

TRADOC Pam 525-8-3



# The U.S. Army Training Concept

2012-2020

7 January 2011





## Foreword

*From the Director  
U.S. Army Capabilities Integration Center*

The U.S. Army continues to answer the Nation's call, as it has since its inception over 235 years ago. As we look to the future, our Army faces an operational environment fraught with uncertainty and complexity that will challenge our Soldiers, leaders, and organizations in many ways. Enemies of the U.S. are likely to emulate the adaptations of recent opponents while taking advantage of emerging technological capabilities and instability to pursue their objectives and avoid what they perceive as U.S. military strengths. The challenges of future armed conflict make it an imperative for the Army to produce leaders and forces that exhibit a high degree of operational adaptability.

TRADOC Pam 525-8-3, *The U.S. Army Training Concept 2012-2020*, expands on the ideas presented in TRADOC Pam 525-3-0 and TRADOC Pam 525-3-1, and identifies training requirements and capabilities necessary to build and sustain an Army that is adaptable in full-spectrum operations in 2012-2020. It emphasizes the importance of achieving boots-on-ground dwell times that will allow both active Army and Reserve component commanders to manage the training of their units. Cognizant of the need to develop adaptive, flexible, and versatile leaders and units, to operate in a complex operational environment, it recognizes the need for unit training to reflect these realities.

TRADOC Pam 525-8-3 provides a key contribution toward achieving the broad goals outlined in TRADOC Pam 525-3-0 and TRADOC Pam 525-3-1. With an eye towards developing operationally adaptive units throughout the force, TRADOC Pam 525-8-3 imparts essential guidance on how to enable commanders to provide unit training with the freedom to develop unique and innovative solutions to problems by empowering them to the lowest practical level. Within a resource-constrained environment, concepts serve as a foundation to help the Army maximize effectiveness and to minimize risk through materiel and nonmaterial trades. This concept serves as a point of departure for wide-ranging discussions, experimentation, and investigation. It represents a significant step forward in an ongoing campaign of learning and directly contributes toward institutional adaptation across the Army.



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Military Operations

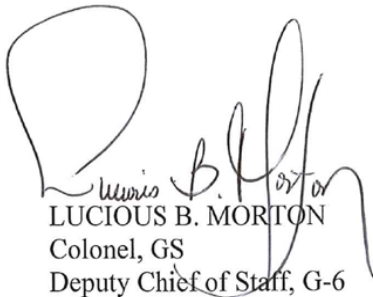
**THE U.S. ARMY TRAINING CONCEPT 2012-2020**

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**History.** This publication is a new United States (U.S.) Army Training and Doctrine Command (TRADOC) concept developed as directed by the TRADOC commanding general for the future force and as part of the capabilities-based assessment (CBA) process.

**Summary.** TRADOC Pamphlet (Pam) 525-8-3, *The U.S. Army Training Concept, 2012-2020*, is the Army's visualization of how it will provide training for units to execute full-spectrum operations in a joint, interagency, intergovernmental, and multinational operational environment. This concept identifies desired current and future capabilities to overcome anticipated challenges in the training environment. This environment is characterized by persistent conflict, uncertainty and surprise in which there are multiple complex challenges across the globe.

**Applicability.** TRADOC Pam 525-8-3 is the foundation for the development of unit training for future Army forces and serves as the baseline for follow-on CBA as a part of the Joint Capabilities Integration and Development System effort. As the basis for performing this assessment, TRADOC Pam 525-8-3 suggests a set of capabilities that guide how a future commander may utilize training across the domains of doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) to augment mission capabilities. It acknowledges the requirement to consider all the variables of the future operational environment: political, military, economic, social, informational, infrastructure, physical environment, and time. It also acknowledges the requirements for mission variables such as the

mission, time, and civil considerations. This concept applies to all Department of the Army (DA), TRADOC, and Reserve component activities that develop DOTMLPF requirements.

**Proponent and exception authority.** The proponent of this pamphlet is the TRADOC Headquarters, Director, Army Capabilities Integration Center (ARCIC). The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations. Do not supplement this pamphlet without prior approval from Director, TRADOC ARCIC (ATFC-ED), 33 Ingalls Road, Fort Monroe, VA 23651-1061.

**Suggested improvements.** Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commander, TRADOC (ATFC-ED), 33 Ingalls Road, Fort Monroe, VA 23651-1046. Suggested improvements may also be submitted using DA Form 1045 (Army Ideas for Excellence Program Proposal).

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*“The training and education of our entire force must aim to develop the mindset and requisite knowledge, skills, and abilities required to operate effectively under the conditions of uncertainty and complexity.”*

TRADOC Pam 525-3-0

## **Chapter 1 Introduction**

### **1-1. Purpose and scope**

a. In an era of persistent conflict, Army training must prepare Soldiers, leaders, and units to operate and succeed in an uncertain operational environment (OE) where the Nation’s enemies will continue to adapt quickly using the full range of threats. To achieve success in the future, Army training must hone necessary Soldier skills; and develop leaders that become comfortable with collaborative planning and decentralized execution, have a willingness to deal with ambiguity, and make rapid adjustments as situations develop. Units must similarly be capable of executing decentralized operations, rapidly developing the situation through action and adjusting to continuously changing circumstances. To achieve these requirements for operational adaptability, the Army must adapt unit training. Soldiers and leaders must learn from realistic experiences and training opportunities that integrate technological capabilities and introduce conditions of ambiguity and uncertainty to develop the trust and confidence required for successful execution of decentralized operations.

b. The purpose of TRADOC Pam 525-8-3, *The U.S. Army Training Concept 2012-2020*, is to describe for the years 2012-2020 the total Army organizational training requirements and capabilities necessary to generate and sustain units trained in full-spectrum operations that can succeed in the operational environment in conditions of uncertainty over extended periods. *A Leader Development Strategy for a 21st Century Army*, TRADOC Pam 525-8-2, *The U.S. Army Learning Concept for 2015*, and this pamphlet collectively describe the vision for an integrated training and learning environment that builds leaders, Soldiers, civilians, and units that have the capability to achieve the Army force generation (ARFORGEN)<sup>1</sup> objectives and to execute full-spectrum operations. In addition, TRADOC Pam 525-8-3 will guide the development of the Army training strategy.

c. TRADOC Pam 525-8-3 poses and answers the following questions:

(1) How must the Army change its unit training construct to enable commanders and leaders to effectively and efficiently train adaptive units to meet ARFORGEN readiness objectives to conduct full-spectrum operations in the future OE from 2012-2020?

(2) What capabilities should the Army provide to commanders and leaders to enable them to execute ARFORGEN based training plans needed to generate and sustain full-spectrum operations trained units?

d. This concept articulates how the Army synchronizes and balances its efforts in the operational and institutional domains to create this training environment. [Chapter 2](#) asserts key operational and training factors that have implications for establishing this training environment. [Chapter 3](#) describes an adaptive and integrated training construct that will begin to blur<sup>2</sup> the distinctions between institutional and operational training and enable establishing a more holistic training environment. This training construct has the potential to enable full-spectrum operations mission essential task list (METL) training anytime, anywhere in the world to allow commanders and leaders to meet their training objectives. Many of the actions and required capabilities to achieve the vision set forth in this pamphlet are within reach; first steps to realizing a truly integrated training environment (ITE) have already begun. [Chapter 4](#) summarizes the future challenges and solutions that drive the required supporting capabilities described in the appendices. The Army must begin now to build a unit training environment that imparts and sustains Soldier and leader knowledge, skills, and experience into units that are ready to conduct full-spectrum operations to respond to the nation's future conflicts in the continuously evolving OE. [Appendix B](#) describes the required capabilities.

## **1-2. Background (baseline)**

a. The Army is almost a decade into an era of persistent conflict whose future will feature hybrid threats - diverse combinations of regular, irregular, terrorist, and criminal forces - employed asymmetrically to counter U.S. strengths. The Nation's seasoned and combat-ready Army has effectively conducted full-spectrum operations in a complex OE for 9 years. However, its boots-on-the ground (BOG) to dwell ratio has driven the Army to adopt an expedient approach where unit training has been limited to what was necessary to quickly reset from operational deployments and prepare for the next mission, focusing almost exclusively on theater specific requirements. Because of the short time available to reset and prepare units to deploy again, the Generating Force has taken an increased role in unit level training. As a result, the Army has lost some of its training management skills, major combat operations skills, and ability to operate along multiple operational themes.

b. The Army has nearly completed the conversion to modularity and rebalancing of cold war skills to expeditionary full-spectrum operations skills. Simultaneously, the Army has nearly completed the largest restationing of the Army since World War II. Shortly, the Army will begin to achieve the objective ARFORGEN model of 1:2/1:4 BOG/dwell ratios, and be comprised of more than 70 brigade combat teams (BCTs) and 230 functional and multifunctional support brigades. As the Army completes conversion to modularity and increased dwell time allows commanders and leaders to assume an appropriate level of responsibility for home station training, the Generating Force will assume a more supporting role in development and execution of unit training.

c. To support training today, the Army has a wide array of system and nonsystem live, virtual, constructive and gaming training aids, devices, simulators and simulations (TADSS). However, there is currently no way to integrate the right mix of TADSS with the joint and Army Mission Command Systems (MCS)<sup>3</sup> to provide the commander the full capability to replicate the complex OE conditions required to conduct full-spectrum operations METL training. While some TADSS can interoperate using manual procedures, physical activities, and specially

designed hardware, it is expensive, resource intensive, and time consuming. This affects collaboration and interoperability with a modular force when an Army unit's training extends outside of its organic organization.

d. Today's unit training support capability is tied to installations and not readily available to deployed forces. The current capability does not provide the ability to shift rapidly from one task to another, easily incorporate foreign language or culture, integrate observations, insights and lessons (OIL) about specific culture characteristics for the area of operations, or conduct a real-time high fidelity mission rehearsal. Current training support does not provide commanders, Soldiers, or trainers the comprehensive capability to access, retrieve, and present networked, integrated training, nor does it provide access to embedded and integrated training from the systems platforms, which would allow Soldiers to reach training information and capabilities while deployed.

e. After decades of effort, Army forces have established effective mechanisms for achieving internal unity of effort with U.S. joint forces based on a single chain of command. However, joint, interagency, intergovernmental, and multinational integration is achieved at the component level or slightly below but not routinely at lower echelons. Decentralized operations will require leaders at lower levels of command to assume greater responsibility for accomplishment of the joint force commander's campaign objectives in a joint, interagency, intergovernmental, and multinational operational environment.

f. In the past, training methods used to develop leaders challenged them with mass and compressed time, simulations were attrition-based, and training scenarios were designed to challenge leaders to understand a predictable enemy array on the battlefield and to master the factors of time and distance. To raise the training bar, the Army added another enemy formation or compressed execution time. This technique was effective in developing leaders and units that could operate in the context of well-defined problems against an enemy who confined himself to a single operational theme, but this technique is incapable of replicating the complexity of today's and tomorrow's OE.

### **1-3. Assumptions**

a. In addition to assumptions outlined in TRADOC Pam 525-3-0, the following assumptions are necessary and relevant to the development of TRADOC Pam 525-8-3, many of which are also shared with TRADOC Pam 525-8-2.

b. The Army will operate in an era of uncertainty and conflict against the full spectrum of possible threats, for the near future.

c. The Army will continue to confront unexpected challenges from an adaptive enemy and must respond rapidly in terms of the development of doctrine, training, and education.

d. The foundational qualities of soldiering will remain; comprehensive fitness, Army values, Warrior Ethos, and technical and tactical competence.

- e. Fundamental competencies must be reinforced by maximizing time on task and training to standards.
- f. Leaders will continue to be challenged by complex operational dilemmas in a culturally diverse joint, interagency, intergovernmental, and multinational OE.
- g. The Army needs more adaptive learning and training practices than those that were designed for a peacetime Army.
- h. Culture and foreign language will remain critical individual and unit capabilities.
- i. Time, manpower, and resources available for learning and training will continue to be limited.
- j. Improved dwell time will provide commanders and leaders opportunities to develop and execute unit driven training programs within the ARFORGEN process.
- k. The Human Capital Enterprise will provide Soldiers, civilians, and leaders at the right time to support the individual and collective training requirements.

#### **1-4. References**

Required and related publications are listed in [appendix A](#).

#### **1-5. Explanation of abbreviations and terms**

Abbreviations and special terms used in this pamphlet are explained in the [glossary](#).

*“We need to leverage the combat experience of our Army and think about what that means as we develop our training plans. We are training a Brigade-based, modular Army that knows how to fight and is already on a rotational cycle – albeit one that is operating with insufficient dwell. We can and must train differently than we did before 9/11 to gain the most value out of every training opportunity.”*

Army Training and Leader Development Guidance, FY 10-11

## **Chapter 2**

### **Operational Influence and the Training Environment Context**

#### **2-1. Introduction**

a. TRADOC Pam 525-8-3 is nested in TRADOC Pam 525-3-0 with its central idea of operational adaptability, TRADOC Pam 525-8-2, and the Chief of Staff, Army guidance, *A Leader Development Strategy for a 21st Century Army*. Recent operations and anticipated persistent conflict puts greater demands on Soldiers and leaders to execute full-spectrum operations in complex, uncertain environments where decentralized operations put more responsibility at lower echelons.

b. Lessons from nearly a decade of conflict, anticipated challenges in the future OE, transition to the modular force, combined with opportunities resulting from rapid changes in information technologies, compel the Army to re-examine unit training. From that examination, the Army must devise a more comprehensive training environment that enables commanders and leaders to take increased responsibility for their unit training plan to meet required ARFORGEN readiness objectives. Building upon the current unit training environment (baseline) described in [chapter 1](#), this chapter describes the key operational influences on the future training environment and how it must be constructed to drive adaptive, OE-based, unit training.

## **2-2. Operational influence on the training environment**

While a number of factors influence training, the two major influences that define the future training environment are an operational environment comprised of complex, interrelated variables that will challenge leaders with conditions requiring the simultaneous execution of offensive, defensive, and stability or civil support operations; and the ARFORGEN synchronization of resources to unit training to attain required readiness levels.

## **2-3. The training environment and the OE**

a. Though U.S. military forces are familiar with conflict, every war is different and experiences within wars vary based on circumstances. As described in the TRADOC operational environment white paper, the future OE is a period of dramatic and accelerating change, uncertainty, complexity, and persistent conflict. Adversaries can be expected to use the full range of options including every political, economic, informational, and military measure at their disposal. The threat is not categorized easily; it is a combination of conventional and unconventional operations, fought by regular and irregular forces, criminals, and terrorists; probably within urban areas among human terrain.

b. There are eight variables which constitute the structure for studying the OE in any situation. They are political, military, economic, social, information, infrastructure, physical environment, and time (PMESII-PT). This structure aligns with Army doctrine but it is also applied using the adversary's perspective. Each variable is analyzed with attention to the effects each has on the others. This analysis is the basis for actions or training in any OE. Both institutional and operational training depend on proper use of PMESII-PT to ensure appropriate consideration of all aspects of the challenges that the individuals and units in training must overcome. Every PMESII-PT aspect within the training environment must replicate, as closely as practical, the same aspect in the environment within which the trained force might operate.

c. To understand the OE, one must understand the global drivers that affect the conditions and characteristics of potential OEs. The following seven global drivers are likely to have the most impact on current and future military operations, leader development, and training.

- (1) Cultures, ideologies, social structures.
- (2) Information and communications technology (social networks).

- (3) Globalization and economics (integration-isolation).
- (4) Weapons of mass destruction (WMD) and/or weapons of mass effects.
- (5) Science, technology, and engineering.
- (6) Natural resources (energy, water, and food).
- (7) Demographics (migration, age, and urban).

d. Future Army training must consider the combined impact of all of these drivers as the Army projects training requirements where future operations include protracted confrontation among state, nonstate, and individual actors that are willing to use violence to achieve political and ideological ends. While persistent conflict does not imply perpetual warfare, it does manifest itself in three of the critical dimensions of full-spectrum operations: as a contest of wills, through strategic engagement, and a contested cyber/electromagnetic dimension. This requires that leaders be aware of the varied and changing interest of adversaries and to understand the OE more fully, including its drivers, if leaders are to achieve an appropriate appreciation of possible enemy actions within that environment. A detailed description of the OE is at [appendix M](#).

#### **2-4. The training environment and ARFORGEN**

a. Enabled through the Army enterprises, ARFORGEN is a comprehensive process that provides for the timely apportionment of resources to units to build toward readiness objectives (aim points) in preparation for anticipated missions and conditions. The ARFORGEN process recognizes that before units can successfully begin full-spectrum operations unit training, they must have sufficient time, people, and equipment. The Army empowers commanders and leaders by providing these resources when needed. Under ARFORGEN, a unit should achieve its readiness aim points to gain maximum benefit of its full-spectrum operations METL training.

b. To set the conditions for this to occur, the Army is organizing four functionally oriented core enterprises to collaboratively execute and improve the ARFORGEN process. The Readiness Core Enterprise is lead and responsible for efficiently managing and executing the ARFORGEN process, supported by the other core enterprises. The Human Capital Enterprise provides Soldiers, civilians, and leaders with the right skills at the right time so leaders can build teams to enable collective training. The Services and Infrastructure Core Enterprise supports units in ARFORGEN by providing critical services to support Soldiers and their families, and by delivering the network and training support required to execute unit full-spectrum operations METL training strategies. Likewise, the Materiel Enterprise must equip units to achieve the aim points and have new equipment fielding and new equipment training completed for units to start meaningful full-spectrum operations collective training. While not a core enterprise, the Training Support Enterprise (TSE) provides the critical mobile, adaptable, interoperable, and reconfigurable training support capabilities that are needed to enable commander and leader training strategies once the personnel and material resources are available to train.

## **2-5. The operational, institutional and self-development training domains - The training context**

a. The three interdependent training domains mutually support the development and sustainment of a trained and ready Army. The operational domain is where units and leaders achieve the capability to meet unified command readiness requirements. The institutional domain is where individuals establish, refine, and improve cognitive, attitudinal, and psychomotor skills for the Army Profession of Arms. The institutional domain also produces the training tasks, conditions, and standards (or individual educational learning objectives) for individuals and units to prevail in the OE. In the self-development domain, Soldiers, civilians, and leaders are committed to lifelong, planned, goal oriented learning. This commitment is critical to expand, build, and sustain individual skills, knowledge, attitudes, and competencies required to meet the needs of future Army forces (masters of weapons systems, skillful in unit tactics, and competent in combined arms and joint, interagency, intergovernmental, and multinational operations).

b. The impact of lifelong learning influences all three domains. The Chief of Staff, Army's guidance, *A Leader Development Strategy for a 21st Century Army* and TRADOC Pam 525-8-2 further define how the self-development domain contributes to Army readiness requirements. All three domains must provide a learning environment that facilitates individual contributions by Soldiers and civilians into successful collective training and unit operations. The necessary skills and capabilities to enable assignments and experiences to further develop leaders are created through education and training. Both the institutional and operational domains must receive an appropriate share of the wealth of talent and contribute to the training, education, and experiences of leaders to provide a balanced, fully capable force.

c. The operational domain has three components: home station training, combat training center (CTC) training, and training while deployed. Unit training at home station and the CTCs focuses on building unit readiness to meet ARFORGEN readiness objectives. Unit training while deployed focuses on both sustaining and continuing to improve unit readiness. Under the ARFORGEN process, active Army deployment expeditionary force (DEF) and contingency expeditionary force (CEF) units achieve T1 readiness prior to deployment or entering the available force pool (AFP).<sup>4</sup> Reserve component DEF and CEF units generally enter the AFP at less than T1 and achieve required levels of training readiness after mobilization. Under ARFORGEN surge conditions, units may have to enter the AFP at some level of training readiness less than fully full-spectrum operations or mission capable. This concept provides flexibility to meet ARFORGEN requirements. The following paragraphs provide characteristics and essential elements across the three training components that assist in framing operational unit training.

(1) Training in the operational domain is unit readiness-centric with commanders, and leaders focused on producing adaptive units and leaders with full-spectrum operations capability across all its dimensions in a joint, interagency, intergovernmental, and multinational construct. This enduring concept, that commanders and leaders train their units is reflected in the following training principles, all of which must be integrated into a coherent, near seamless program for planning, preparation, execution, and assessment of training.



(a) Train to standard (METL proficiency). The combined arms training strategies (CATS) associated with standardized METLs for like units, must not only build skills, but also force units to deal with the competing demands of offense, defense, and stability or civil support operations. CATS provide units a crawl-walk-run, task-based, event driven, full-spectrum operations METL-focused doctrinal training strategy with suggested training support resources required to execute the events. After considering input from others, commanders take prudent risks by prioritizing the tasks to be trained from the unit's full-spectrum operations METL, and then determine how to best replicate the OE with the resources provided. The goal is to focus unit training to achieve mastery of a few tasks essential for a unit to accomplish its mission.

(b) Commanders and other leaders are responsible for training. Commanders are ultimately responsible for the training, performance, and readiness of their Soldiers, civilians, and organizations. Noncommissioned officers exercise their initiative based upon a clear understanding of the commander's intent to execute individual, crew, and small team training.

(c) Train as the Soldier will fight. Training as the Soldier will fight ensures proficiency in the required lethal and nonlethal skills under the conditions of expected, anticipated, or plausible OEs as well as with the same limitations and capabilities expected to be available to the unit. Training should seek to optimize creative and nuanced adaptation in real time.

(d) Train fundamentals first. Train the most important fundamental collective tasks first – the tasks that are basic to full-spectrum operations METL proficiency, and train to standard, not to time.

(e) Train to sustain. Units must be capable of operating continuously while deployed. Essential for continuous operations, sustainment is an integral part of unit training.

(f) Training should not only be focused at a unit level, it should be conducted concurrently at multiple echelons when possible. Commanders and other leaders train their units, regardless of location or venue. They use the tools the institutional and operational domains provide (that is, the enablers and trained Soldiers, civilians, and leaders) to leverage training products creatively to stretch their units' capabilities. These tools and the capability to shape them into a challenging training plan must be resident in a single, automated training management system. All leaders must understand and practice training management, multiechelon, and concurrent training. Leaders are responsible to train their units, and they must capitalize on the most scarce resource—time—through concurrent multiechelon training.

(g) Train to develop adaptive leaders and organizations. The Army trains, educates, and provides valuable learning experiences for its members to develop leaders and organizations able to operate adaptively and successfully in any OE and to prepare them for future responsibilities.

(2) Home station training is the foundation for all other operational domain training. The Army must enable active Army home stations, and key Reserve component training sites to portray the OE adequately in training venues by using an appropriate mix of on-demand enablers and training support to allow units to achieve proficiency in their full-spectrum operations

METL. The Army begins building depth and flexibility at home station through rapid attainment of small unit full-spectrum operations skills immediately upon entering the train/ready ARFORGEN pool. To build and sustain operational depth and flexibility for the Army during train/ready and beyond, home station training must provide a training environment where leaders can progressively produce full-spectrum operations METL-capable DEF and CEF active Army and Reserve component units.

(a) Operational Reserve component training, whether inactive duty or annual training periods, is focused on producing full-spectrum operations METL-capable company-level units and battle staff proficient battalion and brigade staffs prior to entering the ARFORGEN AFP as a DEF or CEF unit. Commanders plan, conduct, and assess training throughout the ARFORGEN cycle to achieve these readiness goals. First, commanders develop long-range training plans as early in ARFORGEN as possible. Next commanders develop a single-integrated training plan on or about the start of train/ready year 2 that spans train/ready 2, train/ready 3 and the available years of ARFORGEN. Plans that are developed at these points, with continuous refinement as conditions change, measure progress on achieving specified readiness aim points; facilitate scheduling of training events and training support; and forecast post-mobilization training requirements. The Army must provide the Reserve component unit commander access to the training support resources necessary to bring the unit to full-spectrum operations METL standards for pre-mobilization and post-mobilization training. Reserve components are the supported commands for conduct of DEF and CEF unit training through ARFORGEN until units are mobilized. Army service component commands (ASCC) are the supporting commands for Reserve component unit training and become, for mobilized units, the supported commands for deployment validation.

(b) The home station training support architecture must provide the right training enablers, at the right time, to close the gap between what is resident on the installation, and what must be delivered electronically or physically from another source. To maximize this training support capability, the Reserve component will concentrate the execution of their collective training requirements at regional training centers.

(c) The Army must leverage science and technology initiatives to provide medium to high fidelity, low overhead instrumented feedback and after action review (AAR) capabilities to support home station unit training that is comparable to the CTCs capability. Optimally, these capabilities can be packaged to capitalize on local resources with enhanced augmentation to provide high fidelity training to organizations that require special emphasis.

(d) Active Army installations and those regional training installations that support regional training platforms for the Reserve component must be able to provide a training network infrastructure that can link to an adequately sized operational network, continually modernized TADSS and training facilities that support training across all of the full-spectrum operations dimensions. Based on the unit training objectives, the installation must be able to provide sufficient observer/controllers (O/C) and role players to replicate the OE at the required level of fidelity. In support of home station training, the institutional domain must provide flexible training support packages that reduce unit personnel training workload required to execute unit training. When required, institutions and centers of excellence (CoE) must be capable of

providing responsive subject matter experts to assist and support unit collective and individual training. A more detailed description of home station training is found at [appendix F](#).

