



Red Diamond Threats Newsletter



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Send suggestions to:

ATTN: *Red Diamond*
Dr. Jon H. Moilanen
Operations
BMA Contractor
and
Angela Wilkins
Chief Editor and
Product Integration
BMA Contractor

THREAT TACTICS REPORT: RUSSIA—COMING SOON IN 2015

by TRADOC G-2 ACE Threat Integration, Operations

In the last seven years Russia has reasserted itself as a military force in Eastern Europe and its former Soviet satellites. With military incursions into Georgia, seizure of Crimea, and support for pro-Russian separatists in Ukraine, Russia is an aggressive, interventionist force in Europe. Vladimir Putin is determined to economically and politically influence former Soviet Bloc states. In the effort to influence events in Ukraine, Russians have used aspects of a hybrid threat to infiltrate, isolate, and dominate eastern Ukraine and the Crimea. Actions demonstrate Russian intent to protect ethnic Russians and interests in their region from what is posed as domination by Western powers and NATO.

Russians do not use the term of hybrid warfare to describe their tactics. Use of varied covert methods, information warfare, and forms of special operations exemplify indirect and direct means to counter conventional and irregular force disadvantages. This Threat Tactics Report will focus on three distinct actions from primarily a military variable perspective—Georgia (2008), Crimea (2014), and eastern Ukraine (2014-15). Analysis of Russian methods in these conflicts will present general observations or lessons learned in each conflict, and progressive improvements by Russian senior leaders and the Russian Armed Forces. The *Threat Tactics Report: Russia* will be published by TRADOC G-2 ACE Threats Integration in summer 2015.



The Russian Military

The reform and modernization programs will yield improvements that will allow the Russian military to more rapidly defeat its smaller neighbors and remain the dominant military force in the post-Soviet space, but they will not—and are not intended to—enable Moscow to conduct sustained offensive operations against NATO collectively.
Worldwide Threat Assessment of the US Intelligence Community (2015)



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 the terrorism of Boko Haram (BH) and its mass kidnapping of adolescent women and girls at Chibok, Nigeria. Some BH raiders deceived captives initially by wearing Nigerian Army uniforms.

The [Decisive Action Training Environment](#) (DATE) article notes changes in DATE 2.2 that modify categories of names, borders, content, and orders of battle. One article notes flame weapons in the Russian Armed Forces as a significant capability. Russian modernization and mobility of systems provide for use in urban and rural OE.

A new regular article series in the *Red Diamond* Data premieres with data on the R-330zh jammer. Each newsletter will report on a weapon or equipment in the TRADOC G-2 [Worldwide Equipment Guide](#). In part 1 of a two-part article, the author reviews tanks in the North Korean Army inventory. The second part will address recent fielding and development of North Korean main battle tanks or amphibious tanks.

Another article initiates a series focused on the Iranian military variable. This first article discusses the IRGC Navy's mission and capabilities, and provides a demonstration example from a recent exercise.

The last article reviews ACE Threats' participation in the 2015 Army Worldwide Antiterrorism Conference, and the value added of a dedicated POC-SME community in support of quality Army training, education, and leader development for antiterrorism programs.

Email your topic recommendations to:

**Dr. Jon H. Moilanen, ACE Threats Integration
Operations, BMA CTR**

jon.h.moilanen.ctr@mail.mil
and

**Angela M. Wilkins, ACE Threats Integration
Chief Editor and Product Integration, BMA CTR**
angela.m.wilkins7.ctr@mail.mil

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U.S. Army TRADOC G2 Operational Environment Enterprise
TRADOC G-2 ACE Threats

Antiterrorism Awareness in an AOR

**Know the Threats
Know the Enemy**

TC 7-100

Hybrid Threat

TC 7-100

ATN

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

Combating Terrorism (CbT)
Poster No. 07-15
(DOD Photo: SFC D. Wheeler)



Director's Corner Thoughts for Training Readiness



by [Jon Cleaves](#), Director, TRADOC G-2 ACE Threats Integration

The new Army Regulation 350-2, *Operational Environment and Opposing Forces Program*, is dated 19 May 2015 with an effective date of 19 June 2015. HQDA considers this regulation a major revision that expands responsibilities across the Army and the programmatic framework from merely opposing force (OPFOR) issues to now include all operational variables as described in ADP 3-0, *Unified Land Operations*. In support of this Army regulation, the TRADOC G-2 Analysis and Control Element (ACE) Threats Integration serves as the Army lead for designing, documenting, and integrating threats or OPFOR and operational environment (OE) conditions in support of all Army training, education, and leader development programs. The directorate also reviews, analyzes, and provides recommendations for the integration of OE and its critical variables into training, education, and leader development events. We produce and update the Army's Training Circular (TC) 7-100 series on OPFOR and threats. An extract from AR 350-2 (2015) states this direct linkage to training and readiness.

Opposing Forces and Threats in Training

Opposing forces. An OPFOR is a plausible, flexible, and free-thinking mixture of regular forces, irregular forces, and/or criminal elements representing a composite of varying capabilities of actual worldwide forces and capabilities (doctrine, tactics, organization, and equipment). The OPFOR is used in lieu of a specific threat force for training and developing US forces. The OPFOR is tailored to replicate highly capable conventional threats and unconventional threats that combined can replicate hybrid threats and their strategies further described in the Training Circulars (TCs) 7-100, 7-100.2, 7-100.3, hereafter referred to as TC 7-100 series of manuals.

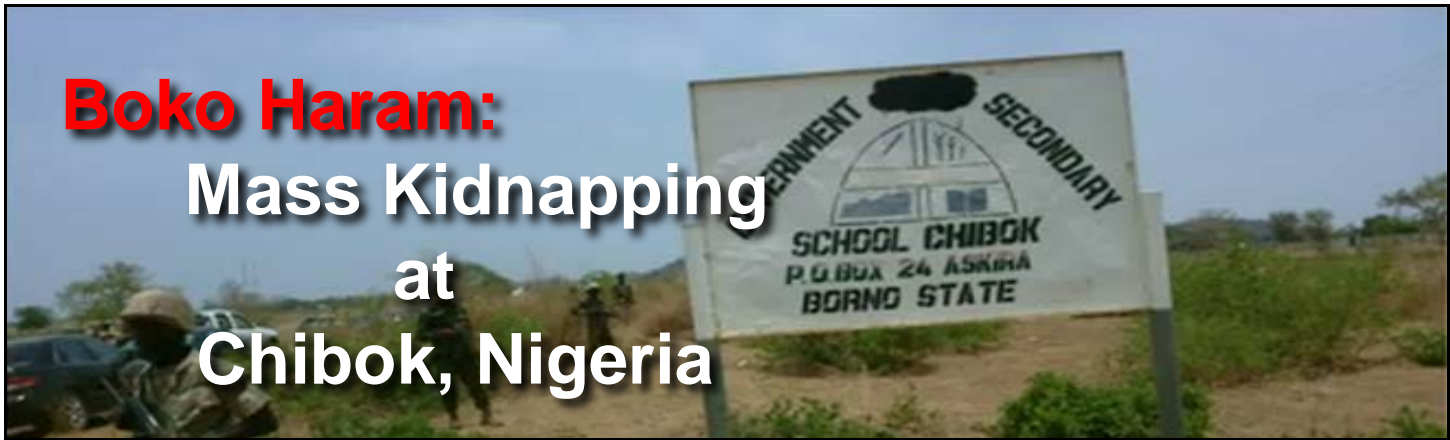
AR 350-2. *Operational Environment and Opposing Forces Program* (2015)

Other ACE Threats Integration products that support understanding and applying OE conditions and threats to Army readiness are TC 7-101, *Exercise Design*; TC 7-102, *Operational Environment and Army Learning*; the three volume TRADOC G-2 *Worldwide Equipment Guide*; and other primary OE and OPFOR condition training references such as the Army's *Decisive Action Training Environment* (DATE). The significant updates in the 2015 version of AR 350-2 include:

- States the need to replicate hybrid threat-based opposing forces.
- Updates assigned responsibilities to Department of the Army agencies to include cyber and space equities.
- Acknowledges establishment of the TRADOC Project Office (TPO) for OE/OPFOR requirements.
- Describes OE fidelity [condition-setting training environment capabilities] levels as a requirements resource.
- Establishes TRADOC responsibilities for integration and sustainment of the Common Framework of Scenarios (CFoS) and the *Decisive Action Training Environment* (DATE).
- Provides OPFOR operational and organizational guidelines for the US Army Reserve.
- Adds leader development programs and training seminars as appropriate to the OE/OPFOR accreditation program.
- Integrates Army core competencies of combined arms maneuver and wide area security operations.
- Identifies, informs, and supports doctrine, organization, training, materiel, leadership, personnel, facilities, and policy evaluation of OE and OPFOR training capability gaps.

TRADOC G-2 ACE Threats continues to study, report, and integrate OE and threat conditions for realistic Army training that will involve a full-range of robust and dedicated threats, adversaries, and/or enemies operating among a relevant population in a complex world now and into the foreseeable future.

JON



by [Rick Burns](#), TRADOC G-2 ACE Threats Integration (BMA Ctr)

Nigeria is a country with great internal turmoil despite its significant natural resources. Oil revenues have led to levels of corruption expected in countries without political infrastructure to combat concentration of wealth in the hands of the few at the expense of the many. Furthermore, a definitive north-south division between Christians and Muslims and the presence of hundreds of different tribes makes for religious and ethnic divides that complicate the effective functioning of a government. A power sharing agreement allowing for two-term alternating of Muslims and Christians as president was disrupted when the Muslim president, Umaru Yar'Adua, died in office in 2010 before completion of his term and his Christian vice president, Goodluck Jonathan, assumed office.¹ Disaffected groups, particularly in the oil rich areas of Nigeria, have used kidnappings and criminal operations as a means of bringing pressure on the government and to finance attacks on oil infrastructure and criminal activities. In the 2015 elections, Nigerians voted to elect a former military dictator from the 1980s and a Muslim, Muhammadu Buhari, as president.² Buhari's election is largely due to the pressures and threats from Boko Haram's (BH) terror rampage.

By far the most dangerous threat to the Nigerian government and stability in the region is Boko Haram, the focus of this article. Jama'atu Ahlu-Sunnah Lidda'Awati wal Jihad (Group of the Followers of the Prophet for Propagation and Holy Struggle), more commonly known as Boko Haram in the local Hausa language from which it came, emerged in the 1990s from a loose-knit Islamist movement centered on its founder, Mohammed Yusuf. Yusuf was an Islamic scholar who preached in Maiduguri, Borno state, Nigeria.³ He died while in police custody in July 2009 in a crackdown that also resulted in the death of hundreds of his followers. BH launched military operations in 2009 with the goal of creating a Nigerian Islamic State.

After Yusuf's death, the Nigerian government mistakenly declared BH finished. The group rallied around his deputy, Abubakar Shekau, and increased the intensity and violence of its attacks. In September 2010, BH conducted its first coordinated attacks against the Federal Police headquarters and United Nations headquarters in Abuja. This was followed in June and August 2011 by the first suicide vehicle bombings in Nigeria, planned by al-Qaeda- and al-Shabaab-trained Cameroonian, Mamman Nur. Nur led a BH offshoot called Ansaru and was responsible for more than twenty suicide attacks in northwestern Nigeria throughout 2012 and 2013 while Shekau directed other attacks in northeastern Nigeria.⁴ In 2013, the United States declared BH a terrorist group.⁵ BH proclaimed a caliphate in the areas under its control in 2014.⁶

BH has been strongest in Nigeria's three northeastern provinces of Borno, Yobe, and Adamawa, leading recently ousted Nigerian president Goodluck Jonathan to declare a state of emergency in those provinces in May 2013. Nigerian military operations have pushed BH out of the strategic town of Maiduguri and into the Sambisa Forest from which it launches operations against a wide variety of targets, to include schools, religious and government leaders, civilians, and infrastructure. BH has successfully recruited from disaffected and poor Muslims in the northeastern provinces. When willing recruits are not available, BH conducts forced recruitment from attacked villages; recruitment targets young male fighters, women, and young girls.

BH has become not only a Nigerian internal threat, but it is also a regional problem with relationships established beyond its borders. Evidence points to BH fighters supporting the Movement for Unity and Jihad in West Africa (MUJAO), al-Qaeda in the Islamic Maghreb (AQIM), and Ansar Eddine in 2012 and 2013 in Mali. BH fighters have come from Niger, Chad, and

Cameroon, all border states with Nigeria. As many as a third of BH members fled Nigeria during the 2009 Nigerian government crackdown on BH. As much as 40% of its funding comes from outside Nigeria. BH is able to use Niger, Chad, and Cameroon to hide, train, plan, recruit, and transit, focusing attacks on Nigeria to avoid crackdowns in countries where it has safe havens. Yusuf found refuge in Saudi Arabia in 2004 and there have been ongoing relationships with groups in that country. BH has also taken inspiration from the Taliban, some of its fighters having trained in Afghanistan.⁷

In March 2015, BH leader Abubakar Shekau swore fealty to al Baghdadi and the Islamic State of Iraq and the Levant (ISIL). The move away from al-Qaeda to ISIL was an evolutionary process. Yusuf considered Osama bin Laden, the founder of al-Qaeda, one of the four Salafist purists all Muslims should follow. An integral reason for Ansaru's separation from Boko Haram was both ideological and tactical. Ansaru adhered to al-Qaeda's rejection of the takfiri ideology of accusing other Muslims of apostasy and killing of Muslims. Ansaru separated itself geographically as well, focusing attention on northwestern and central Nigeria, while BH has focused on northeastern Nigeria. Ansaru maintained network relationships with the *Salafist Group for Preaching and Combat* (GSPC) and its successor organization, AQIM, as well as others loosely aligned with these groups. Many within these groups became disaffected from al-Qaeda in favor of ISIL. Ansaru's recent reintegration into BH brought these ISIL supporters with it, laying the foundation for ISIL's acceptance of BH into its caliphate.⁸

Despite an increased military presence in northeastern Nigeria, BH enjoys a degree of maneuverability that continues to frustrate efforts to completely eradicate it. Since the Nigerian military went on the offensive in 2013, BH has been pushed into the Sambisa Forest, a former colonial game reserve covering approximately 60,000 square kilometers, from which it launches attacks and into which it retreats. The forest is filled with poisonous snakes and other animals, dense and thorny vegetation with complex and protected battle positions.⁹ In addition to the Sambisa Forest, the porous border between Nigeria and adjoining countries provides easy regional access. Nigeria's Minister of the Interior in 2013 stated there are over 1,499 illegal and 84 legal points of entry into Nigeria from neighboring countries.¹⁰ Many of these illegal transit routes are simple footpaths crisscrossing the borders with Cameroon, Chad, and Niger with continuing links to Mali, Libya, and Sudan.¹¹ BH has access to safe havens within Nigeria, training camps in bordering countries, and regional smuggling, supply, and communication routes.

