

Unclassified

The Enhancing Realistic Training White Paper

United States Army Combined Arms Center

Enhancing Realistic Training White Paper

Delivering Training Capabilities for Operations
in a Complex World

26 January 2016

Foreword

From the Commanding General Combined Arms Center, Fort Leavenworth

The Army has always endeavored to conduct realistic training. However, veteran Soldiers and leaders returned to home stations following operations in Iraq and Afghanistan realizing that the legacy training methodologies and capabilities do not replicate the complexities or challenges they encountered during a decade of conflict. Our Soldiers and leaders realize the environment they will encounter in future combat is growing in complexity and unknowns and they are demanding realism in training.

Over the next decade, the Army will make modifications to the way it organizes, mans, and equips the force of 2025 and beyond to conduct operations in a complex world as described in the *Army Operating Concept*. The Army must also make modifications to the way it trains the force to maintain the decisive edge in its most valuable resource – its people. Realistic training is one of the innovative approaches described in the *Army Human Dimension Strategy* to develop the cognitive, physical, and social components of our Soldiers and Leaders. The Army will enhance realistic training by transforming the way it currently develops and delivers training and education. Training for future operations and threats requires an environment that is easily adaptable without significantly increasing the resource requirements. We should employ capabilities and methodologies that accelerate training by enabling Soldiers and leaders to learn faster, and retain skills longer. Most importantly, the training environment must provide, to the fullest extent possible, representative human interactions, meaningful social-cultural situations, superior target engagements, and improved casualty assessments.

This white paper describes an operational design for how the Army will evolve and adapt current training capabilities to enhance realism in training. It provides the conceptual foundation for a capabilities based assessment that will identify key required capabilities, assess critical capability gaps, and propose potential solutions needed to support physically and intellectually challenging training. I am confident that our analysis will set the conditions for building cohesive teams of trusted professionals prepared to operate and win in a complex world.



Robert B. Brown
Lieutenant General, U.S. Army
Commanding

Contents

Executive Summary	1
Realistic Training Vignette.....	1
Problem Statement	2
Introduction: What is Realistic Training?.....	3
Purpose	3
An Operational Environment for Realistic Training	4
Vision	5
Previous Work Informing this Paper.....	6
Operational Design: Central Idea of “Enhancing Realistic Training”	8
Supporting Lines of Effort (SLOE) for Enhancing Realistic Training	8
Evolution of Training	11
Conclusion	12
Recommendations	12
Appendix A: Annotated References	A-1
Appendix B: Proposed Tasks/Focus Areas for Analysis	B-1
Appendix C: High-Risk Capability Gaps.....	C-1

White Paper

Executive Summary

This White Paper is a concept document that supports the Army Operating Concept, (AOC), Human Dimension (HD) Strategy, and the Army Learning Concept for Training and Education (T&E) by presenting an operational design to inform subsequent capabilities analyses, and development and integration efforts to enhance realistic training. The operational design addresses the problem statement through actions along three supporting lines of effort (SLOE) that address both HD LOE # 2 “Realistic Training” and the operational environment and required capabilities described in the AOC, particularly Army Warfighting Challenge (AWFC # 8) – Enhance Realistic Training. The three SLOEs with their supporting objectives and critical focus areas/tasks for analysis will inform the actions across the training and capabilities development communities to provide enhanced realistic training capabilities that build cohesive teams of trusted professionals prepared to operate and win in a complex world. The following vignette helps to illustrate the challenges faced by the Army to provide a more realistic training environment.

Realistic Training Vignette

MAJ Jordan, an experienced multi-tour combat veteran is the newly assigned 2nd Infantry Battalion S-3. As such, he is planning a battalion level home-station training event for the Mission Essential Task List (METL) task of “Conduct an Attack.” The event must focus on a number of collective tasks, battle drills, and individual tasks including:

- Plan an Attack at Battalion Level
- Conduct an Assault at Company Level
- Conduct an Assault at Platoon Level
- Treat Casualties
- Evacuate Casualties
- Execute Fire Support
- Synchronize Close Air Support

In preparing for the training event, MAJ Jordan faces some critical challenges in making the training as realistic and demanding as possible. First, he must determine if there is an option to represent the joint forces, civilians on the battlefield, and a complex urban environment in the appropriate fidelity. Does the battalion or higher headquarters have the ability to provide an opposing force with overmatch in selected niche capabilities without significant external support? The battalion will require the ability to integrate mission command, fire support, and close-air-support with the appropriate simulated effects. MAJ Jordan also recognizes the need to add more realism to casualty