(3) CTC: In the 2012 to 2020 period, as dwell time increases and the force rebalances full-spectrum operations skills, the CTCs will concentrate their training across the three full-spectrum operations dimensions at a higher level of unit proficiency in a joint, interagency, intergovernmental, and multinational context, and will both support and build on home station training. Maneuver combat training centers (MCTC) and the battle command training program (BCTP) exercises provide highly realistic and stressful joint and combined arms training, focusing at the BCT collective unit level at the MCTCs and brigade-and-above staff echelon levels during BCTP exercises. The CTCs will help unit commanders balance their full-spectrum operations exercises with predeployment mission rehearsal exercises (MRE) at MCTCs and mission readiness exercises (MRX) with BCTP. The CTC program must link the range of ARFORGEN supporting exercises from BCTP enabled seminars and brigade warfighter exercises, and division through ASCC capstone events.

(a) MCTCs. BCTs and select echelons above brigade enablers will deploy to a MCTC to train their full-spectrum operations skills in rigorous, run-level exercises, using the vast CTC ITE of TADSS and AAR resources. MCTCs support leader training programs (LTP), exportable training capability events at home station, and BCT capstone exercises at fixed site MCTCs; Joint Multinational Readiness Center (JMRC), Joint Readiness Training Center (JRTC), and National Training Center (NTC). The MCTCs will send an exportable training capability to home station to help brigade-level commanders develop full-spectrum operations proficiency using the CTC training methodology. Exportable training capability must have the capacity to expand in the face of increased operational demands rapidly. A more detailed description of CTC training is at [appendix G](#).

(b) BCTP will conduct mission command seminars and full spectrum exercises (FSX) at home station to help brigade, division, corps, and ASCC commanders form the teams at their respective staff echelon, and attain required readiness standards. Likewise, division, corps, ASCCs, and their aligned brigade-level force structures will hone their mission command skills in high-fidelity BCTP FSXs.

(4) The Army requires a powerful deployed training capability that enables units to maintain current skills, while sustaining and continuing to improve unit readiness after deployment. Deployed training sustains and exploits the capabilities generated earlier in the ARFORGEN cycle and builds on branches and sequels from earlier training. Branch training responds to emerging or changing training requirements, and sequel-training addresses continued sustainment or follow-on training requirements.

(a) Branches establish new after-deployment capabilities that deny a dynamic and adaptive enemy from successfully employing new methods against the Army's interests. Deployed commanders anticipate changes and build training solutions by combining the power of a variety of sources including AARs, red teaming, collection and analysis teams from the Center for Army Lessons Learned, subject matter expertise from CoEs, schools, and PMESII-PT analysts. This

process develops training solutions that not only improve unit performance but also informs training strategies and plans.

(b) Sequels include sustainment and regeneration of capabilities. Atrophying full-spectrum operations METL skill sets can be mitigated through a common ITE. High fidelity rehearsals leveraging an ITE, supplemented by institutional support, sharpen the edge of deteriorated, but soon-to-be-used skill sets. Capitalizing on the Army's concept of modular unit training, dispersed units conduct mission rehearsals virtually, bringing participants, platform simulators, and the anticipated scenario together in a common ITE, 24/7 (persistent training capability). Standardized, fully interoperable training capabilities must be embedded into Army operational systems to give units the ability to train anytime, anywhere, and to ensure each unit has real-time, globally distributed, near-real-world mission-rehearsal capabilities. Ultimately, most training enablers will be organic to the Army's new equipment purchases. In the interim, the Army will build capability to quickly assemble (physically, electronically and or virtually) and deploy training enablers, including the associated training infrastructure, to enable units to train while deployed, similar to how they would at home station.

(5) Common to all three components of operational training.

(a) Operational unit training must instill in Soldiers and leaders the need to anticipate threat capabilities and intentions consciously, continuously, and intentionally. Units and leaders must train to prevail against hybrid threats that simultaneously employ regular and irregular forces, including criminal elements to achieve their objectives using an ever-changing variety of conventional and unconventional tactics to create multiple dilemmas. Units and leaders must be in tune to how that threat might evolve and anticipate the training required to neutralize any advantage the threat attempts to generate before the threat can employ any new capabilities and must be comfortable operating with less than optimal information and conflicting information. Leaders and their units must be able to anticipate, plan for, identify indicators, and execute transitions between Field Manual (FM) 3-0 operational themes with ease.

(b) Training the staffs of modular units is a critical part of the unit's training plan. A well-trained staff is necessary to integrate and enable the capabilities of the modular force, or to integrate and effectively function in a combined arms or unified force package. The modular force staff is like a weapon system, and requires frequent training to maintain readiness and ensure its ability to integrate information. Staff training cannot be an afterthought. It must be an intentional, integral, element of the unit's training plan.

(c) Operational unit training must include culture and foreign language. In an era characterized by conflicts among the people, personal interactions between Soldiers and local populations could mean the difference between victory and defeat. Units, civilians, Soldiers and their leaders must be confident when interacting with people of different cultural backgrounds and perspectives within an unfamiliar environment. To develop confidence, unit leaders must become culturally astute and able to address the implications of this understanding in the planning and execution of unit operations. Unit training events must replicate these conditions. Cultural capabilities extend to joint, interagency, intergovernmental, and multinational partners; Army units and leaders should attempt to train with these partners as a team prior to deployment,

rather than first meeting them in the theater. When not possible, every effort must be made to account for partner perspectives, capabilities, and limitations in training. The more the Army trains with its joint, interagency, intergovernmental, and multinational partners, the better it will understand how to maximize and integrate their capabilities into the unit's operational plans.

(d) The operational domain must possess enough flexibility to accommodate modernization fielding and training, and ARFORGEN cycles with unpredictable dwell times to deploy the best trained, manned, and equipped force that time allows.

d. The institutional domain's content and output are guided by operational demands. The institution must instill, and build on the Warrior Ethos and Army values that drive leaders, Soldiers, and civilians to their physical, mental, and emotional best. The institutional domain builds relevant combat skills, it progressively constructs cultural and foreign language capabilities starting with initial military training (IMT), it builds and sustains adaptive leaders through professional military education (PME), and it provides Soldiers with those specific functional skills that full-spectrum operations METL-based unit needs. IMT, PME, and functional training directly contribute to building unit training readiness and are discussed in appendices I, J, and K.

(1) Institutions will use mobile training teams and distributed learning to support home station Soldier, civilian, and leader training opportunities.

(2) Networking the warfighting function-focused CoEs and schools provides opportunities to collaborate and learn from one another, and it provides the capability to the Institutional Army to pull relevant emerging tactics, techniques and procedures (TTPs) from the Operational Army and to push relevant, timely lessons learned back out to the Operational Army. CoEs and schools must focus on rapidly developing new solutions and products and new methods to provide subject matter expertise support to Soldiers, civilians, leaders, and units at home station, CTCs and deployed locations. CoEs and schools must have the capability to operate in a meshed network with deployed units to support integrated training events and collaborative exchange.

(3) Networked, web-based training solutions will enable leaders, Soldiers, and civilians to pull what is needed when it is needed from the CoEs and schools using mobile learning devices that access the central databases of training products and other training and knowledge management tools.

## **2-6. Key implications**

a. More will be required of Soldiers and leaders to execute future full-spectrum operations. They will be expected to assume greater responsibility at lower levels in decentralized operations; to develop and refine interpersonal and decisionmaking skills to operate in complex, culturally diverse theaters of operations; and to train units that exhibit similar organizational qualities. In addition, as advances in information technologies continue to empower adversaries, it will impact how Soldiers coming into the force learn and communicate, and increase the volume of knowledge that must be managed and disseminated. Technological advances, such as

mobile computing, will cause the Army to examine how to transform Soldier learning and unit training continually to keep pace with adversaries.

b. The Army is in an era of increasing complexity while training resources may be fixed or constrained. The implication for the Army is to create an efficient, versatile, integrated, and effective unit-training construct that is adaptive to the OE and responsive to commanders, leaders, and trainers as they develop unit training to meet ARFORGEN readiness objectives. The construct must be scalable, tailorable, and dynamic to allow commanders to train units at different levels of fidelity to develop new Soldiers as well as deepen the experience of seasoned professionals in critical thinking and problem-solving necessary for operational adaptability. In the construct, the lines between the institutional domain and the operational domain must blur as Soldiers, civilians, and leaders reach back for knowledge and the institution reaches forward to discern current operational realities.

c. Technology must be leveraged to enable collective modular unit training among units geographically separated, to introduce levels of training fidelity that cannot be replicated in a live training environment, and to optimize training in a resource constrained training environment. Most METL tasks must be trained at home station; the construct must empower unit home station training by providing the right training enablers, at the right time, to support the commander's home station training plan. This will require new capabilities in all of the training environments; live, virtual, constructive, and gaming. While technological solutions can provide significant opportunities, other solutions will be required such as improved management of training enablers and their supporting architecture, and deployment of mobile capabilities (role players, instrumentation, O/C support) to increase home station fidelity when required.

d. The integrated training construct must address the full cyclic training requirements of the ARFORGEN process, from home station through CTCs to deployment and return as an integrated whole, providing the right training enablers to allow units to reach ARFORGEN training readiness objectives at the right time. The implications of these factors lead to the solutions addressed in [Chapter 3](#); a unit training construct that supports operational adaptability to train to all dimensions of full-spectrum operations in a complex OE within the ARFORGEN process.

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*“Based on the lessons we’ve learned in the past eight years at war, our Army has made some remarkable adaptations in the way we train. Nevertheless, the reality of persistent conflict, hybrid threats, and cyclical deployments means that we also have to become increasingly innovative in our training if we are to develop the versatile units and agile leaders required for the future.”*

GEN Martin E. Dempsey  
Training Development for an Expeditionary Army  
June 2009

## **Chapter 3**

### **Meeting the Challenges**

#### **3-1. Introduction**

Leaders and units must be effective in addressing ill-defined problems and fighting enemies that are operationally adaptive and can migrate among operational themes. To be successful, training must challenge leaders and units with complexity, extended time, and the competing demands of full-spectrum operations including hybrid threats and complex human terrain. The Army must raise the bar on leader and unit training by adding the complexities of societal, religious, tribal, and economic factors – and occasionally mass, so that leaders and units are developed who can anticipate and react to the enemy’s adaptations and transitions during the course of a campaign. Training in the live training environment alone cannot achieve this goal. The complexities of the OE and the real resource limitations on replicating these complexities in training demand a more all-inclusive approach to raising the bar. This chapter presents the central idea and supporting efforts that will provide commanders and leaders effective and efficient solutions that can raise the bar in unit training whether at home station, at CTC events, or deployed.

#### **3-2. The military problem**

How must the Army change its unit training construct to enable commanders and leaders to effectively and efficiently train adaptive units to meet ARFORGEN readiness objectives to conduct full-spectrum operations in the future OE from 2012-2020?

#### **3-3. Central idea: an adaptive training environment to build adaptive units**

a. The Army unit training construct must build on the individual Soldier and leader cognitive, interpersonal, and cultural skills developed in the institutional learning environment by providing complex and challenging collective unit training opportunities that transform individual adaptive skills into adaptive collective skills and unit readiness. To be adaptive, the unit training environment must be responsive to commanders’ and leaders’ training programs, it must be scalable and tailorable, and it must be capable of quickly adjusting to a changing OE. The future training construct achieves adaptive training in new and markedly different ways from how the Army trains today through the integration of training environments, leveraging technology, and innovative management of training support to meet commanders’ and leaders’ training requirements.

b. The centerpiece of the unit training construct is an ITE that replicates the difficulties and complications of the OE, enabling leaders and units to gain the experience, confidence, and skills required to execute full-spectrum operations. The ITE provides commanders and leaders flexibility and adaptability in the planning, preparation and execution of training programs, while remaining consistent and relevant with the changing OE.

c. A number of supporting efforts enable the ITE or provide capabilities required to achieve requisite training fidelity within the ITE necessary to train to an appropriate level of full-spectrum operations METL proficiency. Supporting efforts include improvements in installation capabilities, robust training network capabilities, embedded training capabilities, Soldier and leader peer-to-peer capabilities, information networking between the institutional domain and the operational domain, and an innovative hub-and-spoke training support concept to facilitate delivery of training enablers.

d. The following paragraphs provide a more detailed discussion of the central idea and supporting efforts. Figures 3-1 and 3-2 portray how the central idea and supporting efforts all work together to enable commanders and leaders to plan, prepare, and execute training that develops full-spectrum operations capable units.

**Responsive, Ready, Agile, Victory!**

As his unit begins to prepare to transition from the reset phase of ARFORGEN to the train/ready phase, a brigade commander provides training intent and guidance to his commanders and staff. The S-3 utilizes the commander’s interface (integrated training management program) and selects the CATS, the scenario to be utilized, the level of fidelity for training each task, and enters the remaining training specifics. The program provides a draft training plan. The commander reviews the plan utilizing the commander’s interface and adjusts the desired fidelity of a number of tasks (training “rheostat”), confirms resources, and accepts the plan. The program automatically requests ranges, fixed training enablers, and updates the master training calendar. The S-3 confirms approval of the necessary training resources and schedule – the training is set. With an approved training plan, the staff and subordinate commanders finalize training preparation. Training enablers arrive on schedule from the appropriate training support facility (hub) at the local installation warehouse (spoke) in preparation for training. **Responsive!**

**Figure 3-1. Responsive**

**3-4. Unit training solution: An ITE**

a. The Army ITE is the integrated linkage of selected TADSS, infrastructure, MCS and knowledge management systems, and a training framework that approximates the conditions of the OE during training for full-spectrum operations in any Army training domain; operational, institutional, and self-development domains. The Army uses the live, virtual, constructive, and gaming training environments. Currently, these environments are partially interoperable, but not fully integrated among themselves or the Army’s MCS. By 2012, the training environment will begin incorporating training enablers that are integrated and seamless to execute ARFORGEN



multiechelon training requirements, so that by the year 2020, a commander operating in a tactical operations center should not be able to distinguish between live and virtual, constructive or gaming input. Commanders must be as comfortable leveraging all of the training environments in the ITE as they are with the live environment. The ITE provides scalable, low to medium level fidelity replication of the OE to support home station unit training. The ITE provides the opportunity for battalions and above to gain proficiency in exercising mission command in full-spectrum operations when the fidelity is increased to include joint, interagency, intergovernmental, multinational, and nongovernmental organization partners. The ITE is not just a network that integrates the live, virtual, constructive, and gaming environments, it includes the tools (enablers) that commanders and leaders require to build and execute unit training.

### **Responsive, Ready, Agile, Victory!**

At the home station training exercise, the brigade commander and some of his staff walk into a room that is labeled with a dual language sign as the town mayor's office. Inside is a large video monitor, on which a culturally attuned role player interacts with the commander about the brigade's operations and the townspeople. Based on that interaction, the unit's supply column is affected constructively and reported to the unit's command post. The unit's vehicles, operating in a live environment, are decremented fuel or ammunition through embedded training capabilities that prevents a platoon from accomplishing its mission. The platoon leadership checks their personal data devices for doctrine and the supporting training resources to deal with their new challenge, and to help them conduct an informal AAR. A formal commander-driven AAR is facilitated by offsite O/Cs, who remotely reviewed the unit actions. The AAR identifies those standardized METL tasks that must be retrained to drive performance levels to the Army's standards. **Ready!**

Later in ARFORGEN the commander deploys his unit to an MCTC using the same procedures he will use when deploying to his assigned mission. Once at the MCTC, that same mayor and his council participate in a live meeting with the commander and his staff. This meeting might set the stage for terrorist attacks against unit assets before the unit crosses the line of departure for an offensive operation against regular forces. A myriad of joint, interagency, intergovernmental, and multinational partners could also be affected by the terrorist act which was reported globally by television reporters, and an array of requests for assistance, information, and offers to help pour into the command post. The effects of the terrorist act are adjudicated using the unit's onboard training systems and the unit must shift its plans en route to a major combat operations task-based, brigade level combined arms live fire exercise. Later in ARFORGEN, the unit continues the training thread at home station in a BCTP exercise where the scenario constructively includes other units and a sister unit operating live at a MCTC. **Agile!**

Once deployed, the commander collaborates with CoEs and others to develop a new training support package to neutralize an anticipated emerging threat capability, and rehearses executing that task using his seamless embedded mission command, instrumentation, and adjudication suites. **Victory!**

**Figure 3-2. Ready, agile, victory**

b. Integral to the ITE is a framework for training and education, which provides the context that drives training and education outcomes. If the ITE represented a production factory environment, the framework would be the tooling and machines that enable the production outcome. Within the framework are all of the training products required to evoke the behaviors necessary to achieve Army training standards and outcomes. The framework is organized around four core components, the Common Framework of Scenarios (CFoS), a commander's interface, training support packages, and meshed networked access to lessons learned and collaborative capabilities. Each is described below.

(1) The CFoS provides a suite of approved TRADOC scenarios containing robust OE conditions (regular forces, irregular forces, terrorist and criminal actors, and civilian populations) designed to add rigor in achieving training and education outcomes in a full-spectrum operations operating environment. At a minimum, they include the following.

(a) Terrain databases with inclusive meteorological data and manmade objects (model ready terrain files).

(b) Friendly and opposing force (OPFOR) orders, plans and graphics to facilitate operational and tactical orders development, to include digital files for direct input to MCS.

(c) OE assessments that provide detailed analysis of various scenarios using PMESII-PT to describe possible outcomes and impacts to U.S. forces.

(d) MCS or simulation interface capabilities.

(e) A central training database (CTDB), which includes current operational reports and events that are converted into unclassified training scenarios that replicate the density and continuity of information and intelligence available to leaders during operations. Data available through the CTDB can be tailored to challenge units and leaders with varying degrees of complexity. It also accounts for events in the cyber/electromagnetic dimension and contest of wills.

(2) An interface for commanders and leaders that provides the capability to adjust conditions (the rheostat) and to enter unit data. It is also a simple single entry point into the automated training systems allowing integrated management of training plans, training enablers, schedule, and training assessment capabilities (linked into TSE systems).

(3) Training support packages provide a comprehensive and exportable collection of integrated training products, materials, and information necessary to train one or more individual or collective tasks. Training support packages provide training enablers not resident in the CFoS.

(4) Through links and meshed network capability, the framework provides rapid access to operational lessons, critical information, shared training lessons, and capabilities for training development collaboration.

c. Together, the ITE and the framework for training and education achieve the following objectives.

(1) They enable unit training that develops leaders and Soldiers who can function as an adaptive organization by providing a training environment that optimizes the live, virtual, constructive, and gaming constructs to accurately replicate the OE at differing fidelity and at different organizational levels. The differences between training and operations are minimized by providing greater fidelity and flexibility in the training environment. This enables commanders and leaders to take charge of their unit training program and build training readiness by challenging units with complex and dynamic problems that tax every Soldier and every warfighting function in a myriad of ways.

(2) They provide an ITE that is persistent, continuous, and integrated from home station, through a CTC or culminating training event (CTE), and into deployment. Units remain agile during deployment utilizing embedded TADSS, reaching back to the institution for information, and utilizing other enablers to conduct mission rehearsals, train on atrophying full-spectrum operations METL proficiency, or develop new skills required by changes in the OE.

(3) They can provide rapid training content updates and are responsive to the operational commander's training needs.

(4) They are capable of sustained adaptation. Routine feedback from the Operational Army on training outcomes will drive adjustments to training support packages, scenarios and other training enablers. Sustaining adaptation includes a capacity to routinely explore and integrate advanced technologies and training methods to maintain training complexity and relevancy to the OE.

d. The networked ITE enables commanders and leaders to conduct concurrent and multiechelon unit training with geographically dispersed units. To achieve DEF and CEF full-spectrum operations METL proficiency (less brigade and battalion-level live fire) at home station, unit training of active Army brigades and Reserve component company level units use the ITE and the framework for training and education. This helps ensure commonality of training context between geographically dispersed modular units that can be attached or detached as part of force packaging.

### **3-5. Supporting efforts**

a. Installations provide the physical capability to support training that produces full-spectrum operations-proficient active Army brigades and Reserve component companies and brigade and battalion staffs. Investments in infrastructure ensure ranges, maneuver areas, TADSS, instrumentation, installation network, and an information grid can support the use of operational communications equipment with low overhead support requirements. Deployed Army units, where operationally feasible, are supported by an infrastructure that enables deployed training and mission rehearsals in the ITE.

b. Robust, interoperable networks link the domains and entities within each domain, and are capable of transmitting at various classification levels the components of the framework for training and education and have the capability to support the ITE for simultaneous, distributed, and continuous training events. They are able to firewall sensitive information without degrading the information sharing and collaboration required for realistic training.

c. Embedded training provides leaders a low overhead capability to operate in a synthetic environment, supported by a ubiquitous network able to support individual and collective full-spectrum operations training events in the OE. Embedded training capabilities are established as key performance parameters (KPPs) for materiel acquisitions. As a component of total package fielding supporting new materiel solutions, the program manager includes all of the needed training enablers that integrate into the ITE and framework for Army training and education. On-board embedded training capabilities seamlessly integrate into the ITE, including its network architecture, and capitalize on previously fielded training products increasing training opportunities while reducing ITE requirements and costs.

d. Soldiers and leaders possess the capability to execute peer-to-peer persistent learning and small unit virtual mission rehearsals that go hand-in-hand with persistent unit training. Soldiers use mobile learning devices to reach back to the institutional Army, and on demand, retrieve information for their immediate needs from centralized training and knowledge management databases and tools.

e. The institutional domain maintains a network of CoEs and schools that operate in a meshed network with deployed units, providing opportunities to collaborate and learn from requests for information and operational and training lessons to support unit and institutional integrated training events. The institution's subject matter experts focus on rapidly developing new solutions and products while providing responsive support to Soldiers, civilians, leaders and units at home station, CTCs and deployed locations. The meshed network provides a rich environment for collaboration, simulation, and gaming linked together by an OE driven CFoS.

f. The Army TSE delivers relevant products, services, and facilities to create training conditions that realistically portray the OE and utilizes a hub-and-spoke support concept that facilitates effective forecasting and coordination of training support requirements. This hub-and-spoke architecture provides the requisite enablers to close the gap between what is resident on the installation (spoke), and what must be electronically or physically delivered from a centralized location (hub) effectively. These resources include mobile, deployable assets, or digital products delivered across the Army's networks. Additionally, foreign language and cultural specific role players are provided through the same hub-and-spoke architecture.

### **3-6. Summary**

a. TRADOC Pam 525-8-3 provides commanders at all echelons a comprehensive training construct, built on an ITE that is responsive and adaptive, which accomplishes the following.

b. Empowers commanders and leaders to train units at home station, CTCs, and while deployed.

- c. Delivers an ITE capability at home station that enables active Army units to achieve DEF and CEF ARFORGEN objective full-spectrum operations proficiency and Reserve component company-level proficiency. Enables complex staff training through the framework for training and education by providing enhanced unit mission unique training stimuli. Provides for home station company live fire qualification.
- d. Achieves BCT synchronized live fire at the maneuver CTCs in a joint, interagency, intergovernmental, and multinational OE, with a long term goal of brigade combat team live-fire (terrain and range dependent).
- e. Sustains full-spectrum operations capabilities, and allows the conduct of mission rehearsals and training for emerging enemy capabilities while deployed.
- f. Enables the synchronization of training requirements in the ARFORGEN process to provide leaders, Soldiers, civilians, and units the ability to operate in a complex, uncertain joint, interagency, intergovernmental, and multinational OE.

*“Building unit agility and versatility comes from a focused approach to training. The uncertainty and volatility of fighting in a hybrid environment demands that our leaders and their units develop the capacity to ‘shift from a known point’. The ‘known point’ becomes the mission focused attention to a few tasks identified by a commander as mission essential. The harmony we desire in our formations within full spectrum operations, and the ability to turn inside an adversary’s decision cycle, is more a product of the quality of training rather than the quantity. As an expression of commander’s intent, METL focused training creates teams that ultimately dominate the shifting complexity of modern wars.”*

**GEN Peter W. Chiarelli, VCSA  
Training Full Spectrum – Less is More**

## **Chapter 4 Conclusion**

### **4-1. Introduction**

Projections of future OE cannot portray a clear picture of what is to come. Recent history indicates future Army forces should always expect the unexpected. For the Army to prevail in an uncertain and complex environment, it must develop leaders and units that adapt rapidly in any OE. To develop adaptive leaders who can build cohesive teams and develop resilient Soldiers capable of adapting and overcoming in the complexity of the future OE, commanders and unit leaders must train in an environment that demands critical thinking and adaptation. To develop adaptive units, commanders and leaders must be provided training capabilities that

enable them to train units with the right fidelity at the right time to introduce complexity and challenges that replicate the OE and can be modified as the OE changes.

#### **4-2. TRADOC Pam 525-8-3**

While reaffirming the enduring training principles, TRADOC Pam 525-8-3 describes a vision for a training construct that provides these training capabilities, through a meshed information infrastructure and integrated training support capabilities that include an ITE, a framework for Army training and education, and hub-and-spoke distribution of training enablers. Collectively, this construct enables commanders and leaders to develop and execute essential full-spectrum operations METL unit training in an OE that builds on the knowledge and skills provided by the institutional and self-development domains. It provides commanders the ability to introduce appropriate levels of fidelity and uncertainty into training to reinforce Army adaptability, to build quality training for geographically dispersed modular forces, and to thread training from the schoolhouse through home station training, the CTC, to the deployed area of operations.