Boko Haram's current capabilities have improved significantly since its beginnings when fighters used machetes as a primary weapon. In direct engagements with Nigerian and regional security forces, however, BH has generally retreated and been unable to hold captured ground since a state of emergency declared in 2013 in northeastern provinces deployed thousands of Nigerian military personnel to the fight against it. In January 2015, BH fighters attacked and drove Nigerian security forces from camps outside the town of Baga in northeastern Nigeria and then occupied the nearby towns of Baga and Doron Baga.¹² However, by the end of February, the Nigerian army had retaken the occupied cities and BH retreated to positions in the Sambisa Forest and elsewhere.¹³

Tactics employed by BH have been limited to small-arms raids, ambushes, and assaults. Direct attacks by BH on security forces and infrastructure became disproportionately costly after the 2013 offensive against BH, leading to the use of ambushes against security forces. Ambushes allow BH to choose the time and place of the attack with the advantage of planned exfiltration routes back into positions in the Sambisa Forest or into bordering countries. Ambushes are not limited to attacks on the military, but are also employed against government and civilian targets. On 17 September 2013, BH set up an ambush near Benisheik in Yobe Province between Maiduguri and Damaturu that killed at least 143 people.¹⁴

Since 2010, BH has expanded from use of crude bombs to more sophisticated use of improvised explosive devices, and suicide and suicide vehicle-borne improvised explosive devices. These types of attacks have allowed BH to attack areas where its presence is limited, such as the national capital Abuja and predominately Christian areas in the south. In addition to these techniques, BH conducts kidnappings, assassinations, and civilian intimidation in its operations. Often seemingly indiscriminate attacks on civilians and burning of houses, buildings, and other infrastructure have placed pressure on the Nigerian government at all levels and caused mass movement of people away from the areas of violence.¹⁵

The purpose of BH attacks has been a practical matter of getting food, medicine, and other provisions. Additionally, BH has used raids to kidnap women, girls, and young men to fill its ranks as well as punish those deemed collaborators with Nigerian security forces. Boys, some younger than fifteen, are regularly conscripted as fighters and spies. In April 2014, as an example, BH made international news with the kidnapping of 276 female students attending a school in the village of

Chibok, Nigeria.¹⁶ Social media fascination with the kidnappings muted the reality that these kinds of raids are a normal way of life for those living in northeastern Nigeria. Women and girls are commonly abducted during raids and subjected to rape, forced marriages, and other kinds of violence. As many as 2,000 women and girls have been kidnapped since January 2014.¹⁷

BH's arsenal includes a range of weapons obtained through relatively robust smuggling and attacks on Nigerian military arsenals. Small arms include the AK-series and Heckler & Koch G3 assault rifles, machine guns, and rocket-propelled grenade launchers. BH has captured, and used in very limited ways, anti-aircraft and anti-tank weapons. Nigerian security forces captured anti-aircraft weapons mounted on the back of pickup trucks on 8 February 2011. To date, BH has primarily used these weapons to support mobile raids and assaults. While it has captured indirect fire weapons and ammunition, BH has not used them to any great degree.¹⁸

Boko Haram Raid—Chibok Girls' Secondary School

The BH raid on the Chibok Girls Secondary School is well known because of the international media attention it received. As with many other similar raids, Boko Haram made no secret of its intentions to attack Chibok. The Nigerian military had intelligence well ahead of the attack. Local leaders unsuccessfully pleaded with regional authorities at least four hours before the attack to send reinforcements to the fifteen soldiers on duty in the town.¹⁹ Rural villages remain at the mercy of marauding bands of Boko Haram fighters with limited support from Nigerian security forces who are stretched thin in a hostile region of Nigeria.²⁰

On 14 April 2014 at about 11:45 p.m., BH kidnapped 276 girls from the Government Secondary School in Chibok, Nigeria. The school had been closed since March due to BH threats, however, it had been briefly reopened for the girls to take the West Africa Examination Council exams. The girls were asleep in dormitories when BH launched the raid.²¹

[TC 7-100.2, *Opposing Force Tactics*](#), states that hybrid threat raids are characterized by damaging and/or destroying key systems, facilities, and infrastructure; securing hostages and prisoners; and supporting information warfare (INFOWAR) plans.²²

These characteristics are also descriptive of BH raids. The Chibok attack began with the BH support element attacking the small security unit located at the school compound. The Nigerian security element was quickly overwhelmed, members being either killed or chased away. A BH typical follow-on technique manifested in Chibok was burning of buildings and infrastructure. While the support element fixed the Nigerian military, the assault element, wearing Nigerian military uniforms, entered the dormitory where the students slept. This element moved the girls to waiting vehicles under the guise of helping them escape BH. Security elements, positioned to interdict Nigerian military reinforcements that did not appear, covered the exfiltration of the convoy filled with the girls. During the convoy movement, some of the girls were



Figure 1: [Map of Chibok and the Sambisa Forest region](#)

able to escape. One senior military source believed the girls were split up and placed in different Boko Haram camps in places like the Sambisa Forest, around Lake Chad, and the Gorsori mountains.²³

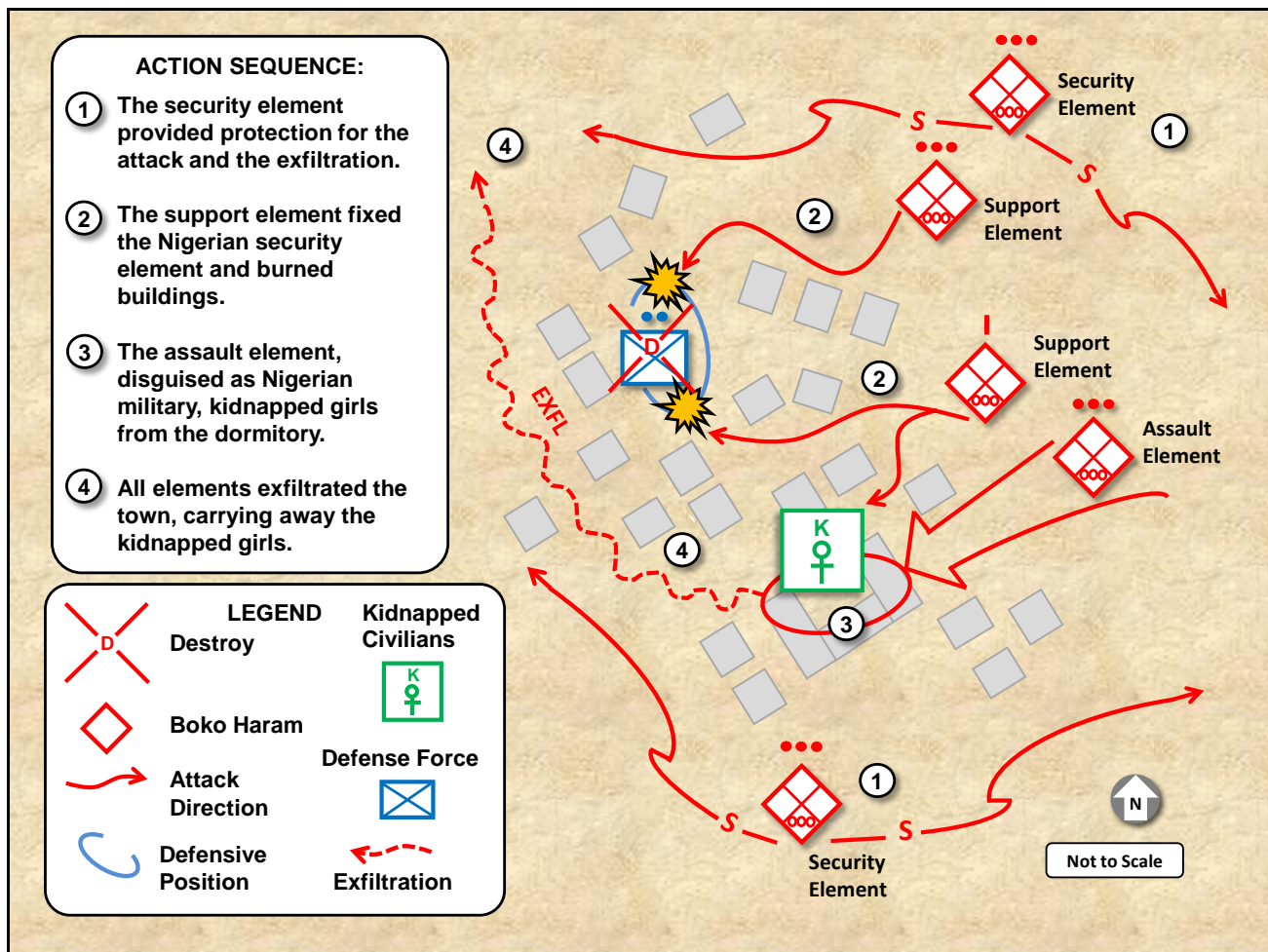


Figure 2. Boko Haram kidnapping at Chibok School (visualization)

Analysis

BH is at a tipping point, being not far removed from its machete-wielding beginning, but developing increasingly stronger relationships with regional and international organizations. A new relationship with ISIL and other regional groups will increase access to funding, weapons, expertise, training, and foreign fighters. As it increases its regional operations, particularly in border countries, BH will face greater pressure from security forces in those countries. Recent operations by the Nigerian military, with support from Chadian and Cameroonian militaries, have reduced the amount of geography controlled by BH.²⁴ The newly elected Nigerian president and former military dictator, Muhammadu Buhari, will in the short term feel an imperative to increase pressure on BH in northeastern Nigeria with joint forces made up of border country militaries.

Responding to this increased pressure will drive BH to use more sophisticated tactics and weapons. BH will increasingly employ coordinated attacks against larger military targets. BH has not used captured mortars, rockets, and anti-aircraft weapons effectively, using them mostly to support raids on villages and badly-defended military outposts. This will change as BH becomes better trained and funded through its developing relationships with ISIL and other groups, and increases its supply of weapons and ammunition through smuggling and captured military inventories. Growing proficiency and capabilities will allow BH to become a much more important regional player as it expands its Nigerian jihad to a regional jihad with more attacks on border countries.

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Notes

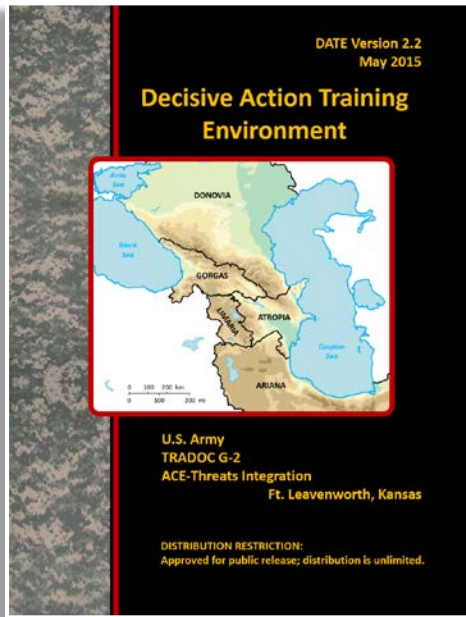
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by [Laura Deatrick](#), TRADOC G-2 ACE Threats Integration (CGI Ctr)

This month sees the publication of the most recent update to the [Decisive Action Training Environment](#) (DATE). While most of the changes in DATE 2.2 are minor, several are more substantial in nature. Modifications to the document fall in four general categories: Names, borders, content, and orders of battle.



DATE 2.2 contains a plethora of name changes. People, groups, organizations, infrastructure, and even countries have been affected. The most pervasive of these modifications is the changing of Kemalia to *Kalaria*, of Minaria to *Limaria*, and of Artzak to *Lower Janga*. Threat actors that have been renamed include the Free Artzak Movement (FAM), Multiple Minarian Factions (MMF), and Sadvol, which have become the *Free Lower Janga Movement (FLJM)*, the *Limarian Liberation Front (LLF)*, and *Salasyl*, respectively. Major infrastructure affected includes the Baku-Tbilisi-Ceyhan oil pipeline (*Trans-Caucasus petroleum pipeline—TC-P*), its companion natural gas pipeline (*Trans-Caucasus gas pipeline—TC-G*), the Baku-Novorossiysk pipeline (*North Caucasus petroleum pipeline—NC-P*), and the Baku-Supsa oil pipeline (*Caspian & Black Seas petroleum pipeline—CBS-P*). Other previously-unnamed pipelines have been christened as well.

The DATE world experiences significant border changes in this edition. Ariana loses its far northwestern tip to Kalaria and Limaria, with the latter receiving the largest territorial gains. A small sliver of Kalarian land previously sandwiched between Limaria and Ariana has also become part of Limaria. Gorgas gains a large section of territory along the Black Sea coast at the expense of Kalaria. The addition to Gorgas is appended on to its southwestern province of Jarie, while Limaria's territorial gains form a new province called Fluvial. Finally, the eastern border of Lower Janga Province, in Atropia, has been modified to exclude the city of Stepanakert from its borders.

its southwestern province of Jarie, while Limaria's territorial gains form a new province called Fluvial. Finally, the eastern border of Lower Janga Province, in Atropia, has been modified to exclude the city of Stepanakert from its borders.



Figure 1. DATE terrain adjustments in version 2.2

Content changes were greatest in the Physical Environment (PE) and Infrastructure variables. Information affected by the aforementioned border modifications, such as the number of road miles in Gorgas, were altered accordingly. All maps were revised to reflect the new borders, topographical maps were replaced in the PE variables of all countries, and other maps in the PE variables were removed. In Limaria, all references to an attempted genocide have been removed. Instead, the Limarian hostility toward Kalaria now stems from an armed conflict with—and loss of territory to—Kalaria, stemming from the Limarian massacre of a Kalarian scientific expedition on Mount Ararat.

