Hybrid Threat Force Structure

Organization Guide   June 2015

by TRADOC G-2 ACE Threat Integration, Operations

The TRADOC G-2 Operational Environment Enterprise (G-2 OEE) is transitioning a series of Army field manuals-training literature into the HQDA Training Circular 7-100 series. *Threat Force Structure Organization Guide*, TC 7-100.4, is the most recent addition to the threat series on the Army Publishing Directorate. The TRADOC G-2 Operational Environment Enterprise (OEE) addresses a flexible baseline of regular forces and irregular forces that can be adapted to meet a variety of different training, professional education, and leader development needs at home station and/or training centers.

These force structures and associated online organizational directories represent a realistic composite of known enemies and/or adversaries the Army might encounter in near- and mid-term operational environ- ments (OEs). These units and organizations apply to OE conditions and variables, except when mission rehearsal or contingency training requires maximum fidelity to a specific real-world threat. The online organizational directories are living documents, and are updated by the TRADOC G-2 ACE Threats Integration directorate. For more information on US Army Training Circular 7-100.4, contact Jerry England: jerry.j.england.civ2@mail.mil.
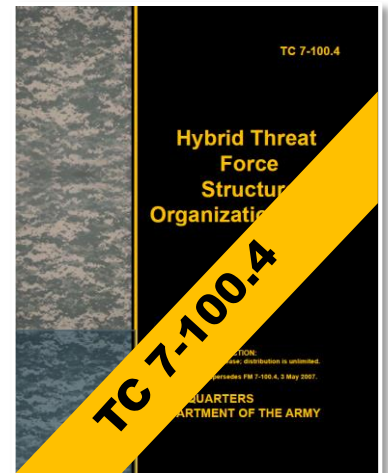
RED DIAMOND TOPICS OF INTEREST

by Jon H. Moilanen, TRADOC G2 ACE-Threats Integration, Operations and Chief, *Red Diamond* Newsletter (BMA Ctr)

This month's lead article spotlights interoperability training among allies and partners in events such as Combined Joint Operational Access Exercise (CJOAX) 15-01. Use of the Decisive Action Training Environment (DATE) has growing support and an adaptable baseline set of conditions for training readiness.

The World Class Opposing Force (WCOPFOR) and ACE Threats Integration provide insights on training observations from recent Mission Command Training Program (MCTP) events. Another article concludes a two-part series on North Korean main battle tanks.

Network Integration Evaluation (NIE) scenario writers are integrating the Decisive Action Training Environment (DATE) to support their next round of evaluations that include conditions that consider the effects of a chemical, biological, radiological, nuclear, explosives (CBRNE) operational environment.

One article assesses the capabilities of China's ground forces, the PLA Army (PLAA), through the lens of the US warfighting functions (WfF).

A regular *Red Diamond* feature is highlighting a system from the Worldwide Equipment Guide. This issue reviews the Fajr-5 artillery rocket system. The final article starts a series of vignettes on threat reconnaissance and counterreconnaissance based on the Army TC 7-100 series for threats and opposing forces for training.

Email your topic recommendations to:

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U.S. Army TRADOC G2 Operational Environment Enterprise
Multinational Antiterrorism Readiness-Training
TRADOC G2 ACE Threats
Know the Threats
Know the Enemy
We are Combating TERRORISM

TRADOC G2 Handbook No. 1.07 C3
A Soldier's Primer to
Terrorism TTP
Tactics, Techniques, and Procedures in
Complex Operational Environments
TRADOC G2 Intelligence Support Activity (TRISA)
Fort Leavenworth, Kansas
August 2012

1.07 C3
5" x 7" Hip-Pocket Handbook

Combating Terrorism (CbT)
Poster No. 09-15
(DOD Photo: CPT Viet Nguyen)

Go to https://atn.army.mil/   See training-education-leader development
Click "Training for Operations"-"ACE Threats Integration OE Page"

ATN Army Training Network

Director's Corner
Thoughts for Training Readiness

by Jon Cleaves, Director, TRADOC G-2 ACE Threats Integration (DAC)

The TRADOC G-2 ACE Threats Integration directorate is the US Army's lead to study, design, document, validate, and apply hybrid threat and operational environment (OE) conditions that support all US Army and joint training and leader development programs. Products describe threat actors, threat tactics and techniques, and OE variables of political, military, economic, social, information, infrastructure, physical considerations, and time (PMESII-PT) for training and preparation for contingency missions and/or deployments. The Army Training Network (ATN) is your easy two-click access to these products. Follow the easy 3-click navigation path.

A sampling of products includes the TC 7-100 series of threat training literature=Look for:

TC 7-100
Hybrid Threat

TC 7-101
Exercise Design

TC 7-102
Operational Environment and Army Learning

TC 7-100.2
Opposing Force Tactics

TC 7-100.3
Irregular Opposing Forces

TC 7-100.4
Hybrid Threat Force Structure Organization Guide

Do you have questions on applying threats to your class, event, or exercise? Contact us.

JON

Multinational Interoperability:
with the Decisive Action Training Environment

by Matt Tucker, WO2, UK (British Army) Liaison Officer to TRADOC G-2 ACE Threats Integration

Train as you fight is not a rhetorical mantra; historical analysis informs the training community that success in operations is directly linked to realism in training. There are many contributing factors that create realistic training such as a credible operational environment (OE), a contemporary opposing force (OPFOR), and the emulation of friction caused by coalition partners. The Decisive Action Training Environment (DATE) version 2.2 and the Army Training Circular 7-100 series of threat and OPFOR publications provide the OE baseline conditions, variables, and the composite threat for training. Multinational participation generates a realistic coalition environment that best identifies and represents current and emergent complexity in military operations.

Effective coalitions can provide public approval to stated objectives and goals, political support, international legitimacy, economic resources, and regional stability. These compelling reasons make it highly unlikely that the US Army would conduct unilateral overseas operations. The importance of multinational training cannot be understated. A review of three training events reveals the extent to which multinational training is taking place across the US Army Training and Doctrine Command (TRADOC) continuum.

Figure 1. British Paratroopers at Exercise 15-01

On 13 April 2015, the skies over Fort Bragg were filled with 2,100 airborne soldiers from the 82nd Airborne Division and the United Kingdom (UK) 16 Air Assault (16AA) Brigade participating in Combined Joint Operational Access Exercise (CJOAX) 15-01. A total of over 3,500 troops took part in the largest bilateral exercise at Fort Bragg in nearly 20 years. The exercise developed compatibilities between the two units such as the ability to parachute using the same equipment. This example and other tactical and operational experiences will ultimately create the capability to seamlessly integrate the 16AA Brigade into the 82nd Abn Div for rapid and effective actions as part of a coalition crisis response force.[1]

MCTP Warfighter 15-3 conducted at Fort Hood and Camp Atterbury during February 2015 incorporated the 2nd Canadian Mechanized Brigade Group. Over 300 Canadian Army soldiers participated alongside 3,000 US soldiers in a training event designed to test readiness and responsiveness in a variety of scenarios.[2] The Canadian Minister of National Defense stated that "This joint Canadian Army US training exercise strengthens our partnership with our American allies and ensures that our soldiers are prepared to deploy with our partners and allies around the world."[3]

Exercise Saber Junction 15 took place at Grafenwoehr and Hohenfels training areas 1–30 April 2015. This exercise featured more than 4,700 participants from 17 NATO and partner nations including Albania, Armenia, Bosnia, Bulgaria, Hungary, Latvia, Romania, Sweden, Turkey, UK, and the US. Saber Junction 15 prepares NATO and partner nation armies for offensive, defensive, and stability operations and promotes interoperability amongst participants.[4]

Figure 2. MCTP coalition training

In addition to the comprehensive multinational exercise program there are 4,700 foreign students in the US Army's TRADOC schools and courses.[5] The TRADOC G-2 Threat Tactics Course (TTC) held at Fort Leavenworth is an example where foreign students are actively invited and routinely attend a course of instruction. To date, students have attended from Canada, Denmark, Italy, Spain, and the UK. Multinational training in exercises or in these type of Army Center of Excellence (CoE) educational experiences builds professional relationships and develops an understanding of ally and partner capabilities with an overarching goal of improved interoperability.

"The ability to operate in synergy in the execution of assigned tasks" is the Army Doctrine Reference Publication (ADRP) 1-02 definition of *interoperability*. At the strategic level, interoperability is the willingness to work together over the long term to achieve shared interests. Interoperability in the realm of the warfighter comes when multinational units are integrated at the tactical level, and is much harder to accomplish.[6] In the case of CJOAX 1501, enabling 16 AA Bde to function as part of the 82nd Abn Div was the requirement for a shared common operating picture, access to common command and control systems, a true understanding of capability, and the ability to share intelligence and logistics.

Along with inviting allies to train alongside the US Army, TRADOC has offered coalition partners a role in the future development of the US Army's unclassified operational environment for training as described in DATE version 2.2. Partner nations will be able to use DATE for their own unilateral and multinational training. The shared development and regular use of DATE by the America, Britain, Canada, and Australia (ABCA) coalition and NATO forces ensure a common operational environment and OPFOR amongst the training audiences.

Figure 3. Hungary at Saber Junction 15

The Land Scenario Centre (LSC) is a lead proponent for the use of DATE in the UK and was deeply involved in the design and delivery of Exercise Iron Resolve (IR) 14, a division-level DATE exercise for the 3rd (UK) Division in October 2014.[7] To enable the UK to further develop its understanding of DATE and the TC 7-100 Series OPFOR, TRADOC G-2 Analysis and Control Element (ACE) Threats provided a TTC to the officers and soldiers of the LSC. The Mobile Training Team (MTT) visited the Land Warfare Centre in Warminster, UK, on 20–24 April 2015 to deliver the first TTC to a completely foreign audience in its own country. As a measure of developing interoperability, the UK Liaison Officer to ACE Threats taught the TTC.

The delivery of the TTC was timed to assist the LSC with its preparations for Ex IR15, which will take place from 28 September to 4 October 2015. 3rd (UK) Division will be the primary training audience for IR15 and the scenario is being progressed from the one employed on IR14. The UK exercise has its own invited coalition partners and observers who are looking keenly at how the UK uses DATE.

There are many areas in which partner nations can contribute niche capabilities and expertise toward the improvement of DATE,

Figure 4. Mobile Training Team (MTT) at Land Warfare Centre

especially as training within the Joint environment is critical to countries with smaller armed forces. The interest demonstrated by ABCA and other NATO partners advances the possibility of DATE as the operational environment of choice for integrated coalition training in the future.

To conclude, coalition operations will be the norm rather than an exception in the future, and interoperability with allies and partners in a resource constrained environment is a must. Multinational training is and has been occurring routinely at all TRADOC establishments, and it is providing an intellectual and practical base for training and readiness when coalitions form. The proposed sharing of DATE by TRADOC G-2 amongst allies and coalition partners represents an interoperability enabler at the strategic level that enhances the operational and tactical capabilities of coalitions for military operations in a complex world.

Notes

[1] 82 Abn. Div. Public Affairs Office, Press Release #15-03-001, Fort Bragg Press Center, 23 March 2015.
[2] Lieutenant Jean-Francois Carpentier, Canadian Army and US soldiers participate in Exercise WARFIGHTER at Camp Atterbury, Indiana, Media Relations Department of National Defence, 29 January 2015.
[3] Honourable Rob Nicholson PC QC MP, Canadian Army and US soldiers participate in Exercise WARFIGHTER at Camp Atterbury, Indiana, Media Relations Department of National Defence, 29 January 2015.
[4] US Army, Exercise Saber Junction, 7th Army Joint Multinational Training Command, 23 April 2015.
[5] General David G. Perkins, TRADOC Homepage, 27 Apr 2015.
[6] Rand Corporation, Interoperability, Chapter 2, A Broad Definition of Interoperability, Jan 2000.
[7] Warrant Officer Matt Tucker, Exercise Iron Resolve 14, Red Diamond 12/23, Nov 14.