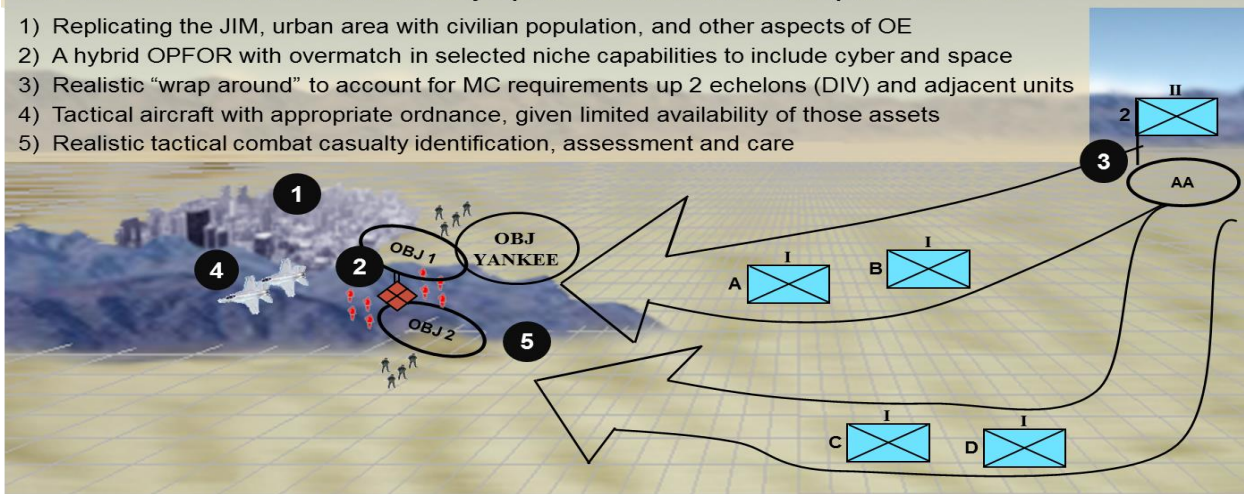
identification, assessment, and care under simulated battlefield conditions. In short, how can these challenges be addressed in training events to better replicate, with the highest level of fidelity, the complexity and rigor that MAJ Jordan knows is inherent in an actual operational environment in order to meet training standards?

MAJ Jordan is also concerned about how to adequately engage, motivate, and challenge the battalion’s Soldiers and leaders during this training event – especially those with combat experience. Does the supporting infrastructure adequately deliver/provide the training enablers and products required for realistic training? MAJ Jordan knows the Army must enhance current training capabilities to better approximate the physical and intellectual rigor faced by Soldiers in recent combat and provide the tools and processes needed for more effective and efficient unit training management.

Concept of Operation: The 2nd IN BN must conduct an attack in order to clear the mountainous area and foothills overlooking Mega City. Objective 1 requires A & B Co. to block enemy forces from fleeing to Mega City and occupying structures. Objective 2 requires C & D Co. to destroy or push enemy forces deeper into the mountain range. Fire support and close-air-support are available via C Co. FiST element with JTAC attached.

The BN S-3, a combat veteran, has identified key shortfalls to train for tactical and technical proficiency in these tasks under conditions that more accurately represent the stressors and complexities of the OE:

- 1) Replicating the JIM, urban area with civilian population, and other aspects of OE
- 2) A hybrid OPFOR with overmatch in selected niche capabilities to include cyber and space
- 3) Realistic “wrap around” to account for MC requirements up 2 echelons (DIV) and adjacent units
- 4) Tactical aircraft with appropriate ordnance, given limited availability of those assets
- 5) Realistic tactical combat casualty identification, assessment and care



Problem Statement

How does the Army enhance realism in training to build cohesive teams of trusted professionals, trained and ready across the Range of Military Operations (ROMO), who can thrive and win in the ambiguity and chaos of the strategic environment of 2025 and beyond?

“Current training is not realistic, demanding, nor challenging enough to properly prepare our forces to improve and thrive in ambiguity and chaos.”

-- LTG Robert B. Brown, CG CAC

Introduction: What is Realistic Training?

The Chief of Staff of the Army (CSA) has designated three priorities for the Army: Readiness, Future Army, and Take Care of the Troops. Enhancing realistic training directly supports the top two priorities of **Readiness** (current fight) and **Future Army** (future fight). “We will always be ready to fight today, and we will always prepare to fight tomorrow. We will do what it takes to build an agile, adaptive Army of the future.”

Realistic training is the deliberate practice of individual and collective tasks to enable tactical and technical proficiency that support mission accomplishment in a training environment that approximates the operational environment (OE) in both sufficient complexity and substance. According to the Army HD Strategy, realistic training incorporates the human, cultural, and political aspects of armed conflict to reflect complex environments of persistent danger. The strategy states “Realistic training develops cohesive teams of Army Professionals who can improve and thrive in ambiguous, complex, and challenging situations.” Realistic, effective training focuses on improving individual/team performance and decision-making.

In order to win in the complex world, we must enhance realistic training so that we train not only technical and tactical proficiency but also provide a training environment that has a robust representation of the complex interaction of the OE variables and poses physical, mental and ethical challenges to the training audience. Enhancing realistic training for Force 2025 & Beyond requires evolving training capabilities across the doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy (DOTMLPF-P) imperatives.

Purpose

This white paper presents an operational design for how the Army will develop and evolve capabilities to **enhance realistic training to prepare our forces to win in a complex world**. A "complex" world is one that is unknown, unknowable, and constantly changing. The ability for the Army to react to the unknown and unknowable drives the need for agile and adaptive training capabilities. This white paper presents the vision and ideas necessary to support Strategic Objective # 2 **Realistic Training** in the Army HD Strategy within the context of the conditions and AWFCs described in the AOC. As such, this document provides the conceptual foundation for further analysis, which will identify key required capabilities, assess critical capability gaps, and propose potential DOTMLPF-P solutions needed to support Army Commanders' ongoing pursuit of the physically and intellectually challenging training required to prepare and sustain ready forces. This white paper and subsequent analysis will inform not only capabilities development, materiel development, training development, and programming, but also provides a means for reflecting on how the Army is postured to provide realistic training for the future OE as envisioned in the AOC.

