushed by Russian-owned media outlets and their proxies.¹²

Leaders should endeavor to incorporate strategic messaging into all activities, integrating relevant themes and messages of higher headquarters, and establishing systems to seize opportunities to highlight activities and capabilities.

Placing command emphasis on strategic messaging encourages leaders to become invested in this task. Leaders quickly realize that producing a two-page article on key training events and submitting it to the public affairs officer for clearance and dissemination is

not an overly burdensome task. To expedite strategic messaging, one successful technique is to prepare the shell of an article prior to each key training event. Most elements of a training event can be prepared before the actual event including known elements, locations, and training focus. As the event unfolds relevant details, quotes, and pictures may be collected and integrated into the article with limited additional effort.

During its twenty-four months of deployment experience, the 54th BEB used this technique to provide over forty internally prepared strategic messaging articles and videos to the 173rd IBCT (A)'s public affairs team for dissemination. This technique assists in meeting timeliness and relevance requirements established by most publication venues.

Strategic messaging became an adjunct activity to development of written communications as a professional skill set for leaders. Written communication is an integral component of the battalion's leader development program. In the 54th BEB, a policy was implemented that each day the battalion staff duty officer would submit a one-page current event paper on the topic of their choosing to discuss with the battalion commander prior to each morning's physical training. Not only did this serve as an informal counseling venue, it also conditioned the officers to practice, improve, and build confidence in their written communication skills. Article publication was also established as a recovery task following key training events.

In our battalion experience, once leaders overcame the intimidation of publishing their first article, they would sustain the initiative with limited prompting from the chain of command. Incorporating strategic messaging became second nature and self-sustaining. These efforts contributed to U.S. Army Europe's initiative to make thirty thousand soldiers look like three hundred thousand.

Be Prepared to Provide Mission Command for Maneuver Elements

Maneuver brigade commanders should expect their engineer battalion leadership to possess the requisite expertise to employ maneuver capabilities. Depending on the BCT's exercise commitments, BEBs may be tasked to provide mission command for maneuver elements. Such opportunities serve as a vehicle to expand the BCT's operational reach and should be embraced by BEB headquarters.

In the last two years, the 173rd IBCT (A) has employed its BEB as a maneuver headquarters on two separate occasions in support of major U.S. European Command and NATO exercise requirements. On both of these occasions, the BEB employed an organic sapper company as a maneuver element and received augmentation from multinational infantry elements. During Immediate Response 15 in Croatia and Slovenia, the battalion employed one rifle company from Croatia and one from Slovenia, and during Trident Juncture 15 in Spain, the battalion employed a reconnaissance troop and two Spanish motorized rifle companies against a British-led multinational armored brigade.

There is no better opportunity to train leaders within an enabler-focused headquarters on the intricacies associated with supporting maneuver than to make them responsible for their employment. Prior to assuming this mission, the BEB staff needs to conduct a detailed mission analysis of the organic capability shortfalls associated with performing this mission and request augmentation from the BCT staff. These shortfalls are primarily located within the fires and mission command warfighting functions.

Invest in Route Reconnaissance

Essential to an early victory against a Russian threat will be the speed at which forces can assemble in their designated defensive positions. Decisive to the speed of assembly is a clear understanding of the trafficability and obstacles along designated routes. One way to obtain this clarity, and to achieve freedom of maneuver, is to have current and accurate route information. Engineers play a critical role in the collection and analysis of route reconnaissance data and this activity should be incorporated into routine travel across Europe.

The Automated Route Reconnaissance Kit (ARRK) is an extremely useful tool and will save time and add precision and accuracy to these endeavors.¹³ The ARRK provides geo-referenced engineer trafficability information that can be integrated with a BCT's mission command systems. Additionally, by using the included camera, video imaging can be taken of bridges and sent to the U.S. Army Corps of Engineers Reachback Operations Center for precise calculation of the military load class, greatly saving the time required to determine this critical route variable.

Although not a modified table of organization and equipment item, ARRK systems can be obtained through the Engineer Research and Development Center of the Corps of Engineers at Vicksburg, Mississippi. At no cost to the unit, the 54th BEB was able to obtain four ARRK systems (one per sapper element) and receive a week-long home station train-the-trainer block of instruction. This system has been employed throughout the Baltics and continues to be integrated into mission planning.

Employ the UAV to Build Counter-UAV Tactics, Techniques, and Procedures

A technique to improve a unit's dispersion, concealment, and other counter-UAV tactics, techniques, and procedures (TTPs) is to employ the Shadow UAV in a manner that allows friendly units to see themselves. Opportunity for friendly forces to observe how their forces appear through the lens of a UAV provides an excellent opportunity for organic and multinational partners to experiment, refine, and ultimately perfect their counter-UAV tactics. This approach also provides UAV operators and intelligence personnel opportunities to seek out targets while building flight currency, which ultimately improves detection capabilities.