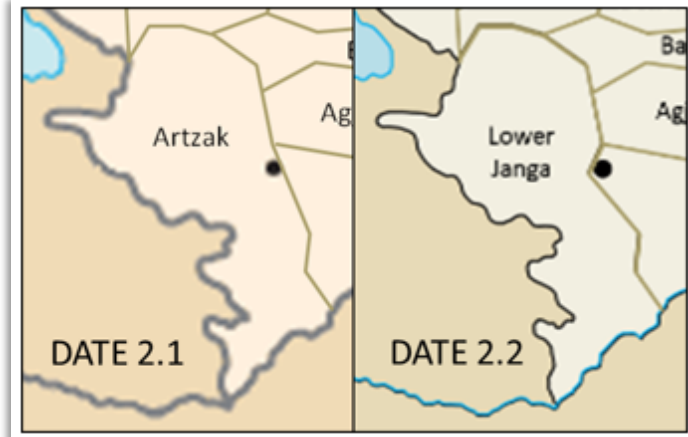


Figure 2. Boundary adjustment

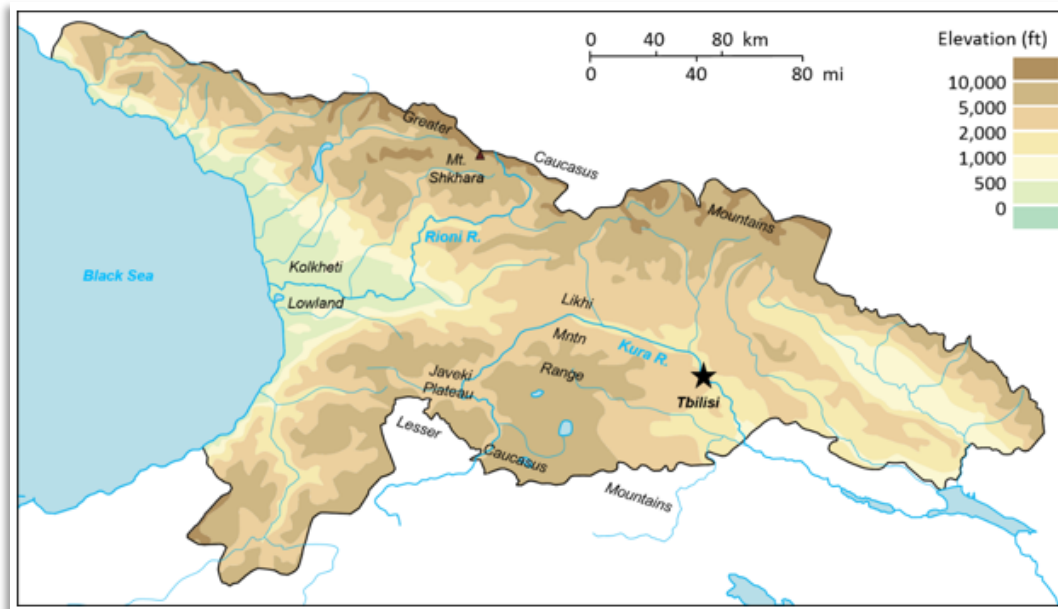


Figure 3. Terrain map (sample)

Other content changes include the following:

- The addition of Ariana’s position regarding the Lower Janga conflict
- The transformation of Ariana’s 92nd Mechanized Infantry Division to a Motorized Infantry Division
- The addition of information on Donovan’s military district command structure and associated internal security brigades
- The addition of Gorgan separatist force sizes
- The lessening of the economic and infrastructure relationship between Ariana and Atropia
- The removal of the Atropian-Donovian natural gas pipeline
- The modification of pipeline routes in Atropia and Gorgas
- The modification of railroad routes in Atropia, Donovan, Gorgas, and Limaria
- The addition of ports to Ariana and Gorgas
- The addition of a Gorgan port city (courtesy of Kalaria)
- The addition of Fluvial Province and the Nakhchivan Reservoir to Limaria



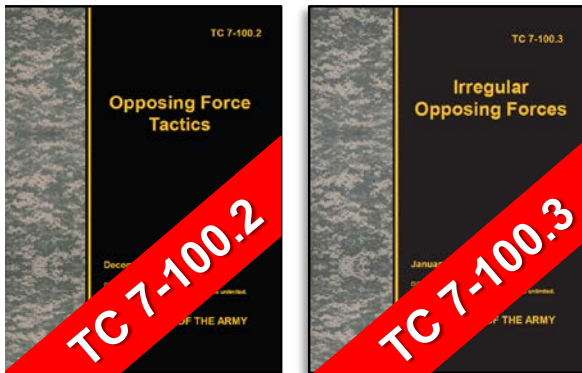
Figure 4. Infrastructure (sample)

Most alterations to the orders of battle (OBs) consist of unit and force structure additions.

Integrated fires commands (IFCs), integrated support commands (ISCs), and reconnaissance, intelligence, surveillance, and target acquisition (RISTA) commands were added to most countries. Force structures for regular forces were added for multiple units, such as signal battalions. They were also added for many of the irregular groups found in DATE, including the South Atropian People’s Army (SAPA), Salasyl, and Gorgan separatist forces in Zabzimek and South Ostremek. One major change to the OBs was the transformation of combat aviation units to combat helicopter units.

DATE 2.2 contains multiple smaller changes that are not discussed in this article. Both the main document and an exhaustive list of errata is on the [ACE Threats Integration Army Training Network \(ATN\) website](#).

Training for Readiness



**Operational Environments
with
Realistic-Robust-Relevant
Threats**





Keeping NBC Relevant: Flame Weapons in the Russian Armed Forces

by [Charles Bartles](#), TRADOC G-2 ACE, Foreign Military Studies Office (FMSO) (DAC)

Introduction

The Russian Nuclear, Biological, and Chemical (NBC) Defense Troops are tasked with identifying NBC threats in the environment, performing decontamination of troops and equipment, and employing aerosols and flame weapons to engage the enemy.¹ In most militaries, flame weapons have traditionally belonged to the NBC troops. The popularity of such weapons has waned significantly throughout the world, but not so in the Russian Armed Forces. While the utility of NBC troops in today's asymmetric warfare is questioned in other armies, Russian NBC Troops' firm grasp of flame weapons keeps them relevant, engaged, and makes them an important asset in the Russian maneuver commander's toolbox.

Flamethrower Technology

The term "flamethrower" itself conjures ideas of the Second World War, with soldiers carrying backpack-mounted aerosol tanks spewing flames from handheld wands, or the M-67 flame-throwing tank that was employed by the US Army and Marine Corps in Vietnam. In current Russian military parlance, the term flamethrower usually refers to projectile-launched thermobaric weapons.² Thermobaric, or fuel-air, weapons cause casualties in a fundamentally different way than conventional high explosives. Conventional high explosives are composed of approximately 25% fuel and 75% oxidizer; this mixture explodes causing a tremendous amount of force.

Thermobaric weapons are almost completely fuel, and work by creating a fuel-filled aerosol cloud of either volatile gases, liquids, or finely powdered explosives.³ The cloud is ignited, and at the center, the ignition of the cloud draws oxygen out of the surrounding area to cause a powerful burn. Although a thermobaric weapon produces a powerful burn in relation to similarly sized charge of high explosives, the primary cause of damage is from the vacuum created by the sucking of the oxygen out of the area, and the overpressure caused from the blast.⁴ These pressures can collapse lungs and cause severe internal injuries.

The fuel-filled aerosol cloud essential for the effective operation of the thermobaric weapon can be negatively affected by environmental conditions that hamper the formation of the aerosol cloud. For this reason, thermobarics are not suited for all environments, and are best employed in enclosed or semi-enclosed environments, such as subterranean areas, in buildings, urban areas, and in the mountains.⁵

Development of Personnel Carried Flamethrowers

The Soviet experience in the Second World War taught that mechanized and tank units were extremely vulnerable in urban combat environments. Urban environments not only restricted maneuver, but also negated the advantages of artillery which could not be employed in close proximity to friendly forces. This lesson was reinforced by the Russian Army's experience in the first Chechen War when tanks of the 131st Motorized Rifle Brigade and the 81st Motorized Rifle Regiment were bottled up and decimated by rocket-propelled grenade launch operators on the streets of Grozny. Urban warfare degrades maneuver and firepower capabilities for conventional armies, while defenders and/or insurgents find a favorable environment for maximizing personnel and armored vehicle losses. Urban warfare also ties the hands of the maneuver commander by not allowing him to employ his full arsenal, as the plight of the civilian population is often exploited in the media by defenders and/or insurgents. The conduct of urban warfare is long, tedious, and bloody. The commander must advance building to building, clearing each from top to bottom.⁶

Doctrinally, the Soviets and Russians avoid urban combat environments when possible, but when not possible they have found flame weapons especially useful. In the Soviet/Russian experience, flame weapons have proved very reliable for filling a niche for a capabilities gap that is created when artillery and mortars are not able to be effectively employed in urban environments. Flame (especially thermobaric) weapons can promptly clear a building, and be used in close proximity to friendly troops. In addition, in more conventional settings, flame weapons prove useful for such activities as bunker busting and clearing light infantry armed with anti-tank weapons in preparation for an armored assault.

The Soviet Union’s first post-Second World War flamethrower was developed and fielded in 1950. The LPO-50 (Light Infantry Flamethrower) is a pack-worn flamethrower with three pressurized fuel containers. The LPO-50 is operated by the discharge of fuel from the pressurized containers, which is ignited by electrical charge at the tip of a handheld flame wand. The discharge lasts from 1.5-2.0 seconds and extends 20-70 meters depending on fuel type and atmospheric conditions. The LPO-50 was effective, but had significant problems. A fully loaded LPO-50 weighs 23 kilograms, a hefty weight considering the device could only be fired three times before requiring refueling. The LPO-50 was excellent for the destruction of wooden buildings, but was ineffective against the adobe and clay buildings, and in mountainous conditions that the Soviets encountered in Afghanistan.⁷ The weight, range, and discharge capacity led Soviet designers to take another look at the back-mounted flamethrower, and try a different technology to achieve a comparable effect. The RPO Rys, Russian for “Lynx”, was the Soviet Union’s first attempt at a rocket-propelled thermobaric grenade launcher. The Rys was fielded in 1975 and was used in the Afghan War. Although the Rys was an improvement over the LPO-50, the Rys was bulky and still had some difficulty destroying clay and adobe structures. Both flamethrowers were used simultaneously in the early years of the Afghan War.⁸

Table 1. Characteristics of Russian Rocket-Propelled Flame Throwers⁹

	RPO Rys	RPO Shmel	RPO Shmel-M (RPO PDM)	MRO Borodach
Caliber	110.5 mm	93 mm	90 mm	72.5mm
Weight of Launcher (w/rocket)	12.6 kg	11 kg	8.8 kg	4.7 kg
Weight of Rocket	3.2 kg	2.1 kg	3.3 kg	1.3 kg
Length	1440 mm	920 mm	940 mm	900 mm
Maximum Range of Direct Fire	190 m	200 m	300 m	90 m
Maximum Effective Range	????	300 m	600 m	300 m
Maximum Range	400 m	1000 m	1700 m	450 m

The Rocket-Propelled Infantry Flame Thrower (RPO)

The Rocket-Propelled Infantry Flame Thrower (RPO), colloquially known as the *Shmel* (Russian for bumblebee), is a family of multi-use firing devices that fire expendable rocket-assisted projectiles, but with a substantially different design than the Rys. The RPO Shmel was first fielded in the 1980s, and proved to be a great improvement over both the Rys and the LPO-50, both of which the Shmel quickly replaced. The Shmel is lighter, has a longer range, and packs far more of a punch than the Rys. The RPO Shmel proved very effective while being deployed in urban and mountainous terrain, and even earned the nickname “Satan Pipe” among the Afghan mujahedeen. The thermobaric warhead of the Shmel was expected to kill all personnel within a 50 meter radius in an open area, and within an 80 cubic meter area in a closed structure. Due to the thermobaric properties of the warhead, it is estimated to have about the same amount of energy as a 107-mm artillery shell on impact. The RPO Shmel is capable of firing three types of munitions. The



Figure 1. [Shmel](#)

RPO-A is thermobaric, and is most often used for the destruction of buildings, bunkers, and personnel in enclosed areas. The RPO-Z is an incendiary munition, and the RPO-D is for smoke. The RPO Shmel was used extensively in the First and Second Chechen Wars, and its performance was much lauded. In 2003, The RPO Shmel-M entered service, the Shmel-M, also known as the RPO PDM (increased range and lethality), has improved characteristics (weight, range, strength of blast, etc.), reportedly having about the same amount of energy as a 152-mm artillery shell on impact, and is replacing the RPO Shmel as inventories are depleted.¹⁰

The newest addition to the family is the MRO *Borodach*, (small caliber infantry flamethrower), which was fielded in 2013 and has reportedly seen service in Eastern Ukraine. The *Borodach* is not replacing the Shmel-M, but instead is likely to be a special version of the RPO family designed for urban warfare. The *Borodach* is smaller and lighter than both the Shmel and the Shmel-M; has a much shorter range; causes less blast damage; and has a different, easier to use, optical system. In terms of munitions, the projectiles are similar to the rest of the family: thermobaric (MRO-A), incendiary (MRO-Z), smoke (MRO-D), and smoke/incendiary (MRO-DZ).¹¹

Employment of the RPO

The Russian Federation believes that rocket-propelled flamethrowers are best employed by NBC troops. Although promotional materials for these weapons tout them as “easy to use,” there is apparently a great deal of training provided to their operators, including a virtual training simulator, the 9F700-2M. The conditional usage of the thermobarics may be another reason they are used almost exclusively by the NBC troops, although Russia does field thermobaric munitions for other rocket-propelled grenade systems. A Russian motorized rifle brigade typically has one flamethrower platoon in its



Figure 2. [Combat vehicle for flamethrower operators \(BMO-T\)](#)

of the enemy line, dismounting with each soldier carrying two RPOs, advancing to within 600 meters of enemy positions (the maximum effective fire range within the Shmel-M), discharging their weapons, and then returning to their vehicles for replenishment. Aside from the flamethrower platoons found in the motorized rifle brigades, the Russian Federation also has flamethrower battalions in NBC Defense Brigades and Regiments. These assets can be attached as needed to support maneuver units and would almost assuredly be assigned (if available) to any maneuver commander expecting urban warfare.¹³

Heavy Flame Thrower System

The Heavy Flame Thrower System (TOS-1), colloquially known as the *Burantino* (Russian for Pinocchio), was the Soviets first attempt to field a heavy flamethrower system in the 1980s. The TOS-1 is a heavy flamethrower system that consists of two different vehicles (a launcher and support vehicle), but in common usage, the launch vehicle itself is often referred to as the TOS-1. The TOS-1 system consists of a combat (launch) vehicle (BM-1/Object 634B) equipped with thirty 220-

NBC Defense Company. Flamethrower platoons usually consist of three six-man squads mounted on specialized BMP-2 (BMO-1) or T-72 (BMO-T) chassised transport vehicles capable of carrying their six-man squad (vehicle driver included) and 30-60 Shmel or Shmel-Ms.¹² Depending on circumstances, the platoon may be attached as a platoon, squads, or as individual members as needed to the supported unit, usually a motorized rifle battalion.

A common scenario for the employment of flamethrowers against an entrenched conventional enemy would involve a flamethrower platoon being attached to a motorized battalion, the flamethrower platoon advancing to within 1.5 to 2.0 km

mm rocket tubes mounted on top of a T-72 tank chassis, and a Transport-Loader Vehicle (TZM-T), also on a T-72 chassis, that carries an additional set of rockets and a loading boom. Doctrinally, the TOS-1 was envisioned to decimate a large area, by charging ahead, while under the protection of tanks, launching rockets in rapid succession (all 30 rockets in 7.5 seconds), and then returning to the rear for rearmament and redeployment. The TOS-1 has a much shorter range (approximately 3.5 km), and its rockets were substantially less accurate than conventional artillery systems, but the combined blasts of the thermobaric rockets produce mutually reinforcing shockwaves that have an impressive effect that has been described as appearing as a nuclear explosion. The TOS-1 saw its first action in Afghanistan, where it was very effective in mountainous terrain, as gorges and valleys are favorable environments for the use of thermobarics.¹⁴



Figure 3. [Heavy flamethrower system \(TOS-1A\)](#)

During combat actions in Afghanistan, some deficiencies were identified with the TOS-1. The 30 barrel rocket housing proved vulnerable to rocket-propelled grenades, a dangerous proposition considering the volatile cargo, so the employment of the TOS-1 always required a substantial covering force. To correct this deficiency, Russia developed a second version of the TOS-1, the TOS-1A *Solntsepek*. The TOS-1A has an added heavy housing to protect the rocket tubes from premature detonation; this armor has reduced the rocket capacity from 30 to 24 rockets. In order to increase mobility, the T-72 chassis has an upgraded engine that produces 800 more horsepower than the TOS-1. The TOS-1A saw combat in Chechnya; its performance was praised in mountainous and urban environments alike.¹⁵ The TOS-1 series of heavy flamethrowers is organized in a similar fashion as Russian artillery units, batteries generally consisting of six TOS-1 or TOS-1As (six BM-1s launch vehicles and six TZM-T support vehicles), with each battalion having three batteries.¹⁶ In general, the TOS-1 or TOS-1As fill the same niche as the RPO series flamethrowers, but on a much larger scale. They will most often be utilized in urban warfare settings, bunker busting, and clearing light infantry.

