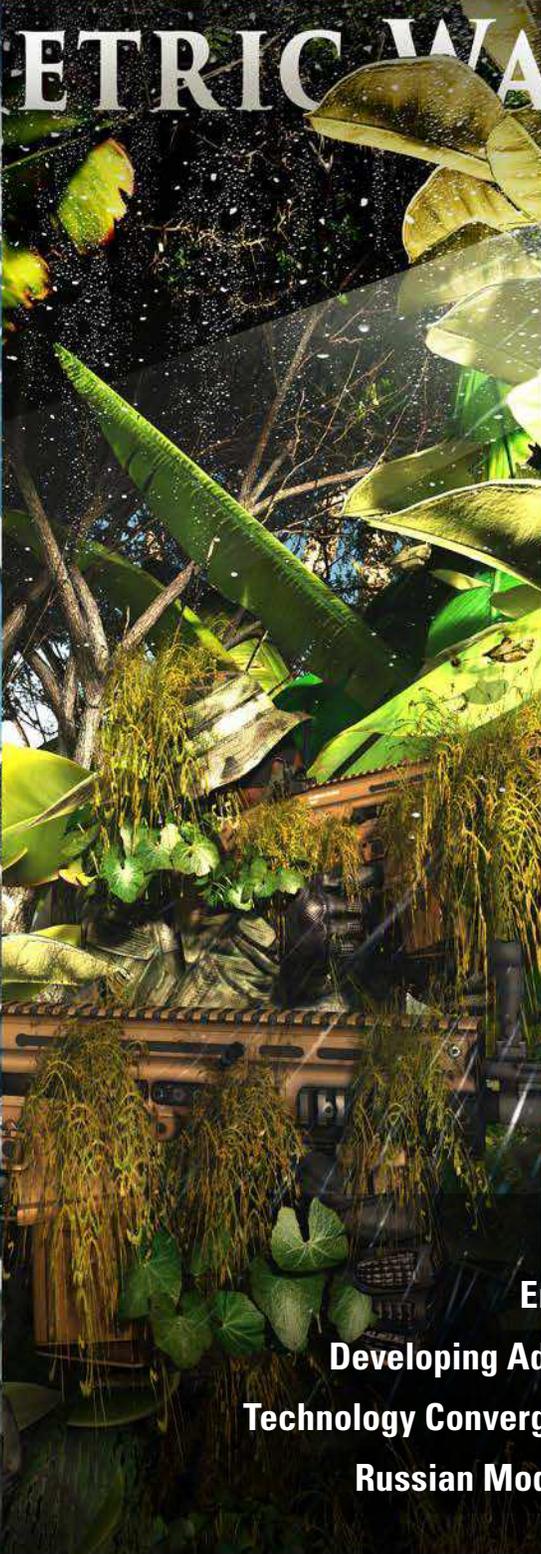
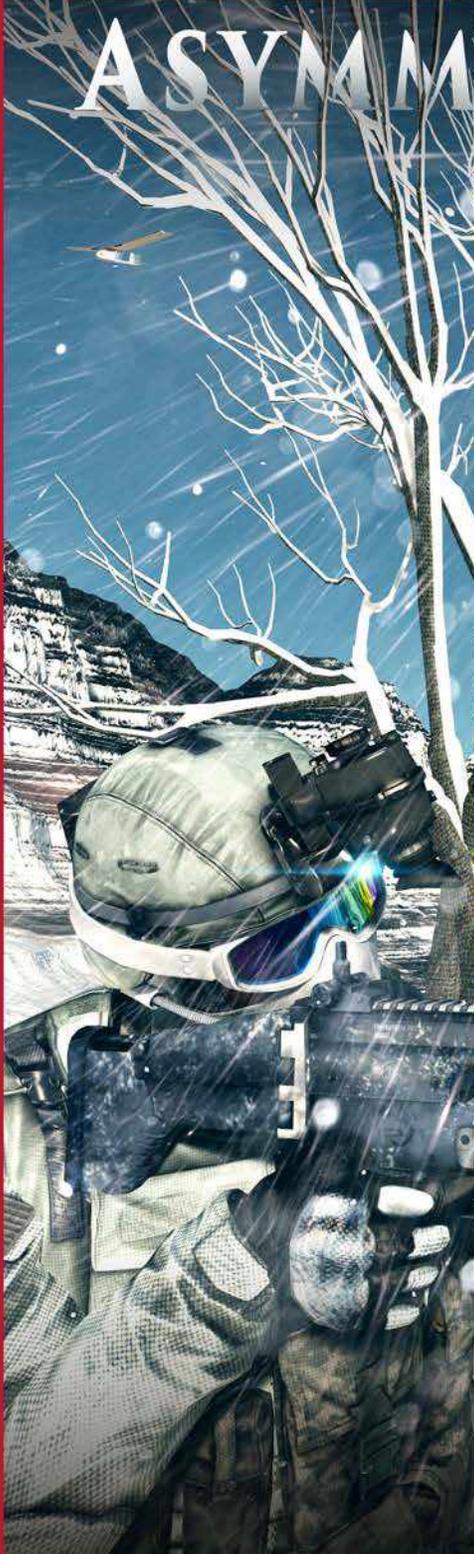


Volume 3 • Issue 1

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J O U R N A L O F

# ASYMMETRIC WARFARE



## THIS ISSUE

Enhanced Realistic Training  
Developing Advisors for the 21st Century  
Technology Convergence is Changing Warfare  
Russian Modern Warfare Methodology

THINK. ADAPT. ANTICIPATE.

This publication describes lessons learned, observations and opinions of operational advisors of the Asymmetric Warfare Group who have observed the training, staff planning and/or combat operations of numerous Army, Marine Corps, other Department of Defense and interagency organizations. It is intended solely to generate professional discussion for the betterment of the force.

**DISCLAIMER:** The information contained herein is not current U.S. doctrine or policy and is not meant to supersede doctrine, commander's guidance or established unit standard operating procedures. Examine and use the information in light of your mission, the operational environment, the Law of Armed Conflict, applicable Rules of Engagement, and other situational factors. This document does not constitute the provision of additional information or the approval of additional information upon request.

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## Fellow Professionals,

This edition of the *Journal of Asymmetric Warfare* addresses the application of evolutionary technologies, the development of twenty-first century advisors, enhanced realistic training to achieve tactical cross-domain overmatch, and a synopsis of Russian information operations. We aim to generate thought, discussion, and action on these important aspects of the evolving character of war.

As we look globally, advisory operations remain a consistent aspect of conflict. To prepare, we must understand how to develop advisors of the future and how to partner with our traditional allies as well as non-traditional host-nation partners to meet undefined challenges brought on by the evolving character of warfare. Simultaneously, we must be ready to win a war of extended ground conflict with a near-peer adversary through the conduct of large scale combat operations. We must be lethal and innovative, and we must contemplate how to train to achieve tactical overmatch across domains.

The importance of populations and how they are influenced is growing, and the need to understand the human aspects of military operations is greater than ever before. Our adversaries are evolving their doctrine and executing influence operations to prepare the operating environment and meet their objectives. To stay ready for this threat, we must understand how to influence key and relevant populations and counter the activities of our adversaries.

Now, more than ever, successfully operating in our complex and changing world requires constant and effective collaboration. The steady interface between departments, agencies, and organizations that convert national power into action is essential to success. Leaders and service members at all levels must be savvy in a growing number of skills; they must be able to leverage the right attributes, training, equipment, and authorities under the principles of mission command in to achieve mission success. Together, we must constantly reconsider how we think, adapt, and anticipate. We aim for this edition of the *Journal of Asymmetric Warfare* to be a contribution to that cause.

*Col. Timothy F. O'Brien*  
*Commander, Asymmetric Warfare Group*  
*Fort Meade, MD*



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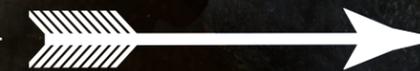
**Russian Modern Warfare Methodology: Information Operations in the “Disinformation Age”**



Enhanced

ERT

Realistic Training



*The cost of unpreparedness is high in the lives of our Soldiers, Sailors, Airmen, and Marines; let us swear on their graves we will never send [others] into combat unprepared.*

—U.S. Army Chief of Staff Gen. Mark A. Milley

## Purpose and Scope

“Enhanced realistic training,” or ERT, describes a coordinated effort between the Asymmetric Warfare Group and U.S. Army Training and Doctrine Command to address a shortcoming in the integration of all domains into unit collective training. This article discusses the effort to maintain an innovative and adaptive cross-domain maneuver (CDM) overmatch capability by integrating new technologies, tactics, techniques, and procedures (TTPs), and training methodologies at home station. This article intends to present hypotheses to inform concept development and seeks to promote discussion and thought.

## Background

The U.S. Army has previously experienced the effects of encountering an innovative adversary in an increasingly complex multi-domain environment, while also not being fully trained to mitigate threat TTPs employed against it. As a result, the U.S. Army deployed units to support operations worldwide while lacking the training and understanding of how to effectively employ innovative solutions against an evolving threat [e.g., improvised explosive device (IED) threats, high mobility multi-purpose wheeled vehicle vulnerabilities, Soldier loads].

Throughout history, we have seen other armies struggle to not only maintain an innovative and adaptive edge, particularly during interwar periods, but also how to best train Soldiers for future threats.<sup>1</sup> Innovators and doctrine writers not only struggle to predict the future enemy threat, but they must also predict how that enemy will use future technologies and in what context they will be applied. Concurrently, tactical units have struggled to maintain lethality as the operating environment, doctrine, and technology changes around them. Military innovators have displayed recurring traits that have provided a model for success in innovation. When organizations innovated against a specific military problem, where the solution to that problem offered significant advantages, they have generally gone on to innovate successfully.<sup>2</sup>

Organizations must identify a specific problem (e.g., specific nation-state actor such as the German Army, the Soviet Union, an irregular or hybrid threat) and then innovate against that threat. Also essential is a military culture that supports learning and growth. Organizations must ensure that they have the capacity and capability to employ those innovations developed by ensuring a learning military culture exists within the organization. Leaders must set conditions that allow for a learning organization to thrive to gain dominance within multiple domains.

The United States has enjoyed a multi-domain dominance that has been unparalleled since the end of the Cold War. This dominance was demonstrated in multiple operations in Central America, the Western Balkans, South East Asia, and South Asia. U.S. formations have had complete multi-domain overmatch, enabling decisive operations and success against threats that could not overcome U.S. capability and capacity. However, extended stability operations, the sheer rate of technical progress, and the abundance of advanced technologies that are now

within the reach of new entrants in the multi-domain environment, coupled with the extraordinary opportunities created by the convergence of technology, has led the U.S. military to “play catch up” against competitors around the globe.

The concept of CDM in multi-domain operations (MDO) is the vehicle by which the Army will regain dominance. CDM, or a focused application of decisive action within MDB, is the understanding and employment of capabilities in the cyber/electronic warfare (EW) and space domains, in conjunction with and through the air, land, and sea domains, to create and exploit temporary windows of opportunity against an adversary.

Unfortunately, the United States is entering into this new era of warfare while under capacity and with less capability to engage the next generation of the threat. Commanders should not rely on the former dominance of past years to help develop doctrine, TTPs, and training for the fight in the multi domain environment. Rather, commanders must look to the future to inform doctrine, innovation, and training.

The U.S. Army will be faced with an ever-increasing requirement to fight in multiple domains utilizing CDM at the tactical level defeat a hybrid threat. The force must adapt and innovate more rapidly and efficiently than the enemy and integrate complex CDM aspects into home station training.

## Implications

The exponentially decreasing cost of entry into the multi-domain environment and “hi-tech” asymmetry will continue to provide access to non-state actors who previously wouldn’t necessarily be threats (e.g., Somali pirates, regional gangs and violent extremist organizations, lone wolf attackers). If U.S. Army formations continue to improperly train and integrate in multiple domains, enemies and adversaries will continue to maintain domain overmatch and deny U.S. forces the ability to succeed.

## Military Problem

Existing training today fails to incorporate emerging technology and innovation across all domains in a manner that increases unit readiness and prepares them for conducting CDM in today’s complex environment.

## Solution Synopsis

ERT is a method by which units can replicate the current and future operating environment while training to operate through the air, land, sea, cyber/EW, and space domains, all while using current and emerging TTPs. ERT allows units the opportunity to understand how technology enhances the capabilities of the operator on the ground and provides the opportunity for the commander to use those capabilities to create planned complex effects on the battlefield. Further, the ERT model does not replace or change the Army training model and/or how the Army trains to win. Rather, it enables units to anticipate and be proactive regarding emerging threat and friendly capabilities with regard to conducting CDM. Units face many challenges in making their training as realistic and demanding as possible with

limited resources and manpower. Through ERT, units will be able to capitalize on the use of an integrated training environment during the execution of multi-echelon training.

Before we can address ERT, we must clearly define our specific threat and develop a military culture that enables training methodologies to prepare the force for future warfare.