#### **4-3. The way-ahead**

The TRADOC Pam 525-8-3 vision can be realized by 2020. Already a number of critical programs of record are making incremental steps to deploy ITE components. The CFoS is approved and efforts are ongoing to integrate existing scenarios and develop other scenarios that provide a full suite that addresses current and potential OE challenges. Other capabilities, such as the commander's interface, which is critical to providing a simple single entry point into the automated training systems, and the hub-and-spoke training enabler distribution system, have yet to be developed but a number of current systems and processes have potential to grow or be modified to achieve these required capabilities. The Army must modernize how it trains; it can do it incrementally, but it must do it quickly. It is possible to realize a significant portion of this training vision by the year 2015, but the Army must begin now and work together. These capabilities are critical if the Army is to set the conditions for an adaptive Army training environment that builds adaptive Soldiers, civilians, leaders, and units for the future.

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## **Appendix B Required Capabilities**

### **B-1. Purpose**

This appendix summarizes the required training capabilities necessary for the future modular force to generate and sustain, trained full-spectrum operations units that can succeed in an uncertain and complex operational environment over an extended period. TRADOC Pam 525-8-3 exploits the synergy between the operational training domain and the institutional training domain to build capable units and agile, adaptive leaders to meet ARFORGEN readiness requirements. The capabilities must support the fundamental tenets of TRADOC Pam 525-8-3.

### **B-2. Required capabilities**

a. Future Army forces require the capability to efficiently and effectively conduct, with constrained resources, training across the institutional, operational and self-development training domains that integrates available training enablers and is conducted in combinations of the live, virtual, constructive, and gaming training environments for multiechelon complex OE training.

b. Future Army force require the capability of a framework for Army training and education (applicable to all Army training domains) that integrates training enablers and accesses dynamic capabilities that provide context by approximating the conditions of the OE and includes: a suite of TRADOC approved scenarios, a terrain database that describes topography, meteorological data, manmade objects/terrains, and an orders suite with missions that allow units to pursue and achieve training standards, and actor taxonomies that describe the PMESII+PT (less military) structure for role players to accurately portray the OE for training.

c. Future Army forces require an automated training management capability that will provide commanders and leaders an interface that automatically communicates training enabler and training resource requirements directly to the appropriate training support provider for scheduling and distribution of training support capabilities to support the commander's full-spectrum operations training plan.

d. Future Army forces require individual and collective training support packages that are a comprehensive exportable collection of integrated training products, materials, information and training enablers necessary to facilitate training on one or more critical tasks.

e. Future Army forces require the capability to rapidly capture lessons learned from the Operational Army and provide it to the Operational Army, Generating Force, and joint forces to enable rapid and interactive update of doctrine, TTPs, and dissemination of critical information.

f. Future Army forces require a training network infrastructure within the Army Enterprise Network (AEN) construct that can link the Operational Army (both deployed and non-deployed) and Generating Force to the operational network, modernized TADSS, and training facilities to support training on demand across the three training domains and the dimensions of full-spectrum operations.

g. Future Army forces require a distributed learning capability that provides Soldiers, leaders, and civilians persistent access to job performance aids when and where needed, using libraries of common reusable training content, performance support applications, and adaptive digitized learning products to conduct training and education anytime and anywhere.

h. Future Army forces require the capability to provide the Operational Army persistent access to subject matter expertise within the institutional Army to enable informed, time-sensitive consultation and decisionmaking.

i. Future Army forces require the capability to conduct collective training in tactical maneuver in a realistic manner that replicates the uncertainty, stress, and complexity of the various theaters of operations using a fully networked structure of live, virtual, constructive, and gaming training systems and approaches that are applicable to both mounted and dismounted Soldiers to develop experienced leaders and Soldiers capable of fighting and winning in full-spectrum operations.

j. Future Army forces require the capability to train cohesive combined arms teams able to employ the full range of joint and Army capabilities (such as, maneuver forces, mobile protected fire power, offensive and defensive fires, engineers, aviation, cyber/electronic capabilities, information engagement, and joint capabilities) in a realistic training environment that approximates the complex OE to fight and win across the spectrum of conflict.

k. Future Army forces require the capability to conduct multilevels of force-on-force engagement in a realistic training environment that emulates the OE and includes high fidelity engagement realism, objective observations, and AAR tools, to effectively and efficiently prepare units for hybrid threats and full-spectrum operations.

l. Future Army forces require the capability to train commanders and staffs at all levels to conduct mission command for employment of all organizational capabilities under tough realistic conditions that simulate digital mission command components, reach back to the institutional domain, and replicate the OE and situational awareness capabilities, to prepare for and execute combined arms operations.

m. Future Army forces require the capability to train and develop Soldiers, leaders, and civilians in all three training domains on foreign language, and cultural, social and political aspects of the OE, to develop capabilities needed to meet ARFORGEN deployment requirements to conduct full-spectrum operations as part of a joint, interagency, intergovernmental, and multinational force.

n. Future Army forces require a persistent capability for unit leaders to manage and integrate individual and collective training readiness information, training records, training enablers and training plans, regardless of the leader's location, to provide commanders and leaders a one-stop-shop training development construct to rapidly plan, prepare, execute, and assess full-spectrum operations training to standard with available resources and assets.

o. Future Army forces require a persistent capability to access training records and self-development activities to identify and track Soldiers with specialized skills and expertise (commercial and business, language, and cultural background), regardless of a leader's location, to conduct effective full-spectrum operations in complex environments.

p. Future Army forces require a freethinking, adaptive OPFOR capable of portraying regular and irregular forces, criminal elements, with a hybrid variant from all to train Soldiers and units against full spectrum METLs and to stress systems to failure.

q. Future Army forces require the capability to provide immersive, vehicle based military drivers, occupants, and crews training replicating the terrain, threat and OE that allows individual to collective training to include rehearsal of roll-over and vehicle emergency response drills.

r. Future Army forces require the capability to conduct deployed training that includes persistent access to automated training management systems, digital terrain databases replicating the OE, deployable TADSS, embedded training, developed theater training infrastructure, and sustainment training in language and culture to ensure success while conducting full-spectrum operations.

s. Future Army forces require the capability to integrate organic and issued equipment embedded training capabilities into virtual, constructive and gaming training environments to provide commanders, leaders and Soldiers the ability to network and exercise systems capabilities in collective training events, to provide tough, realistic training to sustain full-spectrum operations METL tasks, train on OE specific emerging tasks and to conduct mission rehearsals.

t. Future Army forces require the capability to integrate training information repositories, TADSS, products, services, and facilities at geographically dispersed locations to provide commanders and leaders the ability to economically and efficiently maximize the availability of training capabilities anywhere, anytime to reach the required fidelity of training and achieve training objectives.

u. Future Army forces require training support that provides enablers to conduct tough, realistic individual and collective training, with the institutional agility to assess and adapt as the mission, threat, or OE changes, to ensure that the Operational Army has the capabilities needed to fight and win.

v. Future Army forces require a flexible and responsive training community that adapts to emerging challenges (including training resource constraints, rapidly acquired equipment, and changes to the OE) and enables geographically dispersed organizations and units (both in the operating and generating forces) to collect, analyze and share information to exercise and experiment with new TTPs.

w. Future Army Forces require the capability to incorporate a joint, interagency, intergovernmental, and multinational context in all training domains to improve interoperability and achieve unity of effort and mission success in uncertain and complex environments.

x. Future institutional Army forces require the capability to provide initial, functional, and professional skills, knowledge, and attributes developed under realistic replicated OE conditions to provide Soldiers, civilians and leaders fundamental tactical and technical competence over a broader range of complex experiences to be prepared to effectively contribute to unit full-spectrum operations METL proficiency.

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## **Appendix C**

### **Integrated Training Environment**

#### **C-1. Purpose**

a. Implementing TRADOC 525-8-3 will require a major change in the way the Army's trainers and training developers think about enabling training. A major goal of the concept is to make training unit-centric, with commanders and leaders in charge. To prepare for full-spectrum operations in a complex OE, commanders and leaders must be able to replicate that environment as accurately and quickly as possible in training. To achieve this replication they must have the right tools at their disposal – tools that are low overhead, are mobile and capable of being interoperable and integrated, are reconfigurable, and which can be networked together quickly and seamlessly with joint and Army MCS. The Army uses training environments to surround its Soldiers, leaders, and units with the circumstances, objects, and conditions that replicate an OE where they might have to deploy to accomplish real world missions. In a training environment, Soldiers, leaders, and units train to the standards established in their full-spectrum operations METL and CATS.

b. Currently the Army is heavily engaged in an era of persistent conflict with hybrid threats and cyclical deployments, conditions that will likely continue without abatement for the near term. Joint, interagency, intergovernmental, and multinational operations will be the norm rather than the exception. In the future, as indicated by recent events, the Army will face increasingly greater challenges with inform and influence activities and cyber/electromagnetic activities. The Army must be able to train to prepare for these challenges. Such training must address the three dimensions of full-spectrum operations: contest of wills, strategic engagement, and the cyber/electromagnetic contest. Further adding to this complexity is the likelihood resources will be constrained, placing a premium on efficient and effective training.

c. The Army has a wide variety of TADSS to support training. The Army's resources include live, virtual, constructive, and gaming TADSS of both the standard and non-standard variety. The problem faced by the Army is there is currently no way to integrate the right mix of TADSS with the joint and Army MCSs to provide the commander and leaders the full capability to replicate the complex OE conditions required for full-spectrum operations METL training. Some TADSS can interoperate when commanders and their organizations use manual procedures, physical activities and specially designed hardware, but such techniques are expensive, resource intensive, and time consuming. The Army needs to move beyond separate or interoperable systems to low overhead, fully integrated systems, which are mobile, rapidly reconfigurable, and able to communicate and interact through their own innate capabilities.

d. The Army's objective is to integrate all of the essential TADSS with both joint and Army MCS, and ultimately with joint TADSS to create one seamless ITE. The resulting ITE is the linkage of selected TADSS, infrastructure, MCS, knowledge management systems, and a training framework to approximate the conditions of the OE for training and education for full-spectrum operations in any of its training domains-operational, institutional, and self-development. The ITE includes the integrating architecture (IA) and training infrastructure (TI) which replicates an OE anytime and anywhere, thereby enabling all commanders to train for full-spectrum operations using the Army's TADSS in both the operational and institutional training domains in conjunction with the Army MCS and joint mission command (formerly, battle command) systems. The IA component provides the technical how-to that governs information exchange between and among all of the respective TADSS and MCS. It includes the protocols, specifications, standards, interfaces, databases, and hardware and software requirements to allow the construction of networks, which enable the collection, retrieval, and exchange of information. The TI component is the means or the physical enabler for the IA and includes facilities, power, communications assets, the training support, personnel and equipment, and the management structure.

e. The Army intends to initiate the Army ITE by putting the live, virtual, and constructive ITE in place at twelve installations in the continental U.S. (CONUS) and outside CONUS (OCONUS) by fiscal year (FY) 2016. The TRADOC capability manager for the live, virtual, constructive ITE manages the program of record (POR) known as the Live, Virtual, Constructive IA, which is the "engine" or "glue" for an ITE. The live, virtual, constructive IA will execute in four increments that will add the following KPPs or capabilities to the evolving ITE.

(1) Increment one (FY 2010-2012) will include live, virtual, constructive, and command interoperability; expanded area of operations; enterprise AAR; live, virtual, and constructive exercise control; and net-ready capability.

(2) Increment two (FY 2012-2014) will include increment one refinements and add data management and common tools; collaborative exercise; standard communications, protocols, and interfaces; and integration of gaming applications.

(3) Increment three (FY 2014-2016) will include increments one and two refinements and add reach back on demand; correlated synthetic environment; and exercise management and training support products.

(4) Increment four (FY date to be determined) refines increment one through three capabilities and adds yet to be determined capabilities. Based on funding, the Army will expand the live, virtual, and constructive ITE to other installations in FY 2016-2020.

## **C-2. Current state**

a. The ARFORGEN process and ITE. The ARFORGEN process reflects a major paradigm shift for the Army, serving as a forcing function to move it from a cycle of alert-train-deploy to one of train-alert-deploy. The Army recognized that it did not have the luxury of long periods to

prepare for overseas contingency operations. In the three phases of ARFORGEN, reset, train/ready, and available, time is the most critical resource. During the reset phase, the commanders' primary focus is on equipment and personnel readiness. Units conduct some collective training but concentrate primarily on individual training such as weapons qualification, driver training, and PME. Large percentages of unit personnel are in transition moving from one installation to another or attending the Army's various schools and institutions. Units often receive new equipment during the reset phase, and may need to undergo new equipment training.

b. Out of necessity, doctrine and tactics training and full-spectrum operations METL training occurs during the train/ready phase where units must progress rapidly through a crawl-walk-run training regimen to meet the standards for deployment. Units participate in gunnery, situational training exercises, combined arms live fire exercises, field training exercises, command post exercises, BCTP, and ideally a CTC event. Units should be at a walk or run level before progressing to the CTC, and at a fast run going into the MRE and MRX. However, units often have a difficult time achieving those levels. Many brigades, especially functional and support brigades, do not get the chance to train at a CTC, and must undergo an MRX-like CTE at home station. Not having an ITE available, in particular for home station training, poses severe challenges to commanders who are trying to capitalize on scarce time and other resource shortages.

c. The challenge of an ITE. Currently no ITE exists within the realm of Army training that provides commanders and leaders with the training capabilities they need. Although many of the base parts, such as TADSS, are already present at many installations, additional pieces are necessary to form a true ITE. Live, virtual, constructive, and gaming TADSS can be linked together in an interoperable fashion only with extensive resource expenditure. Long lead times and highly skilled technical staffs are often required to cobble together existing TADSS in a manner that enables the replication of minimal conditions for training. Commanders and units often do not have that lead-time. During the design process for the bulk of the Army's current TADSS, no single protocol or standard was followed; different proponents developed the TADSS based on the needs of the moment and gave little or no consideration to integration. This led to systems that would not talk to one another.

d. The Training Support-Materiel Armywide Tracking System currently tracks over four hundred thousand TADSS (Army fielded and fabricated) that are used on a daily basis by schools and institutions to train Soldiers. However, Soldiers and leaders during PME are not trained on the use and integration of TADSS, and consequently they arrive at their next assignments in the operational domain ill prepared to conduct training using those TADSS. Lacking detailed knowledge, commanders are often dependent on CATS documents that rarely provide extensive information on the right mix of TADSS to select for full-spectrum operations METL training. Because of the constraints of the ARFORGEN process, commanders are faced with a quandary when planning and preparing training.

e. Current training environment capability gaps. The current mix of TADSS and the inability to integrate them reflect several capability gaps, which hamper effective and efficient unit training. These include, but are not necessarily limited to those identified below.



- (1) The inability to replicate a complex operational environment with hybrid threats.
- (2) The inability to replicate the complete spectrum of conflict for full-spectrum operations within current or projected training space.
- (3) The inability to train and sustain leader and staff collective training proficiency on Army and joint battle command systems and intelligence, surveillance, and reconnaissance systems.
- (4) The lack of on-demand, distributed training capabilities.
- (5) The difficulty in conducting multiechelon training.
- (6) The difficulty in conducting joint, interagency, intergovernmental, and multinational training, especially with units and key personnel that are not co-located.
- (7) The limitations to the size of the training audience.
- (8) The difficulty supporting large-scale home station exercises.
- (9) The limitations on brigades' and the BCT's ability to train all warfighting functions simultaneously.
- (10) The limitations in conducting training for inform and influence activities and cyber/electromagnetic activities across the three dimensions; contest of wills, strategic engagement, and the cyber/electromagnetic contest.
- (11) The inability to provide a completely integrated, seamless ITE currently.

f. Addressing the capability gaps. To enhance unit-centric training, the Army must address the above capability gaps through the creation of a persistent ITE.

### **C-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. The Army training strategy, the Army leader development strategy, and TRADOC Pam 525-8-3 require the Army's TSE to assist commanders in generating modular, expeditionary units capable of accomplishing their full-spectrum operations METL in support of combatant commanders' requirements now and in the future. Agile leaders for these units are a crucial requirement. The Army's training support system must deliver relevant live, virtual, constructive, and gaming training enablers that establish an ITE, which replicates complex OEs with hybrid threats. Such an ITE will enable full-spectrum operations METL training within the ARFORGEN construct as well as supporting the institutions' and CoE's training strategies as reflected in their programs of instruction.

b. Development and fielding strategy. Since much of the technology for an ITE either does not presently exist or has yet to be discovered by the Army, it must move from the present status

of marginal interoperability to integration at a pace that allows this technology to be incorporated, once available. The strategy to develop and field an ITE is grounded on a phased, evolutionary approach. The funded POR to support the materiel acquisition of the IA subcomponent of the ITE is called the live, virtual, and constructive IA. This POR likewise guides the acquisition of materiel solutions for the TI subcomponent. The focal point for the POR will be the Battle Command Training Centers, which are the Army standard for hub and spoke support to commanders, schools, and institutions in both CONUS and OCONUS for the active Army and Reserve component. The Army will establish the live, virtual, and constructive ITE in three phases.

(1) Phase one, establishing ITE in the operational domain, takes place in FY 2012-2016 with a priority on brigade and below collective training at home stations, followed by a linkage to the CTCs.

(2) Phase two, establishing ITE in the institutional and self-development Domains, takes place in FY 2014-2018 and will bring ITE capabilities to the CoEs, Army schools and institutions.

(3) Phase three, establishing ITE for deployed units, takes place in FY 2016-2020 and will allow Army organizations deployed in operational theaters to leverage the ITE. Also in this phase, the Army will develop an embedded training capability on selected systems.

c. Training strategy. In the final analysis, the ITE is a training enabler and must be viewed as such by the Army. Commanders train their units at home station, the CTCs, BCTP, and while deployed. In many cases, the unit may be split between different locations. For example, a brigade may have one unit deployed, another training at a CTC, and yet another at home station with the brigade headquarters. This brigade may need to conduct joint, interagency, intergovernmental, and multinational training with units, organizations, and key personnel not located at its home station. The commander of this brigade must have a training environment that allows him to train all of these units on demand, with reach back, in a manner that is seamless and invisible to the training audience. The ITE will enable this requirement.

d. The ITE itself does not provide training. Rather, it is the platform upon which training is conducted. Putting Soldiers, leaders and units into the ITE does not lead to effective training unless commanders exercise the functions described in the Army's training doctrine. The foundation for the doctrine is FM 7-0. FM 7-0 establishes seven principles of training which commanders and leaders must follow. Persistent conflict, full-spectrum operations, and modular force structures have altered the way commanders manage training. The Army training management process provides the commander with the management tools to plan, prepare, execute and assess his organization's training. The ITE with its resident framework for Army training and education, and its associated TADSS, are the resources or training enablers that are critical components of Army training management. The CATS consists of multiple training strategies that provide the commander templates for task-based, event-driven, organizational training and are used by the commander to develop a METL. The CATS include the tasks to be trained, the training audience, gates, frequencies, multiechelon training, purpose, outcomes, execution guidance, and the TADSS necessary to conduct the training.

e. Within the time constraints of the ARFORGEN process and the Standards in Training Commission, commanders use the Digital Training Management System (DTMS) with the appropriate CATS and METL to develop training guidance, strategy and training calendars. ARFORGEN and CATS are linked together inextricably for the commander and provide him with the blueprint for effective training. U.S. Forces Command and other ASCC commanders specify the unit OE and operational theme prior to a unit's entry into the ARFORGEN train/ready force pool. It specifies what tasks the unit needs to train. The frequencies of the training events in the CATS are congruent with the ARFORGEN process. The focus of CATS is on full-spectrum operations METL capabilities. When commanders receive missions that require out of design tasks to be trained by their units, these commanders can add to the METL tasks but cannot reduce them. By following the Army's training doctrine, using CATS and ARFORGEN, and enabled by the ITE, commanders can train their units to the required standards.

#### **C-4. Specific outcomes of the ITE**

a. The ITE will enable unit-centric training conducted by commanders and leaders in support of TRADOC Pam 525-8-3.

(1) The ITE provides the commander a more accurate replication of complex OE with its hybrid threats and a means to see the effects of actions taken within that environment.

(2) The ITE enables the commander to expand the size of the training audience.

(3) The ITE allows more flexibility in the crawl-walk-run training methodology, in particular by providing for more retraining events.

(4) The ITE gives the commander greater flexibility in conducting multiechelon training.

(5) The ITE allows the commander to give the unit multiple training experiences – an amount greatly expanded over live-only training.

(6) The ITE helps the commander mitigate training resource constraints.

(7) The ITE enables commanders and their staffs at different levels to simultaneously train all warfighting functions.

(8) The ITE allows the commander to overcome geographic locations such as having one unit at a CTC, another at home station, and another deployed.

(9) The ITE enables the commander to conduct more frequent training with non-habitual units, to include training for joint, interagency, intergovernmental, and multinational, thereby improving joint interoperability.

(10) The ITE provides the commander with a distributed on-demand training and reach-back capability.

(11) The ITE assists the commander in executing the Army's mission command training strategy, CATS, and the Army leader development strategy.

(12) The ITE enhances the commander's opportunities to have large-scale home station exercises.

(13) The ITE allow the commander to conduct training for inform and influence activities and cyber/electromagnetic activities across the dimensions of the contest of wills, strategic engagement, and the cyber/electromagnetic contest.

b. The overall outcome is that through the creation of this ITE, the Army will set the conditions, which enable its commanders to conduct efficient and effective training that develops mission-ready Soldiers, leaders and forces.

#### **C-5. Specific capabilities**

a. The following is a list of specific capabilities initially planned in the ITE, commonly called KPPs by the acquisition community.

b. Increment one capabilities.

(1) Selected TADSS (live, virtual, constructive, and gaming) shall be interoperable with MCS.

(2) Expanded the area of operations.

(3) ITE shall provide an enterprise AAR.

(4) ITE shall provide a live, virtual, constructive, and gaming exercise control (plug and train capability).

(5) ITE shall support net-centric military operations.

(6) ITE shall provide database management, common database, and tools.

c. Increment two capabilities.

(1) Refinement of increment one capabilities.

(2) ITE shall provide data management, common database, and database tools.

(3) ITE shall provide a collaborative exercise capability (improved replication of the joint OE, contemporary OE, lethal and nonlethal effects for training and mission rehearsal).

(4) ITE shall provide standard communications protocols and interfaces.

(5) ITE shall provide integration of gaming TADSS.

(6) ITE shall support net-centric military operations.

d. Increment three capabilities.

(1) Increments one and two refinements.

(2) ITE shall provide reach back on demand capability (connectivity to joint and Army networks).

(3) ITE shall provide a correlated synthetic network (allowing full replication of a complex OE with an embedded training capability).

(4) ITE shall provide exercise management and training support products.

(5) ITE shall support net-centric military operations.

e. Increment four capabilities.

(1) Increment one through three refinements.

(2) ITE shall support net-centric military operations.

## **C-6. Conclusion**

a. The Army needs the capabilities of the ITE to close present and future training gaps. Through the POR, the Army will first establish an interoperable environment and then progress to one that is fully integrated.

b. Army commanders and trainers at all levels and in all domains (operational and institutional training domains) will be able to leverage this revolutionary capability by following TRADOC Pam 525-8-3 and the principles of training found in FM 7-0. The result will be a better trained Army capable of executing full-spectrum operations any time and any place.

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## **Appendix D**

### **Framework for Army Training and Education**

#### **D-1. Purpose**

The purpose of this appendix is to define the required capabilities for a framework for Army training and education construct that supports unit training.

#### **D-2. Current state**

The Army is almost a decade into an era of persistent conflict that has been characterized by quickly changing training requirements from commanders who are deployed or are preparing to deploy that has resulted in attempts across the DOTMLPF domains to rapidly respond and provide the necessary capabilities. This has resulted in multiple stand alone (nonintegrated) training support packages and training products in a myriad of media and domains that exist on various portions of the live, virtual, constructive, and gaming environments. Commanders must still struggle through developing, and tailoring the myriad training products and resources to account for unit unique requirements. Many of these products and resources require additional effort to integrate them to achieve the commander's desired training outcome.

#### **D-3. What is different about the TRADOC Pam 525-8-3 construct?**

The framework capabilities provide one-stop integration of training products available through the ITE that will allow commanders anywhere, anytime to select, tailor, execute, and assess individual to collective training and conduct mission rehearsal. The framework for Army training and education capabilities will also provide the context and continuity to link observations, insights, and lessons to training application, in preparation for full-spectrum operations in the OE.

#### **D-4. Specific outcomes**

Future Army forces require that unit commanders have a reconfigurable, scalable framework for Army training and education. This framework must be the provider and integrator of all training products that are made available through the ITE (training platform) and that evoke the unit and individual behaviors necessary to achieve Army training standards and desired leader, training, and education outcomes. It will provide the actors, environment, scenarios, and training events that allow the commander to challenge the unit with realistic tailored training.