The Future of Flame and NBC Defense Troops

From a Russian military perspective, flamethrowers are not seen as weapons simply to be handed out to the rank-and-file for any ad-hoc use, but instead are seen as a mature weapon system that fills specific capabilities gaps in the Russian Armed Forces force structure. While maneuver units do have limited flamethrower assets in their NBC defense units, all heavy flamethrowers and flamethrower battalions reside in NBC Defense Regiments and Brigades. At a time when other armies are reevaluating the role of NBC troops in their militaries, the Russian NBC Troops' monopoly on flame, and its usefulness for urban and mountain warfare, bunker busting, and clearing light infantry has required the expansion of NBC troops in the Russian military with the creation or reconstitution of at least four NBC Defense Regiments in 2014.¹⁷ As Russia experiments with "new forms and methods" of war, or "hybrid war" as defined in the West, in Eastern Ukraine, urban warfare will likely continue to be a high priority for development, and so will Russia's flame wielding NBC Defense Troops.¹⁸

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- ² Backpack mounted flamethrowers expend most of their fuel by getting the flame to the target, Projected fuel aerosol canisters are a much more efficient, and lethal, use of energy.
- ³ Lester Grau & Tim Smith, "[A 'Crushing' Victory: Fuel-Air Explosives and Grozny 2000](#)," Marine Corps Gazette, August 2000.
- ⁴ The explosive aerosol mix for thermobarics consists of a liquid like propyl nitrate and a metallic powder, The shell has a mixing device that ensures an even mixture of these chemicals before impact, The speed of detonation of the aerosol cloud is many times slower than conventional explosives (hundredths of a second), but occurs over a large area. Anton Valagin, "[Buratino Sets Alight: How Flamethrower System That Frightened Militants to Death Is Organized](#)," Rossiyskaya Gazeta, 16 May 14.
- ⁵ Lester Grau & Tim Smith, "[A 'Crushing' Victory: Fuel-Air Explosives and Grozny 2000](#)," Marine Corps Gazette, August 2000.
- ⁶ Top to bottom clearing is best since inexperienced defenders put their main efforts into preparing the bottom floors. Aleksey Ramm, "[The Shmel Stings Like Lightning: Joint Stock Company 'Precision Complexes' is Continuing to Improve a Unique Family of Flamethrowers](#)," Voenno-Promyshlenny Kuryer, 25 February 2014.
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TRADOC G2 Worldwide Equipment Guide: R-330zh Jammer Zhitel (Tent)



by [Jerry England](#), TRADOC G-2 ACE Threats Integration (DAC)

The R-330zh Zhitel (Russian for tent) is a Russian Electronic Counter Measure System that, according to Western media outlets and Ukrainian citizens, was used in operations in eastern Ukraine. The R-330's main feature is the ability to jam global positioning systems (GPS) and commercial wireless infrastructure. Such a capability can greatly support a maneuver force's ability to control a particular area of the battlefield by disrupting or denying the enemy's use of commercial wireless communications and global navigation satellite systems.

Based on its target set, the Zhitel is a more advanced variant of the R-330 series jammers. The Zhitel appears to be a brigade level asset and has been associated with the Russian 18th Motorized Rifle Brigade.¹ Generally, a Russian maneuver brigade will field one Zhitel along with its other tactical electronic warfare (EW) systems. The Zhitel targets signals in the ultrahigh frequency bandwidths including L-band and S-band frequencies. The lower frequencies in these bands are usually associated with the GPS and GPS enabled command and control systems.² The Zhitel can also target higher frequency commercial wireless communications within 20 to 30 km of the system's location.

System Capabilities and Characteristics

The R-330zh Zhitel operates in frequencies between 100 and 2,000 Megahertz (MHz). The system uses an intercept, analysis, and direction finding capability that contains an electronic library to reference and identify satellite and cellular phone communication systems.³ The jamming capability will suppress targeted signals between 1,227.6 MHz, 1,575.42 MHz, and 1,500 MHz to 1,900 MHz within 20–30 km of the station. An onboard diesel electric power station allows for 16 hours of autonomous operation. With a trained crew of four, deployment and antennae set-up time is estimated at 40 minutes, the standard for many Russian EW systems.

The Zhitel itself is approximately 6 m long and 3.34 m wide. It is mounted on a standard Ural-43203 or Kamaz-43114 truck with a trailer for the antenna masts. The Kamaz truck possesses an operating range of 1,100 km with a standard 210 liter fuel tank. Pro-Russian separatists spotted it in Ukrainian territory among convoys in early March 2014.

Countries—such as the Czech Republic, Ukraine, and Belorussia—operate other R-330 series jammers. These jammers, however, are older variants and are mainly geared for tactical radio systems operating at the high and very high frequency levels. While these older systems currently do not possess the same capabilities as the Zhitel, it is reasonable to assume that with modifications and upgrades they could become more capable with external technical assistance. Russia can also train foreign EW specialists on the latest equipment.⁴ Based on previous versions of the R-330, namely the R-330B, it is possible that a tracked version can be developed for heavy units based on the MT-Lbu armored tracked chassis.

Employment

The Zhitel was sighted by Ukrainian citizens in Crimea and eastern Ukraine among pro-Russian troops and was tied to cellphone outages in a number of population centers. A *New York Times* reporter first photographed the jammer parked in a Russian cantonment area in Crimea in March 2014 at the beginning of hostilities.⁵ The truck and trailer configurations were identified as the R-330zh Zhitel jammer by a former military specialist working part time for the *Times*. A video

showing a signal column with at least four Zhitels and two EW armored personnel carriers moving toward the Ukraine border was posted on June 2014.⁶ In late July, a reported cellphone outage was attributed by Ukrainian media to the Zhitel in the Ukrainian region of Krasnodon.⁷ In August of the same year, Ukrainian anti-terrorism officials were unable to verify the presence of a large amount of Russian vehicles in Luhansk due to the “difficulty with mobile connections.” It was speculated by the media that the Zhitel was to blame.⁸ In a recent interview, Lt. Gen. Frederick “Ben” Hodges, commander of U.S. Army Europe, has stated that Russian proxies in Ukraine possess, “some of the latest, most-effective jamming [electronic-warfare systems].”⁹

The Zhitel targets commercial wireless communications networks and commercial navigation systems such as NAVSTAR and GLONASS. The ability to disrupt command and control and navigation systems can provide to Zhitel operators an informational advantage by delaying the enemy’s ability to make decisions and denying him the ability to maintain situational awareness. Russian information warfare (INFOWAR) specialists have highlighted electronic warfare as a necessary component of the 21st century battlefield and have emphasized the advancement and development of new technologies to address these conditions. Russian officials identified non-traditional military operations such as the growing terrorist threat, and Russian participation in UN missions as potential scenarios in which EW techniques could be employed. Techniques such as jamming commercial communications systems and counter IED are cited by Russian EW officials as compelling reasons for improvement of EW techniques and equipment.¹⁰

System Proliferation

Currently, there is no data that the R-330zh Zhitel is associated with any force other than Russia. Older variants exist, however, which could be upgraded either with Russian technical assistance or indigenously. It is possible that Russia’s allies may be able to convince military officials to provide this capability if a case can be made that a serious threat to Russia’s interests exist. Syria, which has benefitted from Russian electronic technology in the past, could acquire a system similar to the Zhitel for its ongoing civil war. The Syrian regime could target satellite links and triangulate the locations of targets based off their radio frequencies. This technique was suspected by researchers at the Electronic Frontier Foundation as possibly used in the targeting of an unauthorized media broadcast in the Baba Amir district of the city of Homs, Syria in which two western journalists were killed.¹¹ Also, the need for Iranian authorities to jam military targets such as ground forces or unmanned aerial vehicles could cause either the Iranian Army or its revolutionary guard to seek similar capabilities to the Zhitel either through Russia or through its own production.

Training Implications

United States Army units should consider the ramifications of operating without the use of certain space-based enablers and seek to create training environments that replicate these conditions. Operating in an environment without access to GPS would force units to develop contingency plans for navigating and providing situational updates on a regular basis. Additionally, training with degraded command and control systems can emphasize the importance of operational security and frequency management as a means to preserving important wireless tactical systems. Secretary of Defense Ash Carter recently highlighted this issue when he stated that Department of Defense officials, “worry about enemies jamming GPS signals.”¹²

The ability of the Zhitel to target commercial wireless will pose a unique challenge to decisive action tasks, especially stability tasks because of their reliance on interoperability with the local population. Military units working with foreign state and non-state actors such as government ministries, foreign militaries, and nongovernmental organizations will be challenged if interoperability issues are not addressed and those units decide to rely the local wireless infrastructure, or if satellite phones are being jammed.

Threat Doctrine Manifestations

The TRADOC G-2 ACE Threats Hybrid Threat Force Structure and the Worldwide Equipment Guide has equipment specifications and organizational components within the INFOWAR Battalion’s Electronic Warfare Company that allows exercise designers to include threat capabilities such as the Zhitel in their exercises.

Electronic warfare is an element of the hybrid threat’s information warfare activities. The ability to degrade command and control structures, disrupt observation and collection efforts, and possibly exploit existing infrastructure is a perceived capability of the R-330ZH Zhitel. This capability is available in the INFOWAR Battalion of the Hybrid Threat Force Structure on the Army Training Network here: https://atn.army.mil/dsp_template.aspx?dpID=323.

RUSSIAN R-330ZH ZHITEL (TENT) COMMUNICATIONS JAMMING STATION



SYSTEM	SPECIFICATIONS	DESCRIPTION	SPECIFICATIONS
Alternative Designations:	Zhitel, Tent	Radios:	
Date of Introduction:	INA	Communications Radios Sets:	R-163-50U and R-168-100UE
Proliferation:	Russia	Protection:	Against 5.56 ball 5.56, all-around
DESCRIPTION		PERFORMANCE	
Crew:	4	Set Up Time:	40 min (est.)
Platform (chassis):	Ural-43203/KAMAZ-43114	Jamming Frequency Range:	100 to 2,000Mhz (GSM, GPS)
Combat Weight (mt):	11 (est.)	Jamming Range:	20-30 km
Chassis Length Overall (m):	7.73	Output Power:	UNK
Height Overall (m):	3.375	Jamming Types:	UNK
Width Overall (m):	3.34	Receiver Sensitivity:	UNK
Automotive Performance:	KAMAZ-43114 Variant	Intercept Frequency range:	100 to 2,000 MHz
Engine Type:	KAMAZ 740.31, V8 , 165hp turbo charged diesel	Identification Time:	UNK
Cruising Range (km):	1,100 km	Azimuth:	-90 to 120°
Speed (km/h):	82	Elevation:	-15 to +20°
Max Road:	26	Endurance:	16 hours autonomous
Max Off-Road:	INA		
Cross-Country:	1.75		

NOTES

The R-330zh can operate stand alone or with other jammers under a central control system. Its target set includes Wireless Cellular service, and space based UHF receivers. It is unknown whether R-330zh can perform spoofing operations.

Notes

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NORTH KOREAN TANKS

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

Part 1 of 2 Parts

The Democratic People's Republic of Korea (DPRK), also known as North Korea, fields a large armor force that includes over 3,500 tanks ranging from the obsolete to some of more recent vintage. While the forthcoming *Threat Tactics Report: North Korea* discusses the armor threat, it does not provide an in-depth look at this major piece of equipment in the Korean People's Army (KPA). This two-part article will discuss the general use of tanks on the Korean peninsula, a possible tactic that North Korea may employ using tanks, details and specifications about each of the KPA's major tanks, some of the more important variants available, and conclude with a chart that compares the various tanks in a number of categories. For additional information on most of these tanks, see the [Worldwide Equipment Guide \(WEG\)](#) on the Army Training Network (ATN).

Deployment

The terrain on the Korean peninsula is mountainous in many areas, especially in North Korea. This will likely limit the tanks and other tracked vehicles to the road system or the valleys that the road system usually follows. Even in the valleys, off-road access for tracked vehicles may be limited due to the rice patties usually found adjacent to roads in lowland areas. The winter months may be more optimal time for armor movement as some rice patties in the valleys will be frozen. The lighter tanks may be able to traverse more cross country terrain than the larger tanks. The western part of the Korean peninsula is more conducive to armor movement than the eastern side due to the more mountainous terrain.

In offensive operations, KPA armor units will likely use old Soviet-style tactics with two-thirds of its force in the first echelon, about two-ninths in the second echelon, and the remainder in the third echelon or as a strategic reserve. When in defense, the KPA will also echelon its armored forces with about the same deployment tactic, with two-thirds in the front lines or first echelon and one-third in the second echelon. The second echelon can be used to plug a breach in the front line or to conduct a counter attack.

Tactical Example¹

When North Korean forces are threatened with a superior enemy force, they will likely use a *dispersed attack* in an attempt to achieve its objective. The primary objective of a dispersed attack is to take advantage of a window of opportunity to bring enough combined arms force to bear to destroy the enemy's will and/or capability to continue fighting. To achieve this, the KPA does not necessarily have to destroy the entire enemy force, but often just destroy or degrade a key component of the enemy's combat system. The KPA will likely fix its enemy's main combat force in order to successfully attack the actual target. While the KPA may have the majority of its force engaged with its enemy's maneuver elements, the decisive point is actually elsewhere on the battlefield.

The first step will be for the KPA to determine the most appropriate component of the enemy's combat system to destroy or degrade. For US forces, this will likely be a key logistical center or an important command and control (C2) element. The KPA dispersed attack will likely be characterized by the following:

- The KPA's focus is not on the complete destruction of the US/South Korean ground combat power, but probably on the destruction of a key component, most likely C2 or logistics.
- The KPA will likely attempt to fix and isolate US/South Korean combat power.
- The KPA will likely use smaller and independent subordinate elements.
- The KPA will likely conduct rapid movements from dispersed locations.
- The KPA will likely not mass its forces until the last possible moment.
- The KPA will likely conduct simultaneous attacks at multiple and dispersed locations.
- The KPA will likely use deception and other information warfare (INFOWAR) elements to degrade the US/South Korean situational understanding and ability to target the KPA ground formations.