There are several existential threats to the United States that could make the path of innovation clear, if not more narrow. However, none of these threats rise to the level of a clearly defined adversary that enables us to define our missions and describe the threat. Thus, the best course of action, until such a time that a more resolute force is identified, is to broadly define the threat in terms of capability and capacity:

*As such, we can ascertain the threat will be diverse and will employ traditional, unconventional, and hybrid strategies to upend U.S. security and vital interests...Enemies (to include non-state actors) will continue to apply advanced as well as simple and dual-use technologies. As new military technologies are more easily acquired, state and non-state adversaries emulate U.S. military capabilities to counter U.S. power projection and limit U.S. freedom of action. These capabilities include precision-guided rockets, artillery, mortars, and missiles that target traditional U.S. strengths in the air and maritime domains. State and non-state actors apply technology to disrupt U.S. advantages in communications, long-range precision fires, and surveillance. Enemy actions reduce U.S. ability to achieve dominance in the land, air, maritime, space, and cyberspace domains. Additionally, to accomplish political objectives, enemy organizations expand operations to the U.S. homeland. Enemies and adversaries will operate beyond physical battlegrounds and will subvert efforts through infiltration of U.S. and partner forces (e.g., insider threat) while using propaganda and disinformation to influence public perception.<sup>3</sup>*

The multi-domain threat innovates and adapts at the speed of failure and has done so over the course of history. For example, in 1881, twenty-five-year-old Ignaty Grinevitsky and an accomplice set out to assassinate Tsar Alexander II. His accomplice's initial attempt to throw a bomb failed, and Grinevitsky quickly realized he needed a precision delivery and guidance system and promptly delivered the bomb to the Tsar himself, becoming the first suicide bomber.<sup>4</sup>

The principal tactical threat, from Grinevitsky to ISIS to North Korea, in the multi-domain combat environment is the ability for these nefarious actors to be true innovators. These threats only need to form and build on an idea or adaptation and continue until their failures become successes. Even more dangerous than the state actor is the non-state actor, who has no acquisition system filled with bureaucracy, enabling unlimited creativity. Additionally, his budget for innovation is limited only by circumstance and sponsor. Individual project budgets in the hundreds of dollars instead of millions of dollars facilitate rapid prototyping and testing. This speeds the innovation process by an order of magnitude. Also, the plummeting cost of technology and high-tech weapons has provided capacity and capability never seen before in the hands of a non-state actor. The non-state actor innovates for the survival of his cause, not for the profit of his corporation; he sees no risk, except the risk of failing. Thus, the threat is not only from a near-peer competitor who will fight us by and through doctrine, but also a hybrid and irregular threat that will fight us through fluid, irregular means and innovative methods. Knowing this, the force should have a clear and specific threat to innovate and train against.

A very real concern among senior Army leaders is that the force will fail to energize how its leaders and members develop and learn. As a result, the U.S. Army may become incapable of providing dominance in Unified Land Operations (ULO)<sup>5</sup> or future MDO; in turn, it will lose its lead as an adaptive and learning organization, thus hindering its ability to properly execute CDM in support of multi-domain operations.

One solution to helping the force integrate and apply new technologies and TTPs into existing training is Adaptive Soldier/Leader Training and Education (ASLTE). This outcomes-based learning model enables units to quickly and efficiently innovate against an array of threats. Additionally, this vehicle for delivering training readily supports and compliments the training strategies, such as “FM 7-0 Train to Win in a Complex World.”

Army leadership development has always focused on creating adaptive leaders who can solve new challenges. Adaptive and creative leadership is and will be a critical enabler because of the speed of innovation in the multi-domain environment. The multi-domain arena is fast—faster than current doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) and TTP models can support. Soldiers will encounter and be required to use new and emerging technologies in support of their operations, many that they may have never employed. “ASLTE focuses on using capabilities (individual, unit, force) to determine what is important, rather than a task list or prescribed method; describing desired capabilities in terms of outcomes allows commanders the flexibility and latitude to make judicious selection of the tasks that will, when aggregated, generate necessary capabilities.”<sup>6</sup>

The force can prepare to excel in multi-domain battle and maintain an innovative and an adaptive CDM overmatch advantage by integrating aspects of CDM through ERT into existing unit training plans (UTPs) and training areas.

## Components of the Solution – Overview

ERT has three key elements that when combined create a three-prong approach to training development and application: 1) physical, logical, and data layers replication; 2) emerging technology and TTP integration and implementation through ERT at home station; and 3) adaptive and innovative leadership development.

First, the combination of these three key aspects within traditional training environments are what creates the three-dimensional training environment that allows a unit to assess its effectiveness in a truly contested environment, as well as to identify the impacts that each of the five domains has on TTPs, training, and equipment.

Secondly, ERT takes decisive action at the tactical level and integrates formerly strategic-level and operational-level tasks into brigade combat team (BCT) and below training: 1) cyber operations, 2) spectrum deconfliction, 3) airspace management, 4) signals emitting/disruption tools [e.g., counter-unmanned aerial system (CUAS) equipment, versatile radio observation and direction (VROD)/versatile modular adaptive transmitter (VMAX), digital receiver technology (DRT)], 5) commercial/government off-the-shelf (COTS/GOTS) fixed wing and vertical takeoff and land (VTOL) small unmanned aerial systems (sUAS).

Thirdly, ERT is not its own training event; rather, it is meant to be incorporated into existing planned and resourced training. Units can prepare themselves for future operations in a

complex world with some simple, yet effective modifications to training, equipment, and culture. ERT enables units to train decisive action to defeat emerging threats by training at the tactical echelon with capabilities that were once uniquely operational or strategic assets. At home station, units can quickly integrate and employ these assets into existing training by utilizing effective outcomes-based training models.

Finally, the outcome of ERT is to provide the commander a visualization tool for CDM. The secondary outcome of ERT is to gain a comprehensive understanding of how to employ and integrate current and emerging capabilities to create complex effects on the battlefield through multiple domains.

## Components of the Solution – Physical, Logical, and Data Layers Replication

To establish ERT at home station, units will need to have the capability and capacity to replicate physical, logical, and data layers of the operating Environment. These layers are critical in that they take a realistic and integrated dual-domain maneuver training event and move it into the multiple domains of CDM.

First, the Army is intrinsically familiar with physical replication. In a traditional sense, it applies to the physical infrastructure of buildings, roads, and key terrain features. Additionally, it relates to a robust suite of technology that serves as the medium through which the subsequent layers can exist (e.g., social media, cellular networks, cyber operations). The physical layer also incorporates aspects of the electromagnetic and radio frequency environment—including but not limited to the WiFi 802.11 and 802.12—and cellular communication networks.

Second, the logical layer is the digital connections that interlace the physical technology component. It can best be described as the process of pairing a phone to a vehicle, or inputting the information to synchronize a NETT Warrior with its host network. Commanders must be prepared to have their forces exploit this layer to gain a tactical advantage.

Third, data replication is the most tailorable aspect and is where the environment comes to life. It can best be manipulated to replicate the intangible aspects of a CDM training capability into a visual representation. This is where the commander can truly generate the necessary enhancement required to create realistic training at home station.

Data replication requires significant effort to truly synthesize the gray space that constantly impacts a unit on the ground. Gray space is defined as neither adversary nor friendly, but that territory where everyone else operates and can be identified as key terrain for either side. From an informational perspective, this aspect of the cyber domain significantly impacts the success and failure of a mission both near and long term. To date, however, the capacity to effectively operate by, with, and through this domain has been reserved only for units with national and strategic missions. The impact still affects the tactical organization and must be accounted for, mapped out, and operated in at the lowest level.

The combination of these three key aspects (physical, logical, and data replication) with the traditional training environments are what creates the three-dimensional training environment that allows for a unit to assess its effectiveness in a truly contested environment as well

as identify the impacts that each of the key components has on traditional tactics, training, and equipment.

## Components of the Solution – Emerging Technology and TTP Integration through ERT at Home Station

ERT begins with the UTP. Units identify training opportunities and events [e.g., leader development programs (LDPs), situational training exercises (STXs), live fire exercises (LFXs), sUAS training, brigade or battalion/squadron focus, or company training plans] that can support or be supported through ERT, based on METL assessments, operational requirements, or assigned missions. Once identified, the process of planning and executing training does not change, as laid out in FM 7-0, or through unit standard operating procedures (SOPs) and policies. Further, commanders and leaders can decide the extent of enhancement based on the availability of resources, infrastructure, and skill level.

ERT at home station can be conducted as its own training event, where the unit identifies a collective task and then moves through the various training evolutions to the culminating training event in sequential order as part of a unique training event. However, ERT is best incorporated in already resourced training. By including the training in resourced events, the commander does not have to rebrief and reapprove a separate event; rather, he would only need to modify the plan and apply additional training support.

Once the unit has identified the training event(s) to enhance, it must consider the operational and training environments. A well-defined and articulated operational environment is critical to supporting the execution of ERT. The clear articulation of the operational environment allows the commander to visualize the battlefield and identify the problem facing the unit. Additionally, this enables the staff to apply the proper resources to training.

After clearly defining the operational environment, the commander must consider the training environment. ERT is most successfully executed in an integrated and synthetic training environment due to the complexities of operating in multiple domains; however, utilizing a blended training environment will provide similar outcomes. The determining and critical factor for units will be the availability of resources and the ability to replicate the physical, logical, and data layers of the operating environment in existing training areas.

Units should conduct site assessments of existing training areas to identify the best locations that will support their training concept and operational environment. Preferable training areas are those that include the ability to train on sUAS, conduct operations over multiple terrains (urban, woodland, subterranean, etc.), disrupt the electromagnetic spectrum, and provide the ability to conduct CDM against a singular or hybrid threat.

A typical ERT module evolution would proceed as depicted on the following page. At this point, commanders should truly engage in the “commander’s dialogue,” as per Chapter 1 of FM 7-0, to “help ensure both commanders agree with the direction and scope of unit training.” Furthering the dialogue will provide and enable the unit to make critical decisions while “planning, preparing, executing and assessing training.” As such, commanders can adjust training plans at these decision points, if necessary, and verify that units have critical resources when and where they are needed to train.<sup>7</sup>

## IPB

- Develop exercise scenario, develop scenario OPORD, develop scenario IPB, and begin scenario mission analysis
- Conduct read ahead of doctrine, technology, software, etc.
- Download all necessary software onto devices

## ACADEMICS

- Conduct capabilities and effects briefings
- Conduct capabilities demonstration
- Conduct hands on classroom training
- Conduct hands on operator training and familiarization

## SKILLS TRAINING

- Rotational iterative (“round robin”) training in A dynamic training environment

## PLANNING

- Conduct staff training on the conduct of MDMP and RDMP (mission command) in cross domain maneuver and the application of enablers in support of MDO

## INTEGRATED TRAINING EVENT

- Plan and execute a STX in an immersive environment utilizing a hybrid threat/free play OPFOR
- Transition to LFX utilizing the same capabilities and scenario

### ERT Module Evolution

Outcomes of this ERT process include:

- Comprehensive understanding of how to operate, plan for, and create effects with current and emerging technology in a cross-domain environment
- Assistance in “visualization” of CDM
- Understanding of the “synergy of effects” using current and emerging capabilities
- Comprehensive perspectives of integrating capabilities from Red/Blue teams
- Enhanced problem solving, teamwork, collaboration, and communication
- Emphasis on layering provided equipment to find/fix the threat

During the IPB module (Module 0), units should begin to conduct pre-event reading—to include new and emerging doctrine, technical manuals, friendly and enemy TTPs—and ensure they have all proper certifications needed to participate in training. Also, units should take the time to prepare to receive or acquire necessary applications, software, and equipment to support the enhanced training.

During the Academics module (Module 1), units present briefs on organic and non-organic capabilities available to the Soldier in combat and during training. Units conduct briefings and training on emerging and codified doctrine, TTPs, and capabilities within EW/electronic attack (EA), cyber, sUAS/CUAS, and emerging CDM tactics.

During the Skills Training module (Module 2), units will put into action the lessons learned from the briefings and hands-on training received in Module 1. Units will conduct an iterative (“round robin”) training event within a dynamic training environment. Training units will be given a very basic operational order with an intelligence, surveillance, and reconnaissance (ISR) mission set. Units will form tactical elements (teams, squads, platoons, etc.) and move to pre-determined observation points. At the observation points, trainers will meet the tactical elements and provide them with specialty equipment to employ. Additionally, elements will be co-located with their enablers (cyber and EW/EA). Units will begin observation of a dynamic training environment. Opposing forces (OPFOR) will conduct repetitive tasks that will allow friendly units to collect information through physical and electronic means. OPFOR will also provide appropriate non-kinetic responses to being observed or electronically attacked to allow training units to engage in multiple TTPs.

During the Planning module (Module 3), unit staffs and leadership will develop an understanding of how to plan for CDM through the utilization of ERT. Central to understanding how the staff develops a course of action for the unit is a clear understanding of synchronization and integration of assets. Units should invite BCT and Division Information Officer (DIV IO), Division Space Officer (SPACE), Cyber Electromagnetic Activities (CEMA), Military Intelligence Company (MICO), Force Protection, and Military Information Support Operations (MISO) planners into the training session to understand how to better incorporate capabilities and enablers into training. More importantly, planners provide resources to enhance training and can provide knowledge on how to use organic systems in non-standard ways to achieve effects.