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World Class Opposing Forces

WCOPFOR
Best Practices

by LTC E. David Wright, Mission Command Training Program (MCTP), World Class Opposing Forces (OPFOR) and Patrick Madden, TRADOC G-2 ACE Threats Integration (BMA Ctr)

The World Class Opposing Forces (WCOPFOR) serves as a near-peer, competitive, operational-level hybrid threat that challenges the execution of collective tactical tasks by Army brigades, divisions, corps, and service components, while stressing and challenging the ability of commanders and staff to guide, integrate, and synchronize Army forces. It is not an omnipotent or capricious threat. Instead, it is a force designed to challenge the art of command and the science of control, to visualize tomorrow's relevant threats, and assist today's soldiers and leaders with developing the required mental toolkit to seize, retain, and exploit the initiative in unified land operations. Yet, statements are made to Mission Command Training Program (MCTP) from various training units like: "I understand that we are not supposed to win against the OPFOR…" or "How can the 20th division tactical group (DTG) have only one brigade from the 20th, but multiple brigades from other divisions?" This and other similar comments highlight a systemic training challenge that MCTP continually encounters.

Despite comprehensive hybrid threat doctrine and changes to how the US Army conducts intelligence preparation of the battlefield (IPB), training units are often ill-prepared for the tactics and operations presented by the WCOPFOR. This two-part article is intended to eliminate common misperceptions about the WCOPFOR and provide training units with insight into what the WCOPFOR sees as its best practices. In doing so, this will enable the training units to focus on how commanders drive the operations process and staff's execute the operations process, eliminating what is otherwise a distraction to conduct of mission command philosophy, function, and system.

This first article will address how the WCOPFOR plans prior to entering a warfighter exercise. The depth and level of planning for an exercise is often lost on individual training units, but serves as a critical key to enable best practices for the WCOPFOR. Understanding how the WCOPFOR plans will also help training units in their IPB, visualizing, and describing threat courses of action. Without this detailed planning, best practices would be very hard if not impossible to attain.

The WCOPFOR begins planning for each exercise as the staff of the Arianian 2nd Army. The staff conducts a modified version of the military decision making process (MDMP) for the entire Operational-Strategic Command (OSC) operation from the start of the exercise through to achieving termination criteria. While this is done to ensure a coherent and logical narrative for corps or division training units, it also provides two other important criteria.

First, it facilitates the mechanism for weaving an operational narrative together for all the participating training units. For example, during Warfighter 15-5, the main training units were a National Guard division, maneuver enhancement brigade, divisional artillery, combined aviation brigade, expeditionary sustainment command, battlefield surveillance brigade, and an air defense brigade. As a result of the size and variety of training units, OSC planning begins with focusing on defeating US and coalition forces and achieving strategic objectives. This is opposed to developing separate concepts of operation for each training unit in order to meet all their training objectives. In addition, training units can drop out or change their status from training to a small response cell resulting in constant changes and wasted planning time. By starting at the strategic level, the WCOPFOR can create a cognitively linked threat in an operational narrative where the collective outcomes of tactical actions would produce a specified military condition in the theater of operations.

Second, planning for the entire OSC ensures that the exercise director has the flexibility to adjust for the various types of training units. By adjusting the intelligence reports or the mission variables of the OPFOR Commander, the exercise director is able to create or eliminate threats, increase or decrease complexity, and or expose strengths and weaknesses to keep the training audience on "the edge of chaos," which is constantly challenged but never overwhelmed. This requires that the WCOPFOR develop a concept of operations that is structured broadly enough to enable all warfighter participants' training objectives, while remaining adaptable to the constantly changing environment within an exercise, and yet portray a realistic and doctrinally correct hybrid threat. The WCOPFOR does this by developing an operational approach, conducting detailed planning, and then synchronizing those tactical actions in time, space, and purpose.

Six Variables Affecting WCOPFOR Planning

The WCOPFOR initiates the planning for each exercise with the commander devising an operational approach that is described as a directed course of action (COA) for the staff to initiate planning. This operational approach is influenced by six distinct variables: strategic objectives, hybrid threat doctrine, the available force pool, operational and mission variables, the training objectives of the exercise, and the exercise control group (ECG).

First and foremost, is the strategic direction of Ariana, as described in the [Decisive Action Training Environment (DATE)](), as well as any orders published by the Arianian Supreme High Command which describe the conditions and general guidance on what that the OSC is expected to achieve. The current DATE provides insight into these strategic objectives by highlighting both the Supreme High Command's (SHC) National Security Strategy (NSS) and Military Campaign Plan (MCP) objectives. This is further refined with specific operational end states, or tasks, and limiting factors assigned to the WCOPFOR in support of those higher strategic documents. This same general information is also provided to training units in the Road to War, and the Intelligence Annexes of Coalition Joint Task Force/ Coalition Forces Land Component Command orders.
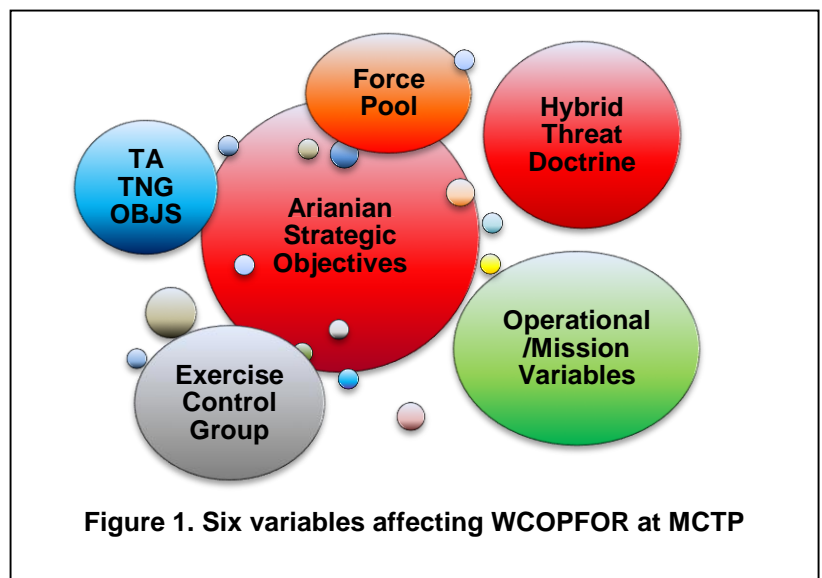

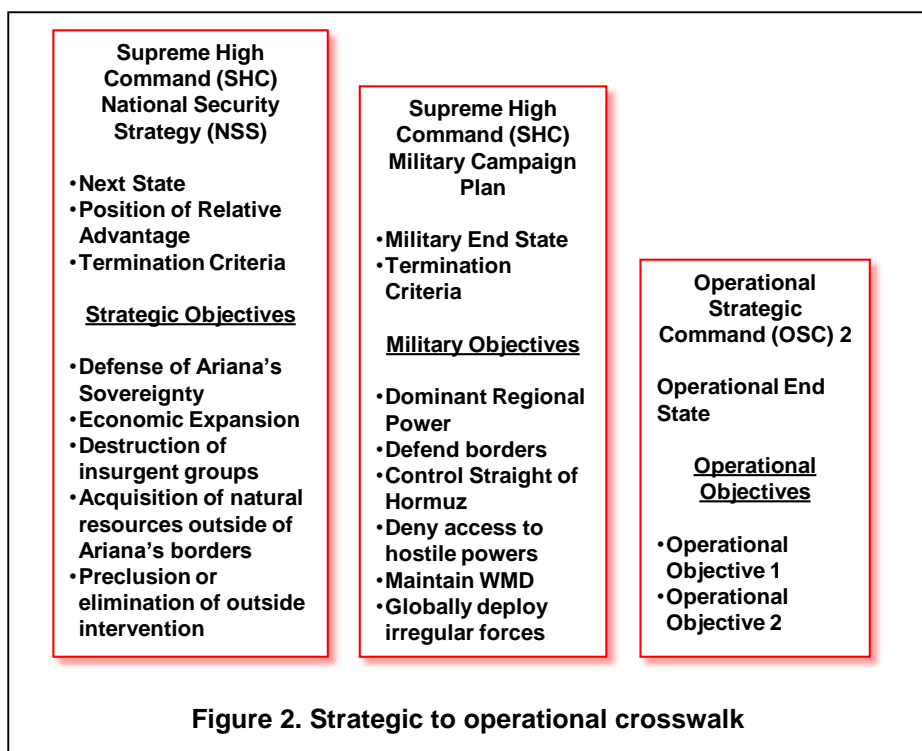**Figure 1. Six variables affecting WCOPFOR at MCTP**

Three of the variables, hybrid threat doctrine, operational and mission variables, and the available force pool, are critical to the WCOPFOR's understanding of the operational environment. They are the composite of the conditions, circumstances, and influences that impact how the WCOPFOR commander can employ capabilities. Doctrine provides a common structure, language, and architecture for OSC operations, while the operational and mission variables impact how those operations are constrained or restrained by the "physical world" of the DATE. The available force pool is normally the 2nd Army which is later converted to an OSC 2 task organization. The 2nd Army serves as the total destructive, constructive, and information capabilities available the OSC and is modified for each exercise based on the composition of the training units. The force pool provides yet another limitation to the WCOPFOR by ensuring only a limited number of resources are available to address all exercise requirements.

The last two variables, training objectives and the ECG, are unique to the architecture of a warfighter exercise. First, the WCOPFOR is advised of the major training objectives for an exercise for two critical reasons. One, the regulatory guidance governing the WCOPFOR directs that it serve as a "sparring partner" within the limits of the exercises training objectives. While an unconstrained WCOPFOR could "win" the exercise in a short time, the impact on US Army resources invested, specifically people, time, and money, is not conducive to effective training. Two, this allows the WCOPFOR commander to devise an operational approach, nested in reality, which ensures training units compete against the appropriate counter-tasks. If the WCOPFOR commander knows that a wet gap crossing is a training objective, this will inform his scheme of maneuver to ensure the opportunity to achieve training objectives. Finally, the WCOPFOR commander also receives guidance and input from the ECG on what key tasks, conditions, or effects are needed within the exercise. The ECG, consisting of senior mentors, chief of operation groups, exercise controllers, and the exercise director, has the role of

adjusting the WCOPFOR capabilities based on their ability to see both the training audience and WCOPFOR perspectives. While this is generally minimal in impact, it can influence an operational concept as conditions or actions can be added or deleted based on the experience, education, intuition, and prerogative of the ECG.

All six of these variables combine to shape and influence the WCOPFOR operational approach for an exercise. The operational approach serves not only as the initial commander's planning guidance, but as a directed COA. The process to develop the directed COA consists of five steps, the first of which is to identify the decisive operational objective. This objective, the one that accomplishes the overall goal or objective for the entire operation, becomes the OSC action function. Working backwards from the accomplishment of that objective, the WCOPFOR Commander identifies what conditions or windows of opportunity must be established to ensure the success of this vital objective.

Supreme High Command (SHC) National Security Strategy (NSS)

• Next State
• Position of Relative Advantage
• Termination Criteria

Strategic Objectives

• Defense of Ariana's Sovereignty
• Economic Expansion
• Destruction of insurgent groups
• Acquisition of natural resources outside of Ariana's borders
• Preclusion or elimination of outside intervention

Supreme High Command (SHC) Military Campaign Plan

• Military End State
• Termination Criteria

Military Objectives

• Dominant Regional Power
• Defend borders
• Control Straight of Hormuz
• Deny access to hostile powers
• Maintain WMD
• Globally deploy irregular forces

Operational Strategic Command (OSC) 2

Operational End State

Operational Objectives

• Operational Objective 1
• Operational Objective 2

Figure 2. Strategic to operational crosswalk

In addition to identifying terrain or forces that must be addressed, the commander looks to identify vulnerabilities and capabilities within his force, as well as the enemies to exploit and what enabling functions will accomplish this objective. These factors become enabling or support functions to facilitate the action function by creating the conditions necessary for the achievement of operational objectives. For example, if the use of attack helicopters to defeat an OSC counter-attack is a critical vulnerability, the commander identifies that a fixing force is necessary to prevent the employment of that capability at a specific time and place. The resources required can be any variety of capabilities arrayed against a portion of the enemy's systems which assists the employment of the attack helicopters. Once the commander has identified all required action, enabling, and support actions, he applies a generic resourcing of his force pool to accomplish the required functions. This includes all means available such as regular forces, irregular forces, criminal, information warfare, etc. Finally, the commander envisions how he sees the operation occurring in time, space, and purpose in order to synchronize all aspects of the operation.