The following is an example of a KPA brigade-size element using a dispersed attack with armor and three types of infantry—mechanized, regular, and air assault—against a battalion command post (CP). During the initial phase, the KPA

will mass its artillery and rockets to help disrupt the front line units while other longer-range indirect fire weapons will attempt to destroy the battalion CP and fix the battalion reserve force. In the second phase, much of the armor and mechanized elements will assault the enemy companies in the valley as part of the fixing force, while mechanized infantry run the east ridgeline to fix the friendly battalion reserve force so the friendly forces cannot respond to either the frontal assault or the assault against the battalion CP. An air assault element and mechanized infantry (or possibly special purpose forces [SPF]) will also conduct a simultaneous movement along the west ridgeline to serve as part of the exploitation force to support the attack against the battalion CP. With the friendly front line units fixed in place and the battalion reserve engaged, the final step is for a mechanized exploitation force coming from two different locations to join together and serve as the KPA main effort to complete the destruction of the battalion CP. The intent is to destroy the battalion C2 capability and, with the loss the command post, the ability for the battalion commander to successfully control his subordinate units.

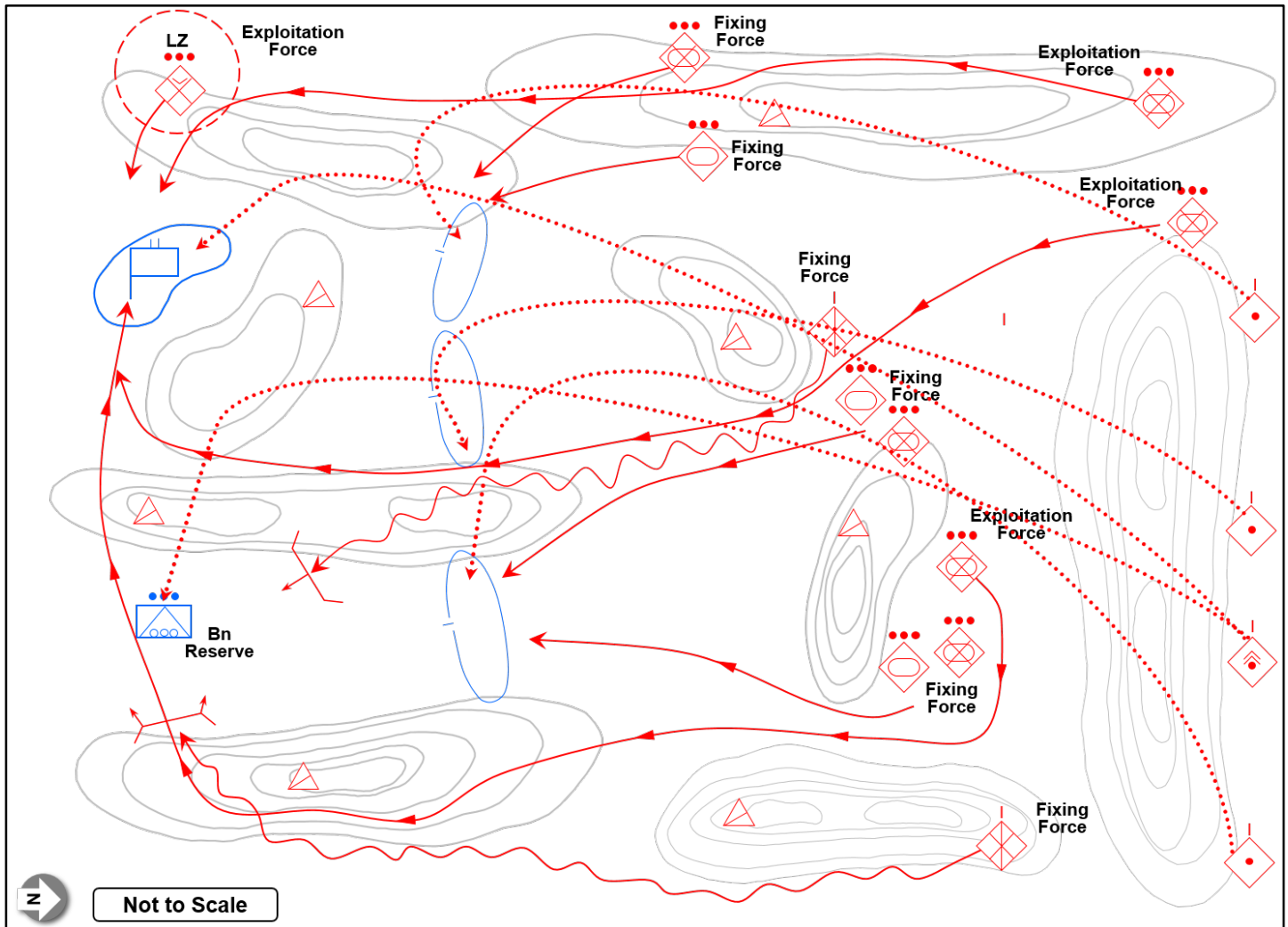


Figure 1: Dispersed attack (Example from Training Circular (TC) TC-100.2 dated 24 August 2011, modified by TRADOC G-2 ACE Threats, 17 February 2015)

In this dispersed attack example, the North Korea armor units cannot negotiate the hilly/mountainous terrain on both sides of the valley and therefore must be used as part of the fixing force in the valley. If the KPA armor elements find success, however, the KPA may modify its plans to exploit any gaps created by North Korea's tanks, and some tanks may become part of the exploitation force against the battalion CP.

Strengths and Weaknesses

North Korean tanks have both strengths and weaknesses when compared to other tanks that the KPA will encounter on the battlefield. The KPA's biggest strength is the sheer number of tanks that the KPA fields—approximately 3,500 of all

types. Any tank is a threat on the battlefield and the KPA operates one of the largest armor forces of any military in the world. A second strength is the relatively low silhouette of the majority of the KPA's tanks. Like most former Soviet/Russian tanks and those produced by other countries associated with the former communist state, North Korea's tanks have a tendency to exhibit a lower profile than tanks produced by Western militaries. The smaller the target is on a battlefield, the more likely it will not be seen. Without exposure to the enemy, a tank is very likely to survive on the battlefield. Another positive attribute for most KPA armor is its ability to operate with external fuel tanks that extend the range of the tanks. The additional range reduces the number of fill-ups a tank requires, a vulnerable time if exposed to the enemy. If the tank must go to the rear to refuel safely, the tank is out of action for that amount of time. Some of the KPA tanks feature an automatic loader that reduces the number of crew personnel needed to operate, but the automatic loader also standardizes the time interval between tank rounds. There is no method to speed up the number of rounds fired per minute.

KPA tanks also contain a number of weaknesses. Due to the lower profile of the tanks, the range that the main gun can elevate and depress is often less than Western-produced tanks. The inability of the tank to significantly depress its main gun makes it vulnerable to reverse slope techniques employed in the defense. Units in defense with anti-tank (AT) weapons can situate themselves at the bottom of hills so when the tank tops the hill, the belly of the tank—often where the armor is thinnest—is exposed. The main tank gun cannot depress low enough to sight in on the AT weapon and therefore gives the KPA's enemy the opportunity to fire AT weapons without fear of immediate return fire by the KPA tank's main gun. Another issue with many older KPA tanks is their inability to fire on the move due to a lack of a main gun stabilizer. This means that the tanks must stop their movement in order to fire and to increase their probability of a hit. A stopped tank is an easier target on the battlefield for other tanks or AT weapons. The KPA's most modern tanks operate using a stabilizer, but even some of those only feature a single-dimension stabilizer. The final issue affecting all KPA vehicles is that the North Korean military lacks a large fuel reserve due to sanctions on the DPRK and the lack of internal petroleum reserves and oil refineries. This fuel shortage means that the KPA will need to capture their enemy's fuel depots in order to continue an offensive. Without fuel, a tank becomes just a pill box with a large-caliber gun susceptible to rapid defeat by the enemy.²

Types of KPA Tanks

The KPA uses a variety of tanks. The following paragraphs highlight the major tanks used by the KPA. The tank photos, may be from a different army than the KPA, depending on availability of open source photos. At the end is a table that provides data on the tanks discussed and can be used for comparison of the various tanks fielded by the KPA.

T-34/85³

While many analysts and historians considered the T-34 the best tank of World War II, it is now hopelessly archaic. While the original T-34 mounted a 76-mm gun, the T-34/85 mounts a larger 85-mm gun. Even though the upgrade in the gun size increases the weight of the vehicle six tons from 26.5 to 32.5 tons, its mobility—including cross-country capability—suffers little due to the extra weight. The Soviet Union built 53,000 T-34s during World War II and production continued in the USSR until 1948. Production in other Warsaw bloc countries continued until 1956. During the 2014 fighting between Ukrainian forces and the pro-Russian supporters in Lugansk, the separatists with pro-Russian leanings repaired a T-34 tank that was part of a memorial and use it against the governmental forces.⁴ While the T-34/85 may be obsolete, any tank has the potential to be deadly on the battlefield. North Korea is likely to have some T-34/85s in reserve that would be used as replacement tanks, if needed.



Figure 1. [T34/85 Main battle tank \(MBT\)](#)

T-34 tanks feature three separate compartments with a driver and bow machine gunner in the forward compartment, the remaining three crew members in the middle main section, and the engine situated separately in the vehicle's rear. The driver sits in the middle of the vehicle with the bow gunner

to his right. The tank commander and gunner sit on the left side of the weapons system with the loader on the right side of the vehicle.

The T-34/85's main weapon is a ZiS-S-53 85-mm rifled gun that sits on a turret and can rotate 360 degrees with range of elevation from -5 degrees to +25 degrees. The T-34/85 normally carries 56 rounds of main gun ammunition. The gunner can also operate a 7.62-mm DTM (Degtyaryov) coaxial machine gun with a basic load of 2,394 rounds of ammunition. The bow gunner operates another 7.62-mm DTM machine gun or, in some variations, a 12.7-mm DShKM (Degtyaryov-Shpagin Large-Caliber) machine gun. The main gun uses optical sights to acquire its target.

With either gun, the T-34 still has approximately the same engine performance specifications. The T-34/85 is normally powered by a V-34 or V-2-34M water-cooled V-12 diesel engine that can generate 500 horsepower at 1,800 rpms. The T-34/85 can travel 56 km/h on roads and 35 km/h off roads with a road range of 300 km and a cross-country range of 209 km. With external fuel tanks, the road range of the T-34/85 can reach 500 km. The T-34/85 can cross a vertical obstacle 0.73 meters (m) in height or a trench 2.5 m wide with the ability to climb a gradient of 60 percent. The T-34 tank can ford a water obstacle 1.3 m in depth or 5.5 m deep with a snorkel. The track vehicle uses the Christie suspension system with coil springs, five road wheels, rear drive, and front idler, but no return rollers.

The T-34/85's armor protection varies depending on the location on the vehicle and ranges from 18 mm to 90 mm. The thinnest armor is on the top of the vehicle and ranges from 18–22 mm in thickness while the turret front has 90 mm of protection. Earlier T-34 models may only carry 75–85 mm of armor on the front turret. The sides of the turret are 75 mm thick and the turret's rear only provides 60 mm of protection. The glacis, or the front slope of the tank, and the hull sides range from 45–47 mm in thickness.

T-34 Variants: There are a number of T-34 variants, but it is unlikely that many of them will be found in the KPA. These include the original T-34 with a 76-mm gun, an armored recovery vehicle (ARV), an Egyptian export T-34/85, Chinese versions, and T-34s converted into howitzers, bridgelayers, bulldozers, or flamethrower vehicles.

T-54/T-55⁵

The second most likely tank that any soldier can expect to encounter in a battle against the KPA is the T-54 or T-55. While there are minor differences between the T-54 and T-55 Main Battle Tanks (MBTs), the capabilities of the two armor vehicles are so similar that they are usually considered the same vehicle for analysis purposes. The T-55 is missing the right-hand cupola on the turret and turret dome ventilator just in front of the cupola is usually only found on the T-54.



Figure 2. [T-54 MBT without camouflage paint](#)

Most T-55s do not feature the 12.7-mm anti-aircraft machine gun found on the T-54. All T-55 tanks carry an infrared gunner's searchlight mounted above and to the right of the main gun, but these searchlights can also be found on selected retrofitted T-54s. T-54s rolled off the assembly line as early as 1950 and T-55s began production in 1958. The USSR ceased T-54/T-55 production in 1981 while Czechoslovakia continued to manufacture its versions of the T-54/T-55 until 1983. It is likely that North Korea fields approximately 1,175 of these tanks from a combination of Soviet T-54, T-55, and Chinese Type 59 MBTs.

Like the T-34 before it, the T-54 and T-55 MBTs contain three compartments. The crew, however, has been reduced to only four soldiers. The driver sits alone in the front section; the commander, gunner, and loader in the center compartment;

with the engine and transmission in the rear area. The driver sits on the left side of the vehicle while the right side of the compartment is set aside for spare 100-mm ammunition, batteries, and a small fuel tank. The T-54/T-55 does have a hull escape hatch located just behind the driver. In the turret, the gunner and tank commander sits in a line directly behind the driver. The loader sits on the right side of the turret. The vehicle's small turret and low silhouette, one meter lower in profile than the American M-60, makes the crew compartment very cramped. This lack of space constrains the height of soldiers that can become crew members and reduces the tank's rate of fire.

The primary weapon on the T-54/55 is normally a rifled, but unstabilized, D-10T 100-mm gun with an average rate of fire of four rounds per minute. Without stabilization, the tank is less accurate when firing on the move. Some later T-54/55 received a D-10TG gun that is stabilized vertically while others received the D-10T2S that is stabilized in both the vertical and horizontal planes. In some cases, earlier T-54/55s are retrofitted with the better guns. The tank commander normally uses a TPK-1 sight while the gunner operates a TSh 2-22 with a 3 1/2 or 7-power sight. Some T-55M models also contain a rangefinder. While all T-54/55 MBT's guns can rotate 360 degrees, the T-54 does not possess a rotating turret floor and the T-55 only features a partial rotating turret floor.

The gun can elevate to as high as +17 degrees and as low as -5 degrees. T-54 MBTs carry 34 main gun rounds while the T-55 adds an additional nine rounds. The T-54/55 MBTs carry a coaxial 7.62-mm PKT (Pulemyot Kalashnikova) machine gun with a basic load of 3, 500 rounds. The T-54 also features a 12.7-mm DshK 38/46 AA machine gun with 500 rounds and a bow-mounted 7.62-mm machine gun. One difference between the T-54 and the T-55 is the latter's D-10T2S gun which is found in versions such as the T-55AMV and can also fire an anti-tank gun missile (ATGM). Any T-54s retrofitted with the 10T2S barrel will also share that capability with T-55s.