During the Integrated Training Event module (Module 4), units will execute an STX in an immersive, synthetic, and integrated training environment. This module is interconnected to all three modules and should not be executed as an isolated training event, but rather be the culmination of the three prior modules. Units begin developing the scenario, products, threat type (singular, dynamic, or hybrid), OPFOR (“free play”), resources, and enablers in Module 0.

As stated in FM 7-0, “it is impractical to think that all training will be conducted live.” As such, utilizing the integrated training environment centered on a multi-echelon event will allow a unit to create a “high payoff” CDM training event. Units can utilize this model from the BCT down to the squad. Units can have a squad conducting live training while another provides input from within a virtual simulator and yet another works in a constructive environment.

Units, depending on the size and scope of the exercise, can refer to Training Circular 7-101: Exercise Design to develop a unit specific or hybridized process for the development of their home station exercise. Although not necessary, the design sequence helps with providing an idea of how to plan an immersive exercise.

The exercise design sequence notwithstanding, units can utilize several models and TTPs, as outlined in FM 7-0. Training units will enter an environment where they will conduct a series of STX lanes that are interconnected and have a common narrative.

Units can now begin to develop a Master Sequence of Events List (MESL) that allows an administrative control element (White cell) to run friendly (Blue cell), enemy/OPFOR (Red cell), and all other events/personnel/forces (Green cell). Units can control the tempo of the exercise to ensure units are experiencing the proper effects and are meeting their outcomes.

Critical to the execution of the STX is an OPFOR that is free play and responsive. OPFOR should employ TTPs such as, but not limited to: “drone” swarms as part of the counterattack, threat sUAS ISR operations, GPS signal “spoofing”/intercept/jamming (from ground and sUAS), sUAS IEDs, “flash” enemy information operations on social media, low-tech improvised armor and weapons, EW/EA, threat cyber operations, and many more. OPFOR should be designed and prepared to play irregular, regular, hybrid, insurgent, and non-state actor threats while conducting ERT. The unit will need to be able to act and react to presented threats on all domains utilizing an organic modification table of organization and equipment, novel technology, and adaptive TTPs.

The development of the ERT STX and the overall concept of operation requires units to integrate organic and external enablers and capabilities throughout their formation to the smallest elements. The greater the integration of these capabilities into the formation, the greater success the unit will incur during the execution of CDM.

Some STX considerations:

- If training units cannot emplace the required infrastructure to create a synthetic environment, a degraded training solution should include establishing a “closed” intranet or employing a civilian Internet—WiFi system to enable the use of social media throughout the training area to replicate how civilians and threat actors pass information in the operating environment.
- Units should employ organic and non-organic systems to create solutions for problems presented in the scenarios. STX lane may be enhanced by utilizing EA/EW capabilities and organic ISR assets used in non-doctrinal or novel TTPs.
- Unit operations sections could have pre-built scenarios with technology requirements ready for subordinate units to use as a template for execution to support “opportunity” training.
- Units should consider integrating formerly strategic operational tasks (CUAS defense in depth, ISR layering, anti-access/area denial, EW/EA, and many more) when developing scenarios and MESLs; by including these and other concepts in the overall scheme of maneuver for training, units can enhance their understanding of CDM. Additionally, units will be able to fully realize innovative methods, capabilities, and TTPs within the air, land, sea, space, and cyber/EW domains.
- Units should consider what level of complexity they want included within their replication of the operating environment by evaluating training levels and threat forces in future deployments in the development of scenarios and technology selection.

As units complete their STX and transition to the LFX, they should ensure they utilize the full spectrum of the integrated or blended training environment to provide maximum training results. Units should continue to incorporate the following (but not limited to) into their LFX: BCT and DIV IO, SPACE, CEMA, MICO, Force Protection, cyber capability, mission command

systems (Android tactical assault kit, NETT Warrior, command post of the future, etc.), EW/EA systems (VROD, VMAX, Prophet, DRT, Drone Defender, man-portable anti-drone system - kit, CUAS mobile integrated capability, anti-unmanned aerial vehicle defense system, Mesmer, etc.) and sUAS/CUAS. By including these capabilities and personnel in the LFX, units will provide the best method for visualizing CDM.

Once the collective task (attack, defend, raid, etc.) for the LFX has been determined, units should review the supporting collective and individual supporting tasks and consider they will need to identify tasks [EW/EA, integration of signals intelligence (SIGINT) and unmanned aerial system (UAS), spectrum deconfliction, etc.] that are normally associated with the other types of units external to their organization (air defense artillery, SIGINT, tactical UAS, IO) and also sometimes only found in the Army Universal Task List or Universal Joint Task List.

## Components of the Solution – Adaptive and Innovative Leadership Development

To maintain an innovative and adaptive overmatch capability in the demanding operating environment of today and the uncertain environment of tomorrow, in which the force cannot yet predict where or when operations may occur, Soldiers and units are expected to have the ability and agility to effectively perform all tasks well. “The increasing complexity of combat creates an intense competition between the need for specialization and the general capabilities required for agility.”<sup>8</sup>

The instructional framework for delivering and executing ERT will be built using the ASLTE. This outcomes-based approach will enable the rapid assimilation of new skills and competencies within the formation. Additionally, ASLTE incorporates the twenty-first century Soldier competencies of character and accountability, comprehensive fitness, adaptability and initiative, lifelong learner (includes digital literacy), teamwork and collaboration, communication and engagement (oral, written, negotiation), critical thinking and problem solving, cultural and joint, interagency, intergovernmental, and multi-national competence, and tactical and technical competence. The lesson outline for ERT will be tailorable and adaptable to train any unit from squad to brigade staff (or equivalent). Instruction will consist of classes, practical exercises, and scenario-driven assessment.

Instruction will consist of classes, practical exercises, and scenario-driven assessment. The following principles and philosophy of ASLTE align well with the goals of how to U.S. Army trains to win in a complex world.

### ASLTE Principles:

1. Grow Problem Solving – Teach to “learn for themselves” the skills necessary to the success of their mission, within an established framework of knowledge.
2. Increase Intangibles – Develop intangible attributes like confidence, accountability, initiative, judgment, and awareness; reinforced positive character traits.
3. Increase Understanding and Awareness – Teach through contextual understanding of the risk and its mission application.

4. Increase Deliberate Thought – Condition Soldiers to always exercise a deliberate thought process (evaluations, judgment, and decision) while under controlled and increasing levels of stress.
5. Improve Combat Performance – Condition Soldiers to overcome the psychological and physiological effects and the physical requirements of combat.

*“Task-centric and standards based training and education does a superb job of presenting fact based and procedural information. The OE reminds us that fact laden information and tactics reduced to procedures are not always sufficient to solve contemporary tactical problems. Broad competencies may be more useful than isolated and specialized task proficiency alone. Integrating ASLTE concepts in training and education is a way to meet the Army’s need for broadly gauged generalists able to acquire rapid mastery of specific skills. From an ASLTE perspective, tasks are always taught with a contextual nature that helps explain why tasks should be learned rather than practicing the task for its own sake, and in isolation. ASLTE uses Army standards as the baseline performance measure in the design and execution of learning activities and when executed appropriately, student performance usually exceeds the standard, often by a significant margin.”<sup>9</sup>*

*“Training in the Army today has to account for unknown work performed in the future whereas in the past Army training was mostly focused on a specific job or function – much as training in industry does. Decisive Action argues strongly for more broadly gauged generalists to handle the ambiguities and uncertainties of a future operational environment. However, core competencies still call for if not expertise, at least abilities beyond proficiency in the critical skills of a military specialty (or unit type).”<sup>10</sup>*

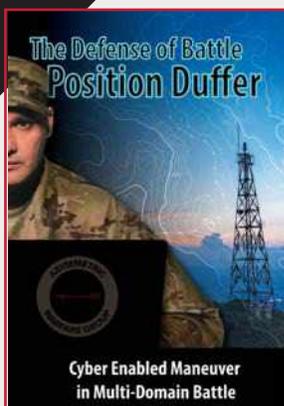
## Conclusion

What ERT means for training in the Army today is that success in MDO is possible through CDM. The Army must develop training methodologies that allow units to quickly integrate and adapt new technologies and TTPs into existing and future training seamlessly. The ERT model provides such a methodology. At home station, units can quickly integrate and employ new technologies into existing training by utilizing effective outcomes-based training models. Also, commanders will inevitably incorporate new supporting collective and individual tasks which are not currently incorporated in existing unit METLs. This is crucial to incorporating COTS/GOTS solutions that are often only employed in combat. Commanders will need to create training opportunities that would normally occur outside the UTP but now must be incorporated into the plan.

The future operating environment will require agile and adaptive leaders who are able to “learn on the fly,” be innovative to their environments, and incorporate new material solutions that were not previously available at home station. Soldier survivability will inherently rely on how Soldiers train at home station as they prepare for a variety of worldwide deployments. Bridging the current and future threat environment with the most realistic training available will require a considerable amount of resources, manpower, and equipment to create realistic training opportunities that blend rapid COTS/GOTS solutions with existing doctrine, tasks, and equipment. Using the ERT model, not only will units maintain a learning culture and a lethal advantage over adversaries in the operating environment, but they will also integrate capabilities to produce consistent effects, even as technology continues to evolve.

## Endnotes

1. An excellent example of the success and failure of the model for innovation is seen at the start of World War II; British and German armies entered World War II in different states of readiness. British forces misinterpreted the threat and relied on a former dominance of the multi-domain environment. The British miscalculation resulted in an undermanned, under capacity, under capable British force entering World War II, with limited tactical and operational advantage. The German military, although significantly reduced, not only in manpower, but in capability as well, was able to precisely emphasize innovation along DOTMLPF because the problem was clear and straight forward. The result was a German military that was able to see itself fully, able to accept change rapidly, and integrate change through the entire formation even while in contact. Strategic failures notwithstanding, this produced great operational victories early in World War II. The Germans were able to create operational opportunities for success in multiple domains while ensuring that their tactical formations maneuvered in support of operational victories that would initially ensure a strategic multi-domain dominance. (Williamson Murray and Allan R. Millett (eds.), *Military Innovation in the Interwar Period* (New York: Cambridge University Press, 2009), 8-9,12.
2. Murray and Millett, *Military Innovation in the Interwar Period*, 311.
3. Department of Defense, "Quadrennial Defense Review 2014," March 4, 2014, 60.
4. Jeffrey William Lewis, "The Human Use of Human Beings: A Brief History of Suicide Bombing," *Origins* 6, no. 7 (April 2013): 1.
5. John Plifka, "Blended Learning: The Army's Future in Education, Training, and Development" (Strategy Research Project, U.S. Army War College, 2010), 9.
6. Blaise Cornell-d'Echert, "Preparing Soldiers and Developing Leaders for Decisive Action," U.S. Army Asymmetric Warfare Group White Paper, 2013, IV.
7. U.S. Army, "FM 7-0 Train to Win in a Complex World," October 2016, 6.
8. *Ibid.*, IV.
9. *Ibid.*
10. *Ibid.*, 6.



"The Defense of Battle Position Duffer" is a visualization of how leaders might integrate the increasingly vital cyber domain into tactical operations in a modern brigade combat team. The intent is to stimulate thought and debate across the Army with a readable, entertaining, and hopefully provocative glimpse at the business of cyber warfare and

related topics—electromagnetic warfare, spectrum management, operational security, social media, information operations, and others. Much has been written on this topic, but virtually all of it has addressed the cyber domain at the national, policy, strategic, and operational levels. This work is focused on brigade and below.

# Developing Advisors

for the **21<sup>st</sup>** Century

## Introduction

Today, the United States finds itself confounded by a global structure beset with political and popular elements that defy traditional perspectives of international stability. This reality compels the U.S. Army to create a force that can foremost support stability and, at the extremes, provide a structure to create a democratic foundation that promotes human values and individual liberty.

This article provides leaders, planners, and instructional designers with some analysis and design ideas to help shape a course of learning that has the intended outcome of producing confident, competent, and effective military combat advisors able to succeed and thrive in an environment of high ambiguity.

## What Makes an Effective Combat Advisor?

While the Army has garnered good insights advising in Iraq and Afghanistan, that knowledge is not fully compatible with the new vision for small teams advising at tactical-level echelons. Better experience is available by examining the work of advisors and advisor teams from Korea (KMAG) and Vietnam (MAAG-V, or MACV after 1962) to determine what advisors themselves thought had made them effective—or what hindered their efforts by their lack. These two advisory efforts are closer approximations to the conditions that current advisors are likely to find themselves in while advising at the battalion level during combat operations.