An Operational Environment for Realistic Training

The world around us is constantly changing, defined by the unknown and unknowable. In previous generations, Soldiers prepared for war through the repetition of basic tasks. In future conflicts, we must add complexity and ambiguity to the training environment. Very capable adversaries will continue to challenge United States (U.S.) interests globally, while rising military powers will work to advance their regional and global interests. Highly adaptive and innovative enemies will use affordable technologies to create unexpected, possible lethal effects. Threats may include regular and irregular forces, criminals, terrorists, and even hybrid mixtures that may not abide by the laws of war or our national values – but our Soldiers and leaders must.

Today, even the most junior Soldiers must be critical thinkers and have knowledge in areas as diverse as cross-cultural awareness and digital communications networks, while maintaining basic skill competencies, executing all within the rules of engagement. The strategic consequences of mistakes have grown. Anyone can broadcast to a global audience in near real time. Social media and other emerging means of communication will allow adversaries to influence American and world opinion while enabling small groups to mobilize people and resources in ways that can quickly constrain or disrupt military operations. The proliferation of information will also challenge Soldiers, leaders, and units in the fight for data while avoiding the risk of “paralysis through analysis.”

Training and preparation against these changing conditions will drive adaptation and flexibility within the Army to ensure U.S. forces prepare for any potential mission within any strategic OE. The Decisive Action Training Environment (DATE) is an example of an initiative that will help set the scenario conditions necessary for realistic training. The Centers of Excellence (CoE) and the Combat Training Centers (CTC) have embraced the DATE to describe a composite of hybrid-threats that is representative of the current and future OE. This type of capability provides a framework for the construction of training scenarios that become the context or backdrop for specific training events. DATE scenarios help to explore the complex and ever-changing combination of conditions, circumstances, and influences that could affect military operations across political, military, economic, social, information, infrastructure, physical environment, and time (PMESII-PT) variables.

As the Army looks to the future, it must develop and evolve training capabilities that more realistically depict the OE to better support realism in training and enable Soldiers, leaders, and units to prepare for and adapt to the following characteristics of the future OE as described in the AOC:

- **Increased velocity and momentum of human interactions and events:** The speed of information travel enabled by the internet and social media will amplify and accelerate interactions and domestic opinions at home and abroad,

influencing people, governments, militaries, and threats. Access to information allows organizations to mobilize people and resources locally, regionally, and even globally to seize the initiative and control the narrative.

- **Potential for overmatch:** Potential enemies will be able to invest in technologies that undermine the U.S.'s ability to achieve and maintain military overmatch.
- **Proliferation of weapons of mass destruction (WMD):** The risk of a nation losing control of nuclear or other WMD weapons increases as extremist organizations incite civil wars and establish control of territories, populations, and weapons, posing increased risk to the U.S. and international security.
- **Spread of advanced cyberspace and counter-space capabilities:** State and non-state actors will invest in capabilities to protect their own access to networks and information while disrupting, degrading, destroying, or manipulating our access to information and information systems. This will force Army units to operate with degraded communications and reduced access to cyber and space capabilities.
- **Demographics and operations among populations, in cities, and in complex terrain:** Urbanization continues to rise as cities and states struggle to provide adequate security, employment, infrastructure, and services. The dissatisfaction among urban populaces could lead to the development of safe havens and support bases for terrorists, insurgents, or other threats. Our adversaries will choose to operate among the people in order to avoid direct contact with the U.S. military.

Vision

The Army will provide enhanced realistic training capabilities that build cohesive teams of trusted professionals prepared to operate and win in a complex world.

Enhanced realistic training capabilities will provide a training environment that represents many of the conditions logically expected on future battlefields based on observed OE trends. Training events must be complex, adding multiple challenges for Soldiers, leaders, and units to consider and overcome. The training environment must represent the physical and cognitive stresses of combat and its associated moral and ethical challenges. Training must incorporate the human, social-cultural, and political aspects of conflict, realistically replicate the joint and combined arms effects, and the capabilities and limitations of Army ground forces and Unified Action Partners (UAP).

The vision for enhancing realistic training directly supports elements of the Army's

Strategic Vision, the Army Operating Concept, the (draft) Army Training Strategy, and the Army Human Dimension Strategy. In order to achieve this vision, subsequent actions from this white paper should inform training support modernization efforts through the: Army Capability Portfolio Reviews (CPR), Non-System Training Aids, Devices, Simulators, and Simulations (TADSS) portfolio in the Long-range Investment Requirements Analysis (LIRA), Science and Technology portfolio, and future training capabilities development efforts.

“The Army does not buy things to fight; we develop capabilities to win in a complex world that is always changing, which influences a different kind of leader development model, a different kind of training, and a different way of building the Army.”

-- GEN David G. Perkins

Previous Work Informing this Paper

The Army Operating Concept serves as a starting point to drive Army force development and highlights the need to make training more realistic and challenging. The AOC poses the question, how does the Army “Win in a Complex World.” The AOC states, “The Army cannot predict who it will fight, where it will fight, and with what coalition it will fight. To win in a complex world, Army forces must provide the Joint Force with multiple options, integrate the efforts of multiple partners, operate across multiple domains, and present our enemies and adversaries with multiple dilemmas.” The AOC recognizes the importance of highly adaptive teams of professionals who improve and thrive in uncertainty and chaos.