Course of Action Development

Next, the OSC staff is presented a directed COA as a basis for planning. This directed COA generally consists of a COA sketch and statement, a function matrix, and a simple timeline detailing how the WCOPFOR commander visualizes the operation unfolding. It is this document that the OSC staff then analyzes against DATE and rotational information to ensure it is adequate, feasible, acceptable, and sustainable. The mission analysis brief that results from this analysis serves as a mechanism for the staff to identify faults, make recommendations, and present other elements associated with a mission analysis and the military decision making process.

Following the staff's analysis, the next step is to develop supporting functional plans for wargaming. This additional development of the COA ensures that when wargaming begins, the staff has nested specialty plans, like the Fires Plan, with the function matrix and directed COA. Wargaming becomes the most essential and resourced portion of WCOPFOR planning. The WCOPFOR conducts a very detailed wargame of the first 48 hours to ensure that all functions will be arrayed in time, space, and purpose. As the wargame progresses, it becomes less detailed and more focused on specific events or locations, and develops multiple decision points, branches, and sequels. The purpose for this is twofold. First, the wargamming serves as a forcing function for the commander and staff to re-frame the fight daily and focus on fighting the

enemy and not the plan. Second, as predicted outcomes are identified, they often show the need to consider additional modifications to the COA in order to mitigate risk or improve expected performance. This allows the OSC to identify any conditions or windows of opportunity that may be needed and ensure that the resources are planned for hours and days in advance. This often requires the WCOPFOR to step back one or more phases in wargaming and synchronize forces for future operations in a disciplined and deliberate process.

Execution Matrix

Once wargaming is finished and back-briefs to the commander are complete, the results are transferred into an execution matrix. However, it is very important to understand that this does not "lock" the operation into a fixed series of events. Instead, the culture of the WCOPFOR is one that allows for rapid and deliberative changes to the plan as necessary. This is exemplified by the process through which the OSC2 command post displays this information during the exercise. Instead of a digital common operating picture or

Table 1. Functional tasks template

Action Function	Enabling Functions					Support Function
Objectives: Task: Purpose:	Objectives: Task: Purpose:	Objectives: Task: Purpose:	Objectives: Task: Purpose:	Objectives: Task: Purpose:	Objectives: Task: Purpose:
Windows of Opportunity: (Required Conditions)	Create Opportunity: (Required Conditions)	Create Opportunity: (Required Conditions)	Create Opportunity: (Required Conditions)	Create Opportunity: (Required Conditions)	Create Opportunity: (Required Conditions)
Method: (Concept of Operations)	Method: (Concept of Operations)	Method: (Concept of Operations)	Method: (Concept of Operations)	Method: (Concept of Operations)	Method: (Concept of Operations)
End State	End State	End State	End State	End State	End State
Required Resources	Required Resources	Required Resources	Required Resources	Required Resources	Required Resources

"continuous battle update briefs," the OSC2 staff uses a large dry erase board to synchronize events by divisions, brigades, and functions within a 48-hour window. The events are applied to the dry erase board using self-stick notes in order to facilitate rapid decision making and reinforce a culture of adaptation, not dogmatic responses.

The manner in which the WCOPFOR plans OSC operations for warfighters is not reserved to one echelon prior to starting the exercise. In fact, understanding how the WCOPFOR develops its plan provides insight into how it replicates the doctrinal hybrid threat. At each echelon and within each function or force a similar process occurs. If, as part of an OSC operation, the requirement for a deception function was identified, a specified functional commander will then envision how he or she achieves success and applies specific functions and forces as required. Likewise if the integrated fires command is tasked to facilitate another enabling function, it will plan to employ its resources in a similar manner. Understanding this planning framework is crucial to the training unit's greatest success in achieving their training objectives at the Mission Command Training Program. The planning framework discussed in these previous paragraphs also enables the WCOPFOR to achieve and apply best practices as they challenge training units during corps and division warfighters.

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by **H. David Pendleton**, TRADOC G-2 ACE Threats Integration (CGI Ctr)

In last month's *Red Diamond,* part 1 of this article focused on the general characteristics of the Korean People's Army's (KPA) tanks and provided a possible tactical example that the North Koreans could employ using their tanks. Last month's article also examined the strengths and weaknesses of the KPA's tanks and more closely examined four of their major tanks. The second part in this two-part series will discuss six additional tanks that are prevalent in the KPA and then conclude with a chart that compares all the tanks discussed in both parts of this article. For additional information on most of these tanks, see the 2014 Worldwide Equipment Guide (WEG) on the Army Training Network (ATN).

The Type 62 is a Chinese-made light tank that is essentially a scaled-down version of the Type 59 main battle tank (MBT). At just over 23 tons, the Type 62 is about 17 tons lighter than its big brother. NORINCO built Type 62 tanks beginning in 1963 and produced approximately 1,400 units before the production line closed in 1989.

Figure 1. Type 62 tank

The Type 62's four-man crew sits in the same configuration as the Type 59, with three compartments—driver, gun crew, and engine. The driver sits in the front left of the hull with the diesel fuel tank and extra ammunition on the right side. The driver enters the vehicle through a single hatch on top of the hull and has two standard periscopes for observation. The tank commander and driver sit to the left of the turret with the loader on the opposite side. The commander can see through a TSh-1A hinged telescopic sight with 3.5x or 7x magnification or a cupola mounted TPK-1 observation device. The gunner and loader each can access separate roof-mounted MK-4 day periscopes for observation.

The Type 62's primary weapon is an unstabilized 85-mm main gun, usually the same one as found on the Type 63 light amphibious tank, with an aimed range of about 1,200 m. The main gun can rotate 360 degrees and elevate from -4 degrees to +20 degrees. The tank carries a basic load of 47 main gun rounds. Secondary armament consists of a coaxial mounted 7.62-mm machine gun with 1,750 rounds, a bow-mounted 7.62-mm machine gun with 1,750 rounds, and an AA 12.7-mm Type 54 machine gun with 1,250 rounds. If needed, all weapons can actually fire at the same time.

The movement characteristics of the Type 62 include a maximum road speed of 60 km/h with a range of 500 km. The liquid-cooled diesel engine produces 430 hp at 1,800 rpm and carries 193 gallons of fuel that provides a road range of 500 km. The tank uses the Christie suspension system with five road wheels, a rear drive sprocket, front idler, and a torsion bar. There is no skirting system to protect the road wheels and suspension system. The Type 62 light tank can cross a vertical obstacle of 0.7 m and a horizontal trench of 2.55 m. The light tank can climb a 60% hill gradient and can ford water up to 1.3 m in depth.

The armor on the Type 62 is thicker than that of the PT-76. The hull thickness ranges from 13 mm on the roof and belly to 25 mm on the front. The turret is thicker and ranges from 32 mm to 50 mm depending on its location.

Figure 2. T-62 MBT with external fuel tanks

Type 62 Variants: There are considerably fewer versions of the Type 62 than of many of the tanks already discussed. Most of these versions are limited to tanks operated by the Chinese or the Bangladeshi military, but there are some varieties manufactured for specific use in tropical environments, as ARVs, or for light engineering work.

The Soviet-produced T-62 and its North Korean-produced copy—the Chonma—are the mainstays of the KPA armor forces. Shortly after the Soviet Union began producing the T-55 MBT, the USSR was already looking for its replacement. The Soviet army began testing what became the T-62 in 1961 and began operational production four years later.

Before the USSR ended production in 1975, it had produced approximately 20,000 units. Other countries that produced the T-62 include North Korea and Czechoslovakia. While based on the T-55, the T-62 was longer and wider, with additional gaps between some of the road wheels, and the gun barrel was longer, thicker, and featured a fume extractor. The North Korean military possesses 1,800 MBTs between its Soviet-built T-62s and its own locally-produced Chonma I/II/III/IVs.

Like the T-55, the T-62 has three compartments (driver, main, and engine) and operates with a crew of four. The driver sits in the left front of the vehicle with two vision blocks. A TVN-2 infrared periscope that provides a 30-degree field of view to approximately 60 m can replace one of the vision blocks. The driver enters the vehicle through the left-opening hatch, but also can access the main area where the other three crew members operate. In the turret, the commander and gunner sit to the left of the gun while the loader sits to the right.

The primary weapon on the T-62M is a 115-mm U-5TS (2A20) Rapira 2 semi-automatic smoothbore gun with a two-axis stabilization that allows the tank to fire on the move while it rotates 360 degrees and ranges in elevation from -4 degrees to +17 degrees. The maximum effective range for the T-62 is 1,000 m with a penetration capability of 330 mm of armor plate. The normal rate of fire is four rounds per minute and the basic load is 40 rounds. This usually breaks down to twelve HVAPFSDS (hyper-velocity, armor piercing, fin-stabilized, discarding sabot), six HEAT and 22 HE-FRAG (high explosive-fragmentation). Some T-62s also possess the capability to fire the Sheksna laser-guided missile with a normal basic load of five rounds. The secondary weapon is a coaxial mounted 7.62-mm PKT (Pulemyot Kalashnikova) machine gun with 2,500 rounds stored on board. In addition, the T-62A model also carries a 12.7-mm DShK AA machine gun with 300 to 500 rounds.

The T-62 carries much-improved optics when compared to the previous Soviet MBTs. The tank commander can access four periscopes, two in the hatch cover and two forward in the cupola. He also can operate a TKN-3 day/night binocular periscope with infrared capability. The sight uses 5x magnification with a 10-degree field of view during the day and a 4.2x magnification with an 8-degree field of view at night. Maximum sight range depends on the ammunition to be fired and ranges from 3,600 m for HE (high explosive) rounds to 4,000 m for APFSDS (armor-piercing, fin-stabilized, discarding sabot) rounds. The gunner operates a TPN1-41-11 infrared periscope or an L-2G searchlight that is mounted to the right of the main gun and can be used out to 800 m. The gunner's infrared sight possesses a 5.5x magnification with a 6-degree field of view. The gunner can also access a TNP-165 periscope with a 1X magnification. The loader has his own TNP-165 day periscope with the capability to look to the front or rear of the tank.

The T-62's travel performance is similar to its predecessor, the T-54/T-55, as it can travel approximately 50 km/h on roads. With external fuel tanks, the T-62 can travel 650 km on paved roads and 450 km on dirt roads. Without the auxiliary tanks, the T-62 is limited to 450 km on paved roads and 320 km on dirt roads. The T-62 possesses the capability to cross a vertical 0.8 m obstacle, a 2.8 m horizontal trench, and traverse slopes of 60% grade.

Without preparation, the T-62 can ford 1.4 m of water in depth and with preparation to put on the snorkeling equipment can cross 5.5 m of water without issues. The original T-62 engine was a VS5-S 2,368 cubic inch, V-12 water-cooled diesel engine generated 580 hp at 2,000 rpm. The Christie suspension system is used with five road wheels, torsion bar, rear drive, front idler, and two shock absorbers on each track.

Besides the tank's armor, the T-62 has a nuclear, biological, and chemical (NBC) collective nuclear warning and protection system with a system blower to remove chemical or biological fallout. The T-62 can also generate smoke from the exhaust system by injecting raw diesel fuel into the engine. The T-62's hull armor ranges from 31 mm on the top to 46 mm on the rear, 79 mm on the sides, and 102 mm in front. The turret features even thicker armor with 242 mm on the front, 153 mm on the sides, 97 mm in the rear, and 40 mm on the top.

T-62 Variants: While not as numerous as the T-54/T-55 variants, there still are a large variety of T-62 tanks that can be found on the battlefield. These include the T-62A with a 12.7-mm AA machine gun; T-62S with a KTD-1 laser rangefinder; T-62K command tank with additional communications gear and compass indicators; T-62M models with different passive armor packets, upgraded diesel engines, various machine gun combinations, and smoke grenade dischargers; and the TO-62 variant with a flamethrower.