Sometimes referred to as personal qualities, characteristics, or traits, what emerges is that effective advisors needed knowledge, skills, and attributes. Today, we call those three items competencies; competencies are the cluster of knowledge, skills, and attributes (or abilities) necessary to accomplish a task. A short listing can build a framework for the necessary competencies for a combat advisor, regardless of rank or billet:

- Knowledge: Principles of military operations and logistics, culture, psychology, leadership, government, and civil structures
- Skills: Language, effective communications, nonverbal communication, use an interpreter, teach and coach, influence behavior, assessment, planning, project management, health/hygiene/sanitation, navigation, trauma care, weapons, and communication systems
- Attributes: Confidence, adaptability, empathy, patience, ambiguity tolerance, sociable, conscientious, problem solving, impulse control, and open-minded

This list, while not inclusive, is considered adequate according to combat interviews and analytic reports from previous advisors. Ultimately, these KSAs provide a comprehensive framework that can be used for the screening, selection, training, and assessment of combat advisors.

## Why Competencies Matter

In the first version of the Army Learning Concept (TRADOC Pam 525-8-2, 2011), the concept of competencies was introduced as an essential component for preparing Soldiers for military

operations. Known as the twenty-first century Soldier competencies, listed below; the intention was that all Army training and education should seek to develop the competencies of:

- Character and accountability
- Comprehensive fitness
- Adaptability and initiative
- Life-long learning
- Communication and engagement
- Critical thinking and problem solving
- Cultural competence
- Tactical and technical competence<sup>1</sup>

The idea was that mastering, or developing, this set of critical core competencies would provide a foundation for operational adaptability. As can be seen in this list, these were intended to be learning outcomes as a result of whatever knowledge or skills were delivered in a course.

The new Army Learning Concept for Training and Education 2020-2040 (TRADOC Pam 525-8-2, 2017) no longer describes the Army core competencies. Competencies, as an idea are still prominent, and the idea now is that commanders determine the competencies they need to develop through Army learning. The desired end state envisioned by the new Army Learning Concept is:

*An outcomes-based, learner-centric, continuous and progressive learning environment that develops agile, adaptive, and innovative Soldiers and Army Civilians with the competencies required to build cohesive teams and successfully lead them in complex and chaotic environments.<sup>2</sup>*

Research suggested fundamentally different outcomes occur when trainers adopt different strategies and methods when interacting with their trainees, as originally promulgated in the publication of a research monograph that described the application of outcomes-based training and education (OBT&E), especially in the initial military training environment.

Subsequently, with increased demands from senior leaders for adaptable Soldiers and adaptive leaders, the U.S. Army Asymmetric Warfare Group (AWG) undertook the design and implementation of a course for mid-grade leaders to enhance their adaptability. The Asymmetric Warfare Adaptive Leader Program (AWALP) was a ten-day resident course taught at Fort A.P. Hill, Virginia. Student responses to their learning and commander recognition of fundamental change in their subordinates' abilities in combat suggested the program improved or enhanced the natural adaptability of these young leaders.

Lessons learned from the OBT&E initiative and the execution of AWALP led to the re-conceptualization of training and education in both the institutional and operational domains of Army learning. This led to the development of the Adaptive Soldier/Leader Training and Education (ASLTE) approach to implementing the just-published Army Learning Concept. Since 2011, the AWG has used ASLTE for internal training, as a demonstration model at TRADOC schools and centers, to assist the U.S. Army Cadet Command with instructor development, as well as for AWG-led training of Army units working with foreign security forces (FSF) in U.S. Central Command and U.S. Africa Command.

## Adaptability: The Key Competency for Advisors

Reading combat advisor interviews and reports of advisor missions leads to the inescapable reality that advising at the tactical (battalion) level is one of the most difficult missions a Soldier might ever face. Whether stated by the command or not, every advisor has the sense that they stand or fall with the performance of their counterpart.<sup>3</sup> Many advisors consistently complained that they had responsibility with no authority. Appeals to higher authority were a double-edged weapon as it inevitably led to loss of mutual trust and confidence. Advisors often arrived at the unit completely unprepared for what they might find and mostly dependent on the host military for all manner of support. All of an advisor's prior experience had been as a member of the best, most richly equipped and supported Army in the world. Suddenly they found themselves at the mercy of an uncertain FSF logistic system, with forces under questionable leadership, lacking sound doctrine, and more than likely at odds with the citizenry of the nation. Clearly, success depends a great deal on the adaptability of the advisor.

### Understanding the Challenges of Adaptability

Adaptability had long been recognized as a human trait or attribute, but for many years lacked a valid, researched definition, and was considered an elusive concept. Finally, in the last year of the twentieth century, a definition emerged. Extensive surveys of working professionals assisted the team to define a taxonomy for adaptive performance.<sup>4</sup> Further research compilation arrived at the following working definition, "Adaptability is an effective change in response to an altered situation."<sup>5</sup> It was this definition, and taxonomy that the AWG used to design and develop a course of instruction that purposefully sought to enhance adaptability in the responses to learners in novel situations. There are eight dimensions identified in the categorization of adaptability and have been further conceptualized by the individual adaptability (I-ADAPT) theory to measure the behavior in individuals. These dimensions include:

- Solving problems creatively
- Dealing with uncertain or unpredictable work situations
- Learning new tasks, technologies, and procedures
- Demonstrating interpersonal adaptability
- Demonstrating cultural adaptability
- Demonstrating physical adaptability
- Handling work stress
- Handling emergencies or crisis situations<sup>6</sup>

There is a close association with adaptability and being a combat advisor. Any training for a potential combat advisor must include efforts to develop adaptability as an important outcome. *Adaptability is not a topic for training; it is an outcome of well-designed training.* It is possible to design training to increase knowledge, skills, and attributes while also developing lesser obvious intangibles that allow the Soldier to adapt. This requires that the training allow Soldiers to show their confidence, initiative, innovative problem solving, and decision making while bounded by accountability to the mission, the unit, and their own decisions.

### **Studies Underpinning the AWG's Efforts with Adaptability**

Anecdotal evidence achieves limited mileage with decision makers in a world constrained by resources mapped by program objective memorandum cycles. The commitment of resources in a five-year budget plan depends on more than good intentions and positive results—especially when those results and methods are so contrary to the norm. Therefore, the AWG requested scholarly and scientific studies to validate its observations.

RAND undertook a study of the AWALP to determine if what the program espoused was actually achieved. A year-long study that sought to accumulate longitudinal data (for learning transfer) merely recognized that the program produced measurable change in participants.<sup>7</sup> The RAND study conclusion was that “AWALP, supported by systematic course evaluation, provides a promising approach for the Army as it seeks to further develop adaptable leaders and teams.”<sup>8</sup>

The AWG chartered the Johns Hopkins University Applied Physics Laboratory (JHU/APL) to determine the metrics for adaptability. In a two-phase study, the results were clear. The AWG's operational definition of adaptability, “an effective change of behavior in response to an altered situation consistent with the commander's intent,” was supported by research into adaptability and adaptive performance. Most significantly, the key finding of the study was that adaptability can be measured in an individual while responding to various stressors and stimuli in a laboratory setting. Thus, the core subtypes of executive function and elements of adaptability are both measurable and can be influenced through training.<sup>9</sup>

To demonstrate that the ASLTE approach is transferable and produces behavioral and organizational impact within an operational unit, the U.S. Army Training and Doctrine Command (TRADOC) Analysis Center at White Sands Missile Range (TRAC-WSMR) studied the 25th Infantry Division's Lightning Adaptive Leader Program (LALP).<sup>10</sup> The findings noted that participants in the LALP increased application of the twenty-first century Soldier competencies. More importantly, the study found that training following the ASLTE principles provides intangible benefits without sacrificing training effectiveness. As a true experiment with a control and a test group, there were significantly measurable differences in performance that showed the effectiveness and durability of ASLTE-principled training.

### **The Adaptive Soldier/Leader Training and Education Approach**

The rationale of ASLTE and its broad applicability to all aspects of Army learning pertain to the five principles that frame the ASLTE learning environment. These principles derive from consistent observations of successful learning in various training environments and schools. Recent findings in the learning sciences, focused on neurology and cognition, suggest that the ASLTE principles are fundamental and foundational instructions for the trainer or instructor/facilitator to produce effective and durable learning.

There are five principles that guide the instructor/facilitator during interactions with their learners.

- Grow problem solving skill
- Increase competencies
- Increase understanding and awareness
- Increase deliberate thought
- Improve combat performance

In support of those principles, there are five elements that the learning environment should do to facilitate learning and increase confidence.

- Assist the Soldier to understand the situation and the desired results
- Assist the Soldier to identify the obstacles in achieving the desired results
- Allow the Soldier to work toward a solution within defined principles
- Draw out of Soldiers a critique of their performance during the process
- Demonstrate linkage of tasks in a military situation

ASLTE aids trainers, course managers, and training developers in their analysis, design, and development activities as they prepare material for instructor use or unit training. It focuses their analysis on how to align learning outcomes with a particular requirement. This alignment allows them to use the outcomes as a guidepost to check the validity of learning activities within a current or planned program of instruction. Further, the use of outcomes guides the design and development of all learning activities as opportunities to develop the Soldier. *Outcomes and objectives are not synonymous, and this idea remains the biggest obstacle to effective course design in the Army today.*

## Understanding Outcomes and Objectives

Outcomes broadly describe a design goal, while objectives shape the means to achieve those goals, and the training developer can then choose learning activities that purposefully achieve those objectives. The developer can view every activity from the context of relatedness to other activities and all guided by the holistic perspective of the learning outcome desired. Outcomes are long term, and behaviors infer their presence, while objectives are short term and manifestly observable. Outcomes are a learner-centric way to describe what should happen to the learner; objectives are a way to describe content for the instructor to meet capability requirements and skills to be developed.

The most useful result of using outcomes to describe learning is that learning activities, performance, and assessment can be constructively aligned. Soldiers begin to recognize that they are not just learning something because it is a topic in a curriculum. Learning and learning activities now become purposeful. For example, what is it that makes Paratroopers, Rangers, and Marines broadly more effective, aggressive, and mission focused? It is not the content of the curriculum, and it is not because they start with “better” stock. It derives from the outcome (intended or not) of their training that produces superb confidence in themselves. It is the outcome that matters, and the objectives just help to get there. What we desire with developing combat advisors is confident, adaptable, and effective leaders who are able to produce measurable change in the military performance of the units that they advise.

## Design Ideas for the Security Force Assistance Advisor Course

### Selection

There should be little doubt of the need to screen and select personnel to perform advisory support to FSF, as well as understanding that not every Soldier is capable of performing in the advisor role. General military knowledge and professional competence are not sufficient indicators to assign personnel as military advisors as the experience with military transition teams proves.<sup>11</sup> Most of the relevant selection techniques used by elite units today derives from the work of psychologists and psychiatrists during the assessment of personnel to serve in the Office of Special Services (OSS) in World War II.<sup>12</sup> The relevant points of the screening, assessment, and selection processes is to predict future behavior and determine a person's fit to the mission and to the organization.

The Special Forces selection process has used the Minnesota Multiphasic Personality Inventory for many years, and it appears to be useful for their needs. However, it depends on credentialed psychiatric doctors to administer and analyze. Most psychometric instruments do as well. Even the Meyers-Briggs Type Inventory (MBTI) requires training and certification to administer. There is ample evidence to suggest that the MBTI is a flawed instrument and does not provide the kinds of information necessary for making useful acceptance and assignment recommendations. The Attentional and Interpersonal Style (TAIS) instrument is recommended instead. Though, as with all such instruments not wholly perfect, TAIS provides a better description to serving practitioners than other instruments that depend on qualified analysts to adjudicate:

- TAIS is used around the world for the selection and training of high-level performers in sport, business, and the military.
- TAIS measures the specific concentration and interpersonal skills necessary for effective decision making and for the coordination of mental and physical processes in high-pressure situations.
- TAIS results identify the specific environmental conditions likely to facilitate or interfere with an individual's ability to make effective decisions and perform at the upper limits of his/her physical and mental potential.
- TAIS results also identify the specific behaviors an individual needs to change to improve performance.

An alternative assessment tool, the Test of Adaptable Personality (TAP), is a personality-based measure of adaptability developed by the U.S. Army Research Institute (ARI) for special operations Soldiers. It is a paper and pencil questionnaire using multiple-choice questions that focus on past behaviors and reactions to work events. The TAP measures the following six attributes:

- Achievement orientation: Giving one's best effort to achieve objectives.
- Cognitive flexibility: Willingness to entertain new problem-solving approaches; enjoys creating plans and ideas; accepts change and innovation.

- Fitness motivation: Enjoyment from physical training; willingness to maintain good physical conditioning.
- Peer leadership: Seeks positions of authority and influence; comfortable with being in command; willing to make tough decisions and accept responsibility for the group's performance.
- Interpersonal skills – team player: Works well with others; ability to establish supportive and trusting relationships.
- Interpersonal skills – diplomatic: Being extroverted; able to make friends easily and establish rapport.

Feedback from the TAP includes behavioral descriptions of strengths and potential challenges associated with each dimension, along with suggestions for improvement. Several studies have shown that TAP scores are predictive of on-the-job performance.

