

# Infantry

Spring 2023

## ARCTIC OPERATIONS



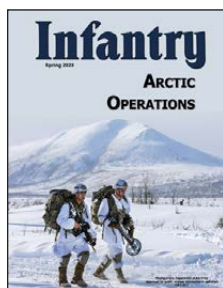
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**FRONT COVER:**

Paratroopers from 1st Battalion, 501st Parachute Infantry Regiment move to their assembly areas after conducting a joint forcible entry operation in Alaska as part of Joint Pacific Readiness Multinational Readiness Center 22-02 on 11 March 2022. (Photo by MAJ Jason Welch)

**BACK COVER:**

U.S. and Canadian paratroopers conduct a joint forcible entry operation onto Donnelly Drop Zone in Alaska on 11 March 2022 to set the stage for Joint Pacific Multinational Readiness Center 22-02. (Photo by John Pennell)



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SPRING 2023

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# Commandant's Note

BG LARRY BURRIS



As this issue of *Infantry* is going into print, Russia's unprovoked war on Ukraine enters its second year with snow still covering the battlefields across the war-torn country. Subfreezing temperatures and intolerable conditions have added to the devastation of war as another bitter winter has wreaked havoc on personnel and equipment across Eastern Europe. This edition examines how the Army can generate and produce Arctic-capable forces ready to deploy, fight, and win in extreme conditions against adversaries in large-scale combat operations (LSCO).

Continued modernization and technological advancements throughout every operational domain must consider the possibility of fighting in such an austere environment. However, the Arctic is not merely another potential battlefield. The Department of Defense identified the [North American] Arctic as "the northern approaches of the United States" and "a potential vector both for attacks on the homeland and for U.S. power projection" in the 2019 Arctic Strategy.

Russia is a mere 55 miles away from the United States at the Bering Strait. It is the largest nation by landmass, population, and military presence within the Arctic circle. It has modernized military bases and airfields, deployed enhanced air defense systems, and increased military exercises and training operations north of the Arctic Circle. Intensification of regional economic competition, and the possibility of conflict around natural resources and transit routes, including the North Sea Route, make the Arctic a top priority for Moscow. And, though the fighting in Ukraine intensifies, Russia continues to carry out concurrent military exercises in the Arctic.

Russia's military buildup in the Arctic poses a strategic challenge for our NATO Allies, multinational partners, and the Army. In recent months, Russia fired anti-ship cruise missiles to test its readiness for possible regional conflict. In this issue, Dr. Lester Grau and Dr. Charles Bartles provide a great article to enhance the Infantry Soldier's knowledge of Russia's current Arctic training mission and battalion tactical group.

Likewise, despite having no territorial claims, the People's Republic of China seeks a more significant influence in the Arctic. China's operational presence in the Arctic is limited. However, it aims to increase diplomatic, economic, and military activities under the Belt and Road Initiative, an ambitious transnational infrastructure and construction program initiated globally in 2013, intending to establish a trans-Arctic shipping route. In addition, China has also partnered with Russia on multiple efforts, such as airfield construction, energy extraction, and intelligence sharing.

The Army has a critical role in securing America's Arctic interests. The Department of the Army's 2021 Arctic Strategy tasks us with "project[ing] power from, within, and into the Arctic to conduct and sustain extended operations." Doing

so will require changes to how we generate, posture, train, and equip our forces. We must develop new equipment and tactics specifically suited for the Arctic environment.

Alaska is home to the recently reactivated 11th Airborne Division and the newly established Joint Pacific Multinational Readiness Center - Alaska (JPMRC-AK). With the long, extreme winters and the complex terrain of the incredible expanse of wilderness as their "backyard" at the JPMRC-AK, no Infantry formation has more skin in the game than the "Arctic Angels." In this issue of *Infantry*, the senior leaders of the 11th Airborne Division provide the reader with multiple articles covering various topics related to fighting in the Arctic environment.

The ability to train units and test equipment in the extreme conditions of the Arctic will be critical to the success of our operations in the future. Along with the Army's premier facility for institutional and functional cold-weather training, the Northern Warfare Training Center in Fort Wainwright, the JPMRC-AK, and its observer/coach/trainers, will prepare Soldiers from across the Army for the Arctic fight. MG Brian Eifler, the Commanding General of the 11th ABN DIV, and Mr. Troy Bouffard provide an article describing the background, mission, and way ahead of the JPMRC-AK.

Tactical and technical operations receiving focused attention in this edition are the execution of joint force entry and sustainment operations in Arctic conditions. Multiple senior leaders of the 2nd Brigade Combat Team (Airborne), the Spartan Brigade, provide a detailed breakdown of considerations by warfighting function in the article "Airborne Joint Forcible Entry Operations in an Extreme Cold Weather Environment." In addition, two pieces by MAJ Stanley Bershinsky and CPT Sarah Schwei examine the technical and logistical challenges of providing support and medical care in "Logistics Support in the Arctic" and "Patient Hold Goes Cold."

As the Arctic continues to grow in strategic importance, the Army must focus on these types of operations through training exercises; the development of new equipment and doctrine; enhanced infrastructure and logistical capabilities; and improving interoperability with our multinational Allies and partners, as well as within the Joint Force community. The following articles provide insight into the Arctic environment that matters to us all. Formations far from "America's Last Frontier" may be called on to fight at the world's northernmost latitudes. The Army's premier fighting force, the Infantry, must do everything required to deploy, fight, and win in an Arctic environment.

I am the Infantry! Follow me!



# Forging the Arctic Warrior:

## *Joint Pacific Multinational Readiness Center-Alaska*

MG BRIAN S. EIFLER  
TROY J. BOUFFARD

The United States faces new and increasing security concerns as access expands to the Arctic. Although the circumpolar North has enjoyed notable cooperation for many years, growing competition threatens U.S. interests. While soft-security problems represent much of the daily burden throughout the North, hard-security issues and threats persist. The United States has stated its objectives in the Arctic, is producing and posturing the capabilities needed to secure those objectives, and is actively engaging its partners to manage competition and preclude conflict within the Arctic. The Department of Defense (DoD) and subordinate service strategies for the Arctic illuminate the relevance and importance of the military instrument of national power to a degree not seen since the Cold War.

The need is clear: Russia continues to pursue aggressive Arctic military advancements, accelerating its head start on Arctic land force development. China's Polar Silk Road initiative underpins Beijing's ambitions to become a political and economic global power. Given these circumstances, U.S. Army Arctic advancements remain essential to balance strategic competition in the region. Operational success

always requires joint and total force development emphasizing innovative doctrine, staffing, equipping, and training. But in the Arctic, effective integrated deterrence will require synchronized support from the three regional combatant commands with Arctic equities: U.S. Northern Command (NORTHCOM), Indo-Pacific Command (INDOPACOM), and European Command (EUCOM).

The U.S. military maintains defense readiness and superiority through an enterprise of precision-enabled combat- and combined-arms warfare capabilities. For the DoD to meet its Arctic national security, national defense, and national military strategy responsibilities, the U.S. Army must regain Arctic dominance in the region.<sup>1</sup> The operationalization of the U.S. Army Arctic Strategy will require significant contribution from all the Army's combat enablers to develop precision-enabled combat- and combined-arms Arctic capabilities. To ensure an Arctic-ready land force, the Army recently activated an airborne division and established a regional Combat Training Center (CTC) in Alaska. Troops assigned to the new 11th

*Soldiers with the 1st Battalion, 5th Infantry Regiment conduct a company live-fire exercise in Alaska's Yukon Training Area as part of Joint Pacific Multinational Readiness Center 22-02 on 15 March 2022.*

Photo by Benjamin Wilson





Airborne Division and its enablers will undergo formal training evaluations culminating with a CTC exercise at the nation's newest major training center — the Joint Pacific Multinational Readiness Center-Alaska (JPMRC-AK).