Chonma-ho in Korean means "Flying Horse," sometimes translated as "Sky Horse" or "Pegasus," and is a North Korean-manufactured copy of the Soviet T-62A tank. Most of the best North Korean armored units operate the Chonma-ho. North Korea produced approximately 1,200 of these tanks beginning in about 1980 and about 800 are still believed operational.

While North Korea obtained some T-62 tanks from the Soviet Union in the 1980s, it is believed that North Korean operatives stole T-62 blueprints from Syria in the late 1970s and these were used by the regime to develop its own version of that tank. Between the Chonma-ho and the T-62, North Korea fields 1,800 of these MBTs with similar characteristics.

Figure 3. Chonma-ho MBTs on parade

Like the T-62, the Chonma-ho uses a four-person crew in the same configuration. See previous section for additional details. The primary weapon on the Chonma-ho MBT is either a 2A20 115-mm smoothbore or a 2A46 125-mm smoothbore main gun. The effective range of the main gun is approximately 1,900 m with a sustained rate of fire of 3 to 5 rounds per minute. The basic load for the main gun is 40 rounds. Secondary armament includes a 7.62-mm coaxial mounted machine gun and a 14.5-mm KPV (Krupnokaliberniy Pulemyot Vladimirova) machine gun for air defense. The Chonma-ho is supposed to operate a better fire control system than the original T-62 tank and has an externally mounted laser rangefinder.

The Chonma-ho's performance characteristics are similar to the T-62 with the 620 hp engine producing a top speed of 50 km/h on the road and 35 km/h cross-country with a range of 450 km. While North Korea produces about 90% of the tank's components, most of the engine or engine components come from Slovakia. This tank uses the Christie suspension system with five road wheels, but there is a larger gap between the first and second road wheels than the other four road wheels. The Chonma-ho can cross a 0.8 m vertical obstacle or a 2.85 m horizontal gap. The Chonma-ho can ford a river obstacle 1.4 m in depth or, with its snorkel, 5.0 m in depth.

Relative to other tanks, the Chonma-hos' armor characteristics are not as well known, but the hull is believed to be 100 mm to 150 mm in thickness depending on the location. Turret protection data is also sketchy, but the turret front is believed to be approximately 200 mm in thickness. The Chonma-ho also sports add-on armor on the turret front and hull glacis (slope) that is supposed to add 120 mm of protection against APDS (armor-piercing, discarding sabot) ammunition and 200 to 250 mm of protection against HEAT rounds.

Chonma-ho Variants: North Korea has manufactured several variants of this internally produced tank. Versions include the Chonma-ho I that is lighter and with thinner armor, a 115-mm main gun, and a 14.5-mm anti-aircraft machine gun mounted on the turret. The Chonma-ho II is just like the Chonma-ho I except with a laser rangefinder mounted externally above the main gun. The Chonma-ho III is the Chonma-ho II with full hull-skirting, add-on armor to the turret front, potential explosive reactive armor on the turret sides, and two sets of smoke-grenade launchers mounted on the turret sides. The Chonma-ho IV with a 125-mm main gun, new engine, and an internal laser rangefinder/night-vision camera combination; and the Juche-Po that converts the tank into a self-propelled artillery piece.

M1985:[4]

The M1985, also known as the PT-85, Type 82, or Type 85 in its various configurations, is a North Korean-made amphibious light tank mounted on the country's own VTT-323 APC chassis. It is based on the Soviet PT-76 and Chinese Type 63 light amphibious tanks. One of the main differences is that the vehicle carries an ATGM. The tank made its debut at a military parade in Pyongyang in 1985. The exact number of the PT-85/Type 82/Type 85 tanks fielded by North Korea is unknown.

Like most former Soviet and Chinese tanks, there are three compartments—driver, gun crew, and engine. Like many Chinese tanks, extra ammunition is stored on the opposite side of the driver's compartment from where he sits on the front left. The M1985 is unusual in that it can operate with either a two- or three-man crew in the main compartment. It is likely that, as with most Soviet and Chinese tanks, the tank commander and gunner sit on the left of the turret and the loader on the right. In the absence of the gunner, the tank commander can fire the main gun.

Figure 4. PT-85 Amphibious Light

The M1985 tank's main gun is an 85-mm rifled gun fitted with a bore evacuator, but it is not stabilized in either the horizontal or vertical planes. The main gun can rotate 360 degrees and can depress to -5 degrees or elevate to +18 degrees. Secondary weapons include a single 7.62-mm coaxial mounted machine gun, a single 12.7-mm AA machine gun, and an AT-3 Sagger (9K11 Malyutka) ATGM mounted on a rail over the main gun. Basic load numbers are not available. The Type 85 tank mounts a 125-mm gun that gives the tank a much larger-caliber primary weapon, but the North Koreans needed to drastically increase the weight of the tank in order to compensate for the additional recoil created when firing of the main gun.

The PT-85's capabilities such as speed and armor protection are sketchy and estimates vary widely. Some assessments give the PT-85 a maximum road speed of 60 km/h and a water speed of 10 km/h with a range of 500 km on shore. The PT-85 can probably cross a vertical obstacle 0.87 m in height and a trench 2.9 m in width. The PT-85, however, can only climb a hill with a 38% gradient. This is a slight difference when compared to other North Korean tanks. The vehicle uses a Christie suspension system with six road wheels, front idler, rear drive, and torsion bar, but no return rollers. The hull armor is believed to be only 30 mm at its thickest point.

M2002 Pokpoong (Pokpung-ho or Storm Tiger):[5]

In 2010, Western observers saw the M2002 Pokpoong MBT for the first time, even though the vehicle had been known by some since 2002 – hence the name M2002 – but its origins date back to the late 1980s or early 1990s. Due to the poor showing of the Soviet T-72 MBT in the 1991 Gulf War against the American M1 Abrams, North Korea began a search for a better MBT in case the country ever needed to fight the American military. The M2002 is said to use the technologies from the Soviet T-62, T-72, T-80, and T-90 as well as the Chinese Type 88 MBTs in its construction. North Korea claims the

Pokpoong-ho's capabilities are similar to the Russian T-90 MBT but even if it is not, the M2002 is probably the best tank that North Korea possesses in its armor arsenal. There is only one unit with this tank: the 105th Seoul Ry-Kyong-Su Guards Division, North Korea's original armored division. North Korea operates approximately 250 of these tanks.

The M2002 operates with the standard four-man crew and probably in the same three-compartment configuration as most of their tanks—driver, gun crew, and engine. Some reports state that the vehicle only operates a three-person crew with an automatic loader similar to the T-90. The driver sits on the forward left side of the hull. The remainder of the crew is in the center section within the turret area.

Figure 5. M-2002 Pokpoong main battle tank

The actual type of main gun on the M2002 is in doubt, but it appears to be a 115-mm or 125-mm cannon with the latter as the most likely candidate. The M2002 also possesses a single 7.62-mm coaxial mounted PKT machine gun and a 14.5-mm KPVT anti-aircraft machine gun on the commander's cupola. There are also eight smoke grenade dischargers with two sets of two mounted vertically on the turret. The estimated basic load includes 36 main gun rounds, 300 rounds of 14.7-mm, 3,000 rounds of 7.62-mm, and eight smoke grenades. The fire control system operates a laser rangefinder and it is equipped with infrared sensors and a searchlight.

The M2002's most likely power plant is a single 12-cyclinder diesel engine capable of 1,000 hp, mounted in the rear compartment, with a maximum road speed of 60 km/h and a range of 370 km. The Christie suspension system is used with six road wheels covered by armored skirts for limited protection.

Information on the M2002's armor thickness is unknown, but may be similar to the T-90. The M2002 possesses an NBC protection system.

M2002 Pokpoong-ho Variants: There are few known variants of this tank and the one known type is a Russian version that fires an anti-tank guided missile (ATGM).

Songun-ho (Military First):[6]

Little is known about this tank except that it is believed to be an improvement on the M2002 Pokpoong-ho. Reports indicate that North Korea may operate just over 100 of these MBTs.

Comparison

The following chart compares the capabilities of the major North Korean tanks in relation to each other. When there is more than one variant available, the standard or the most common version is used for comparison purposes.

North Korean Tank Features and Capabilities Comparison Chart[7]								
Tank	Crew	Wt (metric ton)	Range Road CC (km)	Max Speed Road CC (km/h)	Main Gun	Main Gun Ammo (Est Mix)	Secondary and/or Tertiary Weapons	Fording (meters) Swimming (Snorkel) Capacity (meters)
T-34/85 (1944-USSR)	5	32	300 209	56 35	85-mm ZiS-S-53 rifled gun	Total: 56 APC-T/HVAPP-T HEAT-FS AP HE Frag-HE HE	(1) 7.62-mm DT Coax MG (2) 7.62-mm DTM or 12.7-mm DShKM Bow MG	1.3 5.5
T-54 (1947-USSR)	4	36	400 NL	50 32	100-mm D-10T or D-10TG	Total: 34	(1) 7.62-mm Coax PKT MG (2) 7.62-mm Bow MG (3) 12.7-mm DShKM AA MG	1.4 5.5
PT-76 (1952-USSR)	3	14	370 NL	44 25	76.2-mm D56TS rifled gun	HVAP or AP-T/API-T: 10 HEAT: 10 Frag-HE: 20	(1) 7.62-mm SGMT or PKT Coax MG (2) 12.7-mm DShKM AA MG (optional)	Amphib
T-55 (1958-USSR)	4	36 to 40.5 (varies by type)	390-500 NL	50 35	100-mm D-10T2S L/54	(for T-55AMV) APFSDS-T: 14 HEAT: 3 Frag-HE: 21 ATGM: 5	(1) 7.62-mm PKT Coax MG	1.4 5.5
Type 59 (1958-China)	4	36 to 36.5	440	50	100-mm	(for Type-59-II)	(1) 7.62-mm Coax 59T MG	1.4

						North Korean Tank Features and Capabilities Comparison Chart[7]		
			NL	25	Type 59 rifled gun	CH APFSDS-T: 12 / M456 HEAT: 6 / L35 HESH: 16	(2) 59T 7.26-mm Bow MG / (3) 12.7-mm Type 54 AA MG	5.5
Type 62 (1962-China)	4	21	500 NL	60 NL	85-mm	Total: 47 / AP / APHE / HE / HEAT	(1) 7.62-mm Coax MG & 7.26-mm Bow MG / (2) 12.7-mm Type 54 AA MG	1.3 NA
T-62 (1965-USSR)	4	40 to 41.5	450 320	50 Not Listed (NL)	115-mm L/46 U-5TS	APFSDS-T: 12 / HEAT: 6 / Frag-HE: 22 / ATGM: 5	(1) 7.62-mm PKT Coax MG / (2) 12.7-mm DShKM Anti-Aircraft (AA) MG / (3) 2A20 Sheksna ATGM	1.4 5.5
Type 63 (1963-China)	4	18.4	370 NL	64 28	85-mm	(for Type 63A) New CH APFSDS-T: 20 / M456 HEAT: 4 / L35 HESH: 27 / AT-10/Imp ATGM: 6	(1) 7.62-mm Type 59T MG / (2) 12.7-mm Type 54 AA MG	Amphib
Chonma-ho (1980-North Korea)	4	40	450 280	50 35	115-mm 2A20	Total: 40	(1) 7.62-mm Coax MG / (2) 14.5-mm KPV AA MG	1.4 5.0
M1985 (North Korea-1980s)	3 or 4	19	500	60 NL	85-mm	Total: 47 (Est) / APC-T/HVAP-T / HEAT-FS / AP HE / Frag-HE / HE	(1) 7.62-mm Coax MG & AT-3 Sagger ATGM / (2) 12.7-mm AA MG	Amphib
PT-85 (North Korea-1980s)	4	20	500 NL	60 NL	85-mm	Total: 47 (Est)	(1) 7.62-mm PKT Coax MG / (2) AT-3 Sagger ATGM	Amphib

North Korean Tank Features and Capabilities Comparison Chart[7]							
Type 85 (North Korea-1980s)	3	41	435 NL	57 45	125-mm 2A46M	Total: 47 (Est)	(1) 7.62-mm PKT Coax MG (2) 12.7-mm AA MG	1.4 2.4
M2002 (1992-North Korea)	4	44.3	370 NL	60 NL	115-mm 2A20	TBD	(1) 7.62-mm PKT Coax MG (2) 14.5-mm KPVT AA MG	NL

Summary

The KPA fields one of the largest armor forces in the world. The tanks range from outdated tanks of World War II vintage to some of the most modern tanks available to North Korea. While most of the KPA's tanks cannot match the latest M-1 Abrams tanks on an individual basis, the sheer number of tanks makes the KPA a formidable armor force. A Soldier's survival on the battlefield may be based on the knowledge of the tanks operated by the KPA; the tanks' capabilities, strengths, and weaknesses; and the tactics that the armor units will use.