An important consideration the military assistance training advisor (MATA) must address is the purpose for selection. No test or construct for assessment and selection is 100% accurate and valid. There might be some individuals that, through training and development, perform very well in the mission that testing might have suggested otherwise. Therefore, it is prudent to determine which criteria are important enough that would suggest a candidate not attend (select out) the MATA.

An historical review offers some compelling factors. Below average ratings in the following categories should disqualify the person from attending the MATA or from assignment in an advisory position:

- Tolerance for ambiguity
- Sociability
- Empathy
- Self-confidence
- Teamwork
- Cultural tolerance
- Conscientiousness

Low scores in any of these seven items suggest that no amount of leader or team intervention will transform that person into an effective advisor. Low scores in several (or all) would indicate a potential failure.

The importance of teamwork is fundamental to the success of the advisory mission. Arguably, the Army's efforts to quickly build advisor teams to fill the performance gap in Iraq and Afghanistan was mostly a manpower challenge. Deficiencies in advisor team personnel could be overcome by the unit partnering techniques predominant during the period of MiTT employment (2006–2013), but analysis suggests otherwise, and lack of team cohesion significantly degraded advisor team performance and, ultimately, FSF unit success.<sup>13-16</sup>

### **Desired Course Outcomes**

The outcome statement is a description of what the student will be able to do as a result of new knowledge, and influenced with new behaviors. The leader model of BE, KNOW, DO is useful from an outcomes perspective because it maps well to the components of competencies (knowledge, skills, attributes). From the educator's perspective, it is also useful to nest the

outcome with learning levels, as found in the three learning domains first described in Bloom's taxonomy (cognitive, affective, and psychomotor).

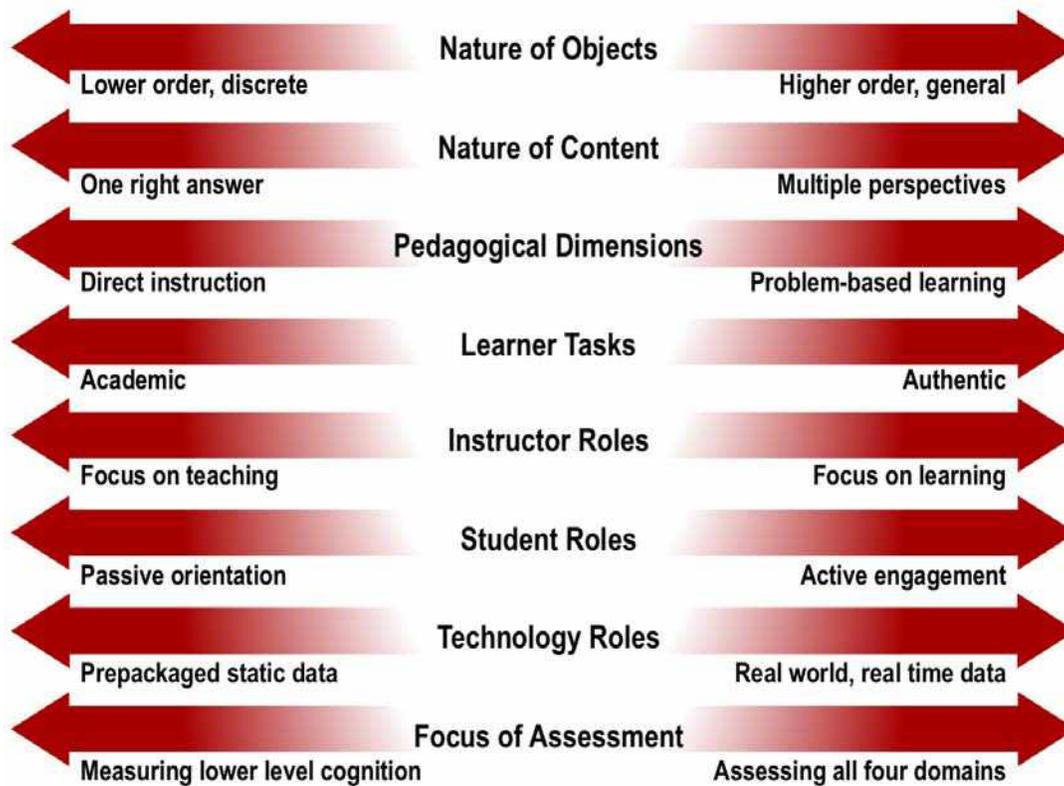
While the cognitive and affective domains are mostly well understood by educators and instructional designers, psychomotor is not. The challenge is that skills, which are where the psychomotor is associated, are compound manifestations of performance. For example, speaking a foreign language is a skill, but it requires knowledge of grammar and a desire to communicate with a foreign person.

This skill/knowledge/attitude requirement is reminiscent of a domain that was once well recognized but has only recently (since the 1990s) re-emerged in the thinking of educators. It is the conative domain, and it was once thought that human mental efforts could be described as cognitive (thinking), affective (feeling), and conative (willing). It is interesting that a long-term study about adaptability for the Department of Defense (DoD) performed by the Institute for Defense Analyses used several words for components of adaptability that also have long been associated with the conative domain.<sup>17, 18</sup> The idea that grit, resilience, mental toughness (drive), and physical toughness (endurance) are attributes that enable adaptability is not necessarily a new idea, as most military trainers have for eons attempted to instill this into Soldiers through tough training regimens. Words most often associated with conation are ambition, desire, drive, persistence, striving, and will.

Most military leaders would be encouraged by having Soldiers with these inherent qualities. The question is: can these attributes be developed, or are they just useful indicators of future performance? Educators are now considering that like the taxonomy of the cognitive, affective, and psychomotor domains, the conative domain (perception, focus, engagement, involvement, transcendence)<sup>19</sup> can be categorized. This listing of levels of development in the conative domain are not just measures; they essentially describe the conditions that should be created to allow learners to operate at those levels.

Reeves considers the conative domain as an essential component for design, which also speaks to the importance of alignment.<sup>20</sup> However, there is a difference in the two perspectives (Reeves and Biggs),<sup>21</sup> though both are founded on constructivist learning principles. In Biggs' case, the alignment is derived from and central to the desired outcome. Expressing the desired outcome means that there is something to measure—how well does the student represent the outcome? To assure this outcome, learning activities have to be designed that allow the student to demonstrate their knowledge, skills, attitudes—in other words, their learning produces observable evidence that allows a subject-matter expert to make an informed judgment about the student's performance. Reeves takes a much broader view of the alignment issue. He maintained that there are eight critical factors that needed alignment to be sure that an outcome can occur. Further, he noted that each of those factors existed as a continuum describing the differences between instructor-centered and learner-centered instructional models.

This returns us to the ASLTE approach that depends on design to create a learning environment that generates the desired outcome. As is the case with holistic instructional strategies that use a "whole-person" perspective, the demands on the instructor and the institution are higher than for an objectives-oriented learning paradigm. The design is more demanding,



#### Learning Experience Alignment Factors<sup>22</sup>

learning activities more complex and in greater number, and assessment of learning is as critical as teaching the content.

#### Security Force Assistance Advisor Course Outcomes

The top-level outcome is a competent, confident combat advisor that can positively influence change in the combat performance of an FSF unit through effective interactions with all levels of personnel in the FSF formation.

Subordinate outcomes include:

1. A competent combat advisor that accurately and effectively determines actual versus perceived developmental needs of the FSF unit under advisement.
2. An adaptable combat advisor that is equally effective with low-resourced FSF formations in austere environments as with well-resourced FSF in rich and permissive environments.
3. A confident combat advisor that easily transitions from teaching, coaching, and providing advise without diminishing FSF formation leadership credibility while improving performance.

4. A persuasive, persistent, and humble combat advisor that builds durable relationships with FSF counterparts at multiple echelons.
5. An informed combat advisor that takes initiative to excel as a member within several team constructs, sees the broad perspective, and remains accountable to the mission end state.

Clearly, as with most draft outcome statements, these need to be tested through the design of learning activities to determine if the outcomes are attainable, measurable, and meaningful. However, based on a synthesis of an historical literature review, it seems likely that these outcomes might be what is needed to close the gap between intention and practice that has persisted for more than the sixty years the Army has actively employed combat advisors in the contemporary operational environment.

### **Desired Competencies**

It is clear just how different a competencies-focused curriculum might be when compared to an objective-oriented curriculum built around topics and content. When cast against the desired competencies and outcomes, many different kinds of topics can be taught in authentic, mission-oriented contexts that develop the learner in ways that a topic-based learning activity can never accomplish.

### **How to Develop the Desired Competencies**

Naturally, there are topics that are appropriate to produce competencies for a specific mission or job. To demonstrate the limitations inherent in a topics-based, or objectives-oriented, curriculum, consider the following content listing:

- Land navigation
- Combat water survival test
- Weapons familiarization, preliminary marksmanship instruction
- Heavy weapons familiarization and qualification
- Driver training
- Communications equipment
- Combat lifesaver training
- Advanced rifle marksmanship
- Military orienteering
- Small unit tactics
- Call for fire and air-ground coordination
- Force protection
- Personal recovery
- Troop leading procedures
- Range operations
- Building rapport
- Negotiations
- Cultural use of interpreters
- Host-nation training strategies
- Training plan
- Interpreter/translator management

The first problem is the underlying assumption that every student is starting from a zero-point base of knowledge. All of the selection criteria used to slate personnel for assignment to a security force assistance brigade argue that personnel are not at the entry level of learning in any of these topics.

The next problem is that teaching these topics in isolation diminishes the level of learning and produces the typical teach, test, and dump result of most direct instruction. The amount of time needed to re-introduce certain topics (knowledge and/or skills) to learners with a body of learning and experience can be much reduced when compared to teaching it to uninformed novices.

What is required for learners who already have military and combat experience is an active, immersive learning environment that provides authentic problems that would be experienced in the new mission or role of a combat advisor. In many ways, because Soldiers selected for advisor duties already have some (or a great deal of) experience, what is really needed is a way to transform the prior experience in ways that shed biases but improve critical thinking and enable adaptability.

Most important, perhaps, is that the previous listing of topics lacks any focus on the needs of an advisor, such as communication, teaching, coaching, and advising.

**Active Learning and Authentic Problems**

Active learning is a learning environment that recognizes that every learner constructs his/her own knowledge. Active learning keeps the learner engaged, puzzled, challenged, curious, and uncertain, but always supported by facilitators that keep the learner grounded. Active learning is not lectures, demonstrations, drills, conferences, discussions, or most of the typical activities that occur in classrooms in high schools, colleges, and Army courses. That said, active learning can still happen in classrooms. To understand the distinction, one only has to consider what the learning environment is doing in terms of engaging the mental faculties of the learner. Further, research suggests that active learning strategies are helpful with improving learner self-regulation and enhancement of adaptability in the learner.<sup>23</sup>

Authentic problems, to have an impact on learners, must have real-world relevance, need to be ill-defined and partially ambiguous, have enough complexity to defy simple solutions, force examination from multiple perspectives, and offer multiple solutions and differing outcomes.<sup>24</sup> There are other considerations that various researchers offer, but for the most part these are the key design parameters needed to create learning activities that provoke, engage, and energize learners.

		Learning Levels (Skill Acquisition)					
		Lower					Higher
		Novice	Advanced Beginner	Competent	Proficient	Expert	Master
Learning Domains	Cognitive	Remember	Understand	Apply	Analyze	Evaluate	Create
	Affective	Receive	Respond	Value	Organize		Internalize
	Psycho-motor	Observe	Model	Recognize Standard	Correct	Articulate	Naturalize
	Conative	Perception	Focus	Engagement	Involvement		Transcendence

**Learning Activity Design Analysis**

This chart depicts how designing learning activities requires several levels of analysis, and if the constructive alignment philosophy is accepted, recognizing that assessment must address multiple domains. Subject matter experts (meaning valid practitioners of the skill set of an advisor) will recognize the multi-faceted aspect that the chart proposes.

Land navigation is a useful analogy. The ability to navigate with confidence, anywhere in the world, depends on knowledge, skill, attributes, and desire. The traditional approach seeks to transfer knowledge, test the quality of that knowledge, and determine if the level of transfer is sufficient to say the person knows how to navigate using a map, compass, and protractor and is sufficient enough to conduct dead-reckoning from point A to point B. This is hardly a representation of how navigation works in reality.

If, however, we change the entire concept of how we teach people to find themselves in distant unknown locations, we arrive at a different learning outcome. More importantly, it is obvious that how we teach is fundamentally different too. The key issue: is a map, compass, and protractor necessary to plan and execute a route between points A and B? Actually, the answer is no, but these tools certainly help by making it easier. The difference between an objective and an outcomes focus can be found in the basis of this question: do we want a Soldier that is confident and capable to move from point A to point B regardless of conditions or a Soldier that can only do so with a variety of tools and very specific instructions?

With such a realization, how we teach a Soldier to navigate turns on its head. *Today, it is not about rules and procedures but more about understanding the how and why behind the tools, systems, and processes that have accumulated over time to make things easier and more precise—but not necessarily better or more effective.*

The realization is that learning how to navigate is not anchored to a step-wise methodology that must always be followed using a set of tools that will not always be available. Navigating into the unknown is a test of how willing people are to pit themselves (the accumulation of their experience) against the uncertainty of an indifferent environment. Looked at more broadly, instead of a series of objectives to be met, we measure how effective the performer was in execution of the task. Those metrics further determine the focus of the after-action review and what additional coaching might be needed in subsequent learning activities to move the learner to a higher level of performance.