## Background

CTCs are training locations that best facilitate required military readiness testing and reporting for tactical-level ground forces (typically a brigade) during either a command cycle and/or when scheduled for a contingency (combat) deployment. Rotations through CTCs allow for optimized, controlled conditions to measure tactical performance of an assigned mission based on the commander's upper-echelon guided mission essential tasks (METs). CTCs are capable of hosting and managing a brigade-level force-on-force test of specified METs through the various warfighting functions, including mission command, movement and maneuver, intelligence, fires, sustainment, and protection.<sup>2</sup> CTCs basically provide an exercise that is as close to combat as you can get.

CTCs are purpose-built by the Army to deliver large-scale multi-echelon training across all warfighting functions. Each center employs live, virtual, and constructive environments; a dynamic and capable opposing force; and a cadre of role players to simulate and test a unit. They also feature electronic sensors and expert observers to provide authoritative assessments and feedback to the training units. For combat and contingency operations, CTC certification remains the best means by which to prepare units for the complexities and difficulties of their high-risk responsibilities.

Since 1981, CTCs at Fort Irwin, CA (National Training Center — NTC); Fort Polk, LA (Joint Readiness Training Center — JRTC); and U.S. Army Garrison Bavaria at Hohenfels Training Area, Germany (Joint Multinational Readiness Center — JMRC) have provided the U.S. Army, sister services, and international allies and partners with invaluable, realistic training to prepare for current and future conflicts. However, the introduction of JPMRC-AK in 2022 represents a new model that is optimized for the Arctic mission set in the region.

JPMRC-AK addresses a key limitation inherent in the brick-and-mortar CTC design: As fixed-base sites, their climate and geology cannot be easily modified. Because JPMRC is exportable, it affords units the opportunity to train under the environmental conditions in which they are most likely to be employed. This is particularly relevant for Arctic forces, as the extreme cold weather and mountainous conditions can be as dangerous as the enemy they may encounter. Training in those same challenging conditions is essential for Soldier and unit readiness. JPMRC-AK offers other key benefits. Training within the region avoids costly and timely shipment of equipment, integrates and assures regional partners, enhances local joint interoperability, and applies a



model where more than just the priority training brigade garners readiness and proficiency. It also keeps units and their equipment in the region, ready to respond to crises as opposed to being unavailable for three to four months.

To prepare for operations in an Arctic environment, JPMRC-AK facilitates unique training in extreme cold weather as well as mountainous and high-latitude environments. JPMRC-AK can offer training executed at scale (brigade or above) because the 11th Airborne Division controls exceptionally large and diverse training ranges. The 11th Airborne Division manages 10 percent of the Army's total training lands, with a multitude of unique terrain types, restricted airspace that equates to the size of Florida, and few concerns for encroachment on local communities.

Outside of Alaska, exercise locations hosted at Camp Grayling, MI, are used for Northern Strike 22-1 and are very effective for small unit training.<sup>3</sup> But Grayling's relatively small size (147,000 acres), lack of ranges and emitters, remoteness from Arctic units, insufficient opportunities for joint forcible entry operations, limited resources, mild climate, and flat terrain limit its use for Arctic-level training. JPMRC-AK offers ample maneuver space within the 655,000 acres of the Donnelly Training Area and 257,000 acres in the Yukon Training Area (YTA). Within the largest U.S. all-domain training venue, JPMRC-AK also offers experts in cold weather and mountain operations at the Northern Warfare Training Center (NWTC).

## The Road to the Arctic Combat Training Center

In May 2022, the DoD announced that U.S. Army Alaska would be redesignated to the 11th Airborne Division. On 6 June 2022, two ceremonies were conducted to redesignate the 1st Stryker Brigade Combat Team (SBCT), 25th Infantry Division to 1/11 Infantry Brigade Combat Team (IBCT) as well as 4th IBCT (Airborne), 25th Infantry Division to 2/11 IBCT (Airborne).<sup>4</sup> With this reflagging, the 11th Airborne Division is effectively enabled to develop a high-level tactical staff with a defined Arctic operational purpose. Additionally, the 11th Airborne Division headquarters has been empowered to review and contribute vertically and horizontally to all elements of its transformation. As it becomes a fully resourced and trained Arctic force, the 11th Airborne Division stands ready to address all elements of Arctic strategies and plans in its sphere of influence.

Assigned missions can include top priority plans and named operations. The 11th Airborne Division ensures trained and ready forces for its missions through seasonal training nested within the Army's Regionally Aligned Readiness and Modernization Model (ReARMM) cycles. ReARMM features a two-year, three-phased readiness construct evenly divided between modernization, training, and mission phases. Modernization includes the fielding and training of new equipment and is limited to individual and lower collective training



Photo by MAJ Jason Welch

**Paratroopers from the 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division move to their assembly areas after conducting an airborne infiltration near Fort Greely, AK, as part of Joint Pacific Multinational Readiness Center 22-02 on 9 March 2022.**

and involvement in select theater security cooperation exercises. The training phase progressively builds toward higher-level collective training, culminating in the iterative execution of cold weather and rugged mountainous certification and experimentation. The mission phase includes the highest density of exercises with partners and allies in INDOPACOM, NORTHCOM, and EUCOM; contingency employment; and rotational force deployments.

Preparing for Arctic missions must include training and confirmation of expertise in acclimating and operating in extreme cold environments. Justification is simple: A person is significantly more likely to die from cold than heat.<sup>5</sup> According to research involving defined categories of extreme cold (usually specified by various temperature ranges), it can take between two to three weeks to physiologically adapt, which could help to inform the kind of training needed for individuals to survive and thrive in the Arctic winter environment.<sup>6</sup> In addition to the physical demands, Arctic experts, such as the cadre at the NWTC, know that the cognitive aspects of Arctic survival are often more important than physical. JPMRC-AK provides the ideal conditions in which to operate and train for these challenges.

In March 2022, Alaska's U.S. Army forces participated in the first-ever extreme cold weather CTC rotation during exercise JPMRC 22-02.<sup>7</sup> Nearly all 12,000 Soldiers of U.S.

Army Alaska were involved. JPMRC hosted the 1/25 SBCT from Fort Wainwright, AK, as they faced the opposition forces led by the 4/25 IBCT (Airborne) from Joint Base Elmendorf-Richardson in Anchorage, AK, in the fictitious scenario country of Olvana. Canada, our principal Arctic ally, provided airborne and reconnaissance forces into this combat-focused exercise. Separate from the JPMRC 22-02 scenario, one infantry battalion from 1/25 SBCT executed company-level combined-arms live-fire exercises in the YTA. This unprecedented training event represents the first authoritative step to define an Arctic readiness model for generation of Arctic-ready forces available to combatant commanders for operations.<sup>8</sup>

### **Preliminary Perspectives — The First Steps to Army Arctic Dominance**

For the participating brigades, the primary purpose was to build expertise in sustained operations in Arctic conditions. For the Army, JPMRC 22-02 did more than provide a military-readiness rating to national authorities. It was a comprehensive capstone training event in an extreme cold weather environment where temperatures dropped to -37 degrees Fahrenheit. Lessons learned during this pivotal training will inform refinement and development across doctrine, organization, training, materiel, leadership and education, personnel, facilities, and policy. Some of the challenges involve optimizing equipment, gear, and weapons. Units were required to maximize tactical proficiency at the squad to company levels, including small-unit Ranger tactics and the integration of all supporting arms, to close with the enemy in complex terrain and difficult conditions. However, the principal lesson learned revolved around the importance for "Soldiers to be masters of their craft in Arctic warfare, not just to survive but to thrive in extreme cold weather and mountainous terrain."<sup>9</sup>

### **Conclusion and Recommendations**

JPMRC-AK was established as the regional training center to comprehensively challenge America's Arctic Warriors and allies and partners in their operational environment. The CTC will be the premier location in the region for our allies and partners to train with U.S. forces — to train like we will fight as a joint, multinational team. Coupled with JPMRC-Hawaii, these regional CTCs will enable unique and essential training, much like the other CTCs have proven invaluable in certifying the readiness of the U.S. military during combat operations in Iraq and Afghanistan. With the 11th Airborne Division reactivated, the "Arctic Angels" must remain ready for threats across INDOPACOM and the Arctic, all while piloting, experimenting, and testing force structure and equipment to optimize the capabilities of America's only Arctic fighting force. Effective training, equipping, and manning are critical to success moving forward.