To adequately support the AOC and evolving functional concepts, the Army must improve its current and programmed training solutions. Our current training capabilities are resource intensive: Legacy training systems are capable but unsustainable, are difficult to integrate and costly to maintain and operate. Major collective training events often require extensive external manpower support and preparation time, and facilities operations and maintenance costs continue to rise. Modeled on historical concepts and threats, our current training capabilities do not adequately replicate the changing OE and are no longer keeping-up with technical advances.

The 2015 Human Dimension (HD) Strategy lists ***Realistic Training*** as one of three HD Lines of Effort (LOE) to develop cohesive teams of Army professionals who can thrive in ambiguous, complex, and challenging situations. Realistic, effective training improves teams. Realistic training efforts will apply innovative processes and technologies to improve learning, memory, reasoning (critical and ethical), decision making, planning, implementation, assessment (to gain situational understanding), and the ability to rapidly adjust. Additionally, realistic training efforts will help develop ways

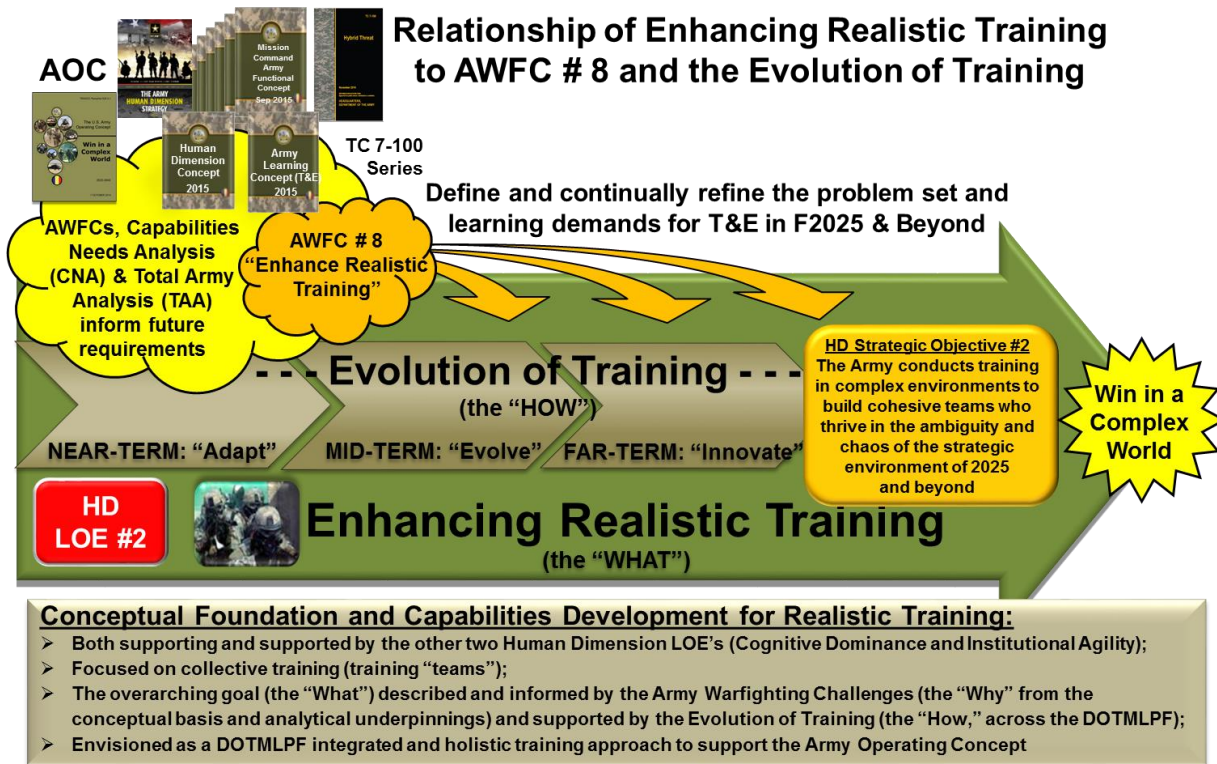
to assess training methods, and provide accessible, adaptable, effective, efficient, and low-cost training capabilities. The HD Strategy designates Realistic Training as HD LOE # 2 and identifies four supporting objectives (SO):

1. **Accelerated Training:** Accelerate team learning through innovative training management and improved training capabilities that immerse units in complex and realistic environments, increasing [training] opportunities and decreasing required resources.
2. **Team Building:** Provide training guided by mission command to forge diverse individuals and organizations into cohesive teams based on mutual trust and unity of effort.
3. **Complex Training:** Integrate all aspects of training support and development, including a synthetic training environment that replicates complex reality, enabling geographically dispersed teams to train together.
4. **Team Performance Research and Assessment:** Improve training and performance of Army teams through continuous research and assessment of training methods, technologies, and team dynamics.

Realistic training also touches the other LOEs in the HD Strategy, primarily HD LOE # 1 **Agile and Adaptive Leaders** (formerly Cognitive Dominance). This LOE focuses on improving the individual through training, education, and experience in order to optimize cognitive, physical, and social abilities to achieve advantage over a situation or adversary. All three components are necessary for effective decision-making required in the future strategic environment. The HD Strategy lists five SOs under LOE # 1. Supporting objective 5, Human Performance Research and Assessment, provides specific linkage to Realistic Training through the continuous research, development, and assessment of training capabilities.