It is only in an exceptionally rare circumstance that a team of Soldiers will execute a singular task alone and in isolation. Military activities are most often performed in a team setting and as a series of linked activities that lead to some kind of result. It is therefore useful to teach Soldiers in such a manner. Another benefit of using this integrated approach is that it does not make assumptions about the military skills competence of the participants in ways that have a derogatory context. More importantly, it is also serving as a model for how to assess skills and performance as an advisor. In so doing, the instructor/facilitator can then also model how to teach, coach, or advise as necessary to support the team's success in executing a task.

The following table contains the same list of learning topics from before but now reflects consideration as conditions or elements of the authentic learning tasks and problems that will be presented to learners for solution. Notice how the purpose of the learning changes from meeting arbitrary standards of learning objectives to instead focus on mission success while contending with different challenges—much like in reality. Every learning objective

is satisfied and, in some cases, in multiple instances. However, these are not stand-alone instances of learning about the content of the topic. Instead, they are learned about in an integrated way that lends a degree of authenticity for the topic, as well as the potential challenges that might be faced in the advisory mission.

**Learning Objectives**

LA 1	LA 2	LA 3	LA 4	LA 5	Major Topic (Learning Objective)
X				X	Land navigation
	X				Combat water survival test
		X			Weapons familiarization, preliminary marksmanship instruction
		X			Heavy weapons familiarization and qualification
X	X	X			Driver training
X	X	X	X	X	Communications equipment
	X	X	X		Combat lifesaver training
		X	X		Advanced rifle marksmanship
X		X		X	Military orienteering
		X	X	X	Small unit tactics
		X	X	X	Call for fire and air ground coordination
	X	X	X		Force protection
X	X	X	X		Personal recovery
X		X	X	X	Troop leading procedures
		X			Range operations
			X		Building rapport
			X	X	Negotiations
X			X	X	Cultural use of interpreters
				X	Host-nation training strategies
				X	Develop training plan
				X	Interpreter/translator management

**The Rank and Position (Billet) Challenge**

It is likely that every advisor, regardless of rank and duty position needs some development in the certain competencies. Will every learning activity challenge and develop an O-4 as much or as well as an E-7? Moreover, are knowledge and skills needed in certain levels of advisory support that are not germane to every advisor? The purpose of these questions is to consider that the MATA might offer shorter courses to develop certain competencies in select numbers of students. This would be better than trying to do everything for all advisors in one course. By the same token, scoping the course to develop the core competencies for all advisors could reduce total course time.

It is important that students at the Security Force Assistance Advisor Course be organized in teams. An advisory team organized to support a mission should ideally train together and deploy to execute the mission. Ultimately, though, such an approach would not succeed due to attrition, team member dysfunction, or other issues that would eliminate personnel from the team setting. Nonetheless, the team approach is critical. Ignoring team concepts and developing those important skills (task work and teamwork)<sup>25</sup> is a large part of why the

Army's prior efforts with advisors had marginal results, especially in Iraq.<sup>26</sup> The reason for organizing and learning in a team context is to develop the skills necessary in all participants to rapidly assist the creation of a functional, adaptive team. It is rare that authoritarian leadership styles withstand the stresses of most military situations, the advisor mission depends on communication, cooperation, and coordination—essential components of the adaptive team process. Soldiers of different ranks and levels of experience need to learn to trust each other and recognize that their combined competencies are far greater than the skills of a designated leader. The leader too must understand and recognize the power of the team. This is not just about leadership but about learning the work of teamwork, consensus building, decision making, and adaptation as a small team that must depend on itself.

### **The Need for Continuous Assessment**

Some concepts for the Security Force Assistance Advisor Course organize the learning program into phases or modules and suggest that these serve as gates. The more important assessment needs to be based on the top-level outcome and the subordinate learning outcomes listed earlier in this article.

Recall that the method of constructive alignment will assist the designer or the instructor/facilitator to create a learning activity that will allow the student (or team) to do things that provide observable evidence. A scoring rubric would describe the criteria and the qualities expected for different levels of performance. The ideal situation would be to use a digital assessment tool such as the tablet devices with which the ARI field unit at Fort Benning, Georgia, has been experimenting. The benefits of such a device would be the ease of capturing performance data on site, collating the data, monitoring performance changes over time, and tracking trends of both individuals and teams.

Finally, as completion of this course will generate an additional skill identifier, there has also been discussion that graduates receive an academic evaluation report (AER) DA 1059. Because this course should create a comprehensive learning environment and an opportunity for extensive assessments. Properly used, this data can help the commander to slate personnel into teams or assign them to missions for which their assessments suggest a good fit.

### **An Opportunity for a Novel Approach to Learning Design and Implementation**

The MATA and its Security Force Assistance Advisor Course offers the Army an opportunity to shed the baggage of almost a century of production-line training and objectivist orientation to learning and development. As the Army learning strategy has begun to suggest, an outcomes-oriented and competency-based approach to learning will be more productive (and effective) in the short and long terms, much as industry discovered over the past decade.<sup>27</sup>

It appears that the course resourcing model and the entirety of the TRADOC system approach to training will intervene to produce a learning product that might appear to be efficient but instead is wholly ineffective. The tension that exists between these two extremes is beyond the capacity of this author to illustrate but the results of the annual Center for Army Leadership Survey of Army Leadership reports should make clear. Year after year, respondents to the annual survey of Army leadership indicates that professional military education continues

to miss the mark (widely, in some cases). Perhaps this is an opportune time to consider something completely different.

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T. X. Hammes

# Technological Convergence

is Changing Warfare

Small,  
**SMART,** *and Many*

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Klaus Schwab, executive chairman of the World Economic Forum, coined the term “fourth industrial revolution” for “the staggering confluence of emerging technology breakthroughs, covering wide-ranging fields such as artificial intelligence (AI), robotics, the internet of things (IoT), autonomous vehicles, printing, nanotechnology, biotechnology, materials science, energy storage and quantum computing, to name a few.”<sup>1</sup>

This revolution will drive massive changes across society to include all forms of conflict. It is essential to remember even these massive, rapid technological changes will not change the fact that Clausewitz’s primary trinity of passion, chance, and reason will continue to define the fundamental nature of war. Nor will technology eliminate fog and friction. However, these technologies will provide small states and even non-state actors with capabilities that used to be reserved for major powers.

This article will focus on four technologies that will have maximum impact in the near term. Nano-energetics, AI, and three-dimensional (3D) printing integrated into drones are already producing a revolution of small, smart, and cheap weapons that will redefine the battlefield.

The primary immediate impact of nano-technology is the vast improvement in explosive power to weight ratio. As early as 2002, nano-explosives generated twice the power of conventional explosives.<sup>2</sup> By 2014, open-source literature claimed nano-aluminum created ultra-high burn rates, which give nano-explosives four to ten times the power of TNT.<sup>3</sup> The obvious result is that small platforms will carry great destructive power.

Task-specific AI is the second technology that will greatly augment the power of drones. To date, drones have been very useful but have required extensive numbers of personnel to operate them effectively. Task-specific AI has advanced to the point a drone can be instructed to fly to a specified location and then commence searching for a designated target. Cheap sensors mean inexpensive drones can search in the visual light spectrum. Additional





investment allows infrared and electromagnetic spectrums to locate a target. In short, autonomous operation is not only doable but inevitable. It is available in basic form today.

These two technologies provide the small and smart aspects of the revolution. Three-dimensional manufacturing will provide the cheap and many. The 3D industry has developed the advanced Digital Light Synthesis (DLS) process, which could allow a single printer to produce up to one hundred small drones in a single day. Thus, a moderately sized plant of one hundred printers, such as the United Parcel Services (UPS) plant in Tennessee, could produce 10,000 cheap drone bodies per day. UPS plans to expand the plant to one thousand printers and open multiple plants globally. Dr. Joseph DeSimone, one of the inventors of DLS, is working to increase the speed of the printers by a factor of ten with obvious implications. Thus, production of hundreds of thousands of drones is feasible.

Current technology can produce very large numbers of drones, but is it possible to position and launch them? The answer is yes—and systems are getting better rapidly. China already fields Harpy drones in eighteen drone launchers that mount on a single five-ton truck, as well as a smaller six drone launcher.<sup>4</sup> The Defense Advanced Research Projects Agency is continuing the development of the Navy LOCUST system that launches drones from a multiple-rocket launcher-like system.<sup>5</sup> The Russians are selling a wide variety of weapons that are built into standard twenty-foot shipping containers.<sup>6</sup> It is a relative short step to begin building multiple launchers for inexpensive, autonomous, deadly drones into standard twenty-foot containers. Using this approach, every truck that can carry a twenty-foot container, as well as every seagoing vessel, to include fishing boats, is a potential weapons platform. Also, drones could be built into smaller launchers that fit in pickup trucks or even vans.

## State Versus State Conflicts

The best outcome in a state versus state conflict is for both sides to be deterred from military action. Deterrence can be achieved through either denial or punishment. If an aggressor knows he cannot succeed or knows the punishment inflicted will exceed any gain, a rational aggressor will be deterred. The small, smart, and cheap approach can make deterrence affordable for NATO.

The creative use of swarms of autonomous drones to augment current forces would increase Russia's uncertainty about its ability to execute an invasion. If deterrence fails, it will assure a much greater cost to Russia, as well as the nightmare of a prolonged insurgency against highly capable opponents. If NATO assists frontline states in fielding large numbers of inexpensive, autonomous drones pre-packaged in a variety of standard containers, the weapons can be stored in sites under the control of reserve forces. In addition, prepackaged improvised explosive devices (IEDs) could be built in similar and smaller containers using ammonium nitrate fertilizer. With a proper initiating charge, ammonium nitrate is a powerful explosive. A twenty-foot container can hold fifty thousand pounds of ammonium nitrate, which is safe as long as it is stored separately from the detonator. The use of standard shipping containers drastically complicates any attempt to preemptively destroy them.

Further, if the weapons are prepackaged and stored, national active and reserve forces can quickly deploy the weapons to delay the Russian approach. Even Russia's advanced forces could be faced with very large numbers of attack drones and dense networks of IEDs. Then NATO only has to fly in the relatively small crews necessary to augment those forces. If NATO also invests in long-range autonomous drones, Russia will face punishment from drones launching from essentially unlimited locations outside the range of its own tactical air force. The Russian rocket launchers will also be subject to attack from the same long-range drones. The addition of guided rockets, artillery, missiles, and mortars munitions, smart mines, and autonomous drones—and the creative use of IEDs—could make even small nations very hard targets.

Against China, the small, smart, and many can also provide effective deterrence for the allies. To maximize the advantages, the allies must defend rather than attack. These weapons will dramatically reinforce a plan to hold the first island chain while denying China the use of the waters inside the first island chain or access to the ocean beyond.<sup>7,8</sup> The allies will not seek to win by striking into China but by choking her international trade and thus exhausting her ability to fight. This strategy, combined with



new technology, could both deny China access to the Pacific and Indian oceans and punish it severely through an economic blockade. Thus, it meets both requirements for an effective deterrent. Further, while the People's Liberation Army (PLA) envisions winning short, "informationized local wars," the allies can establish a defense that ensures China cannot win quickly.

A key strength in this approach will be land-based systems fighting from the first island chain. However, to survive, today's allied air forces and logistics facilities must be dispersed. Major bases are simply too vulnerable to China's weapons.<sup>9</sup> U.S. and Japanese forces have begun limited exercises to demonstrate they can operate their air forces from a wider range of bases. Given the level of threat today, it is essential that U.S. and allied forces regularly practice these dispersed operations. Rather than operating from a very limited number of military air fields, the air forces must practice operating from the numerous civilian air fields throughout Japan. Demonstrating this capability will have a deterrent effect on China by greatly reducing the probability of a successful preemptive attack on forces in Japan. Naval forces can act as a mobile reserve behind the chain to prevent Chinese efforts to break out or overwhelm the defenses at a specific point.

However, dispersion only provides temporary respite. As long as air power is tethered to bases inside the range of China's growing arsenal of missiles and drones, it remains vulnerable to preemption. It is essential that the United States and Japan cooperate in rapidly designing and procuring long-range, advanced vertical takeoff and landing strike drones. We already have promising designs such as the QX-222 and the Tern. The key is shifting investment from current systems to accelerate the development and fielding of these systems. When these systems are fielded, the basing possibilities become almost unlimited, and deterrence is increased because China cannot contemplate a disarming conventional first strike. For the purchase price of one *Ford*-class carrier and its proposed air wing, the United States could buy ten thousand Kratos QX-222 drones or thirty thousand loitering Tomahawk land attack missiles.