Notes

[1] Military Periscope, "Type 62 light tank," 1 November 2014; Global Security, "Type 62/WZ-132 Tank, Type 61-I Light Tank, Type 62G Light Tank," Undated; Christopher F. Foxx, "Tanks and Combat Vehicles Recognition Guide," Jane's Fully Updated Second Edition, HarperCollins Publishers, 2000, pp 22-23.

[2] Military Periscope, "T-62 main battle tank," 1 July 2014; Global Security, "T62 Series Tanks," Undated; Military Factory, "T-62 Medium Tank/Main Battle Tank (1961)," 14 October 2014; Christopher F. Foxx, "Tanks and Combat Vehicles Recognition Guide," Jane's Fully Updated Second Edition, HarperCollins Publishers, 2000, pp 70-71; Roger Ford, "The Gatefold Book of Tanks," Barnes & Noble Books, 1998, p 24.

[3] Military Periscope, "Ch'onma-ho main battle tank," 1 May 2014.

[4] Military Periscope, "VTT-323 armored personnel carrier, 1 May 2013; Military Periscope, "M1985** light tank," 13 August 2009; Global Security, "PT-85 (Type-82)," Undated.

[5] Military Factory, "Pokpung-ho (Storm Tiger) (M2002) Main Battle Tank (1992)," Military Factory, 27 January 2014; Jung Sung-Ki, "S. Korea Studies North's New Battle Tank," Defense News, 17 August 2010; David Isenberg, "North Korea rolls out new tank," Asia Times Online, 6 July 2002.

[6] Jane's Sentinel Security Assessment, "Korea, North > Army," 1 September 2014.

[7] Worldwide Equipment Guide (WEG) 2014 – Volume 1 Ground Systems; Other sources are the same as in the main article.

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Training for Readiness
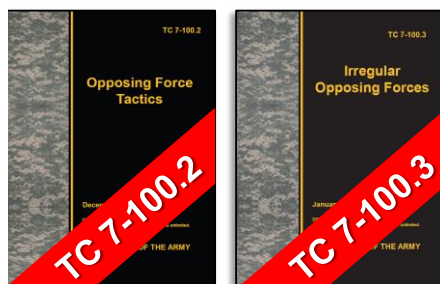
Operational Environments
with
Realistic-Robust-Relevant
Threats

NIE Integrates DATE
in the NIE Process
Network Integration Evaluation and Chemical Weapons

by Walter Williams, TRADOC G-2 ACE Threats Integration (DAC)

The US Army Operating Concept, "*Win in a Complex World,*" identifies five main characteristics of the complex operational environment that are likely to impact land force operations in the future.[1] One of these impacts is the proliferation of weapons of mass destruction (WMD). Thus, it is important that future leaders and Soldiers possess the ability to identify and solve future WMD challenges. This includes the presence of the effective enablers in their organizational structures and equipment as well as sound techniques and procedures to facilitate their ability to endure considerable amounts of time in inhospitable conditions.

The Network Integration Evaluation (NIE) scenario writers are using the Decisive Action Training Environment (DATE) to support their next round of evaluations. With a focus on chemical, biological, radiological, nuclear, explosives (CBRNE) weapons, scenario writers are developing an exercise that will provide challenging conditions to facilitate the evaluation of an NIE unit to conduct its mission in a future operational environment (OE). This article is broken into three discussions. The first discussion is a brief look at the historical and contemporary perspective of CBRNE employment to gain an understanding as to why the proliferation of WMD is important in the Army Operating Concept. The second discussion addresses selection and use of DATE in NIE. Finally, the third discussion addresses some of the challenges NIE scenario writers are addressing in the implementation of DATE in their evaluations.

A Historical and Contemporary Perspective

The use of chemical weapons during World War I left an indelible mark on combat operations during the 20th and 21st Century. The use of chemical weapons during WWI produced a psychological stigma far greater than their physical effects. Out of the approximately 16 million fatalities in WWI, chemical weapons caused fewer than 100,000. Artillery was actually the deadliest weapon of the war, but the use of poison gas is what made the permanent impression in the minds of the people of the participating nations.[2] Throughout the 20th Century, the research, development, and employment of CBRNE weapons by state actors centered on traditional means with conventional forces. However, during the 1990s, the world saw the employment of CBRNE in non-traditional or improvised means with non-state actors. For example, the Japanese terrorist group Aum Shinri Kyo conducted a Sarin (second generation agent) gas attack of the Tokyo subway system on 20 March1995. The terrorist group was well financed and organized. They were able to obtain the Sarin agent and disperse it on crowded subway trains inflicting casualties as well as spreading fear among the population. Again, the psychological stigma of the employment of a CBRNE weapon produced greater fear than actual casualties within the targeted population.

The traditional and non-traditional employment of CBRNE weapons by both state and non-state actors in the 21st Century requires flexible and adaptive organizations within the US military. These organizations must be able to readily accept the challenges of the employment by enemy forces of both traditional and non-traditional forms of CBRNE employment. The organizations also must be able to immediately respond to these uses in support of unified land operations.

Why Use DATE?

The evaluation of a designated NIE unit's ability to respond to 21st Century threats and conditions requires a scenario construct that represents various state and non-state actor use of CBRNE weapons. In terms of true cost (money and time), it is neither feasible nor practical for NIE leaders to conduct an evaluation against 10 or more separate countries. However, an evaluation conducted against a hybrid threat in a complex OE offers scenario writers the option to develop an exercise that realistically challenges or stresses the evaluated unit.

DATE contains OEs designed from a composite of real-world conditions that include conventional enemy forces, insurgents, guerrillas, terrorists, criminals, or combinations of other threats and challenges. The realistic and complex nature of DATE facilitates the NIE scenario writers' flexibility to rapidly "ratchet up or down" the conditions to achieve the desired evaluation objectives in an unclassified capability development environment. Most countries within DATE provide a degree of WMD use. Using a composite of OE conditions of 8 different countries (China, India, Iran, Libya, North Korea, Pakistan, Russia, and Syria), DATE provides the potential for:

- Presence of WMD and delivery methods
- Presence of nuclear materials
- Presence of chemical precursors, including toxic industrial chemicals

The following is a brief description of each DATE country's WMD capability:

- *Ariana*—Nonproliferation Treaty (NPT) state; possesses WMD weapons and delivery methods; supports a first-strike policy
- *Atropia*—Limited chemical weapon stockpile; can manufacture radiological weapons; can acquire WMD weapons; possesses WMD delivery methods
- *Gorgas—N*o known or suspected WMD weapons or programs
- *Limaria—S*uspected of possessing 2–5 functioning nuclear weapons
- *Donovia*—NPT state; possesses WMD weapons and delivery methods; supports a first-strike policy

Using the TC 7-100 series of Hybrid Threats and OPFOR doctrine enables the scenario writers to introduce and evaluate the designated NIE unit to the various traditional and non-traditional forms of CBRNE employment throughout the range of military operations during decisive action operations. For example, the use of DATE enables the scenario writers to create conditions for employment methods such as chemical rucksack bombs, chemical truck or vehicle-borne improvised explosive device (VBIED), chemical and biological sprayers, and chemical land mines. Selected sites within the confines of the training area may be designated as chemical or biological production/filling sites or radiological source interdiction points. Though the introduction of chemical and biological events may be of smaller scales, DATE also offers the NIE scenario writers the ability to develop an exercise that addresses the effects and outcomes from second- and third-order implications of such an attack, such as the media and/or the handling of civilian causalities.

Challenges in the Way Ahead

Future US forces must be capable of conducting proactive measures such as critical CBRNE site identification, intervention, and neutralization or destruction combined with an aggressive information warfare campaign that establishes credibility and trust while simultaneously discrediting the efforts of hybrid threat elements. The ideal campaign involves the use of medical personnel, international organizations, and the local populace. The challenge for the NIE leadership and personnel is to provide the designated role players able to replicate the ideal campaign and response to a CBRNE environment.

Currently, the NIE scenario writers (with assistance from the TRADOC G-2 Training Brain Operations Center) are using the recently released DATE 2.2 environment in the design, development, and evaluation of a scenario to support their CBRNE evaluation phase. The scenario writers have to consider whether the events developed as drivers to support their evaluation facilitates the use of both actual and notional units and role players. For example, a terrorist/tactical violent event resulting in many casualties in any locale will receive immediate local and national media attention. If the event involves the use of chemical or biological agents or weapons (to include toxic industrial chemicals), there is a heightened concern among the populace and the government. Even though the attack may be small scale and may result in limited illness and fatalities, the psychological impacts from such an attack could be severe. The attack may generate substantial

media attention, incite terrorist/insurgent rhetoric, and force a heightened interest into the perceived use of chemical and biological weapons by friendly and threat forces. For this heightened awareness of chemical and biological weapons to take place, there has to be a seed planted of previous use of these types of weapons by either side or a sense of distrust among the populace. This will entail the development of exercise injects or storylines to ensure the fidelity of the evaluation.

Notes

[1] US Army TRADOC, "TRADOC Pamphlet 525-3-1 (with changes) The U.S. Army Operating Concept, Win in a Complex World," 31 October 2014.
[2] STRATFOR, "World War I and the Legacy of Chemical Weapons," 22 April 2015.

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People's Liberation Army:

Challenges to US Warfighting Functions

by Jennifer Dunn, TRADOC G-2 ACE Threats Integration (DAC)

Much of the intelligence community's analysis into China's military force, the People's Liberations Army (PLA), focuses on its maritime assets and capabilities. While this article will touch on these things in the overview sections, the bulk of this article will focus on the assets and capabilities of China's ground forces, the PLA Army (PLAA). This article will address the PLAA's capabilities through the lens of the US warfighting functions (WfF).

Overview of Current Capabilities

For the past two decades, China has devoted significant time and money to modernizing its military. The PLA that was once known for its outdated equipment, poor training, and personnel issues has been revamped thanks to regular increases in defense spending. It is now a much more capable military with advanced equipment and better training. While personnel training and reforms are partially responsible for this, much of the PLA's growth in capability is due to the

acquisition of new technologies and weapon systems. The PLA's acquisition has focused on cyber-attack technologies, fourth-generation level platforms, and precision strike systems. The biggest capability advancement the PLA has demonstrated is its ability to conduct joint force operations. The PLA has placed significant focus on this area and has made noteworthy progress.[1]

On a more tactical level, the PLA has concentrated its advancements on its special operations forces (SOF) and increasing the amount of amphibious and army aviation units. Additionally, it has procured more modern platforms for use by its ground forces—main battle tanks (MBTs), armored vehicles, artillery, and air defense systems are all examples of systems that have been upgraded in recent years.

Figure 1. Soldiers Chinese People's Liberation Army

Despite the advancement of its capabilities, analysis by the RAND Corporation shows that the PLA still has some significant weaknesses. These weaknesses fall into two broad categories: institutional and combat capabilities. The institutional weaknesses stem from ineffective command structures, lack of professionalism among personnel, and rampant corruption. The combat capability weaknesses include logistical and strategic airlift capabilities.[2]

Overview of Future Capability Development

The PLA is likely to focus its future military development efforts on fleshing out its naval, air, missile, and space capabilities in addition to rectifying the above mentioned weaknesses.[3] The naval capabilities that the People's Liberation Army Navy (PLAN) is likely to focus on are those that support the expansion of its operations into the Pacific and Indian Oceans. Air defense, cruise missiles, and aircraft carriers are three areas that could enable the PLAN's operations expansion.