Figure 3. [T-55 MBT with machine gun pintle-mount](#)

While the T-54/T-55 is an improvement over the T-34 in most respects, speed is not one of them. The T-54 MBT can only travel 50 km/h on roads and 32 km/h cross country while the T-55 maintains the same road speed, but its cross country speed does reach 35 km/h. The range of the T-54/T-55 MBTs depends upon the use of external gasoline tanks. Without the long-range tanks, the T-54 can go 400 km without refueling and the T-55, 500 km. With the additional tanks, the T-54's range increases to 720 km and the T-55 to 650 km. All T-54/T-55 variants can cross a vertical obstacle 0.8 m in height or a trench 2.7 m in width. The T-54/T-55s can climb the same gradient as its T-34 predecessor, 60%. The T-54/T-55 MBT also possesses the capability to ford a river 1.4 m deep or, with a snorkel kit and time to emplace it, 5.5 m in depth. It takes approximately 30 minutes to prepare the tank for snorkeling and the entry and exit points also need work to ease the tank in and out of the water. The T-54/T-55 MBTs use the Christie suspension system with five road wheels with a noticeably larger gap between the first and second road wheels on each side of the vehicle.

The T-54/T-55 upgrades the crew's survivability over the T-34 as its armor ranges from 20 mm on the hull floor to 203 mm on the turret front for some variants. The thickness of the hull's armor is only 20 mm on the lower sides to more than 97 mm on the front. The turret armor also varies greatly from only 39 mm on the top to 203 mm on its front, the most-often hit place on a tank.

T-54/T-55 Variants: The number of versions of T-54/T-55 tanks is almost as numerous as the years the tank was produced. The exact type of T-54/T-55 MBTs operated by North Korea could include some of the following: T-54A with an added fume extractor, gun stabilizer, night-vision equipment, electrical improvements, and a fire suppression system; T-54B with an improved 100-mm D-10T2S gun, infrared searchlight, external fuel tanks, and snorkel system; T-54M/T-54AM with night-fighting equipment, NBC (nuclear, biological, and chemical) warning and protection systems, gun stabilizer, additional armor, and a V-55U diesel engine; T-54K command tank with less ammunition, but more communications gear; T-55 Model 2 with added NBC protection, but no bow machine gun; ARVs (armored recovery vehicle); and those equipped with mine-clearing equipment.

PT-76⁶

The PT-76 is a light amphibious tank that is often found in reconnaissance units to provide firepower that a scout car cannot. The Soviet Union began assembly-line production of this tank in 1952 after going through a two-year design process beginning in 1949. The PT-76 uses the same chassis and power train components that the Soviets used on other armored vehicles such as the BTR-50, the BMP, and the ASU-85 tank destroyer. The USSR produced approximately 12,000 of these tanks until it ceased production in 1969. At about 14 tons, this tank weighs over 20 tons less than the T-54/T-55 from the same era. North Korea has approximately 560 PT-76 light amphibious tanks, including Type 63 Chinese copies.

The Chinese Type 63 amphibious tank is basically the same as the PT-76, but can reach higher speeds and is also armed with an ATGM.



Figure 4. [PT-76 amphibious tank](#)

The PT-76 is built from welded steel with three compartments—driver in the front, tank commander and loader in the middle, and the engine in the rear. The driver sits in the center of the hull and when buttoned up can see through three TNP daytime periscopes. To see over the front of the vehicle when the trim vane is erected to cross rivers, a PER-17A day periscope can replace the center TNP periscope. The driver normally enters the vehicle from the top hatch, but there is an emergency escape hatch located under his seat. The original PT-76 featured a TPKU-1 day sight with a 5x magnification for the commander, but this was replaced on

the PT-76B with a TPKU-2 day sight and two TNP day periscopes. The loader can see outside the vehicle through an MK-4 day observation device.

There are normally two weapon systems on the PT-76, but some of the tanks may also carry an optional anti-aircraft (AA) machine gun. The main gun is a 76.2-mm D56TS rifled gun, stabilized in both planes (available only on the PT-76B variant), that can traverse 360 degrees with an elevation range from -4 degrees to +30 degrees. The normal basic ammunition load is 40 HVAP (high-velocity, armor piercing) and HEAT (high explosive, anti-tank) rounds with a sustained rate of fire of six to eight rounds per minute. The second weapon is a coaxial mounted, 7.62-mm SGMT (SG-43 Goryunov Modernized) or PKT machine gun with a basic load of 1,000 rounds. Some PT-76s will also carry a 12.7-mm DShKM AA machine gun.

Like most Soviet armored vehicles, the PT-76 uses the Christie suspension system, but with six road wheels, front idler, and torsion bar, and no return rollers. There are hydraulic shock absorbers on the first and second road wheels. The PT-76 can travel up to 44 km/h on the road or 10 km/h on the water. The PT-76B has a range of 370 km on land and 120 km in the water. With auxiliary fuel tanks, the PT-76 can travel an additional 110 km on firm ground without refueling. The tank can climb a hill up to 70% in grade. The tank can quickly become amphibious with the erection of a front trim vane and the activation of two electric bilge pumps before the vehicle enters the water. Propulsion is through two rear-mounted water jets and the driver steers the vehicle by closing the hatches over the water jets.

Due to its light armor protection, the PT-76 is susceptible to almost any weapon system except small-arms fire. The maximum armor on the hull is 14 mm on the lower front and is only 7 mm thick on the top. The turret on the PT-76 is slightly thicker at 17 to 20 mm on the front, 16 mm on the sides, 11 mm on the rear, and 8 mm on top. The PT-76B has an NBC protection system and all models feature a smoke system produced by injecting diesel fuel into the exhaust system.

PT-76 Variants: Over the years, the PT-76 has been upgraded through its various versions. Other variants besides the Chinese Type 63 include the PT-76A containing a D56T gun with a multi-slotted muzzle brake; the PT-76B with its two-axis stabilizer, an improved PKT machine gun, two external fuel tanks, driver's night vision device, better communications equipment, and increased speed; the PT-76C that is like the PT-76B with a turret mounted 12.7-mm AA machine gun; and the M1985 that is a North Korean variant based on the Chinese Type 63 hull using the Soviet PT-76 turret.

Type 59⁷

Besides Soviet-design tanks, the North Korean military also uses those produced by China such as the Type 59 MBT. The Type 59 is a licensed copy of the T-54/55 produced after the Chinese received some of the MBTs from the USSR. The Chinese built their first Type 59 prototypes in 1951, but their first production models did not leave the assembly line until 1958. China North Industries (NORINCO) continued to produce the Type 59 MBT until 1980. Over the years, various modifications occurred in order for the tank to maintain its relevance. North Korea operates a total of approximately 1,175 Type 59 tanks when one includes the Soviet-produced T-54 and T-55 MBTs that offer the same basic capabilities.

Like the T-54/T-55, there is a crew of four soldiers and three compartments. The driver sits on the left of the hull with his entry hatch immediately above him. The driver has two pop-up vision blocks that allow him to see straight ahead and

slightly to the right. The tank commander sits on the left side of the turret and the gunner is directly forward of him, but at a lower level. The loader is on the right side of the turret and all three crewmembers in the turret have their own hatch.

The Type 59 MBT's primary weapon is a Type 59 100-mm cannon with a basic load of 34 rounds. The main gun can elevate from -4 degrees to +17 degrees and can rotate 360 degrees despite having a non-rotational turret floor. The Type 59 also features three machine guns. The gunner can also operate a fixed Type 59T 7.62-mm machine gun that is mounted in the bow of the vehicle. The tank commander can operate either a coaxially-mounted 59T 7.62-mm machine gun or a Type 54 12.7-mm anti-aircraft machine gun mounted above his hatch. The standard ammunition load for the Type 59 MBT is 200 12.7-mm rounds and 3,500 7.62-mm rounds.

The Type 59 exhibits approximately the same travel performance metrics as the T-54/T-55. Maximum speed on roads is 50 km/h, but this MBT can only obtain 25 km/h when traveling cross-country. With external fuel tanks, the Type 59 can go 600 km but only 440 km without the extra fuel. The Type 59 can cross a vertical obstacle 0.8 m in height or span a gap of 2.7 m without assistance. The T-59 can travel a 60% gradient and even 40% while traveling on a side slope. The Type 59 can ford a stream 1.4 m in depth without preparation and 5.5 m with preparation time to emplace its snorkel.

The Type 59 features the same protection capabilities as the T-54/T-55 as the armor thickness is virtually the same. The hull armor ranges from 99 mm on the front to 46 mm in the rear and 33 mm on top of the tank. The turret is 203 mm on the front, 150 mm on the sides, 64 mm on the rear, and 39 mm on the roof. The Type 59 MBT can lay its own smoke screen by injecting diesel fuel into the exhaust pipe on the left side of the hull, just above the last road wheel.

Type 59 Variants: Chinese Type 59 variants include the Type 59 II with an up-gunned rifled 105-mm gun with a fume extractor, a 580 hp diesel engine, improved communications equipment, and an automatic fire suppression system; an ARV without a turret and armed only with a 12.7-mm machine gun for self-defense; and the Type 59P with a 730 hp diesel engine that gives it a maximum speed of 40 km/h, extra armor protection, improved communications and navigation equipment, and an NBC filtration system. From a stationary position, the latter version is said to be able to hit a stationary target within five seconds and a moving target within seven seconds. While moving, the Type 59P is reportedly able to hit another moving target in ten seconds.



Figure 5. [Chinese Type 59 MBT](#)

Look for the continuation of this article as Part 2 in a future, summer 2015 issue of *Red Diamond*. For additional information on most of these tanks, see the [Worldwide Equipment Guide \(WEG\)](#) on the Army Training Network (ATN).

Notes

¹ Department of the Army, "TC 7-100.2, Opposing Force Tactics," Approved Final Draft, August 2011, Page 3-13 to 3-16.

² Paul Szoldra and Geoffrey Ingersoll, "[North Korea's Fighter Fleet is Full of Decrepit Russian MIG 21s](#)," Business Insider, 2 April 2013; Jane's Sentinel Security Assessment, "Korea, North > Armed Forces," 2 July 2014; Jane's Sentinel Security Assessment, "Korea, North > Army," 1 September 2014.

³ Military Periscope, "[T-34 medium tank](#)," 1 January 2015; Global Security, "[T-34 Medium Tank](#)," Undated; Military Factory, "[T-34/85 Medium Tank \(1943\)](#)," 1 May 2012; Roger Ford, "The Gatefold Book of Tanks," Barnes & Noble Books, 1998, p 14.

⁴ YouTube, "[Ukraine. Pro-Russian activists repaired museum exhibit – tank IS-3](#)," 5 June 2014.

⁵ Military Periscope, "[T-54 main battle tank](#)," 1 October 2014; Global Security, "[T-54/T-55 Series Tanks](#)," Undated; Military Factory, "[T-55 Medium Tank/Main Battle Tank \(1958\)](#)," 22 September 2014; Military Factory, "[T-54 Medium Tank/Main Battle Tank \(1949\)](#)," 1 July 2014; Christopher F. Foxx, "Tanks and Combat Vehicles Recognition Guide," Jane's Fully Updated Second Edition, HarperCollins Publishers, 2000, pp 72-73; Roger Ford, "The Gatefold Book of Tanks," Barnes & Noble Books, 1998, p 23.

⁶ Military Periscope, "[PT-76 light amphibious tank](#)," 1 September 2013; Global Security, "[PT-76](#)," Undated; Christopher F. Foxx, "Tanks and Combat Vehicles Recognition Guide," Jane's Fully Updated Second Edition, HarperCollins Publishers, 2000, pp 76-77; Roger Ford, "The Gatefold Book of Tanks," Barnes & Noble Books, 1998, p 22.

⁷ Military Periscope, "[Type 59 main battle tank](#)," 1 October 2014; Global Security, "[Type 59/WZ-120 Medium Tank](#)," Undated; Global Security, "[Type 59/WZ-120 Medium Tank Variants](#)," Undated; Military Factory, "[Type 59 Main Battle Tank \(1959\)](#)," 18 November 2010; Christopher F. Foxx, "Tanks and Combat Vehicles Recognition Guide," Jane's Fully Updated Second Edition, HarperCollins Publishers, 2000, pp 20-21.

WHERE IS YOUR *EASY RESOURCE* OF THREATS/OPPOSING FORCE/OE PRODUCTS?

by TRADOC G-2 ACE Threats Integration, Operations

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 operational environment (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.

The screenshot shows the ATN website interface with three numbered callouts:

- 1**: A callout box with the text "Go to <https://atn.army.mil/>" pointing to the top navigation bar.
- 2**: A callout box with the text "Click." and an arrow pointing to the "Training for Operations" button in the main navigation menu.
- 3**: A callout box with the text "Click." and an arrow pointing to the "ACE-Threats Integration Operational Environment Page" link in the left sidebar.

Additional annotations include:

- A callout box with the text "Check this out too!" pointing to the "OPFOR & Hybrid Threat Doctrine" link in the main content area.
- A red diagonal banner in the bottom right corner of the screenshot with the text "Sample Products".

Below the screenshot, the text "Find-Use Threats and OE Awareness Products" is displayed.

IRANIAN ISLAMIC REVOLUTIONARY GUARD CORPS NAVY PRIMER

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

In a recent incident, an element of the Iranian navy interdicted and seized the container ship, designated the *Maersk Tigris*, in the Strait of Hormuz.¹ There is speculation from the media and within the intelligence community that Iran initiated this act in retaliation for the Saudi Arabian naval blockade of Yemen or the US Navy's increasing presence in the Gulf of Oman.² Another hypothesis posed is that this action could simply be another menacing reminder that the Strait of Hormuz is a vulnerable shipping lane and the Islamic Revolutionary Guard Corps Navy (IRGCN) can disrupt operations successfully without much warning, which can potentially disrupt the global economy.³

Earlier this year, the IRGC held an annual military Prophet Exercise (Prophet 9) in which the Iranians used a replica US aircraft carrier during the naval portion of the exercise.⁴ This event is a yearly occurrence, but this is the first time that the Iranians used a mockup enemy aircraft carrier during the simulated battle. This is likely just another overt Iranian information warfare (INFOWAR) message using the IRGCN to deter the United States or others countries from interfering in Iranian affairs.

This article will be the first of a series focused on the Iranian military that supports the development of a Threat Tactics Report (TTR) by ACE-Threats Integration. The article discusses the IRGCN's mission and capabilities, and provides an example from an exercise illustrating the importance of the IRGCN and a key component of its operational environment.