Forces fighting on the defensive from the first island chain already have significant advantages against attacking Chinese air and sea forces. The most obvious is that Chinese forces will be fighting inside the allied air defense zone. The second is the fact that many of China's forces lack the range to reach the islands, and thus the allies will only have to fight a portion of the PLA. These advantages will grow as conflict shifts from few and exquisite platforms to the small, smart, and many. Using this strategy, the allies gain the advantage of thousands of independent, active hunters augmenting the relatively few but expensive weapons systems they currently own. Because it is easier to mass produce



This handbook is intended to serve as a reference for Soldiers and leaders on the small unmanned aerial systems (sUAS) threat. The first chapter describes the basic attributes of sUAS systems and highlights common types of sUAS: fixed-wing and rotary. Subsequent sections highlight material and non-material methodologies for mitigating the threat of sUAS. Considerations and best practices for friendly employment are presented in the final chapter. This handbook was intentionally written for Soldiers who need to have a foundational understanding of only the most salient points related to sUAS. Therefore, readers should view this document not as a publication of doctrine, but rather as a list of considerations for an operational environment where sUAS may be active.

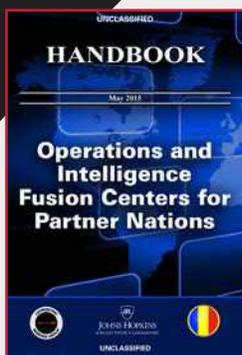
drones in the range of one hundred to three hundred miles than those of five hundred to one thousand miles, the defense will also have the advantage of numbers. Land forces inherently have much larger magazines and access to massive power infrastructures for directed energy weapons when they are developed.

## Non-State Use

The convergence of technology that is driving the small, smart, and many revolution will diffuse power to non-state actors as they gain capabilities usually reserved for major powers. Long-range, persistent, precision strike is a capability to which even non-state actors can aspire. If these actors have a state sponsor, it is almost certain they will attain and employ these capabilities. This provides opportunities in the irregular warfare field for all states to cheaply, relatively easily provide non-state actors with commercially derived weapons that exponentially complicate the enemy's force protection problems. For a decade and a half, ground forces have struggled to successfully hunt with IEDs. Today, IEDs can hunt ground forces, as well as air assets sitting on the ground.

## Does Defense Return to Dominance?

From 1863 until 1917, machine guns, bolt action rifles, and rifled artillery made the defense the dominant form of warfare. The ability of defenders to accurately engage anyone above ground within about ten kilometers of the front lines drove the advent of trench warfare. Drone swarms may once again make defense the dominant form of warfare but this time in ground, air, sea, and space domains. They will also be able to attack the physical elements of the cyber domain—fiber optic links, downlink stations, switching centers, etc. Today, commercially available autonomous drones have ranges out to two thousand miles and payload up to dozens of pounds. Military drones under development have ranges out to three thousand miles with payloads up to five hundred pounds. Combining nano-explosives, AI, and additive manufacturing could create units capable of launching hundreds to tens of thousands of smart drones in wave attacks at ranges exceeding today's ground fire support systems or tactical aircraft. The cumulative impact of improved missiles and autonomous drones in large numbers will be to make domain denial much easier than domain usage for both state and non-state actors.



This easy-to-use handbook will help personnel to more efficiently and effectively set up a partner nation force (PNF) operations and intelligence fusion center (OIFC). It references doctrinal material where necessary, points readers to source material as applicable, and makes recommendations where appropriate.

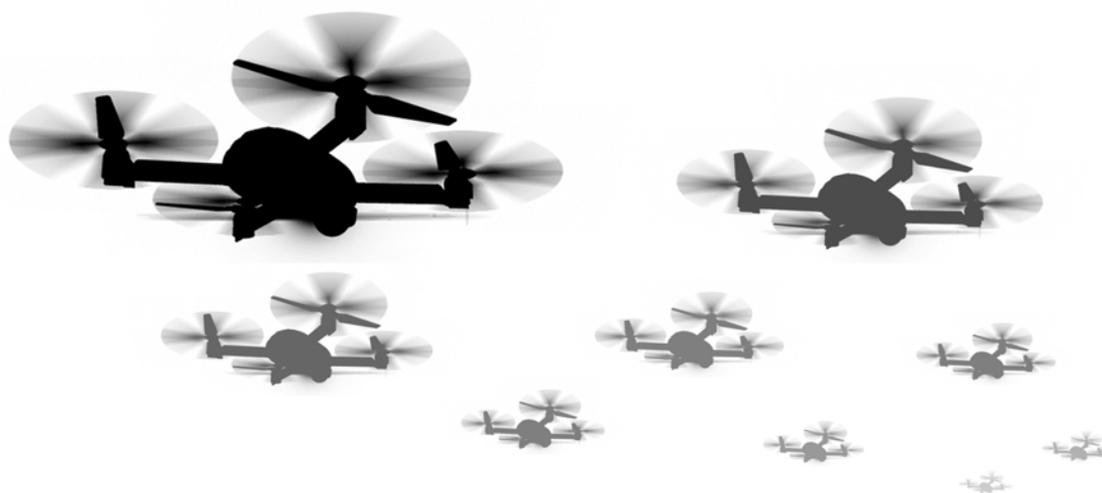
This handbook was developed in collaboration with joint, multinational, international, and interagency partners, with a particular focus on Department of Defense (DoD) agencies, conventional forces, and special operations forces (SOF) that have an interest in OIFCs.

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Russian Modern Warfare

# METHODOLOGY:

# Information Operations in the “Disinformation Age”



## The Character of Twenty-First Century Warfare

To be successful on the twenty-first century battlefield, the U.S. military (and its allies) should redefine its concept of warfare and view it through the lens of subtlety and complexity it has taken on, especially over the last fifteen years. We are rapidly moving into a post-Westphalian world order that will define state and near-state competition/conflict for the foreseeable future. We should understand modern conflict as just that—competition between multiple powers employing all of the tools of influence available to them. These tools range across the diplomatic, information, military, economic, financial, intelligence, and law enforcement (DIMEFIL) spectrum, including the leveraging of “lawfare;” in the kinetic realm, they include asymmetric and unconventional levers/actors/agents. Modern conflict need not be declared to occur or be effective.

In regards to Russia, the success of its efforts depends on keeping its activities below the internationally accepted threshold for war or aggression. This approach is the modern, platform-enabled version of “Russian active measures,” refined over the last sixty years to operate at all levels of war and permeate diplomacy. The Soviet Union employed these active measures to foment, foster, and facilitate revolutionary movements throughout Africa, the Middle East, Central and South America, and southeast Asia—in some cases seriously undermining U.S. and NATO efforts and interests (e.g., the Vietnam War, the socialist client states of the Middle East, and long-game European political demographic shifts). The Russian concept of information operations (IO) includes all manner of influence activities across the DIMEFIL spectrum, as well as narrative construction and distribution. It is for this reason that Russian IO plays a central role in its modern warfare methodology and is crucial to its global, regional (particularly, Middle East and Africa), and local (near abroad and internal) shaping operations and preparation of the environment.<sup>1</sup>

During the twentieth century, examples of the Soviet Union flaunting international norms included failing to sign either the Geneva Convention or Law of Land Warfare, the Ottawa Treaty to ban the use of landmines, and the continued research and development of its offensive chemical/biological warfare capabilities. In the twenty-first century, Russia has fully weaponized the skirting of international standards of conduct to facilitate its bellicose expansionism and return to influence on the global stage. It has done this in conjunction with its extremely robust media/Internet/messaging machinery to sway and confuse communities worldwide, create doubt in every component of its target societies, construct a reality where truth becomes irrelevant, and delay the political and military decision cycles of the leadership of those societies. Russian operations in Chechnya, Georgia, Crimea, and Nagorno-Karabakh exemplify this concept—“passportization” of ethnic minorities, false-flag operations, and political manipulation to create the illusion of moral and legal justification for Russian aggression. What the United States and its allies understand as legally binding international norms of conduct are de facto antiquated concepts no longer applicable in a modern geo-political-technological confrontational space. Put simply, Russia is executing warfare simultaneously across every domain with every lever and tool in its national arsenal; employing twenty-first century *realpolitik* at an unprecedented pace while rapidly optimizing, adjusting, and streamlining its strategies to capitalize on their gains and achieve their national aims.

## Characteristics of Russian Information Operations

In the simplest terms, Russian IO shapes the operational environment through penetration, saturation, obfuscation, and confusion. These means and methods facilitate specific operational-strategic end states. The following IO characteristics detailed in this article are rigorously and effectively adhered to by Russia in conducting these operations and are coordinated from the strategic to the tactical level to a degree not possible in Western countries. This lack of coordination in Western societies is due in part to the fact that permissive democratic societies do not exert messaging control over their media organs nor employ free space in global Internet communities to echo/support that messaging.

**Quantity and volume (aka, the “firehose of B.S.”) – achieves “reality overmatch” across targeted audiences:** An important component of Russian IO is that, unlike its U.S. counterpart, it does not need to adhere to the truth to be effective. This is not simply an administrative difference whereby Russian purveyors of narratives are not bound to report events accurately. It is the conscious tactic of flooding the media/cyber/informational space with a glut of narratives that present a diverse account of the same events, tinted through a lens ultimately beneficial to Russian interests and seemingly plausible to various degrees.<sup>2</sup> Russian narratives often vastly outnumber Western ones, and these stories are fed directly through its multitude of co-opted/sponsored/funded websites, blogs, chatrooms, comment/message boards, YouTube channels, etc. to create a sense of multi-source validation.<sup>3</sup> Russian news stories projected across media entities give the appearance that independent reporters/researchers arrive at the same conclusions as larger Russian outlets, therefore seemingly confirming the factual nature of the content.<sup>4</sup> This circular reporting is distributed through the aforementioned outlets without citing sources. At a minimum, these multitudinous narratives serve to create informational fatigue in the audience; the bandwidth for information consumption is generally around three versions of an event or issue, and over that people tend toward the position that “nothing is certain” or that every opinion somehow has a degree of validity. While this is demonstrably false, the current trend of alternative news sources, the practical exercise of bias verification through a targeted, falsely impartial Internet, and the phenomenon of the “death of expertise”<sup>5</sup> (fueled greatly by the Internet) facilitates Russian disinformation efforts and outcomes on a level potentially unprecedented in history.

**Market penetration – especially in countries with which they have adversarial relationships:** One of the greatest changes in the geo-political landscape, post-cold war, has been the onset of globalization and the domestic (U.S.) proliferation of international and web-based commercial media entities. The audience for any media company is only limited by cellular and wireless infrastructure; even in the developing world, cellular towers and low-cost providers are ubiquitous. New U.S./European/global markets for Russian entities such as Sputnik, Russia Today (RT), NTV, and Russia 24 have given what is essentially state-directed, pro-Kremlin propaganda [on the same level as TASS (the former Soviet press outlet)]—a veneer of objectivity and respectability.<sup>6</sup> This presents the fallacy that Russian media entities are somehow legitimate journalistic organizations on par with CNN or BBC World Services. Since 1987, U.S. media conglomerates unintentionally provided further fertile ground for Russian narratives to enter the discussion, although initially they were unable to reach a broad American audience. The decline in objectivity over the last three decades within for-profit news outlets (since the veto of the Federal Communications Commission “fairness doctrine”

by President Reagan<sup>7</sup>) has further eroded public trust and confidence in the media. In a similar fashion in the cyber domain, the recent demise of net neutrality opens even greater opportunities for Russian shaping and influence activities.<sup>8</sup> Russia capably exploits this lack of trust and feeds the conventional wisdom that all news sources are biased; this consistent erosion of public faith in the veracity of available information is a major contributor to the drastic rise in confirmation bias among specific demographics as audiences are canalized toward news that reinforces their preexisting world view.

***Resonance/relevance – to the targeted audience, tailored narratives that, while working from a larger shared narrative, are locally effective:*** The Russian talent for tweaking the narratives in ways that resonate well with the targeted audience (be it global, foreign near, or domestic) often gives multiple versions of events greater weight with those audiences. Domestically and in the near-abroad, Russian platforms often include widely distributed print media in the form of inexpensive magazines and newspapers; much like the glut of television and Internet sources, these are varied, give the illusion of differing sourcing and viewpoints, and in many cases serve as local versions of larger conglomerate Russian-owned companies hawking centrally crafted narratives.<sup>9, 10</sup> Additionally, these print media sources reach older demographics in the former Soviet Union who are less likely to consume web-based media and often distrust televised media. The majority of local content in these publications serves to obfuscate the larger, produced narratives injected into them and blurs the line between fiction and truth. Compounding this is the remoteness and lack of infrastructure in many of these regions combined with state dominance and control over the news outlets allowed access to the markets in question. Abroad, Russian media serves to incite discord in target populations to achieve desired end states. This is done in conjunction with real world events to maximize impact.