The People's Liberation Army Air Force (PLAAF) is expected to receive the same emphasis as the PLAN. According to the Department of Defense, the PLAAF "will likely become a majority fourth-generation force within the next several years," in addition to developing as many five-generation systems as possible.[4] The PLAAF is also likely to improve its current UAV capabilities.

The final areas of emphasis for future capability growth will be in China's strategic missile force, and space and counterspace. China's long-range strike capability is likely to be improved by the deployment of intermediate-range ballistic missile systems.[5] China's space/counterspace capability will continue expanding through many space-based capabilities such as intelligence, surveillance, and communication systems.

According to IHS Jane's, the PLA has a goal to conduct all future campaigns simultaneously on land, at sea, in the air, in space, and within the electronic sphere.[6] The PLA's effort to reach this goal is evidenced by the areas of future capabilities discussed above.

Figure 2. Chinese tanks at training base

Challenges to US Warfighting Functions

Mission Command—The primary way the PLA will challenge the US Army's mission command (MC) is through anti-access and area denial (AA/AD) operations. AA/AD presents a challenge to Army MC because synergy between all joint forces is essential in any operation where US forces will be engaged with Chinese forces. If the PLA can be successful with its AA/AD strategies, it could prevent successful synergy between US forces. China's existing systems and forces have the ability to not only deny freedom of movement to key areas where the potential for conflict is high, but they can challenge US access to the theater of operations. Systems such as China's Dong Fen-21D, a medium-range ballistic missile, advanced stealth-like aircraft, and China's renowned cyber capability all enable China's efforts at AA/AD.[7] While in practice this may seem less applicable to the US Army, China's AA/AD efforts include its expanded amphibious force capabilities, something that applies to ground force operations. Additionally, China uses its space-based satellite assets to enable its AA/AD efforts to detect approaching foreign naval vessels.[8]

Intelligence—The PLA is taking significant steps to undermine the US Army's intelligence capability. It not only has nearly thirty signals intelligence (SIGINT) and electronic intelligence (ELINT) stations around the world targeting the US and its allies, it has gone to great lengths to advance its information and cyber warfare capabilities.[9] This is the primary way which the PLA presents a challenge to the US Army's Intelligence WfF. China's cyber capabilities are well known. The US Government is aware of a number of known cyber units operating for the Chinese government.[10] The PLA has its own cyber forces that are known to have targeted the US.[11] And, as evidenced by past training exercises, the PLA has shown intent to use its cyber forces during conflict situations.

Movement and Maneuver—The PLA's extensive artillery arsenal could present a significant challenge to the US Army's capability to conduct movement and maneuver. IHS Jane's assesses that China's inventory is greater than 13,000 individual pieces. China's artillery systems are based on their Russian equivalents with minor modifications. The majority of the army is equipped with these types of systems. However, China has begun developing some more modern indigenous systems and is fielding some self-propelled pieces. However, only a small portion of the army is equipped with this modern inventory and only approximately 20% is equipped with self-propelled systems.[12]

Fires—The PLA's greatest challenge to the US's fires WfF is its ability to conduct counter-fires. The LD-2000 used by the PLA is believed to possess a capability similar to US's counter-rocket artillery mortar (C-RAM) capabilities.[13] Artillery experts believe, however, that this system could potentially have extended range. Additionally, as discussed above, China is increasingly fielding self-propelled systems that have the ability to fire and move position before fire can be returned, keeping the systems protected from US counter-fires.[14]

Sustainment—The PLA's biggest threat to the US's sustainment capabilities are its fires and anti-armor capabilities. As previously discussed, the PLA has an extensive artillery arsenal and has demonstrated its intent to continue upgrades to

its inventory, modernizing it over the coming years. The PLA's anti-armor capabilities (discussed in "Protection" below) are also extensive and present a challenge to all US vehicles, particularly those present in LOG trails.

Protection—The PLA's anti-tank weapons systems present a challenge for the US WfF of protection because its inventory contains systems (HJ-12) capable of destroying armored systems up to 4km away.[15] The PLA is equipping these anti-tank systems with its ground forces and ensuring armored personnel carriers carry the systems, each with 8 missiles on board.

Engagement—In an effort to transition the PLA's ground forces from a motorized army to a mechanized army, the PLA has acquired a number of new battle tanks and armored personnel carriers (APCs). China now produces the Type 99 MBT, the newer version of the Type 98, for its armor units.[16] In 2010, it was reported that most of the PLA's Type 62 light tanks had been put into storage.[17] The majority of the PLA's new APCs are designed to support amphibious units, evidence of the growth of these units in importance to the PLA. These new APCs are part of what has become known as a new family of infantry fighting vehicles (IFVs), the ZBDs. The ZBD-04, the ZBD2000, and the ZBD-09 are examples of these new assault vehicles.

Training Implications

The PLA recognizes that the US is not only one of its biggest strategic competitors, it has an exceptionally capable military force. This characteristic makes the US Army a good army to train against. Consequently, China conducts a number of training events in which the PLA OPFOR roleplays using what China believes to be US tactics and techniques.[18] Additionally, the PLAA's acquisitions are generally focused on systems designed to counter the US's perceived strengths.

For US training units, it is important to recognize that threats know US doctrine. Other countries' forces actively train against US tactics and techniques, monitor US acquisitions, and create lessons learned on the US's experiences in combat. They will use this information against the US in any direct conflict. This characteristic can be found in any threat actor depicted in ACE-TI threat doctrine and training materials, such as the TC 7-100 series for threat tactics and organization, the Decisive Action Training Environment (DATE), or the Worldwide Equipment Guide (WEG).

For More Information

ACE-TI will publish a Threat Tactics Report on China later this summer. This document will provide an in-depth look at the PLAA's capabilities and provide detailed information about the PLAA's tactics.

Notes

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[3] Michael S. Chase, et al, "China's Incomplete Military Transformation: Assessing the Weaknesses of the People's Liberation Army (PLA)," *RAND Corporation,* 2015.

[4] "Military and Security Developments Involving the People's Republic of China, 2014," *Office of the Secretary of Defense*, 24 April 2014.

[5] "Military and Security Developments Involving the People's Republic of China, 2014," *Office of the Secretary of Defense*, 24 April 2014.

[6] "Jane's World Armies – China." *IHS Jane's*. 24 February 2015.

[7] Benjamin Cone, "Mission Command and Antiaccess/Area Denial: Implications for Joint Command and Control," *Naval War College*, 20 May 2013.

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[9] "Jane's World Armies – China," *IHS Jane's,* 24 February 2015.

[10] "NIDS China Security Report 2014," *National Institute for Defense Studies, Japan*. 2014.

[11] David E. Sanger, David Barboza, and Nicole Perlroth, "Chinese Army Unit is Seen as Tied to Hacking Against US," *NY Times,* 18 February 2013.

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[13] Carlo Kopp, "Counter-Rocket Artillery Mortar Futures," *Defence Today*, October 2010.

[14] Anthony H. Cordesman, "Chinese Strategy and Military Power in 2014: Chinese, Japanese, Korean, Taiwanese, and US Perspectives," *Center for Strategic International Studies*, 2014.

[15] Jeffrey Lin and P.W. Singer, "For Sale: A New Chinese Tank Killer," *Popular Science*, 10 July 2014.

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[18] The US force is often referred to as the "blue force" in its own training events, and the PLAA OPFOR (the PLAA enemy) is also referred to as the blue force in PLA terminology.

TRADOC G2 *Worldwide Equipment Guide:*

Fajr-5
Artillery Rocket System

by [Kristin Lechowicz](#), TRADOC G-2 ACE Threats Integration (DAC)

Introduction

In May 2015, elements of Iran's military forces participated in the Beit Al-Moghadas-27 drill.[1] During this event, the Fajr-5 artillery rocket system (ARS) launched multiple rockets along with numerous other ARS platforms. This article examines the capabilities and proliferation for the Fajr-5 ARS. This article also discusses the system's application within the training environment.

The Fajr-5 is an Iranian produced 333-mm (4-round) ARS. The system was developed by Shahid Bagheri Industries, a subset of Aerospace Industries Organization (AIO), which in turn is a subsidiary of Iran's Ministry of Defense and Armed Forces Logistics (MODAFL).[2] The MODAFL is responsible for Iran's rocket/missile production and development.[3] Despite current sanctions against Iran, the MODAFL has been fairly successful in revitalizing the rocket and missile programs for its military forces. The Fajr-5 was one of the updated systems within Iran's rocket inventory.

System Capabilities and Characteristics

The Fajr-5 was modernized with a two-stage rocket that has increased its potential range to 180 km.[4] A difference between the two-stage and the single-stage system is the launcher chassis. The two-stage system has a single missile on the launcher chassis.[5] The single-stage rocket characteristics for the Fajr-5 have remained consistent.

The single-stage has a launch chassis that consists of a 6x6 revised (Mercedes-Benz) truck similar to the Fajr-3's (240-mm) launcher. The Fajr-5 can launch one rocket every four to eight seconds with a maximum range of 75 km.[6] Each rocket warhead weights 90 kg with a Circular Error of Probability (CEP) that consists of four percent of the range to the target.[7] Each launcher has a computer that obtains information from a datalink and, along with GPS, pinpoints the launcher's location. The computer provides the launcher with information to level and lay the launcher on to designated target.[8] The system's rockets can be fitted to other launch configurations.[9] The Fajr-5 launcher has four tubes per launcher chassis which houses four 333-mm unguided artillery rockets; however, the rockets can be fired separately from the chassis in an improvised manner, which is suitable for irregular forces.[10]

Employment

The Fajr-5 system and rockets can be found in EUCOM's and CENTCOM's areas of responsibility (AOR). The system was developed and fielded for Iran's military. The system's rockets have been exported to at least two of Iran's allies. The proliferation of the system's rockets have allowed irregular forces to use them in two different conflicts against Israel.

Jane's reported that, in 2006, Hezbollah used both the Fajr-3 and Fajr-5 rockets in operations against Israel in Southern Lebanon.[11] The Center for Strategic and International Studies stated that Iran provided lethal-aid support in the form of both the Fajr-3 and Fajr-5 rockets to Hamas, which they used in operations against Israel in 2012.[12] Preceding the onset of hostilities between Hamas and Israel in 2012, the pre-built rockets were delivered to Hamas by Iranian operatives through Sudan, which were ground transported into Gaza through Egypt.[13] These rockets provided extended ranges for

these irregular groups; however, the rockets still counted for a smaller portion of the Hezbollah's and Hamas' rocket arsenals.

The majority of Hezbollah's and Hamas' rockets consisted of shorter range systems during these conflicts. The precise number of Fajr-5 missiles launched is difficult to estimate for both campaigns; however, in 2012 a Fajr-5 rocket did kill two Israelis in Tel Aviv while also leaving behind considerable destruction resulting from the attack.[14] Even though the rockets were relatively ineffective during these two campaigns, the information warfare (INFOWAR) theme and the psychological impact of irregular forces such as Hamas or Hezbollah being able to extend indirect fire ranges is a disconcerting issue for any combatant command.

Threat Doctrine and Hezbollah's Conflict

Applying threat doctrine to Israel and Hezbollah's 2006 conflict portrays Hezbollah in an area defense with smaller echelons using simple battle positions integrated into complex terrain.[15] Hezbollah concealed rockets and key equipment in subterranean bunkers until the order was given to quickly prepare the rockets for launch.[16] This type of action is consistent with a complex battle position as prescribed by threat doctrine.[17] The crew would disperse after the rocket launch.[18] These types of examples are consistent with threat doctrine from Training Circular (TC) 7-100 series.

System Proliferation

The Iranian military developed and possesses the Fajr-5 ARS. The system's rockets (at the minimum) have been shipped to Hamas and Hezbollah.