The Army Warfighting Challenges (AWFC) identified in the AOC provides a list of twenty, first-order capabilities the Army must possess. The AWFCs provide an analytical framework to integrate efforts across warfighting functions while collaborating with key stakeholders in Army force development. The AWFCs look across the DOTMLPF-P to help derive the AOC's required capabilities. Aspects of realistic training are addressed in nearly all twenty AWFCs, but are focused on AWFC # 8 Enhance Realistic Training: "Train Soldiers and leaders to ensure they are prepared to accomplish the mission across the ROMO while operating in complex environments against determined, adaptive enemy organizations." The learning demands for enhanced realistic training also encompasses all activities related to the development of cohesive teams within a culture that practices mission command, adapting to ambiguous situations through the decentralized execution of commander's intent.

The below graphic describes the key components and relationships of the previous work informing this effort, including the earlier discussion of the OE.



Operational Design: Central Idea of "Enhancing Realistic Training"

The Joint Operational Design Handbook states, "Operational design is a journey of discovery, not a destination." This is exactly the methodology to apply to the concept of Enhancing Realistic Training. The operational design for realistic training intends to achieve the four SOs of HD LOE # 2. It provides an approach to a problem set that continues to evolve as the complex world continues to evolve and links key tenets of the AOC, most notably Initiative, Adaptability, and Innovation. This white paper and subsequent analysis will follow a path based on an operational design with three Supporting Lines of Effort (SLOE). The SLOEs will help shape the analysis required to enhance realistic training that enables Soldiers, leaders and units to train the way they fight, with improved complexity and realism and the ability to adapt training as the mission, threat, or OE changes.

Supporting Lines of Effort (SLOE) for Enhancing Realistic Training

The Army Concept Framework and TRADOC's Capabilities Needs Analysis (CNA) provide the framework to inform DOTMLPF-P analysis in support of Army capabilities developments. However, the current set of required capabilities and capability gaps

identified through these efforts do not provide the specificity to achieve the vision in this white paper. The white paper identifies three SLOEs along with their associated objectives to drive further analysis and assessment: 1) Training Environment, 2) Training Management and Assessment, and 3) Training Infrastructure.



The three SLOEs and their supporting objectives described below will provide the framework to identify critical tasks for analysis, capability gaps, and recommended solution approaches to meet the challenges of enhancing realistic training. Appendix B and C provide the proposed tasks/focus areas for analysis and capability gaps addressed in CNA and previous analyses, aligned to the below SLOEs.

SLOE # 1 (Training Environment): The training environment SLOE is the physical location "Where Soldiers and Units Train" for technical and tactical proficiency and the mission scenario location that represents a complex and ambiguous operational environment. The physical location may be a classroom, home station training area, CTC, CoE, motor pool or while deployed. This SLOE includes the operational, institutional, and self-development domains and the Live, Virtual, Constructive, and Gaming environments. The training environment must enable tough, ethically challenging, and rigorous training that not only replicates as closely as possible the conditions of the complex OE, but also the physical stressors of combat (human domain) and the human dimension aspects.

Human domain is the physical, cultural, psychological, and social environments that influence human behavior. The success of any military operation or campaign in a population-centric conflict depends on the ability to identify and influence relevant populations. The human dimension includes biological attributes, cognitive abilities, motivational techniques, social expectations, leadership abilities, physical characteristics and physical abilities of an individual or organization. The realistic training environment should enable the Army to “train as it will fight” by conducting multi-echelon and concurrent training, with improved complexity, realism, and the ability to adapt training as the mission, threat, or OE changes.

Supporting Objective: A Training Environment that approximates the stresses of combat and aspects of the OE (across PMESII-PT) to train Soldiers, leaders, and units to operate under conditions of uncertainty across the ROMO.

SLOE # 2 (Training Management and Assessment): The training management SLOE is “What enables commanders and leaders to apply the operations process to build and maintain training readiness.” Training management includes the processes and tools by which Army commanders and leaders plan, prepare, execute, and assess training of Soldiers and units in accordance with the Army training model. After more than a decade of prescribed and delivered training, the Army must now provide the capabilities for commanders and leaders to reassume their responsibilities to train their Soldiers and units.

The operations process provides a common framework for guiding commanders and leaders as they lead and manage unit training.¹ When practical, the tools used in training should be the same tools used to execute an operational mission and training management tools should mimic the operations process. Effective unit training results from a sound analysis of the unit’s mission, identifying critical and non-critical tasks required to accomplish that mission, and the availability and management of training resources and enablers to achieve training requirements. Training management is essential to prepare units for all contingencies and missions across the ROMO.

Supporting Objective: Capabilities that enable commanders and leaders to plan, prepare, execute, and assess training to build, maintain, and objectively report readiness.

SLOE # 3 (Training Infrastructure): The training infrastructure SLOE is “What enables the training environment and training management and assessment.” The training infrastructure includes the facilities, training land, ranges, networks and other

¹ Army Doctrine Reference Publication (ADRP) 7-0, *Training Units and Developing Leaders*, Aug 2012, Chapter 3 Training Management

enablers available at the point of need to conduct Soldier and unit training. Training Support System (TSS) services are included in the training infrastructure described as the manpower, range operations and support, role players, management, and other support services that enable the preparation, distribution, and sustainment of training support. The TSS products include the training information infrastructure (TII), TADSS, and other TSS sponsored training systems that enable training at the point of need.

Supporting Objective: Develop and/or evolve the capabilities that provide the supporting infrastructure for SLOE # 1 and # 2.