#### **D-5. Specific capabilities**

a. The Army Training Brain. The Army Training Brain enables TRADOC Pam 525-8-3 by providing the context or conditions for Army training across all echelons and disciplines. This context, consisting of data, information, and knowledge products, delivered over current and future training systems, mapped to leader driven training outcomes and consistent with the standards for conditions articulated in the Army's documented assessment of the OE will be crucial to the Army's learning and training frameworks. The Training Brain supports the framework by providing the following:

(1) The Training Brain fully replicates the complexity, unpredictability, volume, and depth of current and future OEs for each training domain (operational, institutional, and self-

development) and across each training environment (live, virtual, constructive, and gaming). The scope of Training Brain support includes historic, current, and possible future OEs—including current and future drivers and trends (such as, conventional and unconventional threats; technology; economic stability; cultural, demographic, and immigration realities; resource availability; political stability and critical shifts)—and derivative vignettes, in both outline and detailed form, that characterize specific and potential contingencies and alternative futures.

(2) The Training Brain provides a CFoS that meet the standards for conditions articulated in the OE. These approved TRADOC scenarios contain robust OE conditions (regular forces, irregular forces, terrorist and criminal actors, civilian populations, and others) designed to add rigor in achieving training and education outcomes.

(3) The Training Brain provides an ability to receive and rapidly transform live data and information.

(4) The Training Brain provides an ability to integrate lessons learned—leveraging modeling, simulation, and gaming—into immediately useable, user-tailored OE products.

b. Additional training data capabilities include the following.

(1) Terrain databases inclusive of topography, meteorological data, and manmade objects (model ready terrain files).

(2) Friendly and enemy base orders, plans, and graphics to facilitate operational and tactical orders development.

(3) MCS and simulation ready capable data.

(4) A CTDB linked with the Training Brain that provides all of the additional associated warfighting function training products to replicate appropriately the density, continuity, and complexity of information available to leaders during operations. The information accounts for events in the cyber/electromagnetic dimension and contest of wills.

c. An interface for commanders and leaders that provides the capability to adjust conditions (the rheostat) and to enter unit data. It is also a simple, single entry point into the automated training systems allowing integrated management of training plans, training enablers, schedule, and training assessment capabilities (linked into TSE systems).

d. Training support packages provide a comprehensive and exportable collection of integrated training products, materials, and information necessary to train one or more individual or collective tasks. Training support packages provide training enablers not resident in the CFoS.

e. Through links and meshed network capability, the framework provides rapid access to operational lessons, critical information, shared training lessons, and capabilities to collaborate on training development.

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## **Appendix E**

### **Network Environment: The Global Network Enterprise Construct (GNEC)**

#### **E-1. Purpose**

a. The Army is undergoing a transformation that will result in a versatile, expeditionary force capable of full-spectrum operations in complex environments and in an era of persistent conflict. This expeditionary Army will be dependent on a single, secure, standards-based, versatile infrastructure linked by networked, redundant transport systems, sensors, warfighting and business applications, and services that provide Soldiers and civilians timely and accurate information in any environment, to manage the AEN and enable full-spectrum operations with joint, coalition, and interagency partners. This network environment, including LandWarNet (the Army portion of the DOD global information grid), must evolve to support the Army's evolving expeditionary capabilities during both operational and training phases. The Army's training support will rely on an ITE to prepare units for successful operation in a complex OE. This ITE will require a network that is global, interoperable, and user-friendly.

b. The GNEC, the vision for the future network, is an overall construct comprised of theater-based Network Service Centers (NSC) that will allow the seamless delivery of training capabilities anywhere in the world. Within each NSC will be the capabilities of an Area Processing Center (APC)—, which provides information technology services; a Theater Network Operations and Security Center (TNOSC), which provides network operations and service desk functions; and a regional hub node (RHN)—which provides global networking capability via satellite to fiber interface connection pathways. By leveraging the NSCs and employing centralized management, services that are more robust can be offered to the entire Army at lower cost and complexity. In addition, by removing the need for network configuration, these improvements span not only geographic location, but also the entire joint phasing model. Whether in garrison, at a training center, or in the field, network-enabled training services will be accessible with minimal administrative overhead.

c. This appendix will provide a high-level examination of how the network environment of the future will support TRADOC Pam 525-8-3. While this is an initial preview of the network environment roadmap, as the concept continues to evolve, it will require all new architectures to comply with the Headquarters, Department of the Army (HQDA) Chief Information Officer/Assistant Chief of Staff, Signal (G-6) Army Enterprise Architecture and the AEN framework.

#### **E-2. Current state**

a. The growth in demand for network services has resulted in a network environment that has evolved to meet the most critical demands of the day. However, to provide these services expediently, inefficiencies have been incorporated into the current operational structure.

b. One of the more significant issues with the current network environment is the inability to easily collaborate and interoperate. Within a given Army element, such as a BCT, the Soldier has numerous avenues for sharing data with fellow Soldiers. As the need to collaborate extends



to external organizations—even within the same task force or theater—collaboration becomes more complex and less intuitive. Should the Soldier need to collaborate with its joint, interagency, international, multinational partners and organizations in different theaters (or at different phases through the Joint Operational Planning and Execution System), the barriers become even more significant.

c. At the crux of this issue is the fact that a Soldier moves through highly disparate network environments from home station to deployment. Policies and services at one location do not necessarily carry forward to the next, making it increasingly difficult to offer consistent services, such as training capabilities, on a global basis. Fielding a new training service—or even simply ensuring connectivity to an existing service—requires navigating an intricately involved set of processes across multiple organizations to deliver that capability to the Soldier.

d. Not all difficulties exist at the enterprise level. The local connectivity picture for the unit can vary significantly even within the confines of the home station environment. For example, operating over satellite while in the field, then transitioning to the fixed infrastructure in the cantonment and/or garrison area can be problematic. There are also numerous differences between individual garrisons with respect to different levels of network bandwidth, the tools for managing that bandwidth, and the ports and protocols associated with the installations.

e. Soldiers are being asked to operate an increasingly complex number of technical systems. The Army must be concerned about the extensive administrative burden and significant technical expertise required to operate these systems, particularly in deployed scenarios.

f. The Army's move towards a more efficient and effective operational network structure is in progress. There are currently two operational NSCs (Arifjan, Kuwait and Landstuhl, Germany), four APCs, and TNOSCs within each theater signal command. An NSC-Training (NSC-T) facility is located at Fort Gordon, GA. The NSC-T is centerpiece to the organizational and unit level training strategy of the BCT, corps, and division network. All of these NSC elements will soon make up a constellation of six NSCs located across the globe. NSC development continues as requirements are identified and funding is established. By moving to a one-network construct, and maintaining the NSC-T, the Army can present a more consistent operational and network training environment while simultaneously reducing the efforts required by the larger Army community. In aggressively pursuing areas for potential improvement, the Army's operational network structure will also be well situated to support the required capabilities of TRADOC Pam 525-8-3.

g. The NSC-T is the training and experimentation RHN that supports the Warfighter Information Network–Tactical (WIN-T) equipped U.S. Army Operational Army in CONUS, Alaska, and Hawaii, during all phases of ARFORGEN. It is part of the Fort Gordon Battle Lab, and provides 24/7 RHN services, Defense Information Systems Network (DISN) services, and help desk support to the AEN training environment—collective training conducted by active Army, Reserve, and National Guard units; including Reserve component mobilization sites, the NTC and the JRTC. In addition, the NSC-T provides RHN services to the Army experimentation task force, operational needs statement solution assessments, and other experimentation and test events that require a RHN. Moreover, the NSC-T will provide the core

capability for the institution of the battle command training strategy allowing Soldiers in all phases of ARFORGEN to network under the complex operational environment conditions required to conduct full-spectrum operations METL training.

**E-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. The GNEC, once fully implemented, will fulfill the requirement for a single, enterprise-level, organizational construct that enables operational and Title 10 activities. It will centralize control of the AEN enterprise and achieve unity of command and control by migrating loosely affiliated independent networks into a global capability that is designed, deployed, and managed as a single integrated enterprise. At end-state, all Generating Force networks will be managed by a single command. It will be secure and globally accessible.

b. Applications deployed into the NSCs are available to Soldiers irrespective of location due to the unit's consistent network configuration (which remains the same whether in garrison, at training, or deployed). The resulting environment is far more conducive to training efforts.

c. Consider the following scenario. A new gaming application is created to prepare units for deployment to a particular theater. There is a single global network environment; therefore, the application can be written and fielded without concern regarding location. Once online at any of the NSCs, changes in the application configuration or underlying data store can be replicated rapidly across the entire globe. When a unit requires use of the application, the commander can readily access the training interface using the same network credentials used to log on to the network. Should the unit move between theaters, any unit-specific training data would transparently move as well, preserving the training context for future activities.

d. Four principle objectives are met by the implementation of the GNEC. First is the operationalization of the AEN. Second is a dramatically improved AEN defense posture. Third is a more economic, efficient, and effective information technology services. Finally, there is Army interoperability and collaboration with joint, interagency, intergovernmental, multinational, and other mission partners.

e. Other important features of the GNEC are highlighted below.

(1) The one network construct significantly changes how the Army delivers information technology services to Soldiers by providing an always on network that delivers a plug-and-play capability.

(2) Universally adopted network security, information assurance, network operations situational awareness, and bandwidth management solutions will be employed by the TNOSCs. This will enhance connectivity to enterprise-hosted applications and allow for a more reliable and predictable training experience on the network, without interfering with any mission-essential tasks during the ARFORGEN process. This will ensure that all network users are compliant to standards of hardware, software, and training so that the network remains uncompromised.

(3) Common policies and unified standards employed by the APC remove the burden on the unit to adapt to different network postures. This will eliminate theater or installation specific requirements.

(4) The combination of a single Army service provider with a consolidated network environment, and the establishment of a Department of Defense (DOD) resource forest will enhance training interoperability with joint, interagency, intergovernmental, and multinational elements. Cross service and cross agency trusts will allow for fewer barriers to applications and resources across the larger governmental community.

f. The GNEC will help with the presentation of services to the Army community and help remove barriers between sharing of data between training applications. When individual training services operate within a seamless global environment, it is immensely easier to associate training support to present a richer and more involved training and simulation environment.

g. Overall, the Army of the future is presented with a network environment that is capable of transparently supporting a diverse assortment of training capabilities utilized by a distributed training community.

#### **E-4. Specific outcomes**

a. All Soldiers can access training services regardless of location. TRADOC Pam 525-8-3 considers the training environment from home station to the field. As such, the network environment must support the ability to offer any desired training services to the Army user community regardless of operational state or physical location. By removing location restrictions, the training community has the broadest array of training capabilities, allows for a more cost effective training environment, and reduces needless redundancy when fielding a specific capability. Furthermore, the Soldier is always presented with a consistent and robust set of network enabled training capabilities, simplifying the service usage.

b. The network environment presents no obstacles to the acquisition of training services. When individual Army users or Army units need to access training services, doing so should be easy and uncomplicated. Infrastructure concerns, such as ports and protocols, are remediated well in advance of service usage, with access tied to each user's existing account. Usage of training capabilities will not require network expertise, and the signal regiment will provide assistance with any technical problems.

c. All training services have access to the same data stores. The network environment will enable training applications to create a more feature rich and useful training environment. This interoperability, through a common hosting platform, will support procedural calls between applications and the transfer of large data sets without attempting to force conformity on the application developer by enacting additional restrictions. Furthermore, the environment will support leveraging of data sets outside of the training community, facilitating the transfer of real operational data into training toolsets where appropriate and permissible.

d. Training services can be built to target a single network environment with guaranteed service minimums. Enterprise standardization simplifies the fielding of training applications; use of a single hosting platform reduces development and testing costs. Training services supported by a global network environment allow for applications designed with a focus on capabilities, rather than artificial restrictions based on regional specifics. Advanced network management capabilities will enable training services, which are built and provided to the Soldier with the assurance of certain minimum levels of service. Network management will allow for bandwidth to ensure a consistent experience. With clearly defined and guaranteed network parameters, the training community can better plan how best to incorporate bandwidth-intensive features (such as, video) into the target training architecture.

e. Individual Army elements can participate in virtualized training environments despite geographic separation. Operating within the one network concept, multiple Army elements can participate in network-enabled virtual training even when physically located in different theaters and without requiring special modifications to the network infrastructure. With this capability, the training community can plan for more complex, interactive training exercises, which leverage and involve multiple organizations but does not add exorbitant cost to conducting training.

#### **E-5. Specific capabilities**

a. A centralized application hosting capability. As a subcomponent of the NSC, the Army is implementing the use of APCs to provide a more consistent and cost-effective environment for service delivery. An APC is an infrastructure that includes servers, data storage, and network devices that are capable of supporting large quantities of users and services. New training applications are implemented to virtual machines hosted on adjustment of resources to meet peak capacity requirements. A shared pool of processing and storage capabilities across the hosting environment enables all applications to gain additional headroom without having to incur the complete cost for that capability.

b. High-speed backbone replication across Army core data centers. Data transparency requires high-speed network circuits that rapidly transport large data sets between the linked regionalized APCs. Prepositioning required training data as close to the Soldier or unit as possible can improve the overall training experience by shortening wait times due to data transmissions. The resulting effect is a consistent and geographically distributed logical data center that behaves much like a single facility.

c. Reliable end-user bandwidth. The available bandwidth must increase to support the increasing number of services required by the Army. More satellite and terrestrial bandwidth will be required to support the GNEC and NSC constructs. Bandwidth between geographic theaters of operation must be increased in some cases. The Army must capture and articulate bandwidth requirements to DOD organizations, such as the Defense Information Systems Agency, in sufficient time to influence their Program Objective Memorandum (POM) submission for expanding their DISN infrastructure.

(1) In addition to preprogrammed growth at home stations, training centers will need to have substantial bandwidth to enable cross-regional training and access to centralized resources.

The state of the deployed Soldier should not be overlooked. With future advances in both technology and provisioning, satellite and line-of-sight capabilities at the unit will see substantial increases to capacity and ubiquity, with the goal of delivering services directly to the company level.

(2) In addition to bandwidth, more sophisticated network management tools will improve the service experience for the training community. The network environment will be able to guarantee required throughput by traffic shaping and prioritization and allow for rapid network reconfiguration to support specialized training scenarios when applicable.

d. Single, persistent identity. The network identity of users remains unchanged as they move between operational phases, assignments and geographic locations. A user with access to a particular training resource will not need to request a new account or track multiple network identities simply because of a change in location. Instead, the pre-existing account used to access the network will be sufficient to grant access to all network resources across functional domains. Utilization of a flexible, but standardized, policy and procedures-based permissions model will allow automatic granting of appropriate rights to validated Army users. This will ensure that necessary training services are available and accessible with minimal effort.

e. Joint, interagency, intergovernmental, and multinational resource forest. The Army is not alone in moving to a more consolidated network environment. The DOD is moving towards establishing a resource forest for hosting joint, interagency, intergovernmental, and multinational services (select warfighting services and capabilities traditionally only offered to the Army Soldier and will now include net-centric applications and services), based on anticipated architecture. This network environment will be closely associated with the Army's infrastructure. Joint, Army, interagency, intergovernmental, and multinational partners can reach and share through the joint, interagency, intergovernmental, and multinational resource forest applications and services, which will be common and accessible.

f. Assured connectivity for Operational Army units. The Army is in the process of fielding three additional RHNs; two currently exist. The five RHNs will provide near-worldwide satellite coverage for the Army's WIN-T enabled forces. RHNs are provisioned with both training and preprovisioned space segment to support recurring training and short notice operational missions. RHNs provide access to DISN services; they also enable deployed users in austere locations to access both training and operational systems implemented in the enterprise. Full fielding of RHNs will enable Operational Army units to train as they fight.

## **E-6. Conclusion**

a. Training requirements leveraging the networked environment will only increase as the Army continues to adopt more effective ways to build and maintain operational readiness. Fortunately, the Army is undertaking an aggressive approach to designing the enterprise architecture for the future in terms of GNEC and the NSC.

b. By implementing the principles and capabilities under GNEC, as related to provisioning services leveraging a single network, the infrastructure of the future will be well-positioned to

support the delivery of diverse, complex, and crossfunctional training services on a global level to the entire Army.

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## **Appendix F**

### **Home Station Training**

#### **F-1. Purpose**

The Army must achieve and maintain the ability to provide adaptive, full-spectrum operations-capable, joint, interagency, intergovernmental, and multinational-partnered, expeditionary land-component forces to the combatant commander consistently. ARFORGEN is the process used to man, equip, and train units to meet combatant commanders' requirements. The ARFORGEN process produces increased readiness over time and results in predictable quantities and predictable periods of availability of modular units that are prepared for operational employment. This appendix describes the general enduring training support capabilities required at home station to execute ARFORGEN preparation of units for full-spectrum operations missions in the uncertain complex OE projected for the timeframe of 2012-2020. Specific home station program requirements are updated and detailed every 2 years in the home station training master plan.

#### **F-2. State**

a. The U.S. is almost a decade into an era of persistent conflict whose future will feature hybrid threats - diverse combinations of regular, irregular, terrorist, and criminal forces - employed asymmetrically to counter the Army's strengths. To deal with this complex OE, the Army has developed and refined doctrine that combines full-spectrum operations, the simultaneous conduct of offense, defense, and stability or civil support operations, with agile, adaptive leadership to achieve success. The Army must also develop and refine the training support capabilities at home station that will operationalize Army doctrine and support ARFORGEN. This training support capability must enable units to achieve full-spectrum operations METL proficiency at home station for active Army brigades and for Reserve component companies (with live fire to company level).

b. Soon, the Army will achieve the objective ARFORGEN model of 1:2/1:4 BOG/dwell ratios and these ratios are expected to improve through 2020 with over 70 BCTs and over 230 functional and support brigades. Army transformation of training paradigms for home station must anticipate these changes to support ARFORGEN requirements in the 2012-2020 timeframe.

c. The Army is a combat-seasoned force that has conducted combat operations in an operational environment shaped by counter-insurgency and during that period we have atrophied many of our full-spectrum operations core METL tasks in the process. The Army expects to maintain a tough rotational cycle for the next several years. The Army must plan now to create the training conditions that will allow it to conduct adaptive, full-spectrum operations-capable, joint, interagency, intergovernmental, and multinational partnered, training at home station efficiently, while simultaneously and continuously rejuvenating the force with proactive and readily adaptive institutional support.

**F-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. The training support capabilities that will be generated at home station will help commanders and leaders prepare units for full-spectrum operations missions in the uncertain complex OE, and expand the level of collective training conducted by active Army units at home station to enable DEF and CEF ARFORGEN objective full-spectrum operations METL proficiency at a walk level. For Reserve component units, home station collective training will expand to company full-spectrum operations METL proficiency at a run level. Live fire training, to include qualification training, will be supported up to the company-team level at home station for both active Army and Reserve component. This expanded capability is dependent on development of an ITE in conjunction with the framework that seamlessly blends the live, virtual, constructive, and gaming training environments in a manner that links trainers, training audiences, TADSS, MCSs and other support systems to establish the conditions for training full-spectrum operations METL tasks. Generating these capabilities at home station also requires innovative, responsive, and efficient management of critical enabling training resources. Every training location will not have every enabling resource but through development of and employment of exportable training capabilities, and a hub-and-spoke distribution system, an appropriate level of home station training capability can be generated.

b. Utilizing the ARFORGEN training strategy, this will translate into an active Army DEF BCT participating in brigade training events, a brigade FSX at their home station early in the train/ready phase, and a leader training program event leading into a CTE. This training is intended to bring companies to full-spectrum operations proficiency and the BCT staff and subordinate staffs to proficiency. The final CTC event for a DEF BCT will be an MRE at the MCTC. Other brigade-sized units will achieve ARFORGEN full-spectrum operations proficiency according to their training matrix requirements using similar training strategies. An active Army CEF BCT will also participate in brigade training events and an LTP event, but unlike the DEF, will participate in a maneuver CTC event as a CTE that may also serve as the entry gate into the surge force. Later in the train/ready pool, the CEF BCT may participate in a brigade FSX and may be provided exportable training capability support to reach brigade training objectives prior to entry into the AFP. Both DEF and CEF Reserve component BCTs will participate in a brigade FSX, a LTP event, and a home station exportable combat training capability event prior to participation in a CTE for a Reserve component DEF BCT, or a MCTC event for a Reserve component CEF BCT, if mobilized.

c. Functional and multifunctional brigades will normally conduct all phases of ARFORGEN training at home station. Active Army functional and multifunctional brigades will participate in a battle command seminar and a staff warfighter exercise in preparation for embedded participation in higher headquarters MRX or FSX (time permitting) prior to entering the AFP. All DEF functional and multi-functional brigade mission capability will be achieved through these culminating training events or an event identified by the unit's ARFORGEN training matrix. For some it may be a BCTP training event; for others it may be an approved alternative CTE. Reserve component functional and multifunctional brigades will participate in two battle command seminar events and an FSX during their ARFORGEN cycle. If identified as a DEF unit, the Reserve component functional or multi-functional brigade will participate as an

embedded (staff warfighter exercise) unit in their higher headquarters MRX or receive an approved alternative CTE after mobilization.

d. To meet these challenges, home station training capabilities will be expanded incrementally. Beginning in FY 2012, 12 selected CONUS locations will begin installing the TI and the IA that will allow expanded training capabilities. Experiments, use-case data, and technological refinements will inform continuing expansion and improvements. Expansion of training capabilities will reach full operational capability at the 12 designated locations by FY 16. Additional sites will be added as designated and funded by the Army at times and locations to be determined.

e. Home station training capabilities will rely on closely coordinated support from the TSE, Installation Management Command (IMCOM), and Network Enterprise Technology Command (NETCOM)/9th Army Signal Command (ASC).

(1) The TSE will implement a hub-and-spoke support concept, and forecast and coordinate training support requirements with IMCOM and NETCOM/9th ASC.

(2) IMCOM will provide the training infrastructure - facilities, power, resources, communications assets, training support, personnel and equipment, and management structure - that will support expanded training at home station.

(3) The Army Training Support Center will provide training support system programs, products, and services to include TADSS that will support training.

(4) NETCOM/9th ASC will provide connectivity, protocols, bandwidth management, and technical oversight of the supporting networks.

f. Home station training will employ a hub-and-spoke system of support. Training resources at hubs will be available to spoke locations on a scheduled basis, based on ARFORGEN synchronization. These resources may be mobile, deployable assets, or digital products delivered across designated networks.

g. Home station training will be enhanced with reach back to the institutional domain. This reach back capability will allow trainers to access doctrine, TTPs, lessons learned, and real world scenario injects to develop challenging, relevant, and realistic training.

h. Home station training opportunities (to include higher fidelity experiences) will be expanded via ITE connections to MCTC, BCTP, and deployed units. Home station units will be able to train with unified commands before they deploy; to conduct multiechelon training with live and constructive units; to conduct staff training and rehearsals on real world scenarios; to conduct detailed AARs at multiple echelons; and to conduct training across the joint, interagency, intergovernmental, and multinational partnered OE.

i. Home station training will allow units to access the framework, reducing training overhead, and providing continuity between the operational and institutional domains. This connectivity



and integration will facilitate the use of design in conjunction with the military decisionmaking process. Design, described in FM 5-0 as a method for critical and creative thinking that commanders use to understand the OE, to make sense of complex problems, and to develop broad approaches to resolving or managing those problems, is addressed in the Army leader development strategy.

#### **F-4. Specific outcomes**

a. Home station training will allow units to achieve appropriate levels of full-spectrum operations METL proficiency. Commanders will train their units on full-spectrum operations METL tasks in one or more of the five operational themes: peacetime military engagement, limited intervention, peace operations, irregular warfare, and major combat operations. Commanders will leverage the capabilities of the ITE to recreate the complex OE required for full-spectrum operations METL training. Active Army brigades will be capable of training all METL tasks at home station except live fire tasks above the company level through either home station capabilities or exportable training capabilities. Reserve component companies and Reserve component proficient battalion and brigade staffs will train all METL tasks at home station. Live fire training, to include qualification training, will be conducted up to company team level for both active Army and Reserve component.

b. Home station training will allow units to train for operations in a variety of cultural settings. Commanders will use the ITE to access foreign language and culture training and expertise as well as to replicate relevant culture and foreign language scenarios to challenge the unit's ability to operate across cultural norms. Foreign language and culture skills will be trained to the proficiency levels established in the Army culture and foreign language strategy.

c. Home station training will allow units to conduct unit-centric, leader-focused, multiecheloned training with units and staffs located at other installations. Using the ITE, units will be able to participate in an expanded variety of training opportunities across multiple levels of organizations and proficiencies. While BCTs train in the field at the MCTCs along multiple operational themes and achieve BCT-synchronized live fire at the MCTCs in a joint, interagency, intergovernmental, and multinational operational environment, functional and multifunctional brigade headquarters will have the ability to participate from home station and capitalize on the existing MCTC rotations using the ITE.

d. Home station training will allow units to exercise information operations (IO), electronic, and cyber/electromagnetic competencies across the three dimensions of full-spectrum operations: contest of wills, strategic engagements, and cyber/electromagnetic contests. This training will be multiecheloned and fully integrated into unit operations via a robust ITE.