Training Implications

If the Fajr-5 was procured by an outside entity, Iranian-sponsored advisors would most likely have to train most military organizations (regular or irregular) on how to operate the system. The operational environment (OE) would dictate if logistical resupply could be possible and or problematic for the gaining unit. The system and the rockets have a larger signature than most rockets in Hamas' or Hezbollah's arsenal, and are vulnerable to collection in non-permissive environments. Adaptive tactics and operational security are key factors for irregular forces like Hamas or Hezbollah when fielding these types of larger rocket systems. Hezbollah was reasonably successful in 2006 with shielding these assets by using a detailed subterranean environment.

Depending on the training objectives of the commander, or the duty position of the Soldier, there are a number of reasons to introduce a system like the Fajr-5 into a training scenario. The following are a few individual tasks that can be used as examples: call for fire, sending a spot report, and react to indirect fire. The Fajr-5 could be used as a key piece of equipment for training events that drives collection assets or be pertinent to the intelligence preparation of the battlefield (IPB). This example would likely be the case with regards to Israeli forces preparing for possible encounters with Hezbollah or Hamas.

Opposing Force (OPFOR) units stationed at combat training centers can and have used the above threat examples similar to tactical shielding and subterranean environments in rotational training. In 2011, the Joint Multinational Readiness Center's OPFOR placed a number of systems (including an artillery piece) in a civilian town. The rotational training unit (RTU) attacked these systems with counterbattery fire. The threat used the attack as INFOWAR (perception management) to influence and turn the civilian population against the training unit.

Threat Doctrine Manifestations

Threat doctrine provides the tactics, organizations, and capabilities for ARS threats that are similar to the Fajr-5 in the following sources:

- The Threat Force Structure in TC 7-100.4, *Hybrid Threat Force Structure Organization Guide* has the Multiple Rocket Launcher Brigade, Echelons above Division that provides a similar order battle or capability for a Fajr-5 system.
- TC 7-100.2, *Operational Environment and Army Learning*, Chapter 9 provides the tactics for regular forces indirect fire support (such as multiple rocket launchers or MRLs) for the threat.
- TC 7-100.3, *Irregular Opposing Forces*, Chapter 3 provides tactics for irregular forces with MRLs.

The page below will be added to Volume I, Chapter 7 in the Worldwide Equipment Guide (WEG).

IRANIAN 333 MM (4-ROUND) SINGLE STAGE ARTILLERY ROCKET SYSTEM
FADJR-5

SYSTEM	SPECIFICATIONS	AMMUNITION	SPECIFICATIONS
Alternative Designations:	None	Incendiary, Smoke, Fragmentation-High Explosive	Unguided (with fins), spin stabilized, surface-to-surface, solid fueled, (4 rockets per MRL)
Date of Introduction:	Late 1980s early 1990s Fadjr family of rockets. Upgrades to Fadjr-5 chassis 2006 and second stage rocket production in 2013.	Rocket Weight (kg):	915 kg
Proliferation:	Iran, Hezbollah, Hamas, (rockets)	Fuze:	Nose-mounted impact (point detonated)
Primary Components:	Multiple Rocket Launcher (MRL); Rockets (4 rockets per MRL);	Circular error of probability (m):	4% of range
CHASSIS	SPECIFICATIONS	Rate of Fire (per second):	1 rocket every 4 to 8 seconds
Multiple Rocket Launcher:	Modified 2 door (6x6) Mercedes Benz Truck chassis	Guidance:	N/A
Engine Type:	Diesel	Max. Launch Range (km):	75 km
Truck Weight (kg):	15,000 kg	Min. Launch Range:	N/A
Maximum Road Speed (km):	60 km	Diameter (mm):	N/A
Maximum Off-road (km):	25 km (estimated)	Length (m):	6.485 m
Cross-Country:	Yes	Caliber:	333 mm rocket
Launch Mode:	Static; however, it is a mobile platform	Fragmentation radius (m):	500 m
Maximum Angle Range (degrees):	57°. traverses 45° left or right	Warhead Weight (kg):	175 Fragmentation high explosive (Frag-HE)
MRL Dimensions (m):	Length, 10.45 m; Width, 2.54 m; Height, 3,34 m	VARIANTS	SPECIFICATIONS
Fording Depth:	N/A	Two-stage Fadjr-5 rocket variant	Increased range of 180 km
Radio:	N/A		1 rocket per each mobile launch platform
Armor Protection:	None		
NBC Protection:	None		
Swim:	No		
Displacement Time (Min):	N/A		
Emplacement Time (Min):	N/A		
Computer:	Yes; data link obtains information. GPS pinpoints exact launcher location. Computer levels launcher with target data.		

Notes

[1] Tasnim News Agency. "Iran uses Fajr 5, Naze'at Missiles in Drills." 24 May 2015.
[2] The Nuclear Threat Initiative. "Ministry of Defense and Armed Forces Logistics (MODAFL)." Unknown Date.
[3] Iran Watch. "Aerospace Industries Organization (AIO)." 17 March 2010.
[4] Richardson, Doug. "Two-stage Fajr-5 variant now in production." Jane's Missiles & Rockets. 21 August 2013.
[5] Richardson, Doug. "Two-stage Fajr-5 variant now in production." Jane's Missiles & Rockets. 21 August 2013.
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[7] Military Recognition. "Fadjr-5 333mm Multiple rocket launcher system." 22 December 2011.
[8] Jane's. "Aerospace Industries Organization Fadjr-5 333 mm (4-round) artillery rocket system." 22 July 2013.
[9] Jane's. "Aerospace Industries Organization Fadjr-5 333 mm (4-round) artillery rocket system." 22 July 2013.
[10] Jane's. "333 mm Fadjr-5 Iranian rocket." 29 May 2014.
[11] Jane's. "Aerospace Industries Organization Fadjr-5 333 mm (4-round) artillery rocket system." 22 July 2013.
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Threat
Tactical Vignette
Reconnaissance

by **Jon H. Moilanen**, TRADOC G-2 ACE Threats Integration (BMA Ctr)   **Part 1 in RZ-CRZ Series**

For threat forces presented in the US Army's Training Circular (TC) 7-100 series, an essential component of every military action is reconnaissance. Reconnaissance represents all measures associated with organizing, collecting, and studying an operational environment (OE) in a tactical mission.[1] Although reconnaissance is often associated with stealth and situational awareness, practical analysis of reconnaissance actions indicates that ground maneuver elements will normally fight for information and to obtain relevant intelligence.

The companion task of reconnaissance is counterreconnaissance (CR). This companion of creating and verifying intelligence about an enemy and an OE is all measures employed to protect threat forces. CR is a norm of fighting for information and intelligence. Counterreconnaissance locates, tracks, and destroys all enemy reconnaissance operating within a designated zone of reconnaissance responsibility (ZORR) or counterreconnaissance zone (CRZ).[2]

Threat Tactical Actions in Reconnaissance and Counterreconnaissance

The TRADOC G-2 *Red Diamond* newsletter, August 2014 and October 2014 issues, introduced mutually supporting aspects of reconnaissance and counterreconnaissance. An additional article in the February 2015 *Red Diamond* newsletter accented the basic tactical offensive tasks associated with fighting for information and intelligence, and the situations that emerge for tasks such as *ambush*, *assault*, *raid*, and/or a combination of these tasks. A more ambitious threat task is a *reconnaissance attack.* Based on several simultaneous and sequential actions and multiple resources needed to shape and conduct this task, a reconnaissance attack normally requires the combined arms capabilities of at least a task-organized company-level unit. All of these tasks and their subtasks are available in TC 7-101, *Exercise Design*, at Appendix B.
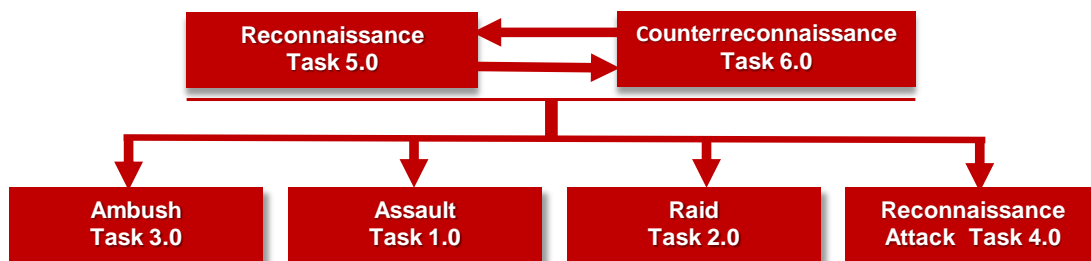
Figure 1. Reconnaissance and counterreconnaissance tasks

This article initiates a series of tactical vignettes and introduces a reconnaissance *platoon* as it conducts tasks during a reconnaissance mission. As tactical conditions change during the reconnaissance, the platoon leader conducts tasks of assault, ambush, and raid within the intent of the original mission and the requirements that arise for CR.

Situational awareness and understanding of an OE and an adversary or enemy is a continuous series of actions to confirm or deny information and intelligence. In command and control echelons above the platoon, overlapping staff resources gather data to compare and contrast situation reports, information updates, and intelligence analyses. Notwithstanding, one of several primary means of gathering reconnaissance and focusing collection assets to confirm estimates and assessments is to have soldiers operating in small units on the terrain in an assigned ZORR and/or CRZ.

Important control measures applicable to both a ZORR and CRZ are a *reference zone* (RZ), *predicted enemy locations* (PEL), and *kill zone* (KZ).[3] A reference zone is a subdivision of the overall zone that orients on ground maneuver space, the air space above terrain, and particular assigned or implied tasks. A technique for RZ operations within a boundary is to portray terrain as a grid pattern on a map with individual grids given code names, letters, or numbers. RZs may also include target reference points for orientation or as artillery targets. A geographic objective can also focus the mission.
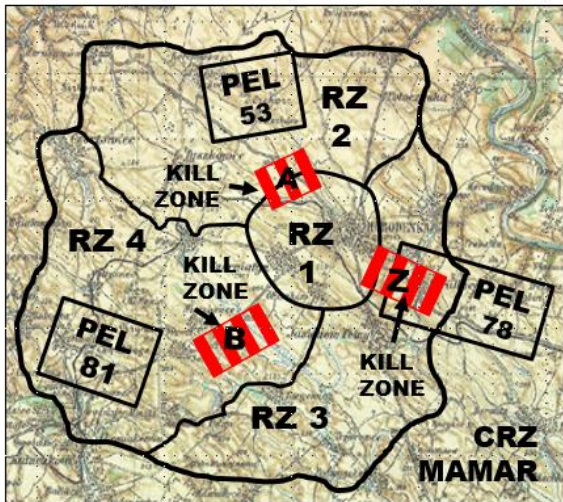
Figure 1. Threat control measures (example)

A predicted enemy location is an area in the zone where enemy activity, troops, or systems are expected to be operating or will enter during the period of the mission. Analysis of current information and the updated tactical intelligence estimate combine to indicate known, most likely, and/or probable enemy locations and avenues of approach.

The platoon leader shapes mission task priorities of effort and coordinates mission preparation with the unit's noncommissioned officers. When enemy presence is unknown or unconfirmed, analysis of the OE orients leader decisions and guidance on where and when reconnaissance and surveillance is to be conducted. Once reconnaissance elements locate and/or maintain surveillance of an enemy reconnaissance effort, the leader determines when and how to counter enemy reconnaissance elements. The specified task may be to continue reporting with situation updates and preclude direct combat actions. When the mission includes counterreconnaissance rather than just surveillance, one or more kill zones can be designated by the leader at probable enemy locations in the zone. Indirect fire targets are incorporated into the mission planning, as are tactical task contingencies such as ambush, assault, or raid. Rehearsals and pre-combat checks conducted prior to the mission confirm the tactics and possible contingencies at platoon, squad, and team echelons.

Tactics, Techniques, and Tasks

Tactics is an organized doctrinal arrangement of military or paramilitary forces that work toward achieving a common objective or task. Considering that techniques by nature are non-prescriptive to a distinct way or method of accomplishing a mission or task, the effective execution of tactics uses *functional* analysis to understand the mission or task requirement.