Evolution of Training

The Evolution of Training (EoT) is the training community's process of continuous improvement of legacy training systems, from simpler yet resource-intensive systems, to higher, more complex but low-overhead training systems required in the future. It is the training modernization effort for Force 2025 & Beyond that supports the AOC and the AWFC # 8 Enhance Realistic Training. The EoT effort, led by the US Army Combined Arms Center – Training (CAC-T) in collaboration with the CoEs and other members of the training community, focuses on adapting, evolving, and fielding innovative capabilities to train Soldiers, leaders and units to thrive in conditions of ambiguity and chaos. The intent of the EoT is to address gaps in the immediate future (ready and available capabilities), near-term (adapting current capabilities and future capabilities ready for testing), mid-term (evolving capabilities requiring further S&T research), and far-term (innovation approaches or capabilities still in the concept phase). This approach will provide DOTMLPF-P solutions that:

- Are Agile and Adaptive
- Support repetition and complexity
- Develop cognitive functions
- Are low overhead and affordable
- Available at the point of need
- Innovative and immersive
- Accelerates training
- Build cohesive teams
- Joint, Special Operations Forces (SOF), and Coalition interoperable
- Are provided via an Agile, responsive and Pro-Active process

Conclusion

Although we will continue to engage globally, the Army is in transition preparing to meet the future challenges of a complex and uncertain world. With transition comes the requirement for training agility and adaptability necessary for Army unit readiness across the ROMO. The difficulty of operating in an environment characterized by an enormous flow of information and constant change will become more manageable with employment of learning science, experience, and the application of realistic training.

Recommendations

The CAC-T will establish an Enhancing Realistic Training Work Group of stakeholders to conduct an accelerated Capabilities Based Assessment (CBA) to identify the critical gaps and potential solutions (across the DOTMLPF-P) for inclusion in current or near-term capabilities development efforts and/or assessment in the Army's Campaign of Learning and Force 2025 & Beyond Maneuvers in FY17 – FY20.

The Army must take an integrated and collaborative approach to achieve the vision described in this paper and engender the creativity and innovation of our Soldiers to focus their energy, passion and professionalism. Training must be complex with multiple factors for units to consider and overcome. Combatant commanders will use Army formations from the squad/staff section through Corps level so Army training and training support enablers must be scalable to different size formations. Army training must also have surge capacity to meet mobilization needs.

“We will always be ready to fight today, and we will always prepare to fight tomorrow. Our most valued assets, indeed, the nation's most valued assets, are our Soldiers and our solemn commitment must always be to never send them into harm's way untrained, poorly led, undermanned, or with less than the best equipment we can provide.”

-- GEN Milley, CSA

Appendix A: Annotated References

CJCSN 3500.01, *2015-2018 Chairman's Joint Training Guidance*, 30 Oct 2014.

CJCSI 3170.01H, *Joint Capabilities Integration & Developments System*, 10 Jan 2012.

Capstone Concept for Joint Operations: Joint Force 2020, 10 Sep 2012.

Planner's Handbook for Operational Design, Joint Staff, J-7, Version 1.0, 7 Oct 2011.

Army Regulation (AR) 5-22, *The Army Force Modernization Proponent System*, 6 Feb 2009 (RAR002, 25 Mar 2011).

Army Regulation 71-9, *Warfighting Capabilities Determination*, 28 Dec 2009.

U.S. Army Training and Doctrine Command (TRADOC), *Capabilities-Based Assessment (CBA) Guide*, Version 3.1, 10 May 2010.

TRADOC Regulation 71-20, *Concept Development, Capabilities Determination, and Capabilities Integration*, 28 Jun 2013.

TRADOC PAM 71-20-3, *The U.S. Army Training and Doctrine Command Concept Development Guide*, 6 Dec 2011.

TRADOC PAM 525-3-1, *The US Army Operating Concept (AOC)*, 31 Oct 2014.

TRADOC Pam 525-3-7, *The US Army Human Dimension Concept*, 21 May 2014.

TRADOC PAM 525-8-2, *Army Learning Concept for Training and Education (ALC for T&E)*, Version 0.71, Draft, 23 Jul 2015.

Army Warfighting Challenge # 8, Enhance Realistic Training, Accessed at https://www.milsuite.mil/wiki/AWFC_FY15/8_Enhance_Realistic_Training

Memorandum, Headquarters, Department of the Army (HQDA) G-3/5/7, DAMO-CIC, 4 Jun 2015, subject: *Interim Policy Memorandum – Capabilities Determination conducted through Integrated Capabilities Development Teams (ICDT)*.

Army Human Dimension Strategy, 12 Jun 2015.

TRADOC G2, *Operational Environment to 2028: The Strategic Environment for Unified Land Operations*, Aug 2012.

Information Paper, *Army Warfighting Challenge (AWFC) 8 (Enhance Training)*, 10 Aug 2015.

White Paper, *Army Vision – Force 2025*, 23 Jan 2014

White Paper, *Force 2025 Maneuvers*, 23 Jan 2014

Capabilities Needs Analysis (CNA) FY 15; including Army Training and Education Functional Assessment

Appendix B: Proposed Tasks/Focus Areas for Analysis

Army concepts and TRADOC's CNA process helped to identify the following Proposed Tasks/Focus Areas for Analysis for enhancing realistic training. The proposed tasks identify linkage(s) to the Army Concept Framework and any supporting efforts, such as the HD Strategy. Additionally, the proposed tasks listed by ERT SLOE will help organize and shape further analysis and assessment.