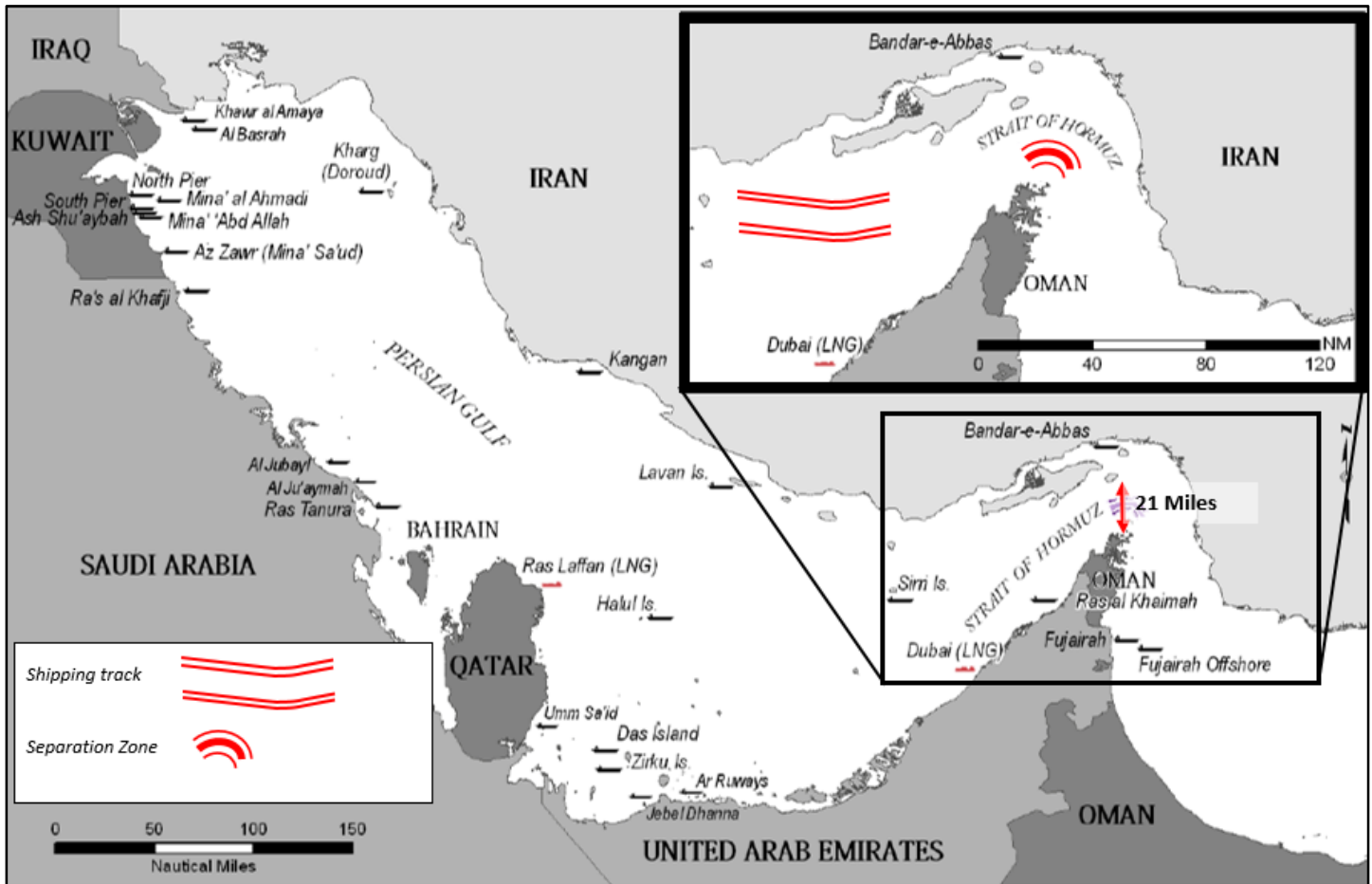


Figure 1. Gulf of Hormuz and a regional orientation

The IRGC's Navy and the Strait of Hormuz

Iran has two distinct navies that consists of the IRGCN and the Islamic Republic of Iran Navy (IRIN). The missions are similar for both organizations, which is to defend Iran's littoral territories and protect Iranian interests. The IRGCN and the IRIN have different areas of operations. The IRGCN possesses a lighter fleet of ships and is charged with the vital close-in mission of coastal defense and the responsibility to protect the Arabian Gulf and Strait of Hormuz.⁵ Iran has used a number of instruments including the missile program, IRGCN, and INFOWAR to deter would-be aggressors that might interfere with their internal affairs.

The Iranian government, in the past, has used an aggressive INFOWAR campaign with a repetitive theme of "closing" the Strait of Hormuz that is a transit point for 30% of all seaborne-traded oil.⁶ A recent example of Iranian INFOWAR arose in late December of 2011 when the US threatened to restrict Iran's oil exports. At the time, Iran's Vice President Mohammad Reza Rahimi stated, "If Iran oil is banned, not a single drop of oil will pass through Hormuz Strait."⁷ The Strait of Hormuz consists of a constricted channel that provides an entrance into the Persian Gulf from the Gulf of Oman making it a natural chokepoint.⁸ The Strait of Hormuz's narrowest point is 21 miles wide with a shipping lane in either direction that is only two miles wide with a two-mile buffer zone that the IRGCN incorporates into its military wargaming and defensive protocols.⁹ The government learned important lessons from the Iran—Iraq War (1980–1988) which also encompassed the Tanker Wars (1984–1987) and now include their learned experiences into their adaptive naval tactics.

At a tactical level, the IRGCN has armed its coastal defense force with the Ra'ad anti-ship missile that is likely based on the modified Chinese's HY-2 Seersucker cruise missile.¹⁰ The IRGCN deployed the Ra'ad missiles to five to seven locations along the Iranian coast utilizing the natural terrain and narrow channel to their advantage.¹¹ The Ra'ad is a subsonic cruise missile with a low flight altitude with a range of 150 km.¹² The IRGCN can launch cruise missiles from land, sea, and from air-based weapons platforms. The Iranian military has initiated a military modernization process for all branches that has enhanced the IRGCN's capabilities.

The Iranian military showcased these adaptive capabilities during the Prophet 9 exercise. The IRGCN demonstrated the ability to deploy mines; operate fast-attack boats; and launch cruise/ballistic missiles from land, air, and sea.¹³ The IRGCN used fast-attack boats, some armed with C-802 anti-ship missiles, to conduct a swarming attack to overwhelm a potential target, the mockup aircraft carrier.¹⁴ These tactics of fast-attack vehicles put a premium on speed and mobility. In a real-world scenario, the theory is that these fast boats could fire and maneuver quickly to safety unlike larger naval platforms. The diagrams illustrate the sequence of events conducted during the exercise.¹⁵

The IRGCN coastal defense fired cruise and ballistic missiles hitting the target; however, this did not demonstrate an over-the-horizon missile capability for the Iranians. It is also worth noting that a US aircraft carrier would most likely not be traveling alone (convoy and air support) and would also return fire as well as employ defensive countermeasures.

- Iranian fast-attack boats with missiles used swarming tactics.
- Iranian boat pulled up along the target and exploded, most likely replicating a VBIED.
- Helicopter fired a cruise missile at the ship.
- A different helicopter air assaulted Iranian commandos onto the ship's deck to secure and exploit the target.

Organizational Structure

There are a total of 20,000 personnel in the IRGC's naval organization, which includes 5,000 marines.¹⁶ The IRGCN's fleet is smaller, easier to maintain, and less expensive than

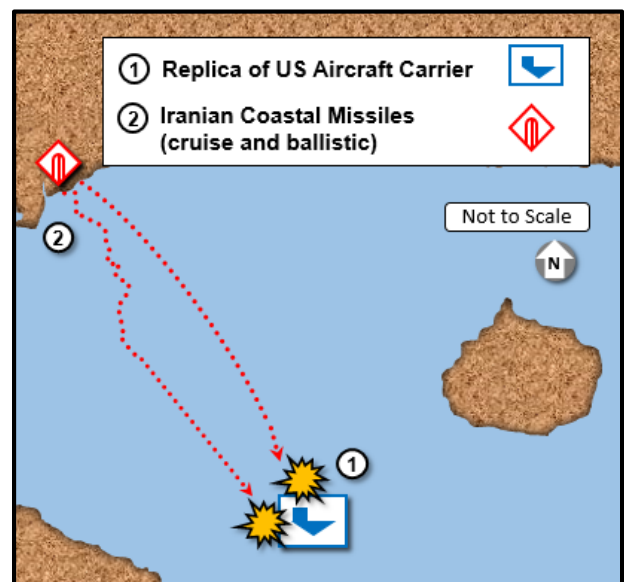
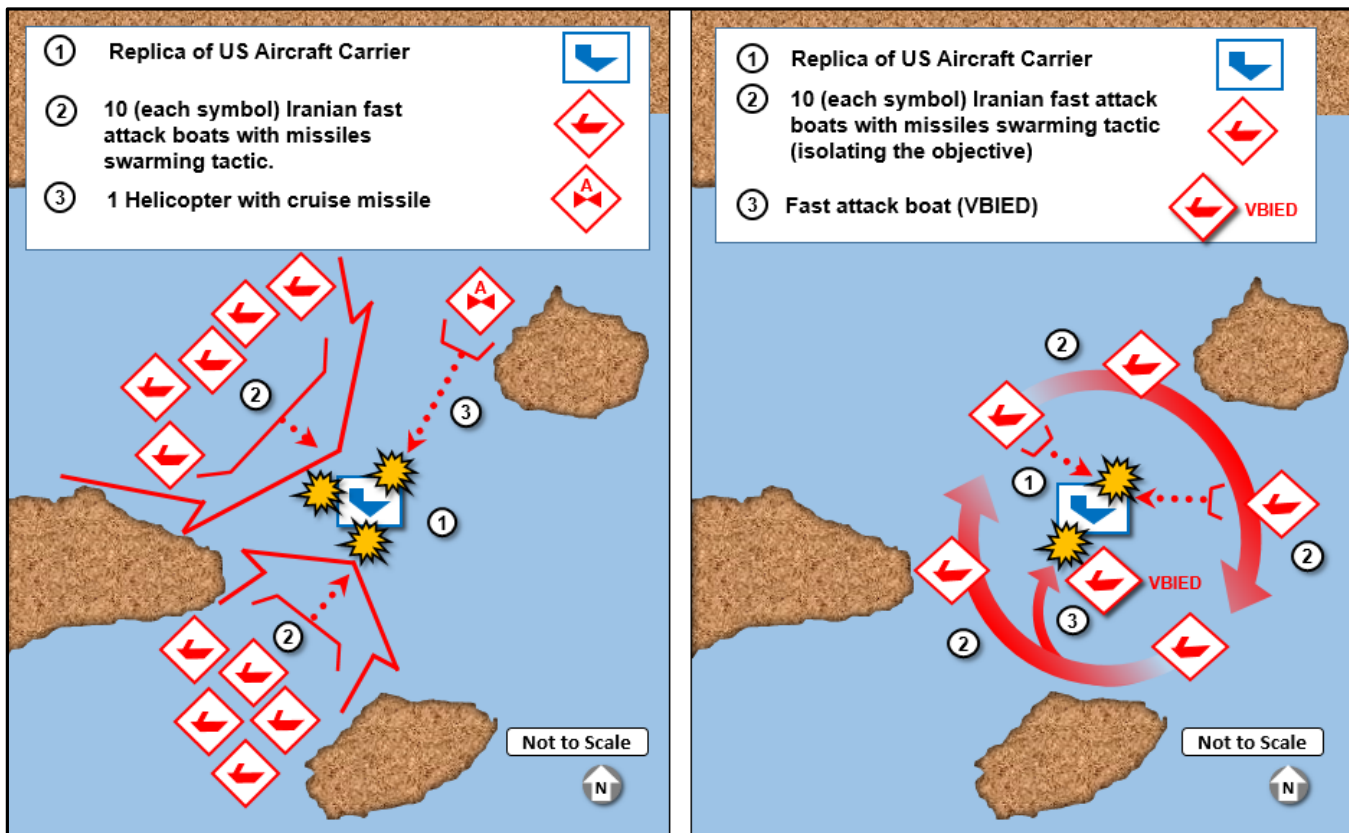


Figure 2. Missiles demonstration

larger boats and ships. The IRGCN operates from bases located at Bandar-e Abbas, Khorramshahr, Larak, Abu Musa, Al Farsiyah, Halul, and Sirri.



Figures 3 and 4. Swarming attack demonstration

Force Projection

The mission of the IRGCN is not to be a global force projection instrument; hence, the IRGCN has limited force projection capability. The IRGCN has adapted with the use of irregular warfare using large number of fast-attack boats that can mine shipping lanes or attack oil tankers with missiles.

Recent Incidents

- **April 2015:** The IRGCN seizes the ship designated the *Maersk Tigris* and forces it back into Iranian waters.
- **January 2008:** Five IRGCN vessels confront three US naval vessels traveling through international waters in the Strait of Hormuz. The IRGCN maneuvered aggressively and made a number of threats over the radio. The Pentagon defined this demonstration as a “significant act of aggression.”¹⁷

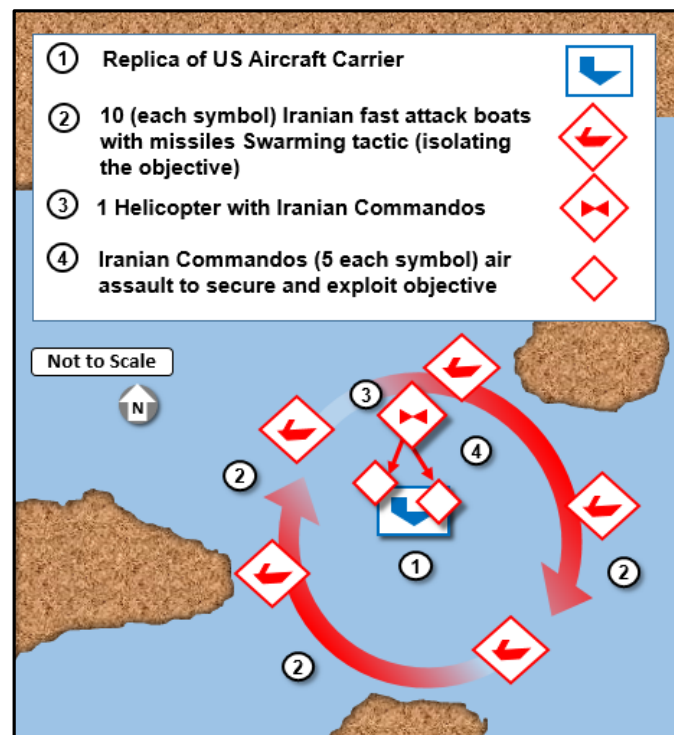


Figure 5. Exploit the objective demonstration

- **March 2007:** The IRGCN captured 15 British Navy personnel while they were on patrol on an anti-smuggling mission off the Iraqi coast. The IRGCN did not harm the sailors and eventually released the British personnel.¹⁸

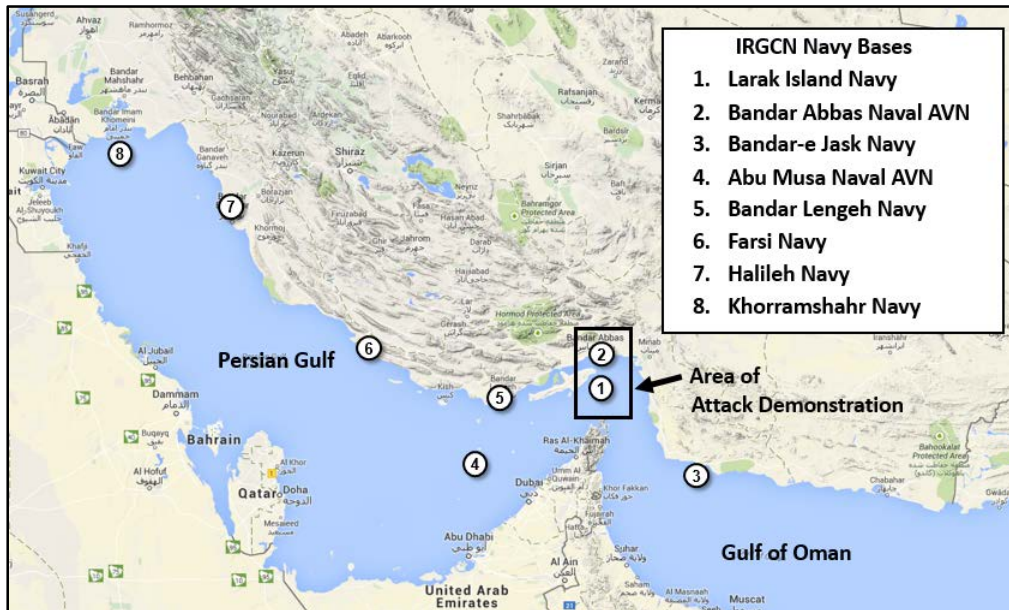


Figure 6. Iranian naval bases and regional projection

Conclusion

The IRGCN has adapted to lessons learned from historical conflicts and modernized into a highly mobile fast-attack fleet with the crucial mission of protecting the Iranian coast in the Arabian Gulf. The IRGCN has an arsenal of missiles that can be deployed by land, air, and sea and it can deliver a complex INFOWAR campaign intended to intimidate any potential aggressors that want to interfere with Iranian affairs. These INFOWAR messages are delivered yearly in the IRGC's military exercises and random acts such as challenging the US Navy while it moves through the Strait of Hormuz. The IRGCN also uses the natural strategic chokepoint that is the Strait of Hormuz to harass the global community, usually as a warning, that Iran could close the Strait and harm the world's economy. The IRGCN will likely remain aggressive for the near future as long as contentious issues with the nuclear program, Yemen (proxy conflict with Saudi Arabia), and sanctions remain unresolved.