Techniques are the practical application of combat power with skills, experience, and initiative to accomplish mission success. The reconnaissance leader applies tactics and techniques to the mission statement and acts in order to achieve the intent of the mission from the higher-echelon commander.

Of note, control measures on a sketch or map overlay are neither tactics nor techniques. These measures assist the leader in visualizing and effectively communicating the planned sequence of actions. Tactical skill and expertise integrate task, purpose, and intent to optimize capability *effects* with movement and maneuver of the combat power resources allocated to the mission. Understanding function is the underpinning to understand and effectively apply tactics and techniques.

> **Functional Analysis**
> An intelligence analysis methodology that uses the concepts of *functional tactics* to predict probable and/or possible enemy courses of action.
>
> **Functional Tactics**
> The idea that threat/hybrid threat tactical action is best understood and described by the functions each force, element, or actor performs in order to bring about mission accomplishment.

Reconnaissance is a mission task. TC 7-101 states that reconnaissance represents all measures associated with organizing, collecting, and studying information on the enemy, terrain, and weather in the area of upcoming actions. Reconnaissance is part of the threat military function of reconnaissance, intelligence, surveillance, and target acquisition (RISTA).

At the lower tactical echelons of regular forces—battalion and company—threat organization of combat power is typically tailored for a particular mission. When task-organized to accomplish mission tasks and designated functions, a threat battalion or company is a combined arms organization designated as a *detachment.* Detachments based on battalion force structure are typically termed battalion-size detachments (BDETs), and those organizations formed from a company force structure are termed company-size detachments (CDETs).

Counterreconnaissance is a mission task. TC 7-101 states that counterreconnaissance is a continuous combined arms action to locate, track and *destroy* all enemy reconnaissance operating in a given area of responsibility (AOR). Tactical application of counterreconnaissance tasks is threat doctrine-based but demands a willingness, competence, and confidence to be flexible and adaptive to dynamic tactical opportunities that arise during mission execution.

In a counterreconnaissance mission, the detachment at battalion or company level are titled a counter-reconnaissance detachment, and use CRD as the counterreconnaissance acronym. A threat leader may have a smaller size CR element operate as a component of a larger threat security force, operate in conjunction with security elements or forces in the same threat area of responsibility (AOR), or conduct operations as an independent element. Some reconnaissance assets in base threat force structure, such as a reconnaissance battalion of a mechanized infantry division, use the term reconnaissance *unit* for the unit designation rather than a detachment-term identifier.

Reconnaissance Platoon

At the platoon echelon, the threat force structure for reconnaissance is often a task-organized element that provides combined arms capabilities. For this series of vignettes, a platoon from a reconnaissance battalion of a mechanized infantry division receives a warning order for a mission.

This task-organized platoon is an *independent reconnaissance patrol* (IRP) with a specific mission to conduct reconnaissance of the enemy and terrain in a reference zone (RZ).[4] Descriptions throughout the series of vignettes use threat terms from the TC 7-100 series. Reconnaissance and CR is an economy of force action. The capabilities of the task-organized platoon is best understood by knowing the unit and weapon system capabilities as presented in TC 7-100.4 and its Threat Force Structure e-folders of units. Another source for unclassified weapon and equipment data is the TRADOC G-2 *Worldwide Equipment Guide*.

In this series of tactical vignettes, the battalion headquarters has coordinated for the task organization as follows:
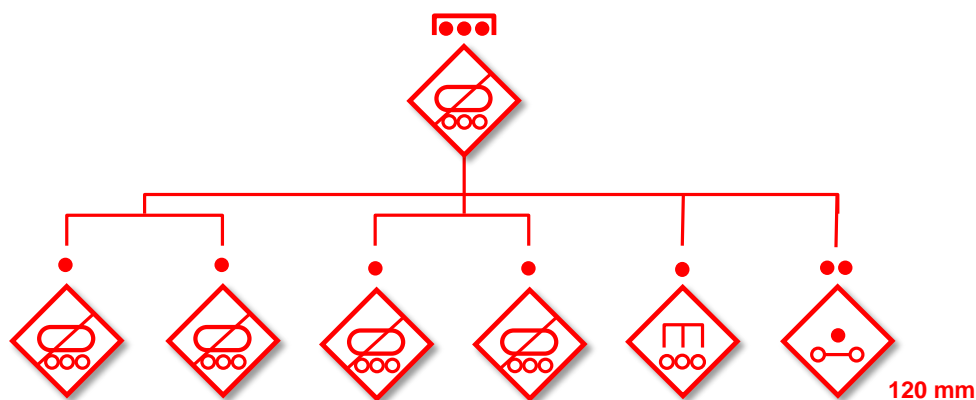
Figure 2. Reconnaissance platoon with task-organized support (example)

To focus a discussion on tasks and subtasks involved in a reconnaissance and counterreconnaissance relationship, and the leadership to accomplish a security mission, these vignettes accent mission analysis, a clear understanding by the platoon leader of the mission intent, and platoon leader willingness to accept prudent risk in conducting the mission as conditions change from initial mission situational understanding of the OE and the enemy.

The Situation

Mechanized and motorized forces of operational strategic commands (OSCs) crossed the international border days ago in preemptive integrated attacks and quickly exploited gaps in the enemy defenses. Current major operations aim to encircle enemy formations bypassed near the international border while other forces continue offensive actions deep into the enemy's rear areas. Division tactical groups (DTGs) are maneuvering to linkup and close the encirclement along the KRONATZ river line.

As DTG KRUEGER continues east with most of its combat power, the division commander directs security operations along his southern flank as risk increases with extended lines of communications. He orders the reconnaissance battalion to screen the southern flank along several probable enemy avenues of approach into the DTG attack zone, report enemy activity between the RADO River and AHL rivers across this predominantly lowland or marshland road network, and delay to the north bank of the RADO River if confronted with superior enemy forces.
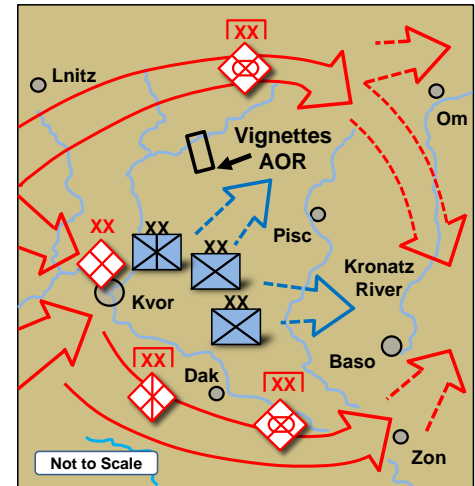
Figure 2. Situational overview sketch
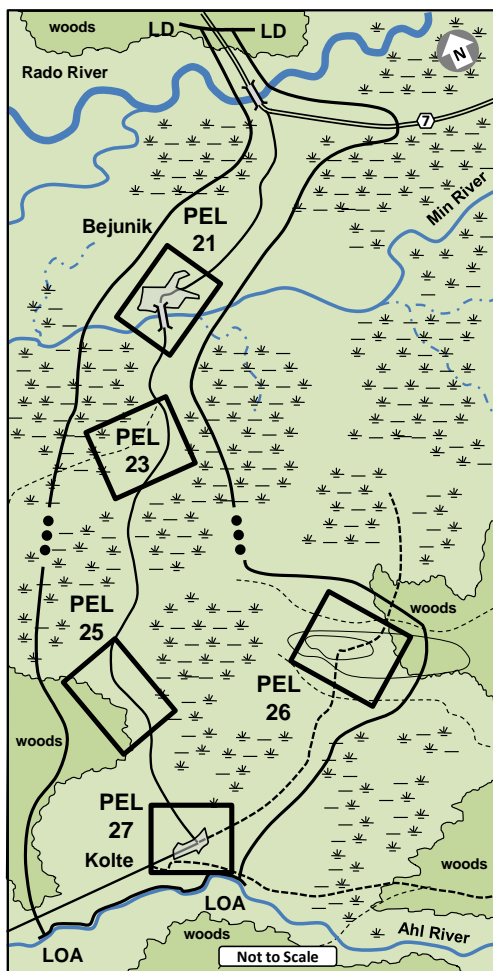
Figure 3. Initial RZ and PEL sketch

Heavy rains and unit movements have already turned underdeveloped roads throughout the zone into muddy quagmires for transportation. Overcast weather brought aerial reconnaissance to a standstill, and fog or recurring mist severely limit any long-range ground observation.

The flank screening mission depends primarily a ground-oriented mounted reconnaissance. The mission update states a high expectation of encountering enemy reconnaissance elements as enemy infantry or motorized forces attempt to avoid the developing pocket that would contain them south of the RADO River.

Independent Reconnaissance Patrol

Several reconnaissance patrols from the reconnaissance battalion cross the RADO River. This series of vignettes describe actions of one independent reconnaissance patrol near BEJUNIK in a reference zone southward as far as the village of KOLTE.

What next? The next article in this *Red Diamond* series: "Reconnaissance to the Bejunik Bridge." The IRP conducts an assault to seize a bridge.

Note. For training events at home station, local training areas, or combat training center preparation, the trainer can tailor threat capabilities to provide an appropriate level of realistic, robust, and relevant capability to challenge US elements and training objectives. This task organization uses TC 7-100.4 and its organizational guide folders on the Army Training Network to configure a particular armored reconnaissance platoon (wheeled) with engineer and indirect fire support elements also in wheeled vehicles. Threat informational folders are available with a registered common access card (CAC) on the Army Training Network. For a simple "three-click" ATN navigation path illustration to ACE Threats Integration products, see this month's *Red Diamond* "Director's Corner."

Notes

[1] Headquarters, Department of the Army. Training Circular 7-100.2, Opposing Force Tactics. . TRADOC G-2 Analysis and Control Element (ACE) Threats Integration. 9 December 2011. Para. 1, p. 8-1.

[2] Headquarters, Department of the Army. Training Circular 7-100.2, Opposing Force Tactics. . TRADOC G-2 Analysis and Control Element (ACE) Threats Integration. 9 December 2011. Para 6-8; 8-39.

[3] Headquarters, Department of the Army. Training Circular 7-100.2, Opposing Force Tactics. . TRADOC G-2 Analysis and Control Element (ACE) Threats Integration. 9 December 2011. Para. 6-11–6-13; 8-38; 8-58–8-59.

[4] Headquarters, Department of the Army. Training Circular 7-100.2, Opposing Force Tactics. TRADOC G-2 Analysis and Control Element (ACE) Threats Integration. 9 December 2011. Para. 8-83—8-86.

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Army Antiterrorism Awareness

Threats Terrorism Team (T3) Advisory

ACE Threats Integration   TRADOC G2 OEE

What ACE Threats Integration Supports for YOUR Readiness

◆ Determine Operational Environment (OE) conditions for Army training, education, and leader development.

◆ Design, document, and integrate hybrid threat opposing forces (OPFOR) doctrine for near-term/midterm OEs.

◆ Develop and update threat methods, tactics, and techniques in HQDA Training Circular (TC) 7-100 series.

◆ Design and update Army exercise design methods-learning model in TC 7-101/7-102.

◆ Develop and update the US Army *Decisive Action Training Environment (DATE)*.

◆ Develop and update the US Army *Regionally Aligned Forces Training Environment (RAFTE)* products.

◆ Conduct Threat Tactics Course resident at Fort Leavenworth, KS.

◆ Conduct Threat Tactics mobile training team (MTT) at units and activities.

◆ Support terrorism-antiterrorism awareness in threat models and OEs.

◆ Research, author, and publish OE and threat related classified/unclassified documents for Army operational and institutional domains.

◆ Support Combat Training Centers (CTCs) and Home Station Training (HST) and OE Master Plan reviews and updates.

◆ Support TRADOC G-2 threat and OE accreditation program for Army Centers of Excellence (CoEs), schools, and collective training at sites for Army/USAR/ARNG.

◆ Respond to requests for information (RFIs) on threat and OE issues.

ACE Threats Integration POCs

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