SLOE # 1 (Training Environment) Proposed Tasks:

1.1 Provide training **scenarios, capabilities, and venues that increase human domain interaction and events** to help improve critical/creative thinking and decision-making.

- *Army Concept Linkage:* ALC T&E RC # B-2.g
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.2 Provide **free-thinking and adaptive Opposing Force** (OPFOR) with overmatch in niche capabilities and human domain aspects of the OE **with the training enablers at the appropriate fidelity to meet training objectives at home station and the CTCs.**

- *Army Concept Linkage:* ALC T&E RC # B-2.g and ALC T&E RC # B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.3 Provide, as a training condition, an environment that includes the employment of **Weapons of Mass Destruction (WMD, Chemical, Biological, Radiological and Nuclear weapons (CBRN), and Improvised Explosive Devices (IED).**

- *Army Concept Linkage:* AOC RC # B-2.a(5) and ALC T&E RC # B-2.g
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.4 Provide an environment that includes **denied or degraded communications, degraded Position, Navigation and Time (PNT), electronic warfare, and reduced access to cyber and space** (based) capabilities.

- *Army Concept Linkage:* AOC RC # B-2.a(7) and ALC T&E RC # B-2.g
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.5 Replicate the effects of the **size, scope and complexity of dense urban areas or mega city** for training.

- *Army Concept Linkage:* ALC T&E RC # B-2.g
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.6 Provide a training environment that **presents commanders and staffs with learning challenges associated with operating dispersed over wide areas** in an expanded and noncontiguous battlespace.

- *Army Concept Linkage:* ALC T&E RC # B-2.g, AOC RC # B-2.a(13), and AOC RC # B-2.a(15)
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.7 Conduct **tough, realistic multi-echelon collective force-on-force training**, in the conditions that approximate an evolving and complex OE with the organizational agility to assess and adapt conditions to meet training needs.

- *Army Concept Linkage:* ALC T&E, RC B-2.r and ALC T&E RC B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, # 3 Complex Training, and # 4 Team Performance Research and Assessment

1.8 Conduct **tough, realistic multi-level collective force-on-target training**, in the conditions that approximate the OE.

- *Army Concept Linkage:* ALC T&E RC # B-2.r and ALC T&E RC B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, # 3 Complex Training, and # 4 Team Performance Research and Assessment

1.9 Conduct training that enables the “team” to cope with WMD threats and continue operations in a CBRN environment.

- *Army Concept Linkage:* AOC RC # B-2.a(5)
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.10 Conduct training that enables the “team” to **integrate offensive and defensive cyber/electronic warfare tasks into training, and operate with denied or degraded communications** and PNT networks.

- *Army Concept Linkage:* AOC RC # B-2.a(7)
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.11 Conduct training to **integrate space and counter-space operations tasks into training, and operate with denied or degraded networks** and PNT.

- *Army Concept Linkage:* AOC RC # B-2.a(7)
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.12 Conduct training on the **employment and integration of Robotic, Autonomous Systems (RAS)** across the warfighting functions and ROMO during collective training (small unit to multi-echelon) at home station and the CTCs.

- *Army Concept Linkage:* ALC T&E RC # B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.13 Conduct training that enables “teams” to **integrate joint** (minus CAS and other air support identified below), **inter-organizational and multinational enablers**.

- *Army Concept Linkage:* AOC RC # B-2.a(14) and ALC T&E RC # B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.14 Conduct training to employ **close air support (CAS) and enable Joint Air-Ground Integration at home station and the CTCs** (through Live, Virtual and/or Constructive means).

- *Army Concept Linkage:* AOC RC # B-2.a(17), AOC RC # B-2.a(11), and ALC T&E RC # B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.15 Provide capabilities to **replicate and train combined/joint forces sustainment operations** (logistics, personnel services, and health services) in brigade and above training events and exercises.

- *Army Concept Linkage:* ALC T&E RC # B-2.v and AOC RC # B-2.a(16)
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.16 Conduct training for **Culture, Regional Expertise and Language (CREL)** skills that enable: **Trained, culturally aware, and politically astute leaders** to engage with joint, inter-organizational and multinational partners and populations to shape environments, apply influence, and deter adversaries and consolidate tactical gains into operational objectives in keeping with our vital national interests.

- *Army Concept Linkage:* ALC T&E RC # B-2.j
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.17 Conduct training for **Culture, Regional Expertise and Language** (CREL) skills that enable: **Capability for Soldiers to develop language skills, regional expertise, culture, and other aspects** of cultural literacy to facilitate engaging regionally and develop partner relationships.

- *Army Concept Linkage:* ALC T&E RC # B-2.j
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

1.18 Incorporate **realistic casualty identification, assessment, initial care, and reintegration** into collective training events.

- *Army Concept Linkage:* ALC T&E RC # B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training and # 3 Complex Training

1.19 Develop **habitual training relationships between Army Special Operations Forces (SOF) and conventional forces (CF)** to leverage SOF/CF interdependencies as a critical component to enhance training in cultural awareness, regional political sensitivity, language skills, and other key competencies inherent to Engagement.