#### **F-5. Conclusion**

The Army will consistently provide adaptive, full-spectrum operations-capable, joint, interagency, intergovernmental, and multinational partnered, expeditionary land-component forces to combatant commanders over an extended period of time characterized by persistent conflict and hybrid threats. ARFORGEN is the tool that will synchronize the outputs of the institutional and operational training domains. These outputs coalesce at home station to create

these full-spectrum operations capabilities in the uncertain complex OEs projected for the timeframe of 2012-2020.

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## **Appendix G**

### **Combat Training Centers**

#### **G-1. Purpose**

a. The CTCs are part of an Army program that provides a bridge between the institutional and operational training domains, and are an essential component to both the Army leader development and Army training strategies. Commanders using the CTC program, build trained and ready full-spectrum operations capable units and agile, adaptive leaders to meet ARFORGEN readiness requirements.

b. The CTC program's mission will continue to be providing highly realistic and stressful joint and combined arms training according to Army and joint doctrine. CTC training will continue to focus at the BCT collective unit and brigade-and-above (brigade, division, corps, ASCC) staff echelon levels, provide commander and mission command centric feedback to unit leaders on all aspects of full-spectrum operations, and replicate the essential OE variables and training conditions up to those that approximate actual combat. The CTC program will continue to provide high-fidelity joint, interagency, intergovernmental, and multinational context to training for the operational domain, generating a comprehensive approach to unit-centric training.

c. The CTC program will continue to include the BCTP, the JMRC, the JRTC, and the NTC. JMRC, JRTC, and NTC are collectively referred to as the dirt or MCTC since they are primarily a live training environment. BCTP will continue to provide primarily a constructive training environment.

#### **G-2. Current state**

a. For the past 9 years, CTCs have supported predeployment MREs and MRXs for units deploying in support of Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). This has been their singular focus. While CTC training exercises in the early phases of OEF and OIF reflected a predominant major combat operations theme, more recent training has shifted the focus in the spectrum of conflict to irregular warfare, counterinsurgency, and support to civil authorities.

b. The CTC operations group (OPSGRP) manning levels have steadily decreased to approximately 75 percent (or lower) of authorized strength as the Army increased manning levels for deploying units and moved manpower from the institutional domain to fill new, modular units in the operational domain. This current state of manning has left the O/C-trainer, exercise control, and CTC support positions vacant, and increased the demand for contracted support and military augmentees to accomplish training.

c. The CTCs have increased their use of supplemental funding, rather than Army POM dollars to resource predeployment training exercises and new equipment and capabilities that have been fielded rapidly to deploying units. While this shift in resource strategies allowed Soldiers to train on emerging equipment before arriving in theater, it has generated a significant unfunded sustainment bill once supplemental funding ends.

d. The Army has taken risk in its training modernization funding in the past few years, maintaining most of the CTC instrumentation, training aids, training devices, simulators, and simulations (ITADSS) at a minimum level of sustainment. Most of these ITADSS enablers were developed for major combat operations scenarios and have not been used extensively for irregular warfare scenarios.

e. The Army's transformation to a modular force and ARFORGEN have increased the role and impact that the CTCs have within the Army training strategy. BCTs and brigades historically relied on sister units and higher headquarters at the same installation for external training support. Now, those sister units and higher headquarters may be deployed, or on a different ARFORGEN timeline, and are unable to provide external support. The CTCs have increasingly assumed training support functions that were largely the responsibility of commanders at home stations.

f. The MCTCs currently dedicate up to one-third of the rotation period to conduct individual MCS and other theater provided equipment training, as well as platoon and company situational training exercises.

g. The MCTCs currently do not have the ability to simulate the full range of weapons effects.

### **G-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. The Army's Quadrennial Defense Review force structure has increased the number of units and staff echelons (headquarters) that rely on the CTCs for training support.

b. ARFORGEN specifically templates linked CTC supported events in a unit's lifecycle to enable commanders to assess readiness levels and transition between force pools in the ARFORGEN process.

c. The Chief of Staff, Army, directed the CTC program to shift focus and assist the force in its effort to sustain irregular warfare skills gained in current operations, and increase its skills in major combat operations. While the guidance to rebalance the force is clear, the effort will be accomplished in training for full-spectrum operations.

d. A critical aspect to the CTCs' ability to replicate a complex operating environment is the ability to immerse the training unit in realistic cyberspace, electronic warfare, and IO problem sets. These emerging components in the OE must add the psychological contest of wills against implacable adversaries; strategic engagement to support external audience; and, cyber/electromagnetic threats, as well as friendly force capabilities, to the multiple dimensions experienced in a CTC training event.

e. Several of the important tenets and imperatives articulated in TRADOC Pam 525-8-3 directly apply to the CTCs.

(1) Some full-spectrum operations training cannot start until a unit achieves a 1:2 BOG to dwell ratio, and a minimum P2 and S2 readiness level.<sup>5</sup> The Army G3 directed CTC way ahead reviews in 2004 to develop specific additional capabilities to meet the BOG to dwell ratio, which matches the objective ARFORGEN templates. However, current ARFORGEN scheduling is not aligned with any system that determines when a unit will achieve P2 and S2 readiness.

(2) Re-emphasize commander training management responsibilities. The CTCs have historically reinforced the imperative that commanders are responsible for training. Commanders provide their training objectives to the CTC exercise planners, approve the scenario and exercise construct, make the final decision on whether or not the CTC training meets the training objectives, and remain singularly responsible for assessing unit readiness based on CTC performance. The CTCs also provide commanders with the tools needed to develop future training plans through AARs and take-home packets.

(3) Improve the training environment to replicate the complex OE. The CTCs already have a close working relationship with the TRADOC G-2, who serves as the proponent for the contemporary and future OE. The OE master plan dedicates a significant portion of its analysis and recommendations on each individual CTC's ability to replicate the OE. The cost to replicate the entire OE and a full array of hybrid threats is prohibitive, and compels the need to prioritize the multiple and complex variables to ensure the CTCs and other training venues replicate the essential elements for full-spectrum operations.

(4) Home station will provide the training environments for commanders and leaders to train full-spectrum operations METL proficiency at active Army brigades and Reserve component company levels (with live fire to company level). Units, trained to standard at home station, achieve greater levels of readiness and proficiency at the CTCs since they are able to train on higher-level skills under more difficult conditions. Individual and small unit collective training efforts will be conducted at home station to allow the CTCs to dedicate the rotational period to focus on training higher unit level collective full-spectrum operations proficiency, incorporating joint, interagency, intergovernmental, and multinational partners under increasingly difficult conditions.

(5) Home station will provide company and team level live fire for qualification. The MCTC live fire working group has already begun work on establishing the minimum requirements for MCTC live fire at the battalion and task force level. All MCTC live fire capabilities require a refresh, since they have been used primarily for small-scale (convoy, platoon military operations in urban terrain) live fire training in the recent OEF and OIF predeployment exercises. NTC has the capability to conduct BCT-level live fire. JMRC and JRTC require additional capabilities to achieve battalion and task force levels for live fire.

f. A major change has occurred with regard to the training role of the Army CTC program in the development of the Army's brigade-level training readiness capabilities. DEF active Army

and Reserve component BCTs will participate in a brigade FSX at their home station early in the train/ready phase. Training is conducted in a virtual and constructive environment with the goal of bringing the BCT to staff proficiency. Later in the train/ready phase, the BCTs will participate in an MCTC sponsored leader training program event to prepare commanders and staffs for their follow-on MCTC rotation. A Reserve component CEF BCT will utilize a similar training strategy leading up to a MCTC event if mobilized. An active Army CEF BCT will participate in an LTP leading into an MCTC collective training event, which could also serve as the entry gate event for the surge force. The active Army CEF BCT could participate in a brigade FSX or receive an exportable training capability rotation at their home station in a live training environment to meet brigade training objectives prior to entry into the AFP.

g. The final CTC event for a DEF designated BCT is an MCTC supported MRE focused on its AFP mission. BCTs within the CEF will execute an FSX at an MCTC. These events would provide the senior commander the insights required to assess the training capability of the BCT to assume its AFP mission. Both the active Army BCT and the Reserve component BCT may be required to participate in a division or corps level FSX or MRX during the train/ready phase. Other DEF brigade-level mission capability will be achieved through a culminating training event as identified by that unit's ARFORGEN training matrix. For functional and multi-functional brigades, it normally will be a BCTP training event; however, it could be an approved culminating training event at the home station.

#### **G-4. Specific outcomes**

a. The Army Campaign Plan (ACP) 2010 provides the following specific outcomes related to the CTC Program and training at the CTCs.

(1) Train the Army for full-spectrum operations.

(2) Produce trained and ready Soldiers, led by adaptive leaders who are proficient tactical operators able to fully integrate joint, interagency, intergovernmental, and multinational capabilities and understand and anticipate the implications of operations with and among foreign cultures, and prepared to operate across full-spectrum operations in an era of persistent conflict.

(3) Provide the capacity to meet ARFORGEN requirements and enable full-spectrum operations training requirements for active Army and Reserve component brigades and higher operational headquarters for both major combat and irregular warfare missions.

(4) Conduct realistic and comprehensive deployment training and enhance participation in the joint exercise program.

(5) Enable unit training and leader development as the mission, threat, or operational environment changes (includes asymmetric warfare and Army information tasks).

(6) Realistically portray the OE and train units and staffs on their full-spectrum operations METL while rekindling major combat operations capabilities.

(7) Embody the complexities of the 21<sup>st</sup> century OE and support ARFORGEN.

(8) Provide exportable training capabilities to home stations and ensure they are tailored to support operational requirements.

b. Internal CTC program self-assessments, based on a review of the 2009 Army Training and Leader Development Conference key discussion points and TRADOC Pam 525-8-3 base document ideas, have generated an additional list of outcomes that will guide CTC development for the 2012-2020 period.

(1) Provide an environment for collective Army training in a joint context, including the integration of joint, interagency, intergovernmental, and multinational partners. Joint, interagency, intergovernmental, and multinational integration is achieved through actual participation in a CTC event or replicating their effects for the Army training units.

(2) Provide a range of exercises tailored to the training unit's needs and objectives. Exercise scenarios will challenge the unit's full-spectrum operations capabilities against a hybrid threat as the predominant training theme. Flexibility in scheduling, scenario development, setting the conditions for training, and in-stride adjustments based on unit commander assessments, must be a fundamental characteristic of the CTC training methodology.

(3) Link events throughout a units ARFORGEN readiness progression from BCTP enabled brigade full spectrum exercises, through MCTC enabled leader training programs and full spectrum rotations, to the predeployment MRE or MRX.

(4) The CTCs must have persistent (24/7/365) access to ITE and become a high-demand user. While the MCTCs will remain predominantly a live training environment and BCTP will remain predominantly a constructive training environment, linking live, virtual, constructive, and gaming training enablers will be key to enabling the integration of joint, Army, interagency, intergovernmental, and multinational capabilities without generating an unsustainable resource requirement.

(5) CTC modernization must maintain pace with Operational Army modernization, to include spin-outs from the cancelled future combat system, the new ground combat vehicle program, as well as planned upgrades in the Army MCS and other equipment.

(6) The MCTCs must improve their collective live fire capability to enable full-spectrum operations training at the combined arms battalion level or above, and for brigade coordinated live fire against hybrid threat target arrays and scenarios.

#### **G-5. Specific capabilities**

a. The HQDA G3 approved CTC Master Plan, (FY 2012-2017, FY 2018-027 extended planning period), contains the specific details on capabilities required within the CTC program to meet ACP-directed outcomes, *Army Training and Leader Development Guidance*, and the Army training strategy.

b. Listing all the specific capabilities is beyond the scope of this document. However, there are some categories of specific enablers worthy of mention.

(1) The CTC OPSGRPs require a higher percentage of military personnel authorization fill in the aggregate, with key developmental qualified majors, and in critical, low-density military occupational specialty and skills that are essential to train units on full-spectrum operations against hybrid threats and reduce the need for augmented personnel.

(2) The CTC program requires the full extent of personnel, equipment, and funding resources to achieve full operational capability for BCTP's OPSGRP Bravo, Sierra, and Foxtrot, and NTC's CONUS exportable training capability to meet its Army training strategy and ARFORGEN process' requirement for annual CTC training support to the Army.

(3) The CTC program requires an increase in modernization funding to keep pace with rapidly advancing technology and new equipment in the Operational Army and enable full-spectrum operations training.

(4) The CTC program requires funding for the essential components of the OE master plan to replicate the critical training conditions for units in full-spectrum operations.

(5) The CTCs require increased joint, interagency, intergovernmental, and multinational participation and integration in all training events to prepare Army forces to operate in an increasingly joint context and environment.

(6) The maneuver CTCs (JMRC, JRTC, NTC) require the capability to conduct at a minimum, battalion-coordinated live fire exercises in support of full-spectrum operations against hybrid threats.

(7) The CTCs require the capability to establish distributive training linkages and set conditions for functional and multifunctional brigade headquarters to participate in BCT maneuver CTC rotations by using the ITE from their home stations while the BCTs train in the field.

#### **G-6. Conclusion**

The CTC Program today is remarkably different from the CTC program at its inception in the early 1980s. The program and each individual center continually evolve to meet Army training requirements. The program is already well positioned to meet TRADOC Pam 525-8-3 requirements and continue its evolution to meet the challenges of full-spectrum operations and the future security environment.

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## **Appendix H Deployed Training**

### **H-1. Purpose**

a. Deployed training, for the purposes of TRADOC Pam 525-8-3, is defined as any training conducted by individuals and units outside the institution, home station, and CTC venues. Deployed training maintains and exploits the readiness that Army units establish at home station and MCTC, and is conducted in environments ranging from austere to modern infrastructure support. Deployed training is a method for commanders, while engaged in support of assigned missions, to maintain versatility and agility to meet their operational requirements within the guidance of assigned unified command or ASCC. The TRADOC commanding general emphasizes that, *“A campaign quality force implies time, and time allows an enemy to adapt. This means that when we are deployed, we must be prepared for all forms of contact and be trained to anticipate the changes that occur in the operating environment during the course of a campaign.”*<sup>6</sup>

b. This chapter will codify the Army’s required deployed training capabilities for 2012-2020 to enable deployed units to maintain full-spectrum operations METL skills, generate new skills as needed, and conduct realistic mission rehearsals.

### **H-2. Current state**

a. As time and resources allow, deployed units train their METL tasks to maintain proficiency during long deployments. Training support tied to installations and not readily available to deployed forces hampers the ability to train with METL based training support products, rapidly shift from one task to another, or conduct a real-time high fidelity mission rehearsal.

b. Training support does not provide commanders, Soldiers, or trainers the comprehensive capability to access, retrieve, and present networked, integrated training, nor does it provide access to embedded training from the systems platforms, which would allow Soldiers to reach training information while deployed.

### **H-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. An integrated deployed training capability will enable units to maintain current skills, and develop skills required by the OE. An agile force requires the institutional domain to have access to operational information daily, leverage that information, and include it in high fidelity, interactive training scenarios. The ITE will deliver relevant integrated live, virtual, constructive, and gaming training environments to enable commanders and leaders to train their units with a true, distributed-on-demand training capability in a seamless manner. Leaders will be able to use an automated training management system to analyze mission requirements, identify tasks requiring training, manage the execution of the training, and develop, record, and disseminate feedback. Embedded training capabilities, integrated in MCSs as well as tactical platforms, will provide crews, teams, units, and staffs the ability to train when and where needed. Deployed training will build on branches and sequels from earlier training at home station or MCTC.



b. The branches establish new capabilities demanded by the OE units face, preferably through anticipatory training that denies an adaptive and changing enemy from successfully employing new methods against our interests. Commanders and leaders anticipate changes and build training solutions by combining the power of: AAR, red teaming, Center for Army Lessons Learned collection and analysis teams, CoEs, and schools subject matter expert support, and PMESII-PT analysts. This process develops training solutions that not only improve unit performance but also inform CATS and the framework to help inform other units.

c. The sequels include sustainment and regeneration of capabilities. Atrophying full-spectrum operations METL skill sets can be mitigated through the ITE. High fidelity rehearsals in the ITE, supplemented by institutional support, sharpen the edge of atrophied, but soon-to-be-used, skill sets. Capitalizing on the Army's concept of modular unit training, dispersed units conduct mission rehearsals virtually; this brings participants, platform simulators, and the anticipated scenario together in the ITE, 24/7. Standardized, fully interoperable training capabilities must be embedded into our operational systems to not only give units the ability to train anytime, anywhere but also ensure each unit has real-time, globally distributed, near-real-world mission-rehearsal capability. Ultimately, most TADSS will be organic to the Army's new equipment purchases. In the interim, the Army will build capability to quickly assemble (physically, electronically, and or virtually) and deploy TADSS, including the associated training infrastructure, to enable units to train while deployed.

#### **H-4. Specific outcomes**

a. Imperatives that span all formations are addressed below.

(1) Embedded training capabilities are required capabilities. Total package fielding for all materiel solutions must include the training and training support requirements in applicable programs and supporting programmatic. Onboard training and training networking must be an integral part of all of new materiel acquisitions. Embedded training is required to provide the capability for commanders and leaders to train in a training environment distinct and separate from the OE to enable training in the three interconnected dimensions of full-spectrum operations and support high fidelity mission rehearsals. Embedded training provides leaders a low overhead capability to operate in a synthetic environment, supported by a ubiquitous network able to support individual and collective training events. Embedded training reduces nonsystem TADSS requirements, facilities, and transportation costs, while increasing available training opportunities.

(2) Train to anticipate. Training must continue during deployments to maintain current skills, conduct mission rehearsals, and prepare for changes to the threat in the OE. Anticipatory training enables units to prevail against regular, irregular, and hybrid threats. The ability to capitalize on other units' recent experience via AARs, observations, insights and lessons, and CoEs and school support is essential to defeating evolving threat tactics. Units and leaders must be attuned to how that threat might evolve and must anticipate the training required to neutralize any advantage the threat attempts to generate. High fidelity mission rehearsals with data available through the CTDB will enable commanders to defeat rapidly changing threat tactics in

the theater. Current skills will be maintained proficient using various tools available to commanders and leaders.

(3) Institutional domain sensitive to the OE. To be successful, the institutional domain must provide deployed Soldiers a realistic view of the current situation with a near real-time-training solution feedback loop between the institutional domain and the deployed forces. Deployed units will need to reach to the institutional domain to exploit the libraries, courses, and subject matter experts at the CoEs and schools in support of various missions on a near 24/7 basis. AARs and OILs in the OE will need to be translated into programs of instruction, doctrine, TTPs, and useable, viable scenarios quickly. Training scenarios produced by the institutional domain must replicate the challenge of complexity faced in the OE to allow Soldiers and deployed units to stay ahead of the speed of war. Training support products must be synchronized with the OE, rapidly developed, and made available to deployed units.

b. Unit outcomes.

(1) Conduct high fidelity rehearsals using operational communications systems with a near real-time representation of the current OE and accurately predict the impacts of the three dimensions of full-spectrum operations during mission rehearsals.

(2) Where mission execution allows, be able to keep all METL tasks and skills at a run proficiency level.

(3) Use the AARs and lessons from recent engagements to apply the current OE to training to prepare for emerging threat tactics, and conduct anticipatory training with a customized training program to defeat those tactics before they are operationalized by the threat.

(4) Commanders must be able to regenerate units with the appropriate amount of training to maintain the force's agility.

(5) Assess METLs to include the supporting collective and individual tasks associated with the appropriate CATS.

(6) Provide AARs and OILs to enable a responsive institutional domain.

## **H-5. Specific capabilities**

a. Deployed training hinges on the training outputs from home station and MCTCs and operational lessons learned. All TSE capabilities identified for the ITE will be essential to unit commanders' abilities to conduct deployed training.

b. Automated training management system. Commanders and other leaders are required to train their units, regardless of location or venue. They will use the tools the institutional and operational domains provide (such as, the framework, common teaching scenarios, and CATS) and leverage these training products to bolster their units' deployed training capabilities. These tools, and the capability to shape them into a challenging training plan, are required to reside in a

single, automated training management system. Commanders require the capability to be able to analyze mission requirements, identify Soldier and unit tasks requiring training, manage the execution of the training, and develop, record, and disseminate feedback.

c. Digital terrain database. In conjunction with capabilities identified for the ITE and TSE, deployed commanders and leaders require a correlated terrain database to conduct mission rehearsal with a realistic depiction of the terrain in the OE. The terrain database is required to support rapid development and employ shared object models to allow the deployed commander and leader to train seamlessly from squad- to brigade-level collective tasks with live, virtual, and gaming enablers. Commanders require the capability to access this database through their embedded systems to support contingency planning and mission rehearsal.

d. Deployable TADSS. As an interim step in reaching a fully embedded training capability, deployable TADSS is required to provide realistic, mission-focused, individual, unit, and leader training support. The capability to deploy TADSS along with units to support commanders' training needs for exercises, battle drills, and mission rehearsals will provide an incremental solution for fully embedded training. Deployable TADSS require worldwide, around-the-clock responsiveness and availability to Soldiers, leaders, and trainers.

e. Theater infrastructure. Deployed Army units require, where operationally feasible, support by an infrastructure that enables deployed training. As the Army builds its expeditionary capability, deployed units will find various levels of infrastructure in theater to support deployed training. Access to facilities, logistics, transportation, and munitions storage greatly enhance all forms of training. Army units may find that in order to conduct training to standard they will need to continuously develop and improve the training infrastructure.

## **H-6. Conclusion**

a. As our training moves to a broader focus with a balanced Army, Soldiers, crews, teams, units, and staffs must be able to maintain readiness levels established at home station and MCTC, and adjust to threat in the OE. Deployed training enables the Army to prevail against regular, irregular, and hybrid threats by enabling units to quickly transition between tasks and acquire new skills or sustain METL skills. Deployed training requires the institutional domain to be sensitive and responsive to the OE and the operational domain to assess their operations through AARs and provide feedback.

b. The ITE will provide a realistic and accurate portrayal of the OE to enable commanders to prepare for full-spectrum operations. Army commanders will be able to leverage this capability by following the principles of training found in FM 7-0 and as enabled by the capabilities identified in TRADOC Pam 525-8-3. The result will be a better-trained Army capable of anticipation and adaptation to the OE during the course of a campaign.

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## **Appendix I Initial Military Training**

### **I-1. Purpose**

a. The purpose of this appendix is to provide a vision for IMT within the Army's institutional training domain. IMT is the critical entry point that combines indoctrination into the Army culture with its values and Warrior Ethos, along with basic skills training, comprehensive fitness, and cultivating a lifelong learning mindset to take responsibility for individual career progress. IMT consists of initial entry training for enlisted Soldiers (includes basic combat training, one station unit training, advanced individual training (AIT)), Basic Officer Leaders Course B, Warrant Officer Basic Course, AIT Platoon Sergeant Course, Drill Sergeant School, and associated commander and/or cadre training conducted at Victory University.

b. IMT provides the foundation upon which all subsequent training, education, and leader development is based. The purpose of IMT, as defined in FM 7-0, is to provide the basic knowledge, skills, and behaviors individuals need to become Soldiers, succeed as members of Army units, contribute to mission accomplishment, and survive and win on the battlefield. Initial military training is given to all new Soldiers. It motivates Soldiers to become dedicated and productive and qualifies them in warrior tasks and knowledge. It instills an appreciation for the Army's place in a democratic society, inspires the Warrior Ethos, and introduces the Army values.<sup>7</sup>

c. Newly commissioned officer training focuses on developing competent, confident small-unit leaders trained in tactics, techniques, procedures, and fieldcraft. Newly appointed warrant officer training focuses on developing competent and confident leaders technically proficient in systems associated with individual functional specialties. Enlisted Soldiers training focuses on qualifications in the designated military occupational specialty tasks and standards defined by the branch proponent.<sup>8</sup>

d. The required outcome is a proud, disciplined, confident, and resilient Soldier; a Soldier who is prepared to enter the Profession of Arms and contribute immediately as a member of a team at the Soldier's first unit of assignment. In support of this outcome, the Army employs an extensive training infrastructure in the institutional Army designed to prepare its Soldiers and leaders for the challenges of the OE. The key to success in this endeavor is the quality of the commanders, cadre, instructors, and the outstanding noncommissioned officers who serve as drill sergeants and AIT platoon sergeants.

### **I-2. Current state**

a. The current focus of IMT is on soldierization; transforming civilian volunteers into Soldiers and leaders. The Army continues training on many of the same skills that it has been teaching since the industrial age: physical training, rifle marksmanship, and other fundamental soldiering skills. The Soldiers who enter IMT are the product of a society with complex problems, inadequate physical conditioning, conflicting morals, and different generational guidelines, which has led to a growing capability gap in their ability to undergo the rigors of IMT

and Army service. In spite of the challenges found in society, the Army's task remains unchanged since its founding - to transform citizens into resilient, morally prepared Soldiers who possess the right skills, live by the Army values, and embrace the Warrior Ethos.

b. Since September 11, 2001, the Army has made significant changes to initial entry training to increase the relevance and rigor of the training while addressing a changing OE. The training day and week are longer; however, training time within ARFORGEN remains constant. Soldiers spend more time in the field in training designed to replicate the OE. Mandatory training requirements now include a variety of tasks with emphasis placed on areas stressed by leaders in the Operational Army, such as physical fitness, first aid, rifle marksmanship, Soldier discipline, and Army values. The Soldier graduating today from IMT and proceeding to first unit of assignment is the best trained the Army has ever produced.