Total force development takes many years, and the



Arctic represents the newest region of security concerns that requires preparation now before the process lags too far behind to meet even the most basic threats. JPMRC-AK and reactivating the 11th Airborne Division in Alaska are only the beginning. The Army will continue to refine force structure and equipping for the harshest environment on the planet. Continuous efforts to engage with our Arctic partners and allies like Canada, India, Nepal, Mongolia, Japan, Korea, and Norway and reconnecting with the Alaskan Native Tribes and the Alaska Defense Force will enhance the necessary experience and structure to regain Arctic dominance.

Finally, to manage service member Arctic assignments and expectations, we must continue to develop effective programs for recruitment, retention, identification, and certification of Soldiers. It takes a special breed of Soldier to thrive in the Arctic; service members must be recruited and retained. The Army should also establish an Arctic division force structure to accommodate the unique skills required. Special skill/qualification identifiers should be emplaced for key positions throughout the ranks of the division structure that require Arctic and mountain skill sets. This will require an increase in the size and throughput of the NWTC but will significantly increase the expertise and maintain continuity of experience across the division — mandatory to regain Arctic dominance. The Army has embarked on this path and remains committed to success. It must continue to adjust and adapt to ensure the Army is ready to thrive, fight, and win in the most challenging environment on the planet.

**Editor's Note:** *This article was first published in the Journal of Indo-Pacific Affairs, the Department of the Air Force's Professional Journal for America's Priority Theater in October 2022, available at <https://www.airuniversity.af.edu/JIPA/Display/Article/3173321/forging-the-arctic-warrior-joint-pacific-multinational-readiness-centralalaska/>.*



***With the 11th Airborne Division reactivated, the “Arctic Angels” must remain ready for threats across INDOPACOM and the Arctic, all while piloting, experimenting, and testing force structure and equipment to optimize the capabilities of America’s only Arctic fighting force.***

## Notes

<sup>1</sup> Headquarters, Department of the Army, “Regaining Arctic Dominance — The U.S. Army in the Arctic,” 19 January 2021.

<sup>2</sup> Army Doctrine Publication (ADP) 3-0, *Operations*, July 2019, 5-2.

<sup>3</sup> Michigan National Guard Public Affairs, “Northern Strike 22-1 Brings Arctic Training to Michigan,” 18 January 2022, <https://www.iosconews.com/>.

<sup>4</sup> Corey Dickstein, “Army Activates Arctic-Focused 11th Airborne Division in Alaska, Cuts Strykers,” *Stars and Stripes*, 6 June 2022, <https://www.stripes.com/>.

<sup>5</sup> Antonio Gasparini et al., “Mortality Risk Attributable to High and Low Ambient Temperature: A Multicountry Observational Study,” *The Lancet* 386, no. 9991 (2015).

<sup>6</sup> Tiina M. Mäkinen, “Human Cold Exposure, Adaptation, and Performance in High Latitude Environments,” *American Journal of Human Biology* 19, no. 2 (2007): 155-64; John W. Castellani and Andrew J. Young, “Human Physiological Responses to Cold Exposure: Acute Responses and Acclimatization to Prolonged Exposure,” *Autonomic Neuroscience* 196 (17 February 2016): 63-74; and Michael N. Sawka et al., “Human Adaptations to Heat and Cold Stress” (DTIC Document, 2002), <https://apps.dtic.mil/>.

<sup>7</sup> Michael Baker, “With Eyes on Russia, the U.S. Military Prepares for an Arctic Future,” *New York Times*, 28 March 2022.

<sup>8</sup> Andrew Feickert, “The Army’s New Regionally Aligned Readiness and Modernization Model,” *In Focus* (Washington, DC: Congressional Research Service, 9 March 2021), <https://sgp.fas.org/>.

<sup>9</sup> GEN James McConville, Chief of Staff of the Army, speech for the reflagging of the 11th Airborne Division, 6 June 2022.

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***Cold Weather Leaders Course students ski along a trail at the Black Rapids Training Site in Alaska.***

Photo by John Pennell

# The Road to Arctic Proficiency and the Pivotal Role of the Army's Arctic CTC

COL ADAM E. MACALLISTER

Our profession prides itself on its adaptability and the audacity with which it overcomes adversity of all types. Unfortunately, there are some problems, no matter our will power, that cannot be solved without the introduction of specialized units, equipment, and training. The Arctic is one such problem. To that end, the Army has taken significant steps towards the creation of an Arctic-proficient force, the most well-known being the publication of a guiding strategy, the activation of an Arctic division, and the creation of an Arctic Combat Training Center (CTC) — known as the Joint Pacific Multinational Readiness Center - Alaska (JPMRC-AK).

An Arctic-proficient force that is capable at operating in extreme cold weather conditions and mountainous terrain will be a unique but highly versatile tool within the Army's inventory of forces. That force has relevance to U.S. homeland defense, domestic contingency response requirements, competition activities, and large-scale combat operations (LSCO). Clear objectives and firm expectations for this force are noted within the Army's Arctic Strategy, but equally telling is the significant and growing demand signal from multiple geographic combatant commands beyond Indo-Pacific Command (INDOPACOM) for which the 11th Airborne Division is assigned. With the wide range of employment scenarios, the hardest questions are fundamental ones: Namely, how will the Army organize and man this force, how

will it be equipped and enabled, how will it be trained and certified, and how will that limited resource be employed to greatest effect? Owing to incredible, and arguably unprecedented, levels of effort from the Department of the Army down to the squad level of the 11th Airborne Division, answers to those questions are rapidly forming. That said, highlighting the present efforts to train the Army's Arctic force, amidst the demands of transformation and persistent mission requirements, offers valuable enterprise-level insights into the future of this capability.

Though relevant to all Army units, the manner in which an Arctic formation defines and applies emphasis to predictability, complexity, and innovation is distinct. All three factors will be described briefly with critical emphasis then applied to the decisive point in the Arctic force's training strategy — the Arctic CTC.

## Predictability

Unsurprisingly, extreme cold weather constitutes the most difficult factor to overcome, the process of doing so is a year-long endeavor, but it centers annually on the training period between October through March. It is within this six-month stretch that the temperatures will remain almost entirely below freezing, often below zero, and reach as low as -50 to -60 degrees Fahrenheit (F). Arctic units will attend Northern Warfare Training Center courses, iteratively execute Cold Weather Indoctrination Courses 1 through 3, advance from squad to company-level live-fire exercises, and execute higher-echelon mission command events. This training progression will then culminate annually with the execution of the Arctic CTC in mid-February to late March to maximize available training time while still exposing the exercise participants to extreme temperatures and conditions.

The time horizon for attaining Arctic proficiency is measured in years not months. Missing a single winter training cycle will significantly impact a unit's proficiency level due in part to the three-year outside the continental United

*Soldiers assigned to 3rd Battalion, 21st Infantry Regiment scan the Arctic landscape while on patrol during Joint Pacific Multinational Readiness Center 22-02 near Fort Greely, AK, on 21 March 2022.*

Photo by SGT Seth LaCount







*Leaders attending the Cold Weather Orientation Course conduct snowshoe training at the Black Rapids Training Site in Alaska on 17 November 2021.*

Photo by SSG Christopher B. Dennis

States (OCONUS) assignment cycles in Alaska. Despite being a strong advocate for the Army's Regionally Aligned Readiness and Modernization Model (ReARMM), it has been a challenge to see this two-year design nested cleanly with imperatives like the annual winter training requirements, annual exercise programs, temperate month equipment fieldings, and annual training requirements that can only be executed in warmer months like Expert Infantryman Badge testing.