- *Army Concept Linkage:* ALC T&E RC # B-2.v
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training, # 2 Team Building, and # 3 Complex Training

SLOE # 2 (Training Management and Assessment) Proposed Tasks:

2.1 Enable **organizational agility to assess and adapt the training conditions** and associated training support enablers when required. (Also supports LOE 1, RC # 2)

- *Army Concept Linkage:* ALC T&E RC # 2-B.c and ALC T&E RC B-2.f
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training and # 4 Team Performance Research and Assessment

2.2 Enable **organizational ability to evaluate and assess training** to enhance training effectiveness and efficiency to support realistic training.

- *Army Concept Linkage:* ALC T&E RC # 2-B.d
- *HD Strategy Realistic Training LOE Linkage:* # 4 Team Performance Research and Assessment

2.3 Develop **leaders and staffs with expertise in design principles and other components of the operations process** in order to conduct mission/operational planning successfully for an uncertain and complex OE.

- *Army Concept Linkage:* ALC T&E RC # 2-B.y
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training and # 2 Team Building

2.4 Integrate **lessons learned and learner feedback** in order to rapidly and interactively update training and education products.

- *Army Concept Linkage:* ALC T&E RC # 2-B.f
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training and # 3 Complex Training

2.5 Provide **improved and innovative training management capabilities** that accelerate individual and team education and learning to support realistic training.

- *Army Concept Linkage:* ALC T&E RC # 2-B.d
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training

SLOE # 3 (Training Infrastructure) Proposed Tasks:

3.1 Provide **integrated and exportable individual and collective training support materials, information, and enablers** to conduct tough, realistic individual and multi-level collective training, with the institutional agility to assess and adapt.

- *Army Concept Linkage:* ALC T&E RC # 2-B.a and ALC T&E RC B-2.c
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerate Training and # 2 Team Building

3.2 Provide **mobile training capability** that supports distributed and distance learning.

- *Army Concept Linkage:* ALC T&E RC # 2-B.a and ALC T&E RC B-2.c
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerate Training and # 2 Team Building

3.3 Incorporate **trainability into system development through new or upgraded physical, virtual, and logical systems** designed to reduce the training burden on Soldiers and Army Civilians to facilitate ease of use.

- *Army Concept Linkage:* ALC T&E RC # 2-B.x
- *HD Strategy Realistic Training LOE Linkage:* # 1 Accelerated Training

Appendix C: High-Risk Capability Gaps

TRADOC's CNA FY15 identified the following High-Risk Capability Gaps with application to enhancing realistic training. These gaps may require additional analysis from the lens of the proposed tasks identified in Appendix B to attain the specificity to inform the identification of existing and potential solutions (across the DOTMLPF-P) to achieve the Enhancing Realistic Training vision and objectives. The high-risk capability gaps listed below by SLOE will help shape further analysis and assessment.

SLOE # 1 (Training Environment) Capability Gaps:

- The Army lacks the ability to conduct ***Brigade and below training exercises at home station*** under conditions that replicate the complexity of all OEs, including applicable joint, inter-organizational and multinational partner enablers, to meet prescribed training readiness levels.
- Brigade Combat Teams (BCT) lack the ability to conduct ***Company through Battalion-level collective training events at home station*** that employ elements of the various training environments under conditions that replicate the complexity of all OEs to meet prescribed training readiness levels.
- The BCTs lack sufficient range and facility capacity to fully support ***Brigade field training exercises (BDE FTX) including live-fire exercise (LFX) requirements at home station...***
- The Army lacks the capability to ***adequately train for Joint Air-Ground integration of CAS at home station and the CTCs.***
- The Army cannot ***assure receipt of PNT data to support unified land operations*** [and lacks training to operate] in areas of denied, degraded and disrupted [PNT] capabilities, in order to meet the commanders intent and maintain operational maneuver.
- The Army lacks sufficient training support enablers to ***conduct individual and collective training at any location during high demand periods or under degraded conditions*** without significant external support.

SLOE # 2 (Training Management and Assessment) Capability Gaps:

- Army lacks the capability to ***rapidly assess (unit and Soldier training proficiency), develop (adapt or replicate), provide and distribute low overhead training capabilities to the point of need*** to support future commander-driven mission-oriented training...

- The BCTs lack the ***experienced leadership, skills and resources to conduct individual, collective and leader training*** in the Doctrine and tactic, techniques, and procedures (TTP) of combined arms maneuver.
- The Army lacks ***sufficient interoperability across training management systems...***

SLOE # 3 (Training Infrastructure) Capability Gaps:

- The Army lacks the ability to ***rapidly and accurately integrate new concepts and technologies into simulations, scenario-driven war games and training exercises*** to prepare units and Soldiers to meet prescribed training readiness requirements...
- The Army lacks sufficient ***capability to incorporate best learning practices and new technologies into training and education programs...***
- The Army lacks the capability to provide ***comprehensive (across the ROMO) and easily accessible training scenarios [with required operational data] from any location*** that realistically portray an ambiguous and complex OE ***to support individual and collective mission command training.***
- The Army lacks sufficient capability to provide ***high fidelity training simulations*** that realistically portray an ambiguous and complex OE ***to support individual and unit collective training.***
- The Army Lacks a ***single governance process to manage [the proponent responsibilities for] integration of training, education, and leader development requirements and resourcing*** to assess and prioritize candidate advances in learning science and new/innovative technologies for integration or future investigation across the three training domains.
- The Army lacks the ***interoperability and concurrency across training enablers (TADSS) and training management systems*** to fully implement integrated mission command and maneuver training...
- The Army lacks the ability for ***training support enablers to conduct individual and collective training at any location during high demand periods and/or under degraded conditions*** without significant external support.