### **I-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. Soldiers of the early 21st century will require more rigorous diversified training to address full-spectrum operations within a constantly changing OE. Future Soldiers will possess an increasing technological edge; they will demand and expect training that appeals to their technical savvy skills. As they enter the service, Soldiers will also require more physical and mental hardening than ever before required. The Army will expect more of Soldiers, and require them to be more resilient, and physically and mentally tough. They must understand different cultures (foreign, joint, interagency, intergovernmental, and multinational partner) and adapt to different threats and conflict scenarios. All this requires technological and institutional improvements in the training base to meet these expectations.

b. IMT must develop the agility to rapidly adapt training to the OE. Mandatory training requirements must change over time based on lessons learned and feedback from operational units. The TRADOC Deputy Commanding General, Initial Military Training will regularly and formally evaluate the training and education provided during IMT, but will continue to emphasize the principle of relevance and rigor to meet the requirements of an expeditionary Army in an era of persistent conflict. The purpose of the periodic formal reviews is to eliminate redundant, outdated, or less important training and education while incorporating those relevant tasks that improve the skills and competencies of Soldiers and leaders. Additionally, the Army will continue to shift training tasks and education subjects to the most appropriate training venue.

c. The Army will retain the higher standards now required to graduate from IMT and resist efforts to return to a less demanding training regime. IMT will continue to be tough and challenging. Soldiers will continue to spend time in the field in training environments designed to replicate the OE.

### **I-4. Specific outcomes**

a. Due to the complexity of the OE during 2012-2020, Soldiers must be ready to contribute immediately upon arrival at their first unit of assignment equipped with a diverse set of skills, an understanding of Army values, crosscultural understanding and physical and mental toughness

geared toward conflict. Soldiers must also be capable of operating effectively as a member of a team while under stress.

b. The principles of the Profession of Arms and the professional military ethic. When Soldiers and officers take the oath of enlistment and commissioning oath respectively, they enter the Profession of Arms. IMT enables Soldiers to understand their obligation to support and defend the Constitution, the relationship of trust with the American people, the Army's rich history and heritage, and that the Profession of Arms rests on common standards and a code of ethics, the professional military ethic, which guides the conduct of all Soldiers at all times.

c. Inculcation of the Army values, the Soldiers Creed and the Warrior Ethos. An integral part of the soldierization process in IMT is the inculcation of the Army values, the Soldiers Creed, and the Warrior Ethos. The objective of Army values training is to enable Soldiers to demonstrate proper behavior in morally ambiguous and complex situations. Instilling Army values and developing moral reasoning capabilities will strengthen the Soldiers' moral courage enabling them to act more confidently and responsibly when confronted by physical, moral, mental, and emotional challenges. The Soldier's Creed and the Warrior Ethos, establish the guiding values and standards of the Profession of Arms. Together, they capture the spirit of being a Soldier and the dedication Soldiers feel to something greater than they are as individuals. Inculcation of the Army values, the Soldiers Creed and the Warrior Ethos also strengthens Soldiers psychologically, building Soldier resilience to the rigors of combat.

d. Reflect the OE. To be successful, IMT must provide trained Soldiers prepared to operate in a fluid and dynamic OE. Through establishment of review and feedback mechanisms, IMT will provide responsive program of instruction updates to training curriculums that maintain relevancy and provide the correct set of comprehensive skills.

e. Technology support to training. Soldiers will demand and expect training that appeals to their technological skills. They may prefer independent learning experiences that incorporate fast-paced and visually intensive instruction, which at times relies heavily on collaboration with their peers. Future Soldiers must also be competent in employing a wide range of new information technologies and data systems in a networked environment. IMT will experiment with new technology solutions to deliver better and more effective training, reduce instructor preparation requirements, and improve Soldier learning effectiveness.

f. Cadre and leader development. An equally important outcome is the development of cadre and unit leaders who model the Warrior Ethos, and are master instructors who fully understand training management and are proficient in training methodologies and technology.

## **I-5. Specific capabilities**

a. There are numerous factors that will affect specific capabilities for IMT in 2012-2020. The predominant factor will remain the human dimension. The human dimension explores human factors in war across the range of military operations, and addresses emerging tools on the cognitive, physical, and social levels. It is also important to understand the generation of Soldiers that will make up the Army in 2012-2020. These future Soldiers will need to know why

learning is required, and understand how to direct the learning to unique situations, applying what they learn to real-world problems. They may prefer independent learning experiences that incorporate fast-paced and visually intensive instruction that at times relies heavily on collaboration with their peers. It is up to trainers in the IMT environment to understand this as they adapt training to meet the needs of the future Soldier.

b. Cultural capabilities. IMT requires the capability to train introductory cross-cultural competencies to prepare Soldiers to operate in a culturally diverse OE. A factor crucial to the success of the Army in 2012-2020 includes the ability of Soldiers to adapt to various elements of full-spectrum operations—everything from humanitarian assistance to major combat operations. As a result, there will be increased emphasis on human terrain, which may require capturing the psychocultural high ground, rather than the geographical high ground. The importance of crosscultural competence and the ability to build trust with various indigenous populations may be as effective in protecting future Soldiers as body armor.

c. Tactical and technical competence. In 2012-2020, IMT will be required to train a broader range of skills while available training time within the ARFORGEN process is not likely to increase. Individual Soldiers are required to possess a much broader skill set to cope effectively with the uncertainty of the OE. Soldiers are required to perform critical tasks outside the core skills, but will still be expected to maintain proficiency of their core tasks. Ultimately, the most fundamental requirement is acquiring and mastering tactical and technical competence, the ability to apply these competencies across a broad range in the future OE, and instilling a lifelong learning mindset.

d. Adaptability mindset. In 2012-2020, IMT will be required to train Soldiers who are comfortable operating in complex and unexpected situations throughout the world. This will require restructuring training to introduce scenarios that take Soldiers out of their comfort zones and require practical application of acquired skills and competencies where there is no predetermined solution or not all the tools normally provided to accomplish the task are provided. Learning to be comfortable in complex situations will strengthen Soldier self-confidence and resiliency.

e. Soldier resiliency. The institutional training base requires the capability to train Soldiers in coping skills at all levels of military education to strengthen Soldiers' emotionally, spiritually, and socially. The physical and emotional demands of the future complex OE will also continue to stress Soldiers who will come from an increasingly sedentary civilian environment. For this reason, the requirement to toughen Soldiers in the training base in preparing them for the demands of their first duty assignment is paramount. Physical and mental training and improvement in Soldier resiliency will be a critical requirement in IMT.

f. Training readiness information. The Digital Training Management System will likely remain the Army's designated sole automated training management system into 2012-2020. Commanders and other leaders require awareness of and the ability to identify Soldier tasks trained in IMT or require training, in support of unit readiness. The training status of Warrior tasks and battle drills and other training events conducted in IMT must be available to unit leaders through this single, automated training management system. This capability is required

to provide the training history of individual Soldiers to support individual and unit training readiness and enable alignment of training between the institutional and operational domains.

g. Support to ARFORGEN. IMT will be able to manage balanced and predictable throughput with minimal disruption to meet the demands of ARFORGEN. IMT will prepare Soldiers for the rapidly changing OE with challenging training and in support of personnel demands of ARFORGEN.

## **I-6. Conclusion**

IMT will continue to change and adapt while maintaining a high level of relevance and rigor. Army IMT will continue to transform civilians into the finest Soldiers and leaders in the world – Soldiers who are proud, confident, adaptive, resilient, proficient, and ready to fight as a ground combatant.

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## **Appendix J Professional Military Education**

### **J-1. Purpose**

a. The global educational environment is changing rapidly, and will look significantly different by 2020. This will provide both opportunity and challenges as the PME system evolves to provide the necessary education for Army leaders to train full-spectrum operations-capable units that can easily operate in a joint, interagency, intergovernmental, and multinational OE.

b. Based on changing educational trends, the education model Army leaders will experience in 2020 will be one that is predominately distributed and relies significantly on technology to link geographically dispersed learners with distributed educators and resources. The interactions between teachers and students will be more frequent but less structured. As a result, education will be more accessible to a greater population and more tailored to individual needs. Education institutions will become more integrated, accessible, and more dependent on outside organizations to remain current, relevant, and responsive to student demand. Students will be exposed to a broader set of cultures and ideas and increasingly capable of moving from institution to institution. This will cause education to become increasingly modular and spread over a lifetime of learning.

c. As products of this education system, Army leaders will be increasingly capable of understanding the complex and ill-structured challenges presented in the OE. Army leaders will have grown up with a fluency in networked systems, communications, virtual environments, and simulations. They will be comfortable using networked repositories or gateways to access information from a wide variety of resources to find the educational products they need and tailoring those products to their use.

d. These trends have the potential to create a much broader and deeper education for our leaders. The Army leader development strategy is the guiding document that describes how PME will take advantage of that potential. The purpose of this appendix is to describe how PME



specifically addresses providing innovative and adaptive leaders capable of conducting training management and multiechelon training in the ITE.

e. The purpose of PME in relation to training is to educate leaders to deal with uncertainty in a complex and uncertain world. While education is the primary focus of PME institutions, they do conduct some individual training.

(1) When training is conducted in support of PME, it will focus on the inculcation of new skills, knowledge, and attitudes. It will be heavily guided and content based, leading to repetitive, instinctive behavior. It will ensure convergent thinking: the ability to apply standard solutions to predictable circumstances, or to deal with familiar problems in familiar contexts. Once convergent thinking is mastered, leaders are broadly educated to think creatively on how to apply and adapt existing methods to unfamiliar problems in unfamiliar contexts.

(2) The PME system must ensure that leaders are trained and available to operational units in accordance with ARFORGEN demand. This requires that the frequency, length, timing, and educational medium of courses support a continuously available pool of leaders to operational units, and from operational units back into the generating base.

f. Training occurs in all three training domains (institutional, operational, and self-developmental) using an ITE, delivered using the framework that replicates the OE and challenges leaders to be creative in solving complex ill-structured problems. Training allows the leaders to build upon and refine foundational skills and knowledge gained from education and experience, and to refine their ability to recognize transitions and to adapt their actions to the situation. Training ensures that leaders remain masters of the capabilities of their weapon systems and are skillful in executing operations across the spectrum of conflict. To the extent that training takes place in the PME system, it is designed to ensure that leaders arrive at their units familiar with training methodologies and tools and are immediately able to put them into practice.

g. Early in their careers, junior leaders learn the fundamentals of planning and conducting individual and small unit training. Over time, leaders gain a broader understanding of training to include obtaining resources, identifying critical requirements, measuring proficiency, and integrating individual and collective training events. With experience, leaders become experts in determining training objectives, facilitating AARs, and conducting developmental counseling and mentoring of subordinates.

## **J-2. Current state**

Today, the Army PME system is defined predominantly by resident instruction. It has a fledgling-networked capability to link institutions together to conduct cross cohort education and share courses. The Army is beginning to apply common teaching scenarios to standardize education and training outcomes. The Army has introduced some simulation and gaming capabilities; however, there is much greater potential through 2020.

### **J-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. The construct for 2012-2020 is marked by several significant changes. The first set of changes for 2012-2020 focus on the individual and is driven by an emerging set of leader skills necessitated by the complexity of the OE. Leaders must have a broader understanding of several important concepts to engage in training units on an increasingly complex array of tasks successfully. Among these are: the skills of problem-framing, as expressed in the concept of design; an increased understanding of foreign language and culture; an appreciation for the interaction of the operational variables of PMESII-PT in relationship to the mission variables of mission enemy terrain troops time, civilian considerations; competency in the systems that make up the ITE; and, an understanding of the dimensions of full-spectrum operations.

b. The second set of changes must occur in the institution. Institutions will be learner-centric, focused on delivering outcomes-based learning to provide the Soldier and leader what they need, when it is needed. This will improve performance with Soldiers pulling (reaching back to the institution) what they need, when it is needed, from the institution. This will be accomplished using mobile learning devices that access the central scenario training database and other training and knowledge management tools. The institution will focus on rapidly developing and maintaining new solutions and products; providing subject matter expertise support to Soldiers, leaders, and units at home station, CTCs, and deployed locations; and providing a rich environment for collaboration, simulation, and gaming linked together under the common context of the framework.

c. The final significant change is to make the output of the PME system educated leaders available to the force based on the demands of the ARFORGEN process. Educational opportunities must be available at the required time, for an appropriate duration, and in an accessible format. This will allow leaders to conduct PME during the reset phase, and to the extent possible, with the minimum time away from home station to allow for leader rest. The objective is for leaders to gain appropriate PME in the 6-month window for active component, and within 12 months for Army Reserve and National Guard units. This supports the objective to return units to P2 early in the reset process, and allows units to begin collective training immediately upon leaving the reset phase.

### **J-4. Specific outcomes from the Army leader development strategy imperatives**

a. Equal commitment by the institution, by leaders, and by individual members of the Profession of Arms to lifelong learning and development.

b. Balanced commitment to the training, education, and experience pillars of development.

c. Outcomes-based to prepare leaders for hybrid threats and full-spectrum operations.

d. Achieve balance and predictability between personnel policies and PME, executable in support of ARFORGEN.

- e. Manage the Army's military and civilian talent to benefit both the institution and the individual.
- f. Prepare Army leaders for the complexity of the OE in the classroom and at home station.
- g. Produce leaders who are mentors and who are committed to developing subordinates.
- h. Prepare select leaders for responsibility at the national level.

#### **J-5. Specific capabilities**

- a. The Army requires a flexible school system that allows cross component participation in whichever educational solution best meets the needs of the individual to make them available to return to units.
- b. The Army requires a modular approach to leader development that provides development in manageable chunks spread across an individual's career.
- c. The Army requires the capability for an integrated learning model to spread total development across the institution, self development, and operational assignment and experience domains.
- d. The Army requires the capability for a virtual university, with an integrated interface providing seamless access to training and education resources with the ability to create an adaptable and flexible framework focused on the learner. The capability is required to support the needs of units and Soldiers through a consolidated course catalog, centralized scheduling, and synchronization of training and education. It is required to reduce the time and effort necessary to locate and access training resources. The capability is required to encompass a personalized dashboard that visually depicts the status of an individual's training, education, and professional goals. It is required to serve as a platform for the creation of virtual education centers, virtual classrooms, virtual staff rides, and virtual mentors and coaches.
- e. Soldiers and leaders require a mobile learning device capability to access information and learning material without being tied to a fixed or predetermined location. They require the ability to collaboratively share critical content near instantaneously with members of their team to capture and share critical lessons or rapidly disseminate new TTPs. Mobile learning provides portability and accessibility for content, enabling the replacement of books and written notes with tailored applications. Mobile learning requires a similar feel and content to operational domain learning portals.
- f. The ITE, supported by the CFoS, links and supports all three domains by coupling the framework and robust training support.
- g. The Army requires the capability to provide broadening opportunities to study disciplines and organizations outside of the traditional military education system.

h. Future Army forces require culture and foreign language training capabilities to implement, build and sustain the Army culture and foreign language strategy with the right blend of foreign language and cultural skills to facilitate full-spectrum operations in the 21st century. Military operations with and among other cultures need to become an Army core competency.

i. The Army requires the capacity to increase joint, interagency, intergovernmental, and multinational educational opportunities to provide leaders with exposure to selected joint, interagency, intergovernmental, and multinational organizations to broaden leader experiences with respect to the culture, environment, and organizational processes of personnel and organizations outside the Army.

j. A strategy is required to incorporate the concept of design into PME to educate leaders to make sense of complex problems, anticipate change, create opportunities, manage transitions, and develop creative approaches to solving unstructured problems. The Army will need the capability to synchronize PME output to ARFORGEN demand.

## **J-6. Conclusion**

a. Faced with an era of persistent conflict, TRADOC Pam 525-8-3 must account for the current operational tempo, ARFORGEN requirements, and must help leaders pace themselves for the future. Leader development is not a sprint; it is a marathon! As TRADOC Pam 525-8-3 is implemented, it will be important to consider and understand what leaders face when not in formation. While they must be challenged and pushed to exceed their comfort zones, requirements should be attainable and realistic. An essential objective must be to achieve the right balance of training, education, experience, downtime for families, and overall quality of life.

b. There is great potential in the use of advanced technology to improve training and educational activities. The use of gaming, mobile learning, and virtual world's three-dimensional capabilities can greatly increase the complexity and relevance of the development of technical and tactical skills and leadership competencies. Today's technologies allow the rapid creation of realistic scenarios based on current operations and actual terrain to add complex real-time observations, insights, and lessons into Army development activities.

c. The development of the next generation of leaders will require an increased level of competence, the ability to learn, to communicate, to understand the context of operations, and to solve complex problems. Leaders at all levels must work with Soldiers to begin creating a new vision of transformation, and help Soldiers to understand the direction of the future. Sustaining a culture of change requires continuous effort and investment.

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## **Appendix K Functional Training**

### **K-1. Purpose**

Functional training supplements the basic skills and knowledge gained through initial military training, PME, and the civilian education system. Its purpose is to qualify leaders, Soldiers, and civilians for assignment to duty positions that require specific functional skills and knowledge. An uncertain and complex future OE demands that Army functional training prepare leaders to operate with competence and confidence in ambiguous, frequently changing circumstances. Functional training supports Army efforts to ensure it prepares talented leaders to lead the Army into the future.

### **K-2. Current state**

a. Functional training is designed to meet the training requirements for particular organizations, a particular individual's assignment or functional responsibility, force modernization, or meet theater or operations specific needs. To address these requirements, the Army employs an extensive functional training infrastructure designed to prepare Soldiers and leaders for the challenges of the modern military environment in synchronization with ARFORGEN. Functional training incorporates an array of general and highly specialized courses that are taught using multiple methods including: train the trainer, individual instructors, and mobile training teams in the classroom and field, or via distance learning modalities. The goal is to support the Operational Army at all points based on a unit's ARFORGEN requirements.

b. The limitations of the current functional state are that courses are generally tied to particular installations, and not readily available to deploying and deployed forces. The current training support system does not provide access to embedded and integrated training from systems platforms, thereby allowing Soldiers to gain access to training information and capabilities while deployed; and generally not focused on full-spectrum operations. Although mobile training teams alleviate these shortcomings to an extent, they do so in many cases with great difficulty and oftentimes do not support widespread, short-notice training requirements. Additionally, the mobile training teams may affect the commander's and unit trainer's role in developing training.

### **K-3. What is different about the TRADOC Pam 525-8-3 construct?**

The training requirements of the force will constantly change based on factors such as the realignment of units, transformation to new operating methods and technologies, injection of new equipment and systems, and ARFORGEN synchronization. As such, functional training requirements must be reviewed continually to quickly respond to the evolving requirements of unit-centric training. To adapt, functional training, where possible, must incorporate more highly complex training environments (using ill-defined problems) that create uncertainty. These changes should include impacts of various cultures, full-spectrum operations, joint, interagency, intergovernmental, and multinational issues in the problem set. Functional training must also allow for widespread access to training material and support while deployed whenever feasible. Additionally, the training must be learner-centric based on critical thinking and the learners'

experiences. Resident schoolhouses must focus on technical training where equipment distribution limits training at regional training centers. Regional training centers functional training emphasis will be on nontechnical functional training.

#### **K-4. Specific outcomes**

a. Functional training, synchronized to ARFORGEN requirements, ensures units can employ functional skills that support understanding the OE, effectively employ organizational assets, operate across the dimensions of the full spectrum of conflict, understand the implications of joint, interagency, intergovernmental, multinational, and crosscultural environments, and understand how to effectively use knowledge management tools within future OEs.

b. The following constitute goals for functional training in 2012 – 2020.

(1) Increase opportunities for partnering and training with governmental agencies and joint services wherever possible.

(2) Enhance the ability to operate with and among other cultures, including joint, interagency, intergovernmental, and multinational partners wherever possible.

(3) Develop interagency and intergovernmental training relationships at the local and state government levels wherever possible.

(4) Synchronize functional training with ARFORGEN to provide responsive reset training opportunities to commanders.

(5) Develop mobile learning capabilities to provide immediate and relevant support to the operational domain. Rapidly develop training solutions across the DOTMLPF.

#### **K-5. Specific capabilities**

a. Functional training must be agile and able to quickly respond to the evolving requirements of units' needs. The ability to provide increasingly complex and progressive skills to Soldiers, civilians, and leaders is required to adapt to a changing OE through all phases of ARFORGEN. Mobile learning devices, which include portable mobile devices allowing a Soldier to access information and learning material without being tied to a fixed or predetermined location, will be useful and critical in affording training opportunities beyond the traditional classroom.

b. Functional courses must be able to cross traditional boundaries, such as other joint service training, active Army and Reserve components, coalition partners, and interagency groups, including local and state governments. The training conditions must realistically portray the OE, which may include or replicate partners in unified action, joint and special operations forces, interaction with the populace (people, government, nongovernmental organizations) and media, the information environment and physical environment, mission-specific equipment, and the effects of nonlethal actions. This training must enable Soldiers and leaders to understand the roles, culture, and goals of other organizations, (joint, interagency, intergovernmental, and

multinational), non-governmental organizations, to quickly build effective working relationships within tailored organizations, and to leverage collaboration and other network tools to operate as a cohesive organization.

### **K-6. Conclusion**

ARFORGEN synchronization of functional training will maximize opportunities for realistic, agile, and collaborative skill development to meet the future Army forces training requirements. Ease of access to training with governmental agencies, enhanced mobile learning capabilities, and training solutions that span the DOTMLPF, are critical in providing relevant training to the Operational Army.

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## **Appendix L**

### **The Army Training Support Enterprise**

#### **L-1. Purpose**

a. Just as the Army's training requirements and capabilities will be constantly emerging through 2020, so will the training support necessary to enable full-spectrum operations METL trained units, Soldiers, and leaders capable of operating in an uncertain OE with joint, interagency, intergovernmental, and multinational partners.

b. Training support capabilities must support the fundamental tenets of TRADOC Pam 525-8-3. They should-

(1) Restore a commander-centric training focus that allows commanders to control the pace and intensity of training events.

(2) Create a seamless, ITE that improves the Army's ability to replicate the future complex OE at home station, at a CTC, and while deployed.

(3) Raise the level of training at home station to achieve full-spectrum operations METL proficiency. This translates to configuring active Army stations to enable brigade-level full-spectrum operations METL training, and Reserve component stations configured to enable company-level full-spectrum operations METL training. However, both active Army and Reserve component stations must be capable of enabling company level live fire.

(4) Establish embedded training capability as a KPP for new operational systems.

c. To fully understand the criticality of training support capabilities to the complex OE, an understanding of what training support entails is needed. Training support encompasses the training information infrastructures, products, materiel, personnel, services, and facilities necessary to enable integrated training and education. It supports the development and sustainment of Soldier, leader, and civilian competencies and enhances unit readiness across all training domains in an ITE.

d. Commander and unit-centric training will require a flexible TSE that provides the mobile, adaptable, interoperable, and reconfigurable training support capabilities that are responsive, adaptive, integrated, and networked to meet full-spectrum operations METL-based operational training strategies within ARFORGEN, as well as institutional strategies reflected in programs of instruction. This will require close coordination and synchronization with the IMCOM, TRADOC, and NETCOM/9th ASC to ensure the installation infrastructures are available to support training and the enabling TSE capabilities.

e. The TSE capabilities addressed will be responsive to active Army and Reserve component Soldiers needs and will require collaboration among many partners and stakeholders, including HQDA, other services, industry, and academia.

## **L-2. Current state**

a. The TSE today is responding to the needs of commanders and Soldiers at war; however, its capabilities do not provide all the efficiency and effectiveness necessary in an environment of constrained resources. Many of the current TSE capabilities are developed with limited horizontal integration, resulting in stovepiped training solutions that are often costly, redundant, and lack interoperability. The TSE of today does not provide commanders, Soldiers, or trainers in either the active Army or Reserve component the comprehensive capability to access, retrieve, and present networked, interoperable training across an ITE. Nor does it provide access to embedded training from the systems platforms, which would allow Soldiers to reach training information regardless of their location.

b. The TSE today cannot keep pace with the insertion of new technologies and the training required to support them. Immediate feedback from current conflicts results in the need for rapid fielding and product development and modification of TADSS and other training enablers. However, the processes to insert the technologies are cumbersome, and once they are inserted, they are often stand-alone products that are not integrated with other training enablers, resulting in inefficiencies.

c. To improve efficiency and effectiveness, the TSE is transforming to an approach that ensures it can rapidly respond to the challenges of the complex and dynamic OE by providing the necessary mobile, adaptive, reconfigurable training support capabilities that enhance Soldier readiness. The TSE must have processes and metrics in place that clearly demonstrate the criticality of its capabilities to the training process, which in turn can influence funding, integration, and rapid development decisions at all levels.