***Multi-domain/multi-platform – across the Internet, television, radio, print, and discussion forums, to include political discourse:*** In addition to these previously discussed tactics, Russia maintains a growing presence across various global Internet communities and has injected its agents/auxiliaries into the collective culture and consciousness of these communities in covert ways.<sup>11</sup> Thousands of these individuals keep up a twenty-four/seven presence, posting and contributing continuously in any blog, video, media website, etc. that is covering a topic that impacts Russian interests. This activity also shapes a fabricated “grass roots” concurrence with Russian viewpoints and narratives and creates the illusion that people of vastly different backgrounds, nationalities, and socio-economic circumstances share these views.<sup>12</sup>

***Integration with military/intelligence force projection:*** Russian Intelligence and Security Services (RISS) elements proactively shape the environment to achieve operational success; at the tactical level, they execute missions that generate the observables (ground truth) that confirm and support enduring, flexible, and shaping narrative themes. This is the art of taking a two-dimensional object (narrative, perceived identity, and conceptual reality) and granting it three-dimensional attributes through creating physical and cognitive outcomes. These actions are conducted by RISS in a coordinated manner that interferes with the decision cycle of an adversary, creating confusion, doubt, inaction, and internal conflict that gives Russian elements time/space to maneuver in physical, cyber, and cognitive spaces.

## Narratives

Information operations, to include sustained/flexible narratives, constitute the main effort in modern Russian warfare methodology. All other supporting efforts—including kinetic operations—are conducted in accordance with, and reinforce, those narratives. Accordingly, adjustments to narratives necessitated by ground truth or to exploit new opportunities are supported/echoed as rapidly as they can be disseminated. They are generated and echoed across governmental organs, both official and unofficial; these include state-owned, co-opted, and sponsored media entities that often link stories from each other to create the illusion of multi-source volume (both internal to Russia and in target communities/countries—e.g., RT, Sputnik, Infowars, Zerohedge.com, Drudge report, Breitbart).<sup>13-16</sup> The narratives are further maintained by covert actors for dissemination and distribution. More formally but key to narrative coordination and dissemination is the Federal Service for Supervision of Communications, Information Technology and Mass Media (**Roskomnadzor** {*Роскомнадзор*} - *Federal'naya Sluzhba na nadzoru v s'fere svyazi, informatsionnikh tekhnolokhii i massovuykh kommunikatsii* Федеральная служба по надзору в сфере связи, информационных технологий и массовых коммуникаций)). These Russian narratives are collectively held, understood, repeated, and supported through action by all of the players within the sphere of influence; this includes organic and proxy forces down to the lowest tactical level. The Russian Intelligence and Security Services (**GRU** {*ГРУ*} - *Glavnoye Razvedyvatel'noye Upravleniye* {*Главное разведывательное управление*}), **Spetssvyaz** {*Спецсвязь*} - *Sluzhba spetsialnoye svyazi i informatsii* {*Служба специальной связи и информации*}), **FSB** {*ФСБ*} - *Federal'naya Sluzhba Bezopasnosti* {*Федеральная служба безопасности*}), **SVR** {*СВР*} - *Sluzhba vneshney razvedki* {*Служба внешней разведки*}, etc.) direct the organization and activities internationally of “youth clubs,” airsoft leagues, hunting clubs, and all manner of Russian cultural organizations and non-governmental organizations as part of “Russkiy Mir.” These organizations serve as a literal fifth column doubling as a method of galvanizing the global Russian diaspora and training/indoctrinating Russians for potential operational action on behalf of Kremlin objectives. For this reason, narratives are kept simple and enduring, tailored to local/regional understandings of history, while also being culturally palatable. This principle holds true even when this version of history is seriously flawed or distorted. These shaping factors provide a framework for achieving, or setting the conditions to achieve, operational-strategic end states and generate guidance for coordinating whole-of-society efforts domestically and abroad.



**ROZKOMNADZOR** (first two from the left) and **SPETsSVYAZ** (third and forth from the left).

**Organizational Coats of Arms and Logos of Two of the Key Organizations for Directing Media, Telecommunications, and Cyber Activities in Russia**



Diagram demonstrates the shaping and supporting roles that hte components and groups of components play in achieving Russian national objectives.

#### Essential Components of Russian Warfare from the Strategic to the Tactical Level

Military spectrum kinetic activities and missions are thus developed and executed, not as a last resort or in lieu of policy/diplomacy, but as a nested component of that policy facilitated by established narratives. These calculated military actions (including unconventional and asymmetric actions) create tangible “proof” that solidifies messaging/narratives as “fact.” These “facts,” when effectively illustrated by timely, planned actions, take on the four-dimensional qualities of reality (the fourth dimension being cognitive space/maneuver). At this stage, counter messaging and alternate narratives lose impact and become lost in the noise of IO saturation.

As U.S. Army Training and Doctrine Commander, General David G. Perkins, said at the 2017 annual Association of the United States Army conference, dominating the “human domain” will be pivotal for future battle. Leaders at all levels of war, and elements within the U.S. government with actions and operations the complement Department of Defense (DoD) missions, must have a basic understanding of how the modern operational environment is shaped, influenced, and exploited if they are to maximize their effectiveness and win on today’s battlefield. Russia, and an increasing number of U.S. enemies and competitors, has fully grasped the whole-of-government approach to warfare and is currently employing it in Phase 0/competition phase to achieve its desired strategic goals. This includes state actors, trans-national violent extremist organizations, trans-national criminal entities, and elements of the latter facilitated by state and state-like powers. U.S. allies and interests risk being outmaneuvered or marginalized if measures are not taken to identify, pre-empt, and counter these shaping operations locally, regionally, and globally. For tactical-/operational-level

leaders, understanding the impact of their missions well beyond their immediate second- and third-order effects is as important as knowing the why behind the enemy's operations. For strategic-level leaders and decision makers, employing non-kinetic levers of influence nested with DoD missions to achieve outcomes favorable to U.S. national security and economic concerns will, as it was during the Cold War, be a hallmark of U.S., NATO, and partner-nation success.

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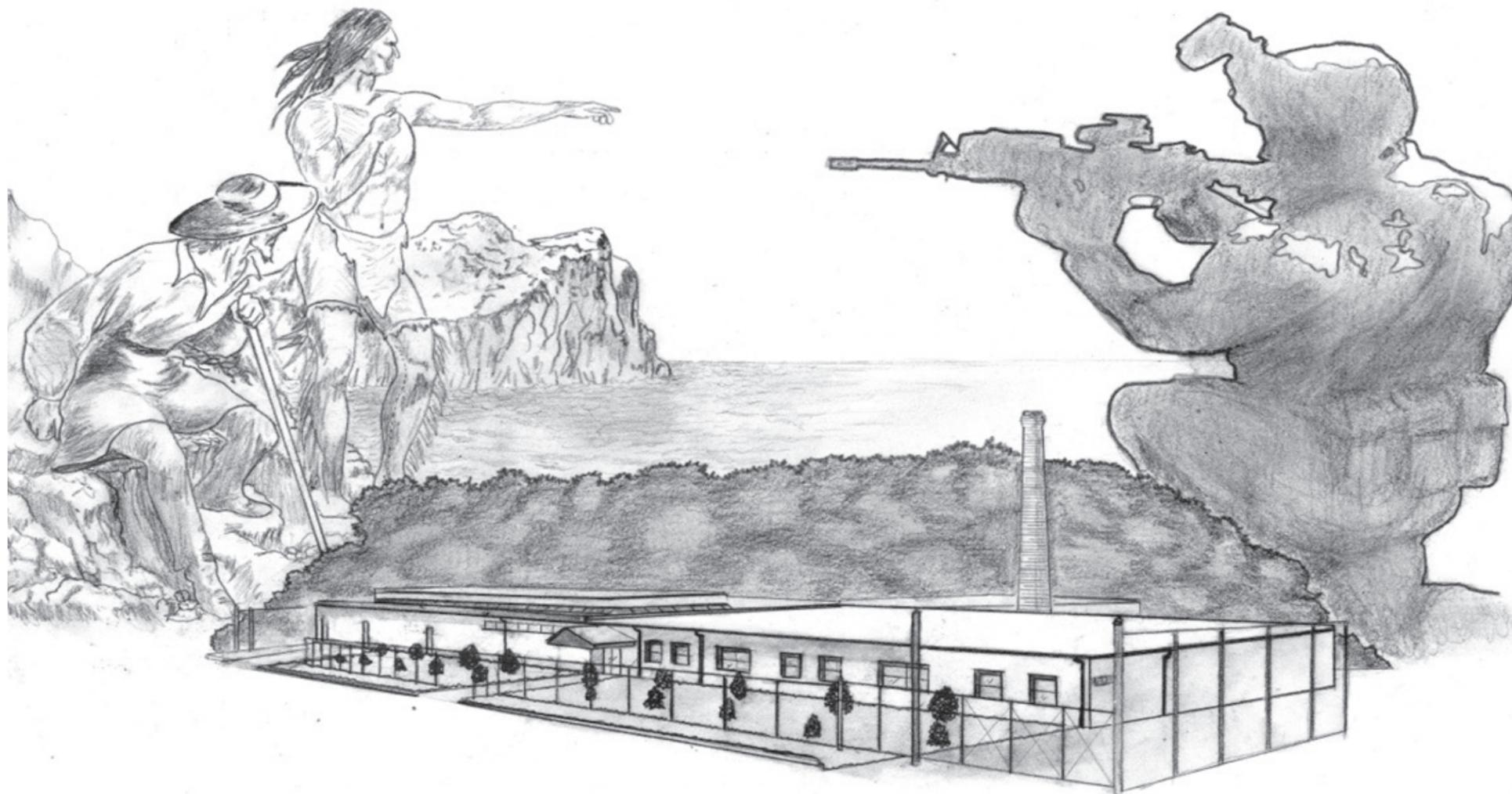
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The Asymmetric Warfare Group traces its origin to the 2003 Army Improvised Explosive Device Task Force. The task force proved its relevance, and the Army G-3 directed the establishment of the Asymmetric Warfare Regiment in June 2004. The AWR eventually changed its name to the Asymmetric Warfare Group.

The initial successes achieved by the IED Task Force and its partners, as well as an overriding need for a coordinated, department-wide effort, led the deputy secretary of defense to approve, on July 12, 2004, the establishment of the Army-led Joint IED Defeat Integrated Process Team. Organized around the existing Army IED Task Force, this group assumed the mission of pulling together all counter-IED efforts within the Department of Defense. The IPT identified, prioritized and provided resources for material and nonmaterial solutions from across the services and DoD in coordination with inter-agency and international partners. The original Army task force, then augmented by joint service staff officers and noncommissioned officers, continued to accomplish the counter-IED operational mission as the Joint IED Defeat Task Force while also providing necessary support to the IPT.

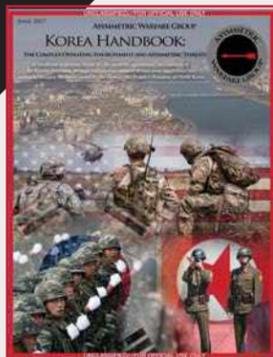


"The group" stockade Fort Meade, MD 2006

Despite U.S. conventional military superiority and successes in the effort to stem asymmetric attacks, the ability of our adversaries to innovate and rapidly adapt their techniques continued to highlight gaps in U.S. force capabilities.

In January 2006, the AWG was established as a Field Operating Agency under the operational control of the deputy chief of staff, G-3/5/7, Headquarters, Department of the Army. The AWG was activated on March 8, 2006, at Fort Meade, Maryland. The AWG was assigned to the U.S. Army Training and Doctrine Command on Nov. 11, 2011, as a direct reporting unit to the commanding general. The assignment to TRADOC enabled enhanced cooperation with the Army Capabilities Integration Center, the Combined Arms Center, and the Centers of Excellence.

Since 2011, the AWG has experienced a significant growth in operational advisory and global operational scout missions, and it activated its third operational squadron in 2013. With this enhanced capacity, the AWG provides observations, analysis and solution development to both the operational and institutional forces of the Army.



AWG's work over the past several years in Korea identified a number of challenges routinely faced by rotational, permanently based, or crisis-focused units. These include combined arms counter weapons of mass destruction operations, threat understanding and our related vulnerabilities, subterranean operations, as well as a general appreciation for the terrain and its impact on operations. We compiled this first version of a Korea Handbook focused on these and other key areas.

This guide is complimentary to several other resources and is designed to describe the problem and offer options for units to train in preparation for operations on the Korean Peninsula. It is written as an unclassified handbook to ensure widest distribution to the lowest tactical level. This inherently limits a certain amount of detail on specific topics, but we believe the critical value lies in its design as a consolidated reference document with relevant training recommendations.

The U.S. Army Asymmetric Warfare Group provides operational advisory and solution development support globally to the Army and Joint Force Commanders to enhance Soldier survivability and combat effectiveness and enable the defeat of current and emerging threats in support of unified land operations.

AWG, headquartered at Fort Meade, Maryland, is an Army unit of highly skilled warriors who provide observation, analysis, training, and advisory support to Army and Joint Force units in order to enhance their capabilities to predict, mitigate, counter, and defeat asymmetric threats and methods. AWG is the only unit in the Army that actively seeks new enemy TTPs and looks to develop solutions, placing its members in the right areas to solve those problems that have the potential to overwhelm or undermine a unit's best efforts at accomplishing its mission.



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