The high operational tempo experienced by Arctic formations speaks to the consistently high demand placed on Soldiers and Families and the importance of closely managing this unique population by leaders at echelon. As we have all thankfully come to appreciate, disassociating unit proficiency from talent management is a fatal mistake. It is satisfying to see the present multifaceted strategy to simultaneously attract the right Soldiers to live and operate within the "Last Frontier" while investing in quality-of-life initiatives within Alaska that address the inspiring, yet harsh and remote, conditions that define the home of the 11th Airborne Division.

### **Complexity**

We are all contending with heightened degrees of emphasis to introduce complexity into our training in order to achieve objectives associated with LSCO, multidomain operations (MDO), divisions as the primary unit of action, fifth-generation joint capabilities, partner nation integration, and certainly dynamic and increasingly capable threats.

The training spectrum for Arctic formations extends from individual survival to joint and combined MDO-enabled division operations. Further, the environment adds high-latitude and high-altitude considerations, which when combined with extreme temperatures, put every warfighting function's efficacy into question.

The training objectives mentioned above do not diminish the continued importance of weighting small unit tactical proficiency. However, our readiness generation models will increasingly emphasize the effective resourcing of large-scale collective training events executed at an increased frequency if we are going to see battalion through division staffs and commanders effectively enabled to meet the demands of the future battlefield. For our purposes in the Arctic, this is realized through the annual execution of JPMRC-AK, which is, by both necessity and design, a multi-echelon training event.

### **Innovation**

Hand in hand with complexity is the presence of innovation and initiative, both of which are enabled by effective knowledge management, expertise, resources, and leader emphasis, to name a few. What is understood is that there is an absence of formalized requirements to fight and win at scale within an Arctic environment, and so the present onus is on our tactical formations to discover the hard lessons to inform our Arctic force's future composition. What is also known is that the majority of Army systems are not regularly tested at

or engineered to function below -25 degrees F, which leads to a progressive waterfall of capabilities at different temperature thresholds that have to be overcome or mitigated to a degree greater than the elevated risk to forces and mission that this reality induces.

Critical to innovation in the Arctic is the U.S. Army's ability to leverage local and tribal leadership, Arctic-based industry partners, and the armies of Arctic-proficient nations to expedite the learning curve. That said, few of our partners place the same emphasis on expeditionary combat capabilities. This simply highlights the need for continued internal collaboration amongst engaged conventional forces, special forces, and the U.S. Army's diverse innovation enterprise, ranging in scope and scale from the Army Futures Command to the Cold Regions Test Center.

### The Army's Arctic CTC — JPMRC-AK

Beyond the activation of the 11th Airborne Division, the creation of JPMRC-AK is the most significant investment the Army has made towards attaining the objectives of the Arctic Strategy. The initiative was spearheaded by the commanding general of the U.S. Army Pacific Command (USARPAC) and his staff, but its successful inaugural rotation in March 2022 is a credit to the entire Army enterprise, with particularly significant contributions coming from the Department of the Army Management Office - Training (DAMO-TR), Combined Arms Center (CAC)/Center for Army Lessons Learned (CALL), U.S. Army Forces Command (FORSCOM), and the Joint Readiness Training Center (JRTC). JPMRC is not designed or resourced to replicate JRTC, the National Training Center (NTC), or even the Joint Multinational Readiness Center (JMRC) in Europe — it is a uniquely flexible design that accommodates the specific operational requirements of the INDOPACOM area of operations. Through the growing capabilities of the 196th Infantry Brigade, I Corps, and USARPAC-aligned forces and the Army-managed training resources and lands within Alaska and Hawaii, USARPAC is able to annually deliver three fully enabled brigade-level readiness generation exercises in the Arctic, in the jungle, and/or west of the international date line.

In addition to training our forces in the environments in which they are most likely to operate, the design prevents lost readiness due to the multi-month equipment shipping timelines to and from the major training centers and realizes significant cost savings for the same reason. The execution of these events within the region demonstrates an elevated level of commitment to our mission, purpose, and identity and reinforces joint and multinational habitual relationships as well as growth in our interoperability.

The five-pillar CTC design used by JRTC and NTC remains applicable to JPMRC. Each rotation features live, virtual, and constructive training environments; is fully instrumented; possesses a professional cadre of observer-controller/trainers (OC/Ts); uses a regionally trained and capable opposing force; and in the case of JPMRC-AK, leverages the newly

constructed Arctic decisive action training environment or Arctic operating environment.

Since JPMRC is not anchored to a fixed installation, the specific live-training environment is selected solely on the training or experimentation objectives for that year. As an example, the inaugural rotation in Alaska utilized the Donnelly Training Area near Fort Greely where the terrain was ideal for assessing at scale the over-the-snow mobility of a Stryker brigade combat team (SBCT) under extreme cold weather conditions, whereas in 2023 the rotation will leverage an active Army airfield at Fort Wainwright to accommodate a contested airborne joint forcible entry operation and then apply the highly restrictive mountainous terrain of the Yukon Training Area to advance offensive and defensive training objectives for an airborne BCT with a full complement of enablers.

Planning and coordination follows a 10-month joint exercise life cycle with participant resourcing increasingly accommodated through traditional processes at the Army Synchronization and Resourcing Conference (ASRC). Though the core function of these rotations will remain the preparation of units for entry into the mission phase of the ReARMM cycle, the realized benefits can also be usefully binned under predictability, complexity, and innovation.



Photo by John Pennell

**A paratrooper prepares to land during a joint forcible entry operation as part of Joint Pacific Multinational Readiness Center 22-02.**



## Predictability

Annual execution of a major crucible event at the conclusion of the winter cycle gives purpose and focus to our unit training plans and provides an imperative to progressively grow and leverage Arctic proficiencies. Though the focus brigade will serve as the rotational training unit, every Alaska-based Army unit is involved in its annual execution as either a training audience or a supporting element. The predictability of anchoring the event in February and March each year allows for Arctic partners whether joint, multi-component, or partner nation to coordinate and expand their involvement. To not lose sight of the human dimension, especially given the high operational tempo (OPTEMPO) of Alaska-based forces, the predictability of this event allows Soldiers and Families to plan and prepare.

## Complexity

The I Corps commander serves as exercise director, and the senior trainer for JPMRC rotations is the supported division commander. The division commander and his/her staff have the additional responsibility of providing the higher command functions for the training units, making JPMRC a division-level operation in every sense of the term. This is assessed as ideal for the way it contributes to division proficiency outside of the traditional warfighter exercise construct.

Owing to over-the-pole mobility and proximity to the Arctic region and Russia, a high density of relevant joint capabilities are stationed in Alaska. Proximity of these capabilities to the execution of JPMRC-AK rotations creates incredible opportunities for integration, particularly as all services are applying emphasis on LSCO, competition in the Arctic, and the importance of competitive messaging. The same principle extends to multinational partners but is amplified because of the increased relevance that extreme cold weather and mountainous terrain offers to their respective nations. For example, the fiscal year 2023 rotation will include representation from the partner nations of four distinct geographic combatant commands.

## Innovation

The space for innovation in the Arctic is as wide as the enormity of the challenges the environment poses. Though we naturally gravitate first to the material issues centered on the individual equipping of Soldiers and small unit tactical operations, every warfighting function requires advancements at echelon if we are to achieve the proficiency needed to survive, fight, and win in the harshest environment on the globe. CALL published the Arctic Gap Quick-Look Report in 2021 that highlighted at the unclassified level 23 capability gaps. That effort now enjoys an annual waypoint through the execution of JPMRC to assess meaningful progress. In tandem to addressing equipping and capability limitations, the Arctic force must develop and refine its tactics, techniques, and procedures (TTPs) to meet the demands of its assigned



Photo by SPC Aaron Downing

**A Soldier assigned to 3rd Battalion, 21st Infantry Regiment provides security during JPMRC 22-02 in Alaska on 21 March 2022.**

mission. JPMRC-AK and the associated unit training plans leading up to it provide the annual catalyst for Soldiers, Program Managers, and contractors alike the opportunity to experiment and innovate.