## **L-3. What is different about the TRADOC Pam 525-8-3 construct?**

a. This construct represents a complex OE marked by persistent conflict across multiple OEs with threats that employ both conventional and nonconventional tactics across the spectrum of conflict. Operations in this environment will be conducted among local populations with unfamiliar cultures, in urban settings or harsh, inaccessible lawless areas. The threat will be hybrid, innovative, adaptive, globally connected, full spectrum, and networked. It will be embedded in local populations and possess a wide range of old, adapted, and advanced



technologies, including the possibility of WMDs. Operations will take place under ambiguous, constantly changing conditions where information will be incomplete and conflicting.

b. To prepare for the complex OEs, commanders and units will employ a wide variety of affordable and adaptable TSE enablers that access institutional repositories and technologies (such as virtual, constructive , gaming, and their combinations) to provide a more realistic live training experience for both active Army and Reserve component Soldiers. These enablers will support training for all type units as they move through institutions and the ARFORGEN training cycle. This will ensure that enablers not physically resident at an installation are available through the hub and spoke concept. Additionally, training will be enabled by advanced simulation capabilities that can accurately replicate the cultures, structures, and infrastructures that will be present in the area of conflict.

c. From the earliest conceptual stages to the initial procurement, new systems and capabilities inserted in the complex OE will have behavioral characteristics replicated in simulations. Those simulations will appear in the form of shared object models compatible and interoperable with current and planned systems, and the part-task and full-task trainers that support those systems.

d. Training and training support capabilities, including embedded training, will be a KPP. For all new systems, the embedded training KPP must be funded to ensure training is institutionalized prior to capability entering the force. The spin-out of new technologies to the force will demand the application of embedded training principles where possible, mirroring equipment behaviors and characteristics within ITE training enablers.

#### **L-4. Specific outcomes**

a. The ultimate objective of the Army TSE is to provide the relevant and responsive training support capabilities that enable the full spectrum of training, and accurately replicate the complex OE in the institutions, at home station, at the CTC, and while deployed. Employing the hub-and-spoke concept, the TSE will provide the networked, horizontally integrated training support capabilities that are mobile, adaptive, and can be tailored to meet the needs of commanders, Soldiers, and trainers anytime and anywhere. Those capabilities will be affordable, safe, and environmentally sound, and result in training efficiencies and effectiveness.

b. The TSE will provide the necessary training support capabilities that can adapt to meet the requirements of the three dimensions of full-spectrum operations: contest of wills, strategic engagement, and cyber/electromagnetic contest.

c. The TSE enablers will achieve economies and training efficiencies by off-setting the high cost of live training; for example, through virtual and constructive capabilities that improve training effectiveness, especially during reset and predeployment phases of ARFORGEN.

d. The objective TSE will have the management, governance structures, and metrics in place to monitor the health and relevance of the system, measure effectiveness, establish priorities, and align resources against those priorities. It will use real-time feedback from the force to ensure training support decisions address real concerns from commanders and Soldiers.

## **L-5. Specific capabilities**

a. The TSE provides the same required capability for Soldiers and trainers in both the active Army and Reserve component, with the same access to institutional and operational training, ensuring accessibility to TSE enablers through all phases of ARFORGEN. It will encompass a mix of training support capabilities that will link Soldiers and leaders from geographically dispersed locations with the CoEs, schools, BCTCs, CTCs, and other locations through a GNEC.

b. The TSE is required to support the single Army training management system and full-spectrum operations METL development processes by providing the required integrated training information infrastructures, TADSS, products, services, and facilities necessary to successfully plan, prepare, execute, and assess training. Commanders will use automated training management systems provided through the TSE to analyze mission requirements, identify tasks requiring training, manage the execution of the training, and develop, record, and disseminate feedback. They will monitor a unit's progress during a training event by the inputs received from the designed-in system sensors, embedded full task trainers, tactical engagement systems, video, audio, data-stream instrumentation, and other data feeds providing the commander an independent assessment of the events training effectiveness.

c. The TSE is required to provide the architectures and standards that enable the networked integration and interoperability across training support structures. The architectures and standards include the protocols used to build training support hardware, software, and materiel. Architectures and standards provide the structure of the TSE capabilities, their relationships, and the principles and guidelines governing their design and evolution over time.

d. The TSE will provide the information infrastructures to allow commanders and their staffs to rapidly develop standardized, common, global training scenarios that are culturally accurate. It will enable mission rehearsal and just-in-time training with full reach to digital libraries, courses, subject matter experts, and proponent schools to support various missions, including host nation support operations where local customs, basic foreign language, and general environment training will be required.

e. The TSE requires a series of common training scenarios, depicted with a common look and feel across an ITE, that will reflect the hybrid nature of the threat (for example, organized forces, irregular warfare, civilians on the battlefield). This will enable realistic training focused on the unit's full-spectrum operations METL. Because the training is commander-centric, the scenarios will allow commanders to tailor the depiction of the threat that best reinforces their training need. They will be able to modify the scenarios to focus upon those tasks that need the most work. Through TADSS, the TSE will support the replication of sophisticated OEs that provide high-resolution granularity for Soldier training with role players and facilities.

f. The TSE requires a common, digital terrain database, employing shared object models, which will allow the commander to move seamlessly among TSE enablers to train from squad- to brigade-level collective tasks. Additionally, the TSE will enable simulation wrap-around plus replication of brigade-level and joint forces to accurately represent the OE.

g. Simulation centers, specialized facilities, military operations in urban terrain, and live fire ranges are required to be integrated and used in conjunction with platform-based embedded training. Where embedded capabilities are not possible, TSE infrastructures and nonsystem training devices will be available to connect embedded TADSS to the ITE and to enable training in units equipped with legacy weapons systems.

h. Training ranges, centers, and facilities require instrumentation to facilitate the recording, collection, and reporting of performance data. Home station ranges for the active Army will support company and team level live fire; ranges for the Reserve component will support platoon to company level live fire. Additionally, ranges will support squad and platoon-level employment of unmanned air and ground systems and robotics and enable three dimensional targeting.

i. Live and virtual assets are required to work together to form task forces that collect, analyze, and share information using current knowledge management techniques. Virtual simulations will be used in place of live assets to exercise and experiment with new TTP.

j. In every case, training events will provide the commander and units a stressful, fully immersive training event that is a high-fidelity replication of the complex OE through linked simulation centers, ranges, institutions, and personnel to create an operationally relevant training environment.

k. The TSE requires an Army automated training management system (like the digital training management system) interface to automatically communicate training support system requirements from the commander and trainer to the TSE to meet full-spectrum operations METL training objectives under ARFORGEN.

## **L-6. Conclusion**

a. The TSE must keep pace with the OE and provide commanders the capabilities to train Soldiers, leaders, staff, and units to standard. The TSE must expand its capabilities at installations, other home stations, including Reserve centers, and major training centers to enable training for all kinds of operations, including irregular warfare and limited intervention operations, as well as major combat operations. The TSE must demonstrate the critical capability to be responsive, adaptive, integrated, and networked to meet full-spectrum operations METL-based operational training strategies within ARFORGEN.

b. The TSE capabilities must support the needs of active Army and Reserve component commanders and Soldiers. The efforts of many partners and stakeholders are required to ensure the TSE is responsive, operates efficiently, effectively, and continuously meets the training demands for a complex OE.

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## **Appendix M**

### **Operational Environment (OE)**

#### **M-1. Purpose**

a. The purpose of this appendix is to provide an overview of the application of complexities of an OE so that commanders and their staffs can consider and integrate the impacts into training, education, and leader development and reflects the OE as portrayed in the current TRADOC OE white paper and ongoing updates. The CTCs must be manned with appropriately skilled role players, and the facilities must be equipped to replicate the OE.

b. An OE is a catalyst supporting the Army's core requirements to produce leaders and Soldiers to fight and win in full-spectrum operations. An OE is fluid and will change based on assumptions and projected political instabilities as interpreted by senior civilian and military leaders. As a result, the Army must prepare for both the relative certainties and key uncertainties associated with defining a current and projected OE.

c. The Army's ability to understand the manifestations of the OE should lead it to make informed decisions as to what lies ahead and how the OE may impact joint, interagency, intergovernmental, and multinational operations and training.

#### **M-2. Current state**

a. U.S. military operations during the past 20 years have forced America's present and potential adversaries to realize they cannot match the best-trained Army in the world equipped with superior technology. Thus, many are seeking strategies to achieve their goals by using various means (from strategic to tactical levels) to offset the U.S. technological overmatch, as well as the combined arms advantages U.S. forces bring to a symmetric, force-on-force fight.

b. Information-age technologies and digitization are affecting how the Army and its adversaries approach warfare. For example, an irregular force may be equipped with precision weapons, sophisticated computers, and advanced communications equipment to transmit messages to various groups of combatants and armed noncombatants. Adversaries will also take advantage of increasingly global access to information to counter U.S. information dominance.

c. Over time, the Army has allowed the CTCs to atrophy in their ability to provide a realistic threat information environment. Adversaries are increasingly using sophisticated command, control, communications, and electronic warfare.

d. All this will require Army forces to enter an OE and to dominate potential adversaries for the duration of the campaign.

### M-3. What is different about the TRADOC Pam 525-8-3 construct?

a. The nature of the global operational environment in the 21<sup>st</sup> century can be characterized as one of uncertainty and unpredictability. However, one thing is certain: conflicts between and among civilizations, regions, nations, and groups will continue. Opponents will seek to redefine the environment and create advantageous asymmetrical conditions by changing the nature of the conflict and moving to employ capabilities for which future Army forces are least prepared. Furthermore, adversaries will attempt to disrupt U.S. sanctuary at home or within the region.

b. In this context, the character of the various threats is constantly evolving, setting the stage for the emergence of the operational paradigm as illustrated in figure M-1. This paradigm will consist of conditions of complexity, volatility, uncertainty, instability, and ambiguity with and among other cultures. This paradigm also suggests America's foes will operate in complex terrain and urban environments to lessen U.S. standoff and long-range precision fires; they realize the majority of the world's population is increasingly concentrated in urban areas of political, economic, and social power. In addition, U.S. adversaries will attempt to deny or limit regional access, attack U.S. information systems, and dictate the tempo of the changing environment.



Figure M-1. The OE 2012-2025

c. The Army faces a training challenge: determining how best to train its Soldiers, leaders, civilians, and units for military actions in the 21<sup>st</sup> century. Army training, education, and leader development programs and initiatives must prepare Soldiers, leaders, civilians, and units to adapt to complex situations across the full spectrum of operations rapidly, to fight when necessary, and

to win decisively. To do this, Army forces must have the mental and physical agility to move between stability or support operations to offensive and defensive operations when conducting wide area security and combined arms maneuver missions. They must do this while demonstrating the tactical agility to task-organize on the move while operating with and among other cultures.

d. A major challenge is to continue to integrate the manifestations, observations, insights, and lessons from deployed forces into training events and leader development activities.

(1) Potential adversaries continue to learn and adapt to U.S. operations. Not all of the enemies future Army forces may face subscribe to the accepted rules of warfare or the U.S. value system. When these facts are combined with the myriad of other factors that affect combat operations, leaders and units will be faced with a battlefield that calls for more than simple doctrinal solutions to tactical dilemmas.

(2) Future Army forces can expect continued integration of paramilitary and even nonmilitary combat forces into threat operations to confound U.S. intelligence, surveillance, reconnaissance, and precision weapons.

(3) Complex terrain, both urban and natural, will continue to be the battlefield of choice for U.S. adversaries. The close fight, soldier-on-soldier, negates the U.S. advantage of standoff fires.

(4) Bad weather provides threat forces unique opportunities as U.S. intelligence, surveillance, and reconnaissance is hampered with degraded capabilities. Training exercises should include simulated periods of inclement weather and the subsequent reduction in U.S. intelligence, surveillance, and reconnaissance capability. No place in the world provides the perfect weather often reflected in exercise scenarios.

(5) Although the outcomes of the wars in Iraq and Afghanistan may change world perceptions, the current perception is that the U.S. is not willing to sustain casualties. This perception guides adversary preparation of the battlefield when facing the U.S.

(6) The reflection of Western values as demonstrated in U.S. and or coalition and allied rules of engagement provides a potential exploitable vulnerability. Training events need to have realistic and enforced rules of engagement.

(7) Leaders should expect future threat forces to have some technologies that equal or exceed U.S. capability. While these technologies may not be widely distributed throughout a threat force, they pose a challenge to an unprepared U.S. leader or unit. Technological surprise in some circumstances may unhinge a U.S. plan. The current proliferation of night vision devices provides an excellent example of the U.S.'s precarious ownership of the night.

(8) Leaders, Soldiers and civilians need to account for and understand the implications of operating within a multicultural environment that includes joint, interagency, intergovernmental, and multinational partners. Training at all levels must force development of culture and foreign

language capability in units. Training events need to include conditions that require employment of these capabilities.

#### **M-4. Specific outcomes**

a. An important implication is the ability to create training conditions that reflect complexities of multiple OEs. As such, the Army's IMT, PME, the CTC, and home station training require the ability to replicate regular and irregular forces, all inside a sophisticated OE that poses challenges across PMESII-PT.

b. The institutional domain. The ambiguous, rapid, and constant nature of change of the OE requires self aware and adaptive Soldiers, leaders, units, and organizations. The Army's training and education institutions must develop competencies whereby the Soldier understands the OE, assesses personal capabilities, determines personal strengths and weaknesses, and actively learns to overcome those weaknesses. The implication is that Soldiers and leaders must learn to recognize changes in an OE, and learn how to adapt to succeed in new environments. The TRADOC CoEs and schools must have processes, programs, and systems that enable them to change rapidly as they become Army learning organizations.

(1) Army learning organizations are skilled at creating, acquiring, interpreting, transferring, and retaining organizational knowledge. They purposefully modify behavior to reflect new knowledge and insights. They continuously clarify what is important; see reality and the future more clearly; and apply knowledge, skills, and capabilities to improve products and services. Army learning organizations effectively translate new knowledge into new ways of behaving. They apply and actively manage learning processes that are focused and purposeful. Army organizational learning occurs by design and in pursuit of clearly defined needs, rather than for just the sake of learning.

(2) IMT. The OE in the 21st century requires the training base to produce Soldiers capable of contributing as team members on the day of arrival at first assignment. Smaller, more agile combined arms teams conducting simultaneous, noncontiguous operations widely distributed over the battlefield will conduct warfare in the future. To be successful, Soldiers and leaders must bring certain skills and characteristics to this battlespace. These skills must enable them to leverage emerging technology; adapt to rapidly changing situations; and to see, understand, and act faster than their opponents, all within an environment in which tactical operations can have operational and strategic impacts. IMT must ground Soldiers with the Army's values and basic understanding of cultural components of anticipated OEs.

(3) PME, leader development, and functional training. To build an Army that will dominate in full-spectrum operations, TRADOC CoEs must prepare leaders for adaptive threats and simultaneous operations within a multicultural environment. This requires leaders who understand the implications of operating with joint, interagency, intergovernmental, and multinational partners and who can envision likely outcomes of events within the context of the OE. CoEs do not have the luxury of focusing on any one threat or under any one area within the spectrum of conflict. Instead, leaders must be exposed to the multiple threats that exist in the

OE. These threats range from standing conventional and unconventional forces, to irregular militias and paramilitaries, to terrorist groups and criminal elements.

(4) The OE is the catalyst for how the Army assesses and develops its Soldiers. In addition to maintaining traditional hands-on expertise with equipment, the Army must create in Soldiers the ability to solve problems under the complex conditions of volatility, uncertainty, and instability with and among other cultures. In this way, Soldiers become confident in the ability to interpret the commander's intent, overcome ambiguity, and leverage combat multipliers throughout the networked battlefield to dominate any situation encountered.

(5) In addition to threats, the intellectual agility of the Army's educational institutions must be based on a mental acumen to analyze and understand the OE in which these threats and U.S. forces will operate. People, culture, ideology, political strife, urban terrain, and information will dominate OEs. Leaders must understand the OE to attain some level of parity when opposing someone within an indigenous environment. Therefore, leaders must be educated on all aspects of the OE through the operational variables interaction of PMESII-PT and how the OE affects elements of military design and the operations process.

(6) Offensive, defensive, and stability operations will not occur in isolation. Nor will they appear as sequential operations. Instead, leaders must understand the OE to make informed decisions regarding managing transitions in executing all three operations simultaneously, at varying degrees of complexity. The ability to make these decisions relies heavily on preparing Army leaders at TRADOC institutions. Leaders must be imbued with mastery of design, that critical step to understanding the OE before the military decisionmaking process or troop-leading procedures can take place. Over the past years, the Army has developed a generation of leaders that are culturally astute and focused on stability operations. While sustaining these skills is critical, the OE will challenge leaders with competing demands for defeating an adversary, force protection, influencing a population, and nation building. Successful leaders of the future will be those who assimilate the OE and make informed decisions on shifting efforts between simultaneous offensive, defensive, and stability operations. To do this, leader development curriculum must have the following embedded within the OE to establish challenging conditions that drive specific terminal learning objectives for each CoE.

(a) Simultaneous operations. Full spectrum implies there will always be some degree of offensive, defensive, and stability operations occurring at the same time within a joint, interagency, intergovernmental, and multinational context. The OE will force leaders to make decisions regarding the allocation of limited resources. A trend discussed earlier was the mixture of regular, irregular, and criminal organizations, loosely affiliated to achieve a common goal. U.S. forces in every OE will face adaptations of these threats that will drive leaders to plan for all facets of the full spectrum.

(b) Culture. Culture and ideology may be the center of gravity in future conflict. All operations, wherever they fall under the spectrum of conflict, are likely set among a population and with joint, interagency, intergovernmental, and multinational partners. The human terrain and associated nonlethal effects have become as important, if not more so, as physical terrain, weapons systems, and lethal force-on-force effects. Leaders must engage populations, and as a



result, understand the values, beliefs, norms, and behaviors that form the foundation of a population's culture and their implications on operations.

(c) Information. The unit or leader that can shape and control the information environment has a significant advantage. Leader development should emphasize applying IO in all operations. The ability of the leader to influence information has positive results for the unit. Conversely, poor decisions regarding IO have adverse effects towards achieving the desired outcomes. Leader development must focus on the following:

- The complexities of the OE require leaders who are intuitive in filtering large amounts of information. Leaders must be technically savvy or suffer a disadvantage to the opponent on the battlefield.
- Advanced situational awareness technologies provide the leader with access to the wisdom of the crowd. Mass collaboration devices provide better solutions to complex problems within the bounds of command structure. Leaders must be able to manage the volume of information to prevent information overload. They must be able to apply the pertinent experience and knowledge through knowledge exchange and embrace the responsibility to share this knowledge and experience with others.
- The connection of everyone and everything means that conducting any military operation must stress operations security.
- Expect to see a continuing growth of homemade movies by both Soldiers and noncombatants that reflect particular points of view. Military operations will be well documented from an array of sources, both professional and amateur. Control of the narrative, both internally and externally, will be a tremendous challenge to leaders at all levels.

c. The operational domain. To continue the mission of full spectrum training, the CTCs and home station training requires the ability to replicate both conventional military action and irregular warfare, all inside a sophisticated OE that creates challenges across PMESII-PT. The implication of this is that CTCs will need to be manned to use military personnel for irregular warfare and conventional warfare during the same event. Both challenges will be present in the same environment that requires replication of noncombatant personnel and economic, political, and social systems.

(1) The Russian–Georgian military conflict of 2008 reminded the U.S. of how quickly conflict can shift towards general war and that multiple OEs exist across the full spectrum of operations. For example, this conflict provided one of the first examples of the use of cyber attacks in conjunction with other military operations. The question, given the several years of conducting MREs, is how prepared is the U.S. Army to respond to rapid transitions across the spectrum of operations? The multiple manifestations of the OE over the coming years will not be confined to unstable peace or insurgency.

(2) In addition to very capable guerrilla, paramilitary, and militias the U.S. will face, trends in an OE are leading to rising conventional military powers (such as, China and India) and existing very capable militaries (such as, Iran, North Korea, and Russia) that have both regional and global interests. Based on drivers and trends, it is very plausible that China will emerge as a

near-peer military competitor by 2025-2030. U.S. Army military competencies along the spectrum of conflict dictate that future Army forces must prepare for all threats by training for both irregular warfare and major combat operations. Training against these changing operational themes will drive adaptation and flexibility throughout the Army.

(3) Required training conditions. Training conditions must result from realistic training scenarios that are culturally accurate and geared towards challenging full-spectrum operations training objectives. The unit's full-spectrum operations METL (based on a designated OE) will drive training scenarios to enable Soldiers, leaders, and units to learn and adjust throughout the ARFORGEN process. It is only through these investments that future Army forces will be prepared to meet expectations. To accomplish this, training must prepare future Army forces for the following aspects of the OE:

(a) Train against an adaptive, free thinking OPFOR that is equipped and manned to achieve victory. No adversary will enter battle with the anticipation of losing. Threats in the global OE have studied the U.S. military over the years and have planned against U.S. intervention. Threats will routinely organize regular and irregular forces, adapting on the fly, in a way that places their perceived strengths in advantageous positions over U.S. perceived weaknesses. Drivers and trends articulate that globalization, information, and technology have facilitated the spread of military capabilities from high-end regular militaries to irregular forces. These forces will continue to increase in anti-armor, intelligence, surveillance, reconnaissance, cyber, and electronic warfare capabilities. The OPFOR at the CTCs and the exportable training capability must be robust to challenge full-spectrum operations METL. The atrophy of the current OPFOR in both equipment and personnel has placed at great training risk, the need to provide a realistic threat against major combat operations training objectives.

(b) Train for simultaneous and continuous engagement. A clear delineation of combat and post-combat operations no longer exists. Training should reflect this to help develop skills necessary for leaders and Soldiers to adapt and respond. Training must incorporate offensive, defensive, and stability operations running concurrently or changing quickly in nature, direction, and scope over an extended period. Phasing of events will not occur in the OE. Instead, subtle changes in conditions (known as, weak signals) are the indicators that efforts should shift from one operation to another. The Army must learn to recognize indicators when the enemy is adapting to make tactical transitions. Units must also become proficient in operating with and among other cultures.

(c) Train for the information environment. The force that controls information has an advantage. Forces must be trained to successfully operate in and shape the information environment within a multicultural context. Training should focus on fully integrating all aspects of IO at all levels and across all operations. Units must be prepared to understand their role in the IO and all actions, once captured digitally and used in the adversary's information warfare campaign, will have reactions and cultural implications.

(d) Train for crisis and consequence management. U.S. forces should be prepared to operate in WMD environments and in response to environmental disasters. Training should stress operating under the threat and or occurrence of a nuclear, biological, and chemical attack.

The Army should train with regard to operating in contaminated areas, mitigating the effects of a WMD attack or an outbreak of a pandemic. Training should also include working with host nation and domestic law enforcement, emergency relief, and humanitarian assistance agencies. This would entail providing security of an area and its populace, conducting environmental operations, supporting disaster relief, and restoring and protecting essential services. Central to crisis and consequence management is the populace and infrastructure. The CTCs must be manned with appropriately skilled role players, and the facilities must be appropriately equipped. Civilians would be part of many of these unit training exercises.

(e) Train for increased coordination and cooperation. As the parameters along the spectrum of conflict change, so do the players. As such, the Army must be prepared to work with a variety of joint, interagency, intergovernmental, and multinational organizations. Trends in the OE indicate that the U.S. will form coalitions and alliances between nation-states and non-state actors, with each entity bringing its individual culture and agenda. All training should incorporate elements that stress the significance of these facts in daily coordination with multiple organizations, both military and civilian. This will include sharing information and intelligence.

(f) Train for urbanization. It is likely that urbanization will result in future adversaries who have highly developed urban survival and combat skills. They may consequently choose to pursue their objectives and conduct operations in sprawling towns and cities with endemic lawlessness and high levels of violence. Allegiance to actors other than nation-states will reduce the recruitment pool for future military recruits.

(g) Train to prevent or respond effectively to genocide and mass atrocity. Training must focus on the potential use of military operations in conjunction with other U.S. government agencies to terminate and mitigate the effects of genocide and mass atrocity when directed by national leadership. When military leaders understand the complexities and challenges of using military force through training, they will be better prepared and more effective in responding to contingencies. Furthermore, greater awareness of the demands and dilemmas of military interventions will foster the development of preventive, nonmilitary approaches, ultimately the preferable response to incipient crises.