Slovenia, Poland, Germany, and the Baltic states each provide UAV flight locations within range of established maneuver training areas. Synchronizing UAV operations with concurrent maneuver training, ensuring that footage is available to ground units for viewing, and including counter-UAV TTPs as a deliberate part of the after action review process will significantly improve a formation's counter-UAV effectiveness.

Develop Beyond-Line-of-Sight Mission Command Expertise

In his remarks during the 2016 Association of the United States Army Convention, Chief of Staff of the Army Gen. Mark Milley described an environment where Army units may be forced to operate in noncontiguous battle space and face adversaries with significant cyber and communication denial capabilities.¹⁴ In such an environment, units must have redundant mission command systems and develop communication protocols that reduce the effectiveness of threat interference as "Russia has invested heavily in electronic warfare systems which

are capable of shutting down communications and signals across a broad spectrum."¹⁵

Employment of HF radio technology at the brigade level is one way to help mitigate this threat and increase effectiveness across extended areas of operation. HF systems offer a redundancy to satellite communication (SATCOM) systems, are more difficult to jam, and increase interoperability among several NATO allies.

Unfortunately, there are a finite amount of SATCOM networks available to support all of the Department of Defense. As the number of units increases, so does the demand for this limited resource. It is easy to envision a scenario where the demand for SATCOM reaches a threshold where a BCT is only allocated one or two SATCOM networks. If units are dispersed beyond the operating range of retransmission frequency modulation (FM) systems, and opposing threat cyber capabilities successfully disrupt warfighter information network-tactical systems, units will be severely limited in their ability to communicate. Developing a robust HF capability within a BCT can help mitigate this likelihood.

In anticipation of these communications limitations and threats, the 173rd is aggressively developing a communication model that emphasizes FM for company-to-battalion communications and HF for battalion-to-BCT communication. This approach increases redundancy of beyond-line-of-site systems, decreases demand on SATCOM, and reduces the combat power required to secure valuable FM retransmission sites. Additionally, the ability to communicate with NATO allies (which may be operating as adjacent or integrated units) is increased as many allies are proficient in HF communication.

Change the UAV Paradigm

The advancements in Russian indirect-fire capabilities render the TTPs used for Shadow UAV operations in Iraq and Afghanistan ineffective. Establishing the entire Shadow launch and recovery system on a developed airfield and leaving it in place for the duration of an entire multi-hour Shadow mission will ensure its detection and destruction by reconnaissance and indirect-fire systems. To increase survivability in this environment, UAV platoons must adopt an artillery mentality of "fire and rapidly displace" focused on minimizing exposure, particularly during the launch and recovery phase of a UAV mission. This requires organizations to understand the difference between risk mitigation during peacetime and during

combat, how to identify minimum equipment requirements, and how to develop surrogate equipment sets to train displacement techniques.

Currently, Army regulation requires that the full launch and recovery systems be in place during flight operations so if an aircraft develops an in-flight emergency it can immediately recover to an established landing site.¹⁶ This requirement reduces the possibility that an operator will have to activate the recovery parachute (which causes extensive airframe damage) to recover the aircraft during an emergency.

While such measures reduce the risk to equipment in a permissive environment, this regulation does not adequately address risk against a near-peer threat in a combat environment. The conservative approach employed in a permissive environment that is engrained into UAV operators at present does not adequately account for the commander's role in the risk mitigation process necessary for a nonpermissive environment. Commanders are responsible for weighing risk and should have the authority in combat to evaluate the risk of damaging an airframe due to an in-flight emergency weighed against minimizing the likelihood of the entire equipment set and UAV platoon being detected and annihilated by enemy artillery. To minimize this combat risk, a commander should have the prerogative of electing to minimize the platoon's

time exposed and signature by not having the landing site established during a multi-hour flight.

To train this technique, leaders need to have a thorough understanding of what is required for peacetime operations and the minimum equipment necessary to physically launch, sustain the flight of, and recover the Shadow. Separating a Shadow flight into these three distinct phases and identifying minimum equipment packages necessary to engage in these activities will allow formations to develop methods to reduce signature during each phase.

Conclusion

The U.S. Army is heavily invested in maintaining stability within Europe through the permanent presence of rotational forces and an extremely aggressive exercise program. These initiatives will assist in deterring aggression through the demonstration of the extreme lethality of U.S. Army BCTs. The unique capabilities located within the BEB are a decisive component of this lethality. The increased opportunities to capitalize on training in Europe—tailored to the European operating environment—will ensure that Army BCTs continue their demonstrated ability to impose their will on adversaries, provide options for decision makers, and, alongside NATO, contribute to the defense of Europe. ■

Notes

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