Put a different way, have you ever considered what it would be like to conduct maintenance on your vehicle at -20 degrees F without the benefit of a warm space; how about a helicopter? Have you ever asked yourself what the right density and type of skis are for an infantry company? Have you ever wondered how to sustain a maneuvering battalion with water or treat a casualty with blood or saline in sub-zero temps? All innovation starts with a problem, and there is no shortage of challenges within an Arctic or mountainous environment.

## **Conclusion**

If you want a credible force capable of overcoming extreme cold weather and mountainous terrain, you must be able to train it — in it. Owing to the extensive training spaces in Alaska and the advent of JPMRC-AK, the Army has the ability to not only do so but to do it extremely well. The Army's Arctic CTC will continue to deliver increasingly proficient Arctic forces capable of meeting the demands of a joint, multinational, multidomain, large-scale battlefield. Thanks to JPMRC-AK, the Army's Arctic force will see complexity and innovation increased each year. And thanks to the emphasis from senior leaders of the military, the momentum of the last two years will overcome the Arctic atrophy experienced over the last two decades and as the Army Strategy directs — regain Arctic dominance.

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# Airborne Joint Forcible Entry Operations in an Extreme Cold Weather Environment

2ND INFANTRY BRIGADE COMBAT TEAM (AIRBORNE), 11TH AIRBORNE DIVISION



*“Today and for the foreseeable future, the Arctic presents a harsh and demanding environment for Army operations and activities. The environment is often cited as the greatest adversary to Arctic operations. Extreme temperatures, long periods of darkness and extended daylight, high-latitudes, seasonal challenging and changing terrain, and rapidly changing weather patterns define Arctic conditions.”*

— “Regaining Arctic Dominance:  
The U.S. Army in the Arctic”<sup>1</sup>

Joint forcible entry operations (JFEO) are extremely complicated and inherently risky operations. Airborne infantry brigade combat teams (IBCTs) of the U.S. Army are specially equipped, manned, and trained to perform JFEO anywhere in the world. There are five airborne IBCTs in the U.S. Army but only one Arctic airborne IBCT capable of conducting JFEO in extreme cold weather (ECW) environments. The 2nd IBCT (Airborne), 11th Airborne Division, headquartered at Joint Base Elmendorf-Richardson, AK, is the only Arctic airborne unit in the U.S. Army that is suited to provide the joint force with an airborne assault-capable formation able to operate in the ECW and alpine environments posed by the Arctic region.<sup>2</sup> Year-round operations in Alaska and across the globe have provided 2/11 with many lessons learned, experiences, and newly recovered expertise in the Arctic.

Two of the Army’s most recent examples of successful airborne assaults in support of JFEOs include Operation Urgent Fury in Grenada in 1983 and Operation Just Cause in Panama in 1989. Both JFEOs offered unique challenges during the airborne assault, but both occurred in the warm temperatures of tropical or sub-tropical areas of operations (AOs), allowing for reduced combat load, increased speed of maneuver, and minimal sustainment requirements upon initial entry. Operating in the Arctic increases the paratrooper’s combat load, slows down maneuver, requires immediate survivability, and calls for a more robust sustainment capability.

This article, by way of warfighting function (WfF) and reconnaissance, offers readers our experience over recent years and highlights the importance of maintaining airborne-capable forces as part of the joint force while directly supporting the U.S. Army’s Arctic Strategy.

Great power competition amongst the U.S., China, and Russia has come to the forefront of the geopolitical landscape. To address this changing landscape, the U.S. Army’s 2021 Arctic Strategy named both the U.S. and Russia as Arctic nations, while defining China as a “Near-Arctic

Nation,” with all three nations competing for access in the Arctic geographical region.<sup>3</sup> The strategy contends that, “The [U.S.] Army needs to generate forces able to compete effectively by, with, and through allies and partners, to pose dilemmas to adversaries as they seek to gain access to and compete in the region [Arctic].”<sup>4</sup> With this strategic competition in mind, and the Arctic becoming an increasingly important competition space, it is critical that the U.S. Army possess the capacity to project its forces and execute its role in JFEOs in this contested region of the globe. The great state of Alaska provides the critical power projection platform needed to accomplish the Arctic Strategy, and 2/11 IBCT (ABN) remains postured to serve as the Arctic-capable force and answer the nation’s call.

Since the end of the Global War on Terrorism (GWOT), 2/11 has turned its attention to regaining Arctic dominance as prescribed in the Arctic Strategy. Detailed planning, tough and realistic training, and exercises incorporating the Army’s WfFs (command and control, movement and maneuver, intelligence, fires, protection, and sustainment) have led to the successful execution of operations in an ECW environment during the past 24 months. Arctic Warrior 21, held in February-March 2021, and the U.S. Army Pacific Command’s (USARPAC’s) Joint Pacific Multinational Readiness Center-Alaska (JPMRC-AK) exercise, held in March 2022, afforded 2/11 IBCT (ABN) an opportunity to conduct joint forcible entry in extreme cold weather. The following lessons learned, organized by WfF, provide serious planning considerations for the successful execution of ECW operations and airborne assaults in particular.

### **Command and Control**

While airborne operations in the Arctic have the same command and control requirements as any other airborne operations in a contested space, the environment alone presents several unique challenges. Airborne units require clear commander’s intent and simple mission orders that enable disciplined initiative by every paratrooper in the airborne task force. Airborne forces operate decentralized immediately upon entry into an area of operations. Little groups of paratroopers (LGOPs) maneuver individually at first and then form small teams as they maneuver to their assault positions. Just as with all other airborne forces, radio-telephone operators and leaders must place their individual weapon into operation, quickly followed by the radio system they are carrying. Arctic airborne forces use communications systems similar to other U.S. Army units, but ECW conditions can shorten the battery life and normal operating functions by more than 75 percent. Shortened battery life places greater strain on Arctic paratroopers by requiring them to carry extra batteries in an already heavy sustainment-packing list.

As a result, units must train to fight in the Arctic without relying on technology that may not function properly. Newly fielded Improved Tactical Network (ITN) systems enhance the communications capabilities of Arctic airborne forces by providing end user devices, like cell phones, that enable



Photo by John Pennell

*Paratroopers from C Company, 3rd Battalion, 509th Parachute Infantry Regiment, conduct an attack during Arctic Warrior 21 on 11 February 2021.*

increased situational awareness. Additionally, these systems employ self-healing Tactical Soldier Mesh (TSM) frequency band communications that alleviate many of the traditional line-of-sight radio retransmission requirements. Despite the exciting possibilities of these new technological capabilities, relying on them presents challenges to the Arctic airborne force. Touchscreens frequently fail to function in sub-zero temperatures, and use of the network increases the power requirements for individual radio batteries.

These communication challenges, as well as potentially unresponsive and unsustainable equipment in sub-zero temperatures, require leaders to consider other options for communicating mission orders. Arctic conditions have demonstrated success in sustained operations by establishing standardized reporting criteria and adhering to disciplined reporting during established communication windows. These procedures allow paratroopers to conserve batteries, reduce electronic signature, and ultimately decrease paratrooper load. Executing this standard operating procedure is only feasible when commanders provide clear mission orders and intent that enable initiative down to the smallest units.

### **Movement and Maneuver**

Commanders and paratroopers must learn to appreciate and plan for the Arctic region's potentially devastating, and at times unpredictable, effects on movement and maneuver. Operating in the Arctic requires more time, and survivability becomes paramount to any operation upon entry. Without considering individual survivability, maneuver forces cannot close with and destroy the enemy. Failure to appreciate

the impacts of an Arctic environment and the persistent reality of basic survival tasks needed in sub-Arctic conditions influence tactical execution.

The 2/11 IBCT (ABN) faced these realities during the execution of Arctic Warrior 21. During this demonstration exercise conducted in Alaska's Donnelly Training Area, 2/11 paratroopers experienced sub-zero temperatures as low as -40 degrees Fahrenheit (F) immediately after airborne insertion. Before proceeding to assault objectives or attempting to expand the lodgment, the assault force was required to erect warming shelters upon arrival to their assault positions. In doing so, the speed at which the ground force commander was able to set the force and prepare for critical airland capabilities increased from four hours to as much as 24 hours. This highlighted the importance of adjusting doctrinal tactical concepts of JFEO key tasks to account for individual survivability. Maneuver timelines must be realistic, as it takes longer to conduct operations due to the nature of the environment.

In an Arctic environment, the combination of terrain, weather, and sustainment load severely reduces the speed at which paratroopers can move dismounted. Dismounted paratroopers often maneuver through multiple snow depths while on foot, skis, or snowshoes. Squads and sections pull Ahkio groups (sleds filled with warming tents; critical components such as shovels, hacksaws, and axes; and fuel and water for survival). Leaders account for the increased load of each individual paratrooper. One of the most significant planning factors centers on clothing, due to the heat generated through physical exertion. Accordingly, leaders must carefully monitor uniforms and proper layering during all phases of a JFEO, respecting the adage that "if you sweat, you die."<sup>5</sup> Individual conditioning under increased loads minimizes the physical and mental toll exacted by operations in Arctic ECW environments. Additional mitigations include avoiding additional layers of clothing until arrival at the first static position, and once movement has commenced, planning a rest stop 30 minutes into travel to allow individuals to adjust their clothing as necessary.

Leaders must also account for increased assault distance travel time and bounding techniques to accommodate slower movement. An additional ECW consideration is to emphasize the centrality of flanking fire to provide sustained machine-gun supporting fire throughout a slow assault.<sup>6</sup> Finally, JFEO planners must deliberately plan the constant rotation of reserve troops to allow for timely reorganization of initial assault elements to prevent early culmination. The environment is draining and taxing on a paratrooper's body. Even the most physically fit paratrooper may not survive in the Arctic.



Ultimately, successful JFEOs in an ECW Arctic environment require an understanding of individual loads, procuring and training on the right equipment, and planning and operating under the tactical constraints associated with the environment. Planners must consider the balance between the fight with adversaries and the fight with environmental conditions in order to achieve mission success. Planning and synchronizing the infiltration of the brigade's organic reconnaissance assets is critical to the brigade fight.

## Reconnaissance

Common to airborne JFEO execution within 2/11 IBCT (ABN) is the insertion of the cavalry squadron's dismounted reconnaissance troop between 48-72 hours prior to the main body's airborne assault. Multiple planning considerations must occur when operating in an ECW environment. Planning considerations for this 80-paratrooper element manifest most critically regarding the sustainment of the unit during insertion, infiltration, and reconnaissance execution.

The insertion of dismounted reconnaissance requires additional support to fulfill the unique sustainment and protection needs in an ECW environment. Ahkio groups are an immediate requirement to protect the teams. Additionally, ECW will both drain and consume batteries faster than temperate conditions. Because of this degradation, units must plan on increased battery expenditure and subsequent resupply. These batteries are critical in supporting mission command requirements both from the recon teams to the mission support site (MSS) and from the MSSs to the troop command posts to higher headquarters. With a basic load of ammunition, radios, batteries, optics, the modular sleep system, Extended Cold Weather Clothing System (ECWCS) clothing, and minimal food and water, the large Modular Lightweight Load-carrying Equipment (MOLLE) rucksack is above optimal weight for an individual paratrooper. Both

the brigade and squadron commander must plan to deliver critical sustainment commodities via door bundles, containerized delivery system (CDS), Joint Precision Airdrop System (JPADS), or other delivery means available for use.

During the infiltration to reconnaissance positions, skis and snow machines provide enhanced over-the-snow capability and increase tempo. When jumping with skis, each paratrooper is required to utilize the Airborne pack (AIRPAC) side-mount container system that constrains the unit to jumping over the ramp of a C-130 variant aircraft. Over-the-ramp operations limit jumper payload and have other paratrooper requirements. An additional capability for infiltration is the employment of snowmobiles/snow machines that directly enhance the depth and speed of infiltration, reduce paratrooper fatigue, and carry the critical sustainment commodities previously mentioned. However, their use increases the need for fuel and creates vulnerabilities to the reconnaissance troop through visual and audible signatures during movement. Airborne delivery of one snowmobile/snow machine requires one 12-foot "fast box" exited over the ramp of a C-17 or C-130 in the same manner as a CDS, creating the need for additional aircraft for infiltration.

During the execution of the troop's reconnaissance of named areas of interest (NAIs), six reconnaissance teams can report simultaneously on six different locations for short durations. In an ECW environment, however, this short duration planning factor requires a 50-percent reduction due to the increased requirement to rotate paratroopers out of the surveillance site and into the hide site or MSS to prevent cold weather injuries. The Ahkio tent creates a uniquely large signature compared to a typical unsheltered hide site and requires an increased distance between the hide site location and the surveillance site to decrease the risk of compromise. Long duration observation, more than 24 hours, reduces the number of NAIs that a reconnaissance team can effectively cover in an ECW environment. Each of the two platoons within the dismounted reconnaissance troop can effectively cover one NAI for as long as their sustainment package allows.

Infiltration of reconnaissance assets prior to the BCT's main body presents distinct challenges in ECW, but their employment is critical to mission execution of the BCT's JFEO. Despite these challenges, 2/11 IBCT (ABN) continues to develop planning considerations for effective employment in an ECW environment, which ensures full use of this critical BCT asset in Arctic environments.

## Intelligence

Arctic environments increase the complexity of providing intelligence support to maneuver operations after initial entry. The most significant impact occurs to the connectivity of organic intelligence systems, such as the Trojan Spirit and Tactical Ground Station (TGS) systems of record. Satellite constellations routinely operate at lower latitudes than Arctic regions, resulting in low angle satellite shots which increase



Photo by SSG Daniel Love

*A paratrooper from 1st Squadron, 40th Cavalry Regiment prepares to move out after an airborne operation in Alaska on 22 February 2017.*

the difficulty of gaining and maintaining satellite connectivity for most systems. Interfering mountainous terrain and aurora activity further complicate connectivity, but robust primary, alternate, contingency, emergency (PACE) plans will do much to mitigate the potential loss of any one intelligence system.

For example, if the Trojan is unavailable, then establishing connectivity by employing the Army Tactical Network through the Modular Communications Node-Advanced Enclave (MCN-AE) makes satellite constellations more accessible. Joint Battle Command Platforms (JBCP) can then send intelligence updates and graphics. Although these obstacles are difficult to overcome, thorough pre-planning between the brigade's S2 section, Military Intelligence company (MICO) commander, and systems maintenance technician (353T), along with determining the most suitable brigade intelligence support element (BISE) location that facilitates satellite connectivity, reduces the risk of losing connectivity. In the Arctic, use of the BCT's organic unmanned aerial systems (UAS), such as the Shadow, is eroded.

The Arctic inhibits the employment of the BCT's Shadow, and the BCT commander should prepare for a lack of UAS capability, relying on external assets and maneuver forces for ground intelligence. Identifying the location to establish UAS assets is paramount. The Shadow UAS is rail-launched but requires a runway to land. The UAS does not have organic plowing capabilities, so the brigade and brigade engineer battalion commander must prioritize assets to plow the landing area. The brigade is constrained by ECW environments when temperatures below a certain point ground the Shadow UAS. The risk of icing may also ground all UAS systems organic to the BCT. Units should also consider the impact of snowfall, which necessitate additional considerations for proper employment of the UAS platoon.

Some brigade organic intelligence collection platforms possess touchscreens and batteries. Techniques to preserve battery life range from using thermal rucksacks, wrapping equipment in spare elements of the ECWCS, placing inside one's jacket to use body heat, or employing chemical hand warmers. By understanding the risks of the operational environment, intelligence leaders can develop creative solutions to ensure continuity of support to commanders and maneuver elements in ECW Arctic environments.

### Fires

During JFEOs, maneuver commanders often employ a "team fires" concept during the initial phases of the airborne assault to mass indirect fire weapon systems providing overmatch, counter fire, and longer-range influence. Utilizing this concept, commanders typically consolidate control of all battalion-level mortar and field artillery assets under a single subordinate battalion commander (direct supporting field artillery battalion commander). JFEOs in Arctic conditions provide unique challenges and planning considerations for these weapon systems to provide responsive, accurate, and lethal fires.

The planning factor for 2/11 is to airdrop M119A3 105mm Light Towed Howitzers and their associated prime movers, 120mm mortars, and 81mm mortar systems. The M119A3 provides the brigade commander with an immediate medium-range capability and greater mobility within the airhead that is critical for survivability. In doing so, there are challenges that the commander and fire support coordinator (FSCOORD) must consider when determining the appropriate artillery package.



*Paratroopers assigned to 2nd Battalion, 377th Parachute Field Artillery Regiment fire an M119A3 howitzer during live-fire training at Joint Base Elmendorf-Richardson, AK, on 16 March 2022.*

Photo by Alejandro Peña



The M119A3's operating temperature is -25 degrees F, and the Digital Fire Control System's (DFCS) is -45 degrees F. Howitzer crews must closely monitor the regularity at which they idle their prime movers and balance the need for power while minimizing their heat signature. Doing so requires an abundance of fuel, a critical resource in the Arctic.

M777A2 155mm Medium Towed Howitzers provide maneuver commanders increased range and firepower; however, their prime movers cannot be airdropped together which decreases the speed at which the artillery can provide indirect fires. Similar to the M119A3, extreme cold weather increases reliance on the prime mover to power the howitzer and Fire Control Computer (FCC). Airdropping these systems requires the gun crews to rapidly de-rig and link the prime mover, something that is extremely difficult in Arctic conditions when there are often multiple feet of snow. Additionally, without the prime mover, the howitzer is increasingly susceptible to counter fire after employment. M777A2 crews must also work to mitigate the howitzer's susceptibility to freezing temperatures on the weapon's breech and hydro struts, which rely on nitrogen and hydraulic fluid levels that fluctuate drastically with changes in temperature. In the Arctic, long-range systems and acquisition assets are air-landed to help reduce the risks associated with dropping these items of equipment.

Ammunition consumption will require careful management throughout the JFEO, since clearing an airstrip and expanding the lodgment will inevitably take longer in the Arctic. Due to limited on-hand ammunition quantities for these critical weapon systems following an airborne assault, it is imperative that fire missions are centrally managed, tracking the expenditure of each round. This requirement becomes increasingly important in an ECW Arctic environment where expanding the lodgment can take longer and necessitate supporting indirect fires for greater periods. Until resupply becomes available, commanders must prioritize indirect fires toward high-payoff targets and high-value targets to reduce consumption rates.

Team fires plays an integral role in enabling maneuver commanders to dominate during JFEOs. JFEOs have inherent challenges, and ECW Arctic conditions present unique challenges and limitations for each element of the fires enterprise. Synchronization and prioritizing assets minimize the impacts of challenges and enable team fires to provide decimating fires in support of maneuver forces and ensure mission success.

### **Protection**

The U.S. Army designs engineer equipment for use in various environments and conditions, but operating in the harsh and extreme conditions of the Arctic can pose many challenges. Extreme cold weather temperatures cause vehicle parts to become brittle and break more easily, lubricants to thicken and become less effective, and demolitions to harden and become less pliable. When this occurs, clearance of obstacles and proofing of the airfield becomes problematic.

The terrain in Arctic, sub-Arctic, and alpine zones can also prove unforgiving to equipment. Permafrost in and around Fort Wainwright is up to 45 meters deep, and deeper within the Arctic Circle.<sup>7</sup> Excavating permafrost can prove difficult and often impossible with the brigade's organic engineer equipment, such as the D6 and DEUCE bulldozers and the High Mobility Engineer Excavator (HMEE). If not careful, the equipment will likely be damaged, which leads to delays in the brigade's preparation for defensive operations and disruptions in tempo during offensive operations.

Despite these challenges, U.S. Army engineer equipment is vital to many operations in the Arctic. Engineers utilize their equipment to emplace obstacles and conduct route clearance, airfield damage repair, and breaching operations. Leaders must understand how to adjust their tactics, techniques, and procedures (TTPs) to work in their present conditions. Expedient methods for conducting airfield damage repair might consider the use of snowcrete and icecrete. During JPMRC-AK 22, 2/11 IBCT (ABN) engineers demonstrated effective ways to fix, turn, block, or disrupt an opposing force and create effective engagement areas by using available snow to create snow berms and serpentines instead of emplacing anti-vehicle ditches. Sapper squads successfully utilized cloth hand warmers to keep C4 pliable before charge construction.

Engineer operations in the Arctic present a host of challenges including cold temperatures, limited daylight, harsh weather, and remote locations. However, utilizing available materials in non-standard ways continues to prove the most effective means of meeting these challenges. Leaders carefully plan, prepare, and adjust mission essential tasks and TTPs to ensure execution of protection tasks in Arctic conditions. They provide maneuver commanders options to shape the battlefield, prepare airfields, and protect the force.

### **Sustainment**

More than any other operating environment, the Arctic punishes leaders who fail to prepare to win the sustainment fight. The key to successfully sustaining a JFEO in an ECW Arctic environment is to embrace the most significant challenges it presents to leaders across all echelons — the imperative of maintenance, the cornerstone of fuel, and a full understanding of distribution operations. In a temperate operating environment, the maintenance of equipment is important; however, it will rarely be life threatening if it ceases to function. In the Arctic, that equipment may be the only thing standing between a paratrooper, -50 degree temperatures, and the heat needed for survival.

The Arctic environment itself can prove detrimental to the maintenance of equipment. The extreme fluctuation of temperature and incredibly low temperatures wreak havoc on machinery and electronics. The effects of ECW are compounded by extended equipment thawing times, limited number of man-hours to conduct repairs, and limited routes for maintenance and recovery assets. In order to limit the

***More than any other operating environment, the Arctic punishes leaders who fail to prepare to win the sustainment fight. The key to successfully sustaining a JFEO in an ECW Arctic environment is to embrace the most significant challenges it presents... the imperative of maintenance, the cornerstone of fuel, and a full understanding of distribution operations.***

negative impacts of temperatures and weather on operations, disciplined maintenance programs prior to a JFEO require leader prioritization.

A second critical consideration is that fuel (JP-8) constitutes the cornerstone of commodities in the Arctic. Fuel is fundamental to operations and each warfighting function across all echelons. Without it, vehicles cannot run, generators do not produce power, heaters do not warm shelters, and squads do not melt snow and purify water to consume sustenance such as their operational rations (Meals, Cold Weather [MCWs]). During a JFEO, the consideration for secondary loads of fuel on all aerially delivered vehicles and execution of CDS bundles with sufficient fuel to support operations is imperative. These methods allow time for either ground assault convoys or airland operations to establish continuous flows of fuel to the warfighter.

A final consideration involves a gained understanding of distribution operations across the battlefield, from the brigade support area (BSA) to the company position by leaders at all echelons. Arctic terrain creates limitations on mobility that force leaders to understand the limits of their equipment in this environment. These limitations are often due to wheeled vehicles being unable to conduct over-the-snow movements. The use of snow chains on tires becomes paramount but does not always work depending on snow depths and road networks. Vehicles at all levels are reduced to operating on roads only, or they face the reality of getting stuck in swamp-like conditions called muskeg if the ice is not thick enough to sustain the vehicle's weight. Primarily, commanders need to consider where they must transition unit resupply operations from wheeled vehicle operations (primarily from the BSA and combat trains command posts) to over-the-snow platforms such as small unit support vehicles (SUSVs), Cold Weather All-Terrain Vehicles (CATVs), or Ahkio sleds. The deliberate planning to move from bulk-wheeled assets to smaller but more capable over-the-snow assets is one of the major planning factors for a successful JFEO.

## Conclusion

The U.S. Army's ability to project power into the sub-Arctic, Arctic, and alpine environments is crucial for our nation's security in the future. Two decades of fighting the GWOT and forward operating base-centric operations have eroded the organizational knowledge of these techniques, control measures, and coordination techniques across BCT formations. Through continuous exposure to this unique environment, 2/11 IBCT (ABN) has incorporated the above mitigations and planning considerations by WfF and reconnaissance to achieve tactical success within this strategically relevant subject. Continuous training in extreme cold weather, understanding Soldier load and sustainment, and detailed planning ultimately reduce the risk associated with operating in the Arctic. Leadership in the Arctic is difficult, but leaders are critical to ensuring paratroopers understand the effects that Arctic conditions will have on their bodies. The Arctic will always present a harsh and demanding environment for our Army to operate in, and it is the greatest adversary we face during JFEOs. However, through tough training, planning, and continued experimentation, 2/11 is leading the way toward demonstrating how units can quickly transition from jump and survive to jump, fight, and win!

## Notes

<sup>1</sup> Headquarters, Department of the Army, "Regaining Arctic Dominance: The U.S. Army in the Arctic," 19 January 2021, 4-5; available at [https://www.army.mil/e2/downloads/rv7/about/2021\\_army\\_arctic\\_strategy.pdf](https://www.army.mil/e2/downloads/rv7/about/2021_army_arctic_strategy.pdf).

<sup>2</sup> Markus Kottek, Jurgen Grieser, Christoph Beck, Bruno Rudolf, Franz Rubel, World Map of the Kppen-Geiger climate classification updated. (Meteorologist Zeitschrift, Vol. 15, No 3, June 2006).

<sup>3</sup> "Regaining Arctic Dominance," 15.

<sup>4</sup> Ibid.

<sup>5</sup> BG M.L. Lapointe, Arctic Advisory #1, 21 October 2022.

<sup>6</sup> Ibid.

<sup>7</sup> Beth Astley, Colby Snyder, Seth Campbell, Steven Arcone, and Bruce Smith, "An Integrated Geophysical Program to Map Permafrost Extent, Fort Wainwright, Alaska," Symposium on the Application of Geophysics to Engineering and Environmental Problems 2011, available at <https://doi.org/10.4133/1.3614107>.



Photo by MAJ Jason Welch

***A small unit support vehicle moves across the drop zone after paratroopers conducted an airborne infiltration near Fort Greely, AK, on 9 March 2022.***





Photo by Master Sailor Dan Bard, Canadian Forces Combat Camera

**U.S. Army paratroopers and members of the 3rd Battalion, Royal 22e Régiment Canadian Army conduct an airborne operation near Fort Greely, AK, as part of Joint Pacific Multinational Readiness Center 22-02 on 12 March 2022.**

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Photos courtesy of author

*Soldiers in the 1st Infantry Brigade Combat Team, 11th Airborne Division dominate the high ground after seizing an objective.*

# Operationalizing the Army's Arctic Strategy...

## *One Extreme Cold Day at a Time*

LTC DAIJIRO "DON" KANASE

As the Arctic sea ice melts at an alarming 12.6 percent per decade, the Arctic will inevitably open more routes for commerce.<sup>1</sup> Additionally, the Arctic is a treasure trove, rich with natural gas, oil, and minerals. This opportunity for efficient commerce and natural resources presents tremendous competition as nations vie to use or claim these routes or extract these natural resources. Competition for the Arctic region can easily lead to crisis and armed conflict. Now more than ever, the Army's Arctic force must specialize to deploy, fight, and win in any contingencies in the Arctic and beyond. Within the U.S. Army's recently reactivated 11th Airborne Division, Arctic Infantry Soldiers are training in Arctic warfare and operationalizing the Army's Arctic Strategy every day.

Warfare in the extreme cold is not new. Armies have waged wars in this environment in the past such as during the Winter War of 1939 when the Soviets invaded Finland.<sup>2</sup> During

this 105-day war, which was fought between November and March, soldiers fought in temperatures well below -40 degrees Fahrenheit (F). The massively outnumbered Finnish Army's roughly 300,000 soldiers initially crippled the Soviet Army, which had more than 700,000 soldiers. The Finns outmaneuvered the Soviets with their knowledge and experience in Arctic fieldcraft. The Soviets suffered well over 300,000 casualties, many from cold injuries, while the Finns only sustained 70,000 casualties.

The U.S. Army defines "extreme cold" as an environment between -25 and -40 degrees F, which are typical winter temperatures for those Soldiers who live and train in and around Fort Wainwright, AK. Some days, temperatures at Fort Wainwright fluctuate below -40 degrees. In these conditions, you can get contact frostbite by touching a car door with your bare hands, and cars that are not "winterized" with suitable battery, oil, and engine block heaters may not start



because the extreme temperatures can sap car batteries and thicken the engine oil. Roads are covered in packed snow for nine months of the year. While this may seem unnerving to some, this unique environment is exactly why Fort Wainwright is the ideal location for extreme cold weather training. The 1st Infantry Brigade Combat Team (IBCT), 11th Airborne Division is the U.S. Army's premier Arctic brigade that is innovating to dominate in the extreme cold environment.

### Arctic Culture

Interior Alaska has a unique blend of cultures, but communities are small and tight knit. People are friendly and welcoming. If anyone has car trouble and gets stuck on a road, others will stop and help to ensure no one is left in the cold. Strangers help each other because they know that the cold is unforgiving to everyone. The relationship between the civilian and military communities in interior Alaska is not just friendly, there is a familial warmth that is unlike any other place in the United States. Perhaps this bond exists because everyone experiences the cold together.

Inside the Army's Arctic culture within Fort Wainwright, Soldiers and Families take care of each other, often quickly sharing cold weather experiences to shorten the learning curve. Conversations can range from sharing tips on big game hunting, best ways to prepare caribou, deals on skis or ice fishing gear, to the latest Aurora Borealis photos. In a location where the population is relatively small and the cold is unforgiving, deep human connections become a cultural norm. This tight-knit culture permeates throughout the Soldiers and Families who call Fort Wainwright home.

The "Arctic Wolves" of 1/11 IBCT embrace the unique Arctic infantry identity. An organizational culture where Soldiers anticipate and wait for the extreme cold to begin collective training is unique — one that is different from any other in the Army. Everything is harder when it's -25 degrees. Soldiers must maintain water in liquid form, ruck without

sweating, operate radios with trigger-finger mittens, and fire their weapons while subsequently preventing condensation. These are just some of the daily challenges Arctic Infantry Soldiers face while operating in the extreme cold.

There is no such thing as a day where it's too cold to train. Arctic Infantry Soldiers train on mastering Arctic fieldcraft every day during both individual and collective training. They do everything that Infantry Soldiers do in the lower 48 states but are also able to complete these tasks in extreme cold weather. According to the National Oceanic and Atmospheric Administration (NOAA), the average temperature in Fairbanks for January is -15 degrees F. Operations in the extreme cold call for a whole different way of thinking and functioning.

There are only two seasons at Fort Wainwright: summer and winter. Soldiers primarily spend the short yet beautiful summer months from late April through September on individual training, mountaineering, and winter preparations. Preparing for the winter may encompass completing machine-gun crