REVOLUTIONIZING TRAINING THROUGH TECHNOLOGY

TRAINING & SIMULATION INDUSTRY SYMPOSIUM
(TSIS-2020)
FRENCH CAVALRY UNIT (PRE-WORLD WAR I)
CAVALRY TRAINING (PRE-WORLD WAR I)
THE AMERICAN EXPEDITIONARY FORCE TRAINING
(WORLD WAR I)
TRAINING EVOLUTION VS. TECHNOLOGY REVOLUTION
THE NEXUS BETWEEN RAPID TECHNOLOGY INSERTIONS AND EVOLUTIONARY ADVANCES IN TRAINING

~ 10 MILLION MILITARY DEATHS
Training and Doctrine Command

The U.S. Army’s Training and Doctrine Command (TRADOC) was established in 1973 as the single proponent for training reforms, doctrine revision, leader development, and the modernization of organizational structure, weapons, and equipment.

Combat Training Centers

The U.S. Army Combat Training Centers (CTC) Program builds trained and proficient, combat-ready units and leaders to conduct operations as part of the joint force - ready to win in a complex world.
EVOlutionary Leaps in Training
U.S. Army Post-Vietnam Era Training

Virtual
- Close Combat Tactical Trainer (CCTT)
- Aviation Combined Arms Tactical Trainer (AVCATT)
- Games for Training
- Engagement Skills Trainer (EST)
- Synthetic Environment Core (SE CORE)
- Live, Virtual, Constructive-integrating Architecture (LVC-IA)

Live
- Home Station Instrumentation Training System (HITS)
- Instrumentable – Multiple Integrated Laser Engagement System (I-MILES)

Constructive
- Joint Land Component Constructive Training Capability (JLCCTC)
EXAMPLE OF EVOLUTIONARY ADVANCES IN TRAINING

MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (MILES)

MILES (1970s/80s)

Advanced MILES (1980s/90s)

MILES 2 (1990s/00s)

MILES XXI (2000s/10s)

I-MILES CVTESS (Today)

INSTRUMENTABLE MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (I-MILES)
BASIC SOLDIER TASKS

TASK BREAKDOWN

26,092 TOTAL INDIVIDUAL ARMY SOLDIER TASKS
6,360 TOTAL COLLECTIVE TASKS

Numbered Tasks DO NOT include:
1. New Equipment Training
2. Deployment specific training
3. A-typical MOS-agnostic assignments (i.e. AFC)
4. Collective tasks
5. Unit-specific tasks
“We cannot solve our problems with the same thinking we used to create them.”

~Albert Einstein
Revolutionary training verses Evolutionary training
THE ARMY'S REVOLUTIONARY TRAINING PLATFORM

- Software centric
- Platform agnostic
- Modular Open System Architecture

YOUR BIG IDEA HERE

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STE INFORMATION SYSTEM (IS)

- Training Simulation Software
- One World Terrain
- Training Management Tool

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Reconfigurable Virtual Collective Trainer - Air
Reconfigurable Virtual Collective Trainer - Ground
Integrated Virtual Augmentation System
Solider / Squad Virtual Trainer
Squad Advanced Marksmanship - Trainer
Next Generation Constructive Training Requirements
REVOLUTIONARY TRAINING SOLVING THE CHALLENGES OF MULTI-DOMAIN OPERATIONS

Operations conducted across multiple domains and contested spaces to overcome an adversary’s (or enemy’s) strengths by presenting them with several operational and/or tactical dilemmas through the combined application of calibrated force posture; employment of multi-domain formations; and convergence of capabilities across domains, environments, and functions in time and spaces to achieve operational and tactical objectives.

TP 525-3-1, The U.S. Army in Multi-Domain Operations 2028, GL-7.

The nexus for conducting Multi-Domain Operations lies within the Human Dimension
PERSONALIZED DIGITAL TWIN (AVATAR) CONCEPT

APPEARANCE

MOVEMENT

FUNCTIONS

- Soldier Skills
- MOS Skills
- Cognitive
- Physiological
- Health
- Fatigue
- Nutrition
- Voice/Language

Intelligent Tutoring
STC’s NEXT BIG CHALLENGE:

REVOLUTIONIZE LIVE-SYNTHETIC TRAINING

Twelve Engagements
Currently replicate only 60% of Brigade Combat Team

- Direct Fire (Small Arms, Tank)
- Counter-Defilade (M320, MK-19)
- Indirect Fire (Mortars, Artillery)
- Placed Object (Mine)
- Thrown Object (Grenade)
- Dropped Object (Bomb)
- Guided Weapon (Missile)
- Autonomous Weapon (Missile, Smart Munitions)
- Connections (Information Warfare)
- Directed Energy (Laser)
- Radiant Energy (Sonic, Microwave)
- Plume (CBRNE)

Plus Five Instrumentation

- Calculations
- Networks
- Transmitters
- Sensors
- Terrains

Next Steps:
- Indirect Fire
- Placed/Thrown/Dropped Force on Target (Live Fire)
- Remote Sensing
- Human Performance
- Machine Learning / AI

Traditional timeline…need to accelerate

INFORMING STAGE – NOW
DEVELOPMENT STAGE – FY26
FIELDING STAGE – FY35
A PARADIGM SHIFT WITH PARTNERSHIP & COLLABORATION

GOVERNMENT

INDUSTRY / ACADEMIA
INNOVATION PARTNERSHIP

Synthetic Training Environment (STE)
Technology Integration Facility (TIF)

powered by: ARMY APPLICATIONS LABORATORY

Team Orlando Tech Grove