Notes

- ¹ British Broadcasting Company. "[Maersk Tigris: Crew of ship seized by Iran safe.](#)" 29 April 2015.
- ² Lamothe, Dan. "[Navy aircraft carrier steams toward Yemen as fighting continues.](#)" Washington Post. 20 April 2015.
- ³ United States Department of Defense, "[Office of Naval Intelligence. Iran's Naval Forces: From Guerrilla Warfare to a Modern Naval Strategy.](#)" Fall 2009.
- ⁴ Beeny, Tara. Moarefian, Mehrdad. "[IRGC exercises in the Strait of Hormuz, Rouhani in Qom.](#)" American Enterprise Institute. 5 March 2015.
- ⁵ Katzman, Kenneth. "Iran: U.S. Concerns and Policy Responses." [Congressional Research Service/US State Department.](#) 25 July 2014.
- ⁶ US Energy Information Administration. "[World Oil Transit Chokepoints.](#)" 10 November 2014.
- ⁷ Hargreaves, Steve. "[Oil jumps over 2% as Iran threatens supplies.](#)" CNN. 27 December 2011.
- ⁸ Katzman, Kenneth. Neelesh, Nerurkar. O'Rourke, Ronald. Mason, Chuck. Ratner, Michael. "Iran's Threat to the Strait of Hormuz." [Congressional Research Service/US State Department.](#) 23 January 2012.
- ⁹ US Energy Information Administration. "[World Oil Transit Chokepoints.](#)" 10 November 2014.
- ¹⁰ Missile Threat. "[Cruise Missiles, Ra'ad.](#)" 10 April 2013.
- ¹¹ Jane's Sentinel Security Assessment: "[The Gulf States, Iran Navy.](#)" 16 April 2015.
- ¹² Missile Threat. "[Cruise Missiles, Ra'ad.](#)" 10 April 2013.
- ¹³ Youtube. "[Iran 9th Great Prophet Wargame Phase one February 25, 2015.](#)" 25 February 2015.
- ¹⁴ Jane's Sentinel Security Assessment: "[The Gulf States, Iran Navy.](#)" 16 April 2015.
- ¹⁵ Youtube. "[Iran 9th Great Prophet Wargame Phase one February 25, 2015.](#)" 25 February 2015.
- ¹⁶ Jane's Sentinel Security Assessment: "[The Gulf States, Iran Navy.](#)" 16 April 2015.
- ¹⁷ Knowlton, Brian. Shaner, Thom. "[U.S. Describes Confrontation With Iranian Boats.](#)" The New York Times. 8 January 2008.
- ¹⁸ British Broadcasting Company. "[UK sailors captured at gunpoint.](#)" 23 March 2007.

Antiterrorism and Threats Integration: Training for Readiness

by [Jon H. Moilanen](#), TRADOC G-2 ACE Threats Integration (BMA Ctr)

Although most homegrown violent extremists (HVEs) will probably continue to aspire to travel overseas, particularly to Syria and Iraq, they will probably remain the most likely Sunni violent extremist threat to the US homeland because of their immediate and direct access. Some might have been inspired by calls by the Islamic State of Iraq and the Levant (ISIL) in late September for individual jihadists in the West to retaliate for US-led airstrikes on ISIL. Attacks by lone actors are among the most difficult to warn about because they offer few or no signatures.

*Worldwide Threat Assessment of the US Intelligence Community (2015)*¹

Army Worldwide Antiterrorism Conference

The 2015 US Army Worldwide Antiterrorism (AT) Conference was a salient reminder of current and future threats that confront the United States of America. Reinstated as an annual training event in 2015 by the Office of the Provost Marshal General (OPMG), this conference provided a US whole of government (WOG) recognition on the specter of terrorism. Conference participants included experts from across the US Armed Services; governmental departments, bureaus, and centers; military and civilian law enforcement and emergency management activities; academia; and commercial research and analysis institutions.

The US Army's Provost Marshal General (PMG) highlighted the conference as professional training, education, and leadership development. He stressed several key objectives of terrorist threat awareness; principles to assess, detect, defend, warn, and recover from threats; and a focused dialog among professionals to examine antiterrorism doctrine, policy, and practices for a safe and secure operational environment.²

Army TRADOC G-2 Analysis and Control Element (ACE) Threats Integration

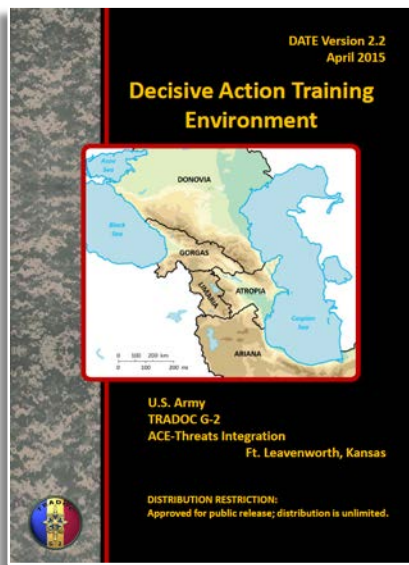
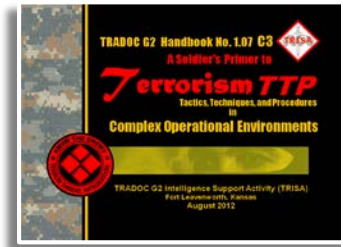
The TRADOC G-2 ACE Threats Integration directorate has participated and presented in the Worldwide AT Conference over several years, and recognizes the significant professional value added of this worldwide forum on antiterrorism. The conference's strategic communication effects are profound with the opportunity of face-to-face sharing of experiences, discussing the dilemma in ongoing persistent conflicts, and projecting the potential of evolving threats and the ways and means to minimize the operational risks and dangers. Participating in the worldwide AT conference is much more than just listening in a general forum or attending a breakout work group. Informative in their own right, personal participation with active engagement is critical to establish and sustain a broad range of professional friendships and expert contacts. These associations extend to regular information-intelligence sharing in electronic consortiums, audio-video updates, and printed materials. Examples of recurring digital linkages are the OPMG Antiterrorism Synchronization Video Teleconference (VTC), daily threat reports by the Army Threat Integration Center (ARTIC), and information updates in the OPMG Antiterrorism Branch newsletter, *The Sentry*.

A collective responsibility is to assess current and future antiterrorism requirements in the operational and institutional Army, and identify products or processes to address antiterrorism training, policy, and doctrinal issues. Products or processes also provide awareness of particular threat trends and/or patterns. Professional observations and lessons learned in training, operational deployments, and other activity mission tasks are integral in our Army doctrine-to-practice methods. An example is the collaboration of the Army antiterrorism community in the staffing and publication of Field Manual (FM) 3-37.2 and its transition to Army Training Publication (ATP) 3-37.2, *Antiterrorism*.

Participation in the Army antiterrorism community complements the ACE Threats Integration charter to serve as, "Army lead for designing, documenting, and integrating threat or [opposing forces for training] (OPFOR) and [operational

environment] OE conditions in support of all Army training, education, and leader development programs.”³ ACE Threats Integration researches, authors, and publishes handbooks, training support packages, and related intelligence material to describe foreign terrorism threats and enemies to the United States.⁴

Working closely with the TRADOC G-34 Protection Division on antiterrorism and protection issues, ACE Threats Integration has continued to provide products at the Worldwide AT Conference such as the [5-inch by 7-inch] TRADOC G-2 Handbook 1.07 C3, *A Soldier's Primer to Terrorism TTP*, a CD-ROM of ACE Threats Integration unclassified threats reports, booklets, circulars, and presentations on threats and enemies, and an informational brochure with subject matter points of contact at ACE-Threats Integration.⁵ Examples in sharing its real-world threat products include the *Threat Tactics Report: ISIL v. 1.4*, Army training literature on regular and irregular forces and terrorism (HQDA Training Circular 7-100 series), and related premier training material such as the Army's *Decisive Action Training Environment* (DATE) version 2.2 (2015).⁶



ACE Threats Integration sustains regular coordination with the US Army's antiterrorism officer (ATO) courses taught by the Military Police School. This contact and association with the Army's antiterrorism officers reaches the operational and institutional ATOs with monthly product updates produced by ACE Threats Integration and distributed by the TRADOC G-2 Operational Environment Enterprise (G-2 OEE). Three of these threats-oriented monthly publications are the *Red Diamond* newsletter, *Threats Terrorism Team (T3) Advisory*, and *Combating Terrorism (CbT)* poster series.

The value of the Annual Army Worldwide Antiterrorism Conference is that it connects professionals with a common mission of protection and antiterrorism to an expert network of military and civilian professionals committed to preparedness and readiness. The scope of responsibilities range the young Soldier in initial military training to the young men and women in Cadet Command, to the Department of the Army Civilian (DAC) workforce and Army contractors, to the leader development and education venues throughout the Army University system, and to the members of our Armed Forces from tactical unit to service component command to combatant command.

Threats, adversaries, and enemies remain operational at various states of intent and capability. They continue to challenge the effectiveness of the US Army's tactics, techniques, and procedures to defend against terrorist attacks and the psychological aspects of terrorism. Whether a threat is inspired to action by a transnational ideology, criminal activity profit, or personal or group vendetta, we as the US Army continue to learn and adapt. We remain vigilant and ready.

"We will continue to improve the Army's ability to protect and defend against terrorism."

Mark S. Inch

Major General, Provost Marshal General

Notes

¹ Clapper, James R. Director of National Intelligence. Statement for the Record. Senate Armed Services Committee. [Worldwide Threat Assessment of the US Intelligence Community](#). 26 February 2015.

² Inch, Mark S. *2015 Annual Army Worldwide Antiterrorism Conference*. [Conference Welcome Letter, 23 December 2014]. Department of the Army. Washington, DC: Office of the Provost Marshal General: 3-6 February 2015.

³ *Organization and Functions. Headquarters, US Army Training and Doctrine Command*. TRADOC Regulation 10-5-1. 20 July 2010. para. 8-18c(a).

⁴ *Organization and Functions. Headquarters, US Army Training and Doctrine Command*. TRADOC Regulation 10-5-1. 20 July 2010. para. 8-18c(k).

⁵ US Army Training and Doctrine Command G-2. TRADOC G-2 Handbook 1.07 C3, *A Soldier's Primer to Terrorism TTP*. US Army Training and Doctrine Command G-2, ACE Threats Integration. August 2012.

⁶ US Army Training and Doctrine Command G-2. *Decisive Action Training Environment (DATE) version 2.2*. US Army Training and Doctrine Command G-2, ACE Threats Integration. April 2015.

⁷ Inch, Mark S. *2015 Annual Army Worldwide Antiterrorism Conference*. [Conference Welcome Letter, 23 December 2014]. Department of the Army. Washington, DC: Office of the Provost Marshal General. 3-6 February 2015.

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

DIR, ACE Threats Integration jon.s.cleaves.civ@mail.mil	Jon Cleaves 913.684.7975
Dep Director DSN:552 penny.l.mellies.civ@mail.mil	Penny Mellies 684.7920
Operations-Analyst jon.h.moilanen.ctr@mail.mil	Dr Jon Moilanen BMA 684.7928
Product Integration-Analyst angela.m.wilkins7.ctr@mail.mil	Angela Wilkins BMA 684.7929
Intelligence Specialist walter.l.williams112.civ@mail.mil	DAC Walt Williams 684.7923
Intelligence Specialist jennifer.v.dunn.civ@mail.mil	DAC Jennifer Dunn 684.7962
Intelligence Specialist jerry.j.england.civ@mail.mil	DAC Jerry England 684.7934
Intel Specialist-NTC LNO kristin.d.lechowicz.civ@mail.mil	DAC Kris Lechowicz 684.7922
Senior Threats Officer shane.e.lee.mil@mail.mil	LTC Shane Lee 684.7907
Threat Tactics & CoEs ari.d.fisher.mil@mail.mil	LNO CPT Ari Fisher 684.7939
(UK) LNO matthew.j.tucker28.fm@mail.mil	Warrant Officer Matt Tucker 684-7994
Military Analyst richard.b.burns4.ctr@mail.mil	Rick Burns BMA 684.7897
Worldwide Equipment Guide john.m.cantin.ctr@mail.mil	John Cantin BMA 684.7952
Military Analyst laura.m.deatrck.ctr@mail.mil	Laura Deatrck CGI 684.7925
LNO to MCTP-Analyst patrick.m.madden16.ctr@mail.mil	BMA Pat Madden 684.7997
Military Analyst henry.d.pendleton.ctr@mail.mil	H. David Pendleton CGI 684.7946
JMRC & JRTC LNO-Analyst michael.g.spight.ctr@mail.mil	Mike Spight CGI 684.7974
Intel Specialist-Analyst	(TBD)
Intel Specialist-Analyst	(TBD)
Intel Specialist-Analyst	(TBD)