(h) Train for homeland security and defense. Homeland security and defense, which requires shared intelligence and assistance in domestic security missions, will test traditional relationships and boundaries with law enforcement and other domestic entities. U.S. joint forces, active and reserve, combined with domestic agencies, intelligence activities, and particularly law enforcement organizations, will have to deal both with regular military and irregular forces, including criminal organizations, terrorists, or religious fanatics, who seek to profit from instability. Sophisticated IO campaigns are necessary and the Army must train vigorously for them. Within IO campaigns, issues over communication system interoperability and connectivity will require addressing by the training community. The collection and use of intelligence by all parties involved may require new processes and partnerships, which should be part of all Army training.

d. Working with non-DOD organizations. Current operations illustrate the capabilities that nongovernmental organizations, private volunteer organizations, and governmental organizations

bring and their overall importance to supporting stability and support operations. Trends in the OE indicate the importance of these organizations will continue just as U.S. military support to stability in Afghanistan and Iraq will continue. It is probable that, given drivers such as the environment, politics, and globalization, some form of U.S. presence will continue in post-war Afghanistan and Iraq, similar to what can be seen in the Balkans. From humanitarian relief to reconstruction, units will be required to work alongside a number of non-DOD organizations. Leaders must understand these organizations and their capabilities to assess how they can shape the OE.

e. Educating for uncertainty. The Army has to educate for uncertainty by providing opportunities for leaders to learn and understand basic principles and enduring concepts relative to the OE. Education allows a leader to understand historical precedents and see linkages. It provides a perspective that allows translation of understanding into action. While there will be much energy devoted to gathering information about the area of operations before the U.S. deploys units to a conflict, there will remain much that is still unknown.

f. Education provides a bridge to add context to adversary and others' activities in theater. The tribal politics discovered in Iraq and the Army's subsequent use of those politics to enable local solutions to insurgent violence, is an example of education providing a basis for decisions in ambiguous situations.

g. Technology is providing mission planning and rehearsal systems. Leaders can rehearse the operation in simulation in multiple ways by changing key variables. Contrast this with the current practice of a one-time walk-through on a sand table or in a report-on-comments drill. In the classroom, simulations will allow leaders to do more than just develop a plan; simulations will allow them to execute the plan to help them see the strengths and weaknesses of their plan. Leaders can further develop their intuition by executing the plan interactively, changing variables with each iteration. In the information age, leaders who instinctively, quickly, and confidently recognize the right course of action to take when faced with a situation must be developed.

## **M-5. Required training capabilities**

a. The OE will manifest in many forms; however, there are constants that can be derived from the OE. U.S. Army operations will be set against the backdrop of populations and with 80 percent of the world's population living in or near an urban center; it is likely that operations will include urban terrain. Threats, capable of employing both irregular and conventional tactics combined with a wide array of advanced technologies, will operate within these settings. As such, there are a series of required conditions across each training, education, and leader development domain to provide rigor to Army training objectives.

b. Hybrid threats. The diverse and dynamic combination of regular and irregular forces as well as criminal elements all unified to achieve mutually benefitting effects. Hybrid threats are illustrated in figure M-2.

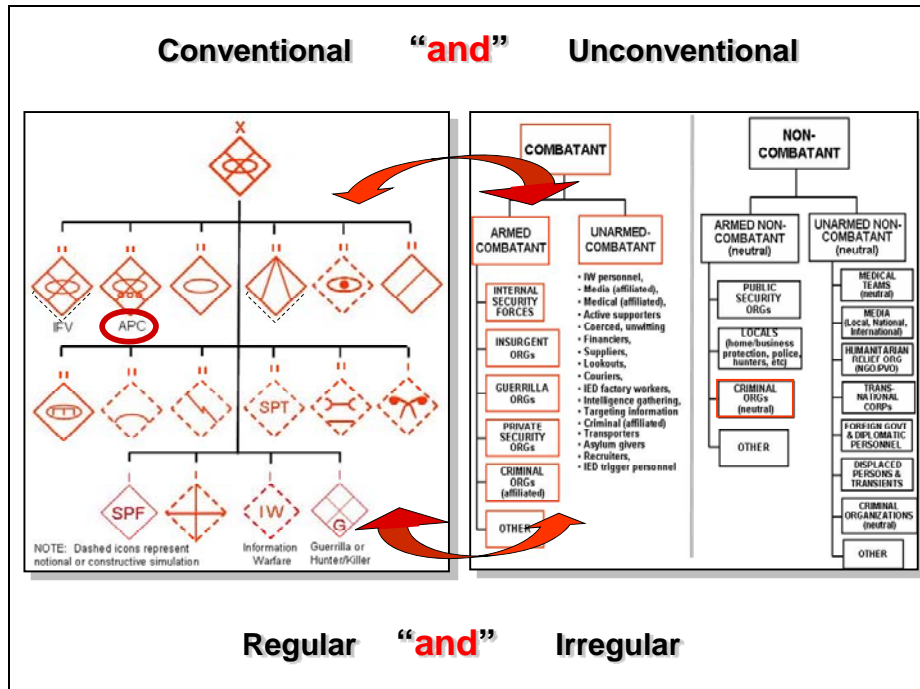


Figure M-2. Hybrid threats

- c. The threat’s ability to attack the network and sensors through electronic warfare and computer network attack.
- d. Robust combinations of improvised weapons and niche technologies, such as, improvised explosive devices and rocket propelled grenades or unmanned aircraft vehicles.
- e. Complex physical environments that enhance threat deception, cover and concealment, and mitigate U.S. intelligence, surveillance, reconnaissance, and precision guided munitions delivery capabilities.
- f. The significant threat of the employment of WMD.
- g. A fragile but oppressive state structure (with nonstate surrogates) requiring international organization involvement, military operations, and multinational coordination to resolve crisis or conflict.
- h. A substantial threat intelligence gathering capability expressed in population-embedded human intelligence, technical intelligence support from sponsor nation(s) and or transnational organization(s), and modest local all-source collection capability.
- i. A population that represents a foreign language and culture with significant differences (religion, norms, acceptable behaviors, and value of human life) from U.S. culture, with some population fragmentation in terms of hostility, indifference, or amiability to U.S. forces.

j. A substantial media presence with subsequent operations security and control of the narrative issues.

k. A robust representation of all the elements of the OE (PMESII-PT) that significantly affect a commander's decisions and produce second and third order effects that require adjustment of plans and operations.

#### **M-6. Conclusion**

a. As the OE continues to be analyzed, new alternative futures will emerge. One predictable fact is the OE will change. Through the study of current trends, plus anticipating and looking for indicators, the Army can signal change from current projections that will posture unit training for the future. To declare the present time as unique in history is perhaps a conceit driven by human ego. However, there is a distinctiveness that is not arguable. Seldom has a nation attempted to continue routine living while engaged in protracted war that threatens civilization, on an extremely tight budget, substituting technology for manpower, and at the same time, attempting to build the next armed forces.

b. The challenge of completing all those tasks successfully will rely on staunch leadership and a commitment to training Soldiers to a level previously not attempted. More than ever, every Soldier and individual actions matter. The complexity and detail needed in training events is a reflection of the formidable tasks that are being demanded of Soldiers, who are few in number, to perform. The challenge for the Army senior leadership is to resource Soldiers to be able to train as they will fight.

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## Glossary

### Section I Abbreviations

AAR	after action reviews
ACP	Army Campaign Plan
AEN	Army enterprise network
AFP	available force pool
AIT	Advanced Individual Training
APC	Area Processing Center
ARCIC	Army Capabilities Integration Center
ARFORGEN	Army force generation
ASC	Army Signal Command
ASCC	Army service component command
BCT	brigade combat team
BCTP	Battle Command Training Program
BOG	boots-on-ground
CATS	combined arms training strategy
CBA	capabilities based assessment
CEF	contingency expeditionary force
CFoS	Common Framework of Scenarios
CoE	center of excellence
CONUS	continental United States
CTC	combat training center
CTDB	central training database
CTE	culminating training event
DA	Department of the Army
DEF	deployment expeditionary force
DISN	Defense Information Systems Network
DOD	Department of Defense
DOTMLPF	doctrine, organizations, training, materiel, leadership and education, personnel, and facilities
DTMS	Digital Training Management System
FM	field manual
FSX	full spectrum exercise
FY	fiscal year
GNEC	global network enterprise construct
HQDA	Headquarters, Department of the Army
IA	integrating architecture
IMCOM	Installation Management Command
IMT	initial military training
IO	information operations
ITADSS	instrumentation, training aids, devices, simulators, and simulations
ITE	integrated training environment
JMRC	Joint Multinational Readiness Center

JRTC	Joint Readiness Training Center
KPP	key performance parameter
LTP	leader training programs
MCS	mission command systems
MCTC	maneuver combat training center
METL	mission essential task list
MRE	mission rehearsal exercise
MRX	mission readiness exercise
NETCOM	Network Enterprise Technology Command
NSC	Network Service Center
NSC-T	Network Service Center-Training
NTC	National Training Center
O/C	observer/controller
OCONUS	outside the continental United States
OE	operational environment
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OIL	observation, insight, and lesson
OPFOR	opposing force
OPSGRP	operations group
Pam	pamphlet
PME	professional military education
PMESII-PT	political, military, economic, social, information, infrastructure, physical environment, and time
POM	Program Objective Memorandum
POR	program of record
RHN	regional hub node
TADSS	training aids, devices, simulators, and simulations
TC	training circular
TI	training infrastructure
TNOSC	Theater Network Operations and Security Center
TRADOC	Training and Doctrine Command
TSE	training support enterprise
TTP	tactics, techniques, and procedures
U.S.	United States
WIN-T	Warfighter Information Network-Tactical
WMD	weapons of mass destruction

## Section II

### Terms

#### aim points

The benchmarks used by decisionmakers at strategic levels to synchronize and align Army's efforts that enables it to "support global operations with ready land power" (Army Campaign Plan (ACP) 2011).



**Army enterprise network**

A single, secure, standards-based, versatile infrastructure linked by networked, redundant transport systems, sensors, warfighting, and business applications, and data to provide U.S. Soldiers and civilians the information needed, when needed, in any environment to enable full-spectrum operations with joint, coalition, and interagency partners.

**Army force generation**

Structured progression of increased unit readiness over time, resulting in recurring periods of availability of trained, ready, and cohesive units prepared for operational deployment in support of civil authorities and Combatant Commander requirements. A rotational readiness model and process that cycles units through three force pools: reset, trained/ready, and available (ACP 2011).

**automated training management system**

A single, automated training management system used to analyze mission requirements, identify Soldier and unit tasks requiring training, manage the execution of the training, and develop, record, and disseminate feedback. The Army's current automated training management system is called the Digital Training Management System.

**boots-on-ground time**

Time a Soldier or unit spends deployed for a given rotation to combat or operational (non-combat) deployments. Not cumulative (ACP 2010).

**central training database**

Designed to support training in the classroom, home stations, and the CTCs, real-time data is collected from operations, converted into unclassified training scenarios that dovetail with other framework products, and replicates the density and continuity of information and intelligence available to leaders during operations.

**civil support operations**

Domestic operations that address the consequences of manmade or natural accidents and incidents beyond the capabilities of civilian authorities.

**comprehensive approach**

Integrates the cooperative efforts of the departments and agencies of the U.S. Government, intergovernmental and nongovernmental organizations, multinational partners, and private sector entities to achieve unity of effort toward a shared goal.

**Common Framework of Scenarios**

A suite of scenarios selected from the total available inventory (and stored on a shared repository) that meet TRADOC criteria to address leader development, training, education, and capability development.

**concurrent training**

Occurs when a leader conducts a level of training or type of training within another type of training (for example, conducting a staff exercise in conjunction with collective weapons gunnery).

**counterinsurgency**

Military, paramilitary, political, economic, psychological, and civic actions taken by a government to defeat insurgency.

**cyber/electromagnetic contest**

Gaining the advantage, protecting that advantage, and placing adversaries at a disadvantage in cyberspace and in the electromagnetic spectrum.

**deployment**

The movement of forces within operational areas; positioning of forces into a formation for battle; relocation of forces and materiel to desired operational areas.

**dwelt time**

Time a Soldier or unit spends at home station between combat deployments, operational deployments (noncombat), or dependent restricted tours (ACP 2010).

**embedded training**

Training capability hosted in hardware and/or software, integrated into overall equipment configuration (AR 350-1).

**exercise**

Military maneuver or simulated wartime operation involving planning, preparation, and execution, carried out for the purpose of training and evaluation; it may be a multinational, joint, or single service exercise, depending on participating organizations.

**expeditionary force**

Armed force organized to accomplish a specific objective in a foreign country.

**expeditionary mindset**

State of mind where Soldier and leader are ready to deploy on short notice, are confident that they can accomplish any mission; are mentally and physically prepared to deploy anywhere in the world at any time in any environment against any adversary (FM 3-0).

**exportable training capabilities**

A combination of exportable, tailored, CTC program training enablers provided as an additional level of support to enhance the training fidelity of a commander's home station training plan that otherwise could not be achieved.

**framework for Army training and education**

Provides the context for the scenarios that drive leader development, training, and education outcomes; provider and integrator of all training products that are made available through the ITE and that evoke the behaviors necessary to achieve Army training standards.

**full-spectrum operations**

Combination of offensive, defensive, and stability or civil support operations performed simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results.

**Generating Force**

Army organizations whose primary mission is to generate and sustain Operational Army capabilities for employment by joint commanders.

**Global Network Enterprise Construct**

Single, enterprise-level, organizational construct that enables operational and Title 10 activities; centralizes control of the LandWarNet and achieve unity of command and control by migrating loosely affiliated independent networks into a global capability that is designed, deployed, and managed as a single integrated enterprise.

**home station**

The physical location where the majority of a unit's training occurs, where individual skills are honed and unit readiness and cohesion are developed; a unit's permanent location and/or habitual training sites.

**hub and spoke**

Integrated training support network that uses several regional locations (hubs) to electronically and physically distribute mobile and adaptable training support capabilities to various training locations (spokes) that meet the needs of commanders, Soldiers, and trainers in support of ARFORGEN; increases training support efficiencies and provides economies of scale for Army training.

**hub**

Installation or training activity, which acts as a regional or command-based center of gravity for individual and collective home station mission command training.

**hybrid threats**

Diverse and dynamic combinations of two or more regular forces, irregular forces (either conventional or unconventional), criminal elements, or terrorist cells that are distinctly different in nature, but unified in purpose or effect.

**Human Capital Enterprise**

Oversees the lifecycle of Soldiers and Army civilian employees from accession into the Army through transition from the Army; supports execution of ARFORGEN by meeting the Army's personnel requirements; at strategic level, develops and deploys human-capital strategy to advise

the secretary of the Army on Armywide personnel issues and priorities that sustain readiness and preserve the force.

**insurgency**

An organized movement aimed at the overthrow of a constituted government through the use of subversion and armed conflict.

**integrated training environment**

Linkage of selected TADSS, infrastructure, MCS, and knowledge management systems, and a training framework to approximate the conditions of the OE for training and education for full-spectrum operations in operational, institutional, and self-development training domains.

**integrated warfare**

The conduct of military operations in any combat environment wherein opposing forces employ nonconventional weapons in combination with conventional weapons.

**integrating architecture**

The technical how-to that governs information exchange between and among all of the respective TADSS and battle command system, including protocols, specifications, standards, interfaces, databases, hardware, and software requirements to allow the construction of networks which enable the collection, retrieval, and exchange of information.

**interoperability**

The ability to operate in synergy in the execution of assigned tasks; condition achieved among communications-electronics systems or items of communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and or their users

**irregular forces**

Armed individuals or groups who are not members of the regular armed forces, police, or other internal security forces.

**joint force**

A general term applied to a force composed of significant elements, assigned or attached, of two or more Military Departments, operating under a single joint force commander.

**knowledge**

Information analyzed to provide meaning and value or evaluated as to implications for the operation; comprehension gained through study, experience, practice, and human interaction that provides the basis for expertise and skilled judgment.

**knowledge management**

The art of creating, organizing, applying, and transferring knowledge to facilitate situational understanding and decisionmaking; supports improving organizational learning, innovation, and performance; ensures that knowledge products and services are relevant, accurate, timely, and usable to commanders and decisionmakers.

**live, virtual, constructive, and gaming**

The environments wherein training and education can be conducted.

**LandWarNet**

The Army's portion of the global information grid.

**Material Enterprise**

Responsible for materiel management from concept to combat; brings together all organizations and stakeholders involved in providing materiel solutions for Soldiers; incorporates all the materiel life cycle functions to include research, development, acquisition, testing, distribution, supply, maintenance, industrial base operations and disposal to provide Army leadership with information and analysis to enable sound decisionmaking.

**mission**

The task, together with the purpose, that clearly indicates the action to be taken and the reason; therefore, a duty assigned to an individual or unit; a task.

**mission command**

The exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander's intent to empower agile and adaptive leaders in the conduct of full-spectrum operations; commander-led and blends the art of command and the science of control to integrate the warfighting functions to accomplish the mission.

**mission command system**

Characterized as a collection or grouping of programs of record and systems of record (a system of systems approach) as a set of functional software applications, which empower tactical commanders to execute operations more effectively.

**mission-essential task**

A collective task a unit must be able to perform successfully to accomplish its doctrinal or directed mission.

**mission-essential task list**

A compilation of collective mission-essential tasks an organization must perform successfully to accomplish its doctrinal or directed missions; (unless there is a specific reason to list full-spectrum operations, then the term METL is understood to be full-spectrum operations METL).

**mission focus**

The process used to derive training requirements from a unit's core capabilities as documented in its authorization document or from a directed mission (FM 7-0).

**mobilization**

The act of assembling and organizing national resources to support national objectives in time of war or other emergencies; process by which the armed forces or part of them are brought to a state of readiness for war or other national emergency.

**multinational operations**

A collective term to describe military actions conducted by forces of two or more nations, usually undertaken within the structure of a coalition or alliance.

**multiechelon training**

A training technique that allows for the simultaneous training of more than one echelon on different or complementary tasks.

**nongovernmental organization**

A private, selfgoverning, not-for-profit organization dedicated to alleviating human suffering; and or promoting education, health care, economic development, environmental protection, human rights, and conflict resolution; and or encouraging the establishment of democratic institutions and civil society.

**operational theme**

The character of the dominant major operation being conducted at any time within a land force commander's area of operations; helps convey the nature of the major operation to the force to facilitate common understanding of how the commander broadly intends to operate.

**operational training domain**

The training activities organizations undertake while at home station, at MCTCs, during joint exercises, at mobilization centers, and while operationally deployed.

**operations group**

Foundational structure of the CTC program and a critical element of every CTC event; OPSGRP headquarters functions as the rotational unit's higher headquarters.

**redeployment**

Transfer of forces and materiel to support another joint force commander's operational requirements, or to return personnel, equipment, and materiel to home and/or demobilization stations for reintegrating and/or outprocessing.

**red teaming**

Structured, iterative process executed by trained, educated, and practiced team members that provides commanders an independent capability to continuously challenge plans, operations, concepts, organizations, and capabilities in the context of the OE from the Army's partners' and adversaries' perspectives.

**regeneration**

Rebuilding of a unit through large-scale replacement of personnel, equipment, and supplies, including the reestablishment or replacement of essential command and control and the conduct of mission-essential training for the newly rebuilt unit.

**regional hub node**

Provides global networking capability via satellite to fiber interface connection pathways.

**Regional Training Center**

U.S. Army Reserve regionalized training locations established to provide premobilization training on theater specific individual readiness tasks and Army Warrior training skills to Active Reserve units.

**Services and Infrastructure Core Enterprise**

Services of six Army direct reporting units collaboratively integrated into one core enterprise for strategic direction and efficient management; provides essential services, infrastructure, and operational support at the right place and at the right time in support of an expeditionary Army, using ARFORGEN aim points.

**spoke**

Installation or training activity with smaller scale home station mission command training capabilities and infrastructure based on its training throughput or mission that rely on associated hub for low-density individual training support, some distributed simulation and stimulation support, and contract management.

**synchronization**

The arrangement of military actions in time, space, and purpose to produce maximum relative combat power at a decisive place and time; application of intelligence sources and methods in concert with the operational plan to ensure intelligence requirements are answered in time to influence the decisions they support.

**task**

A clearly defined and measurable activity accomplished by individuals and organizations.

**task group**

A set of collective tasks necessary to accomplish a specific part of a mission-essential task.

**terrorism**

The calculated use of unlawful violence or threat of unlawful violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological.

**terrorist**

An individual who commits an act or acts of violence or threatens violence in pursuit of political, religious, or ideological objectives.

**training infrastructure**

The means or the physical enabler for the IA and includes facilities, power, communications assets, the training support system, personnel and equipment, and the management structure.

**training support**

The entire spectrum of products, services, and facilities, that provide the networked, integrated, interoperable training support necessary to enable operationally relevant, full spectrum, joint,

interagency, intergovernmental, and multinational training for Soldiers, units, and DA civilians anytime, anywhere.

**Training Support Enterprise**

A process to manage the TRADOC core function of training support across all training support programs and training domains through an enterprise approach to operationalize TRADOC Pam 525-8-3 and the ITE.

**uncertain environment**

Operational environment in which host government forces, whether opposed or receptive to operations that a unit intends to conduct, do not have totally effective control of the territory and population in the intended operational area.

**unconventional warfare**

A broad spectrum of military and paramilitary operations, normally of long duration, predominantly conducted through, with, or by indigenous or surrogate forces who are organized, trained, equipped, supported, and directed in varying degrees by an external source. It includes, but is not limited to, guerrilla warfare, subversion, sabotage, intelligence activities, and unconventional assisted recovery.

**unified action**

The synchronization, coordination, and or integration of the activities of governmental and nongovernmental entities with military operations to achieve unity of effort.

**Section III**

**Special abbreviations and terms**

**deployed training capability**

Enables units to maintain full-spectrum operations skills and develop skills required by the OE.

**human terrain**

Socioculturally definable populations within an area of operations; the cultures, perceptions, values, beliefs, interests, and decisionmaking processes of individuals and groups that exist in the OE comprise the human terrain knowledge; human terrain knowledge provides the sociocultural basis for collection and analytical support to the commander's military decisionmaking process, both in planning and execution.

**low overhead**

Low overhead, reduced overhead, or reduced training overhead refers to training capabilities at home station, the CTCs, and while deployed that serve to reduce the workload in time and effort that unit trainers, training managers, S3s, and other training developers must invest in preparing for training events; capabilities that reduce overhead or reduce training overhead will allow these individuals to devote a greater portion of their time and effort into planning, execution, and assessment of training events.



**meshed network**

Devices are connected with many redundant interconnections between network nodes; in full mesh topology, each node (workstation or other device) is connected directly to each of the others.

**mobile training device**

Provide access to learning content, courseware, and career data, as well as performance support applications; can be used to transmit information that must be captured, analyzed, and important lessons rapidly disseminated to those who need to know and can take action.

**persistent**

Capabilities resourced and available for utilization on a 24 hour, 7 day a week period (24/7).

**subject matter expert**

The definitive source of knowledge, technique, or expertise in a specific subject who understands, articulates, implements best practices related to their area of expertise.

**training brain**

A dynamic set of capabilities that link systems, networks, and data repositories that permits the representation (and replication) of the OE variables and their interactions to present the appropriate level of complexity for training, education, leader development and capabilities development.

**training capabilities**

Enabled ability to achieve a desired training effect under specific standards and conditions through combinations of ways and means to perform specified tasks or to develop specified skills (weapons qualification, combined arms live fire operations, constructive replication of lateral and higher units, as examples).

**training enabler**

Training resources that specifically enable training or enhance training realism to create the appropriate training conditions such as replication of different levels of fidelity of the operational environment; create or demonstrate the properties, qualities, or characteristics necessary to achieve specific training capabilities (range complexes, military operations in urban terrain sites, TADSS, virtual, constructive, and gaming environments, as examples).

**training fidelity**

The complexities (fidelity) in terms of conditions and resource requirements (tools) needed to replicate the OE for training (The Operational Environment Master Plan 2009).

**training resource**

Available means which could be used to execute training activities generally described in terms of human, physical, or financial means (support personnel, funding, land).

**wisdom of the crowd**

The concept of the collection or aggregation of information in groups, resulting in decisions by a leader, that are often better than could have been made by any single member of the group; acquiring information from a group of people vice a single person to render a decision.

## Endnotes

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<sup>1</sup> ARFORGEN refers to the current terminology for what is described in TRADOC Pam 525-3-0 and TRADOC Pam 525-3-1 as a “rotational, cyclical readiness model” designed to provide forces to meet national security guidance and defend national interests.

<sup>2</sup> Blurring the distinction between institutional and operational training describes the future learning environment where the Institutional Army will reach forward to the Operational Army to capture relevant, emerging requirements and quickly adapt training and the Operational Army will reach back to Institutional subject matter experts and collaborative operational lessons forums to prepare for operations or inform deployed training. Leaders, Soldiers, and civilians will have persistent access to critical information and collaborative forums through personal communications devices no matter where they are located. A common operational environment and the resulting Common Framework of Scenarios will provide continuity and consistency from institutional to deployed training environment.

<sup>3</sup> Once the current rewrite of FM 3-0 is published, the term battle command is officially rescinded from Army doctrine. It will no longer appear in any revised Army field manuals. There is current ongoing discussion of the impact on such organizational names as Battle Command Training Program, but the bottom line is that battle command is an archaic term that has had different definitions over some years. TRADOC Pam 525-3-3 exclusively utilizes the term mission command in place of battle command. Terms eliminated: command and control, command and control systems, command and control warfighting function, battle command information engagement, and command and control warfare.

<sup>4</sup> Currently, readiness is measured in the traditional areas defined by AR 220-1, C-level assessments: personnel (P), equipment and supplies (S) on-hand/available, equipment readiness/serviceability (R), and unit training proficiency (T). The highest level of readiness in a category is (1). Efforts are on-going to redefine the measures in a manner that more accurately allows unit readiness to be described as it relates to the ARFORGEN process.

<sup>5</sup> Ibid.

<sup>6</sup> General Martin E. Dempsey, Commanding General, TRADOC.

<sup>7</sup> FM 7-0.

<sup>8</sup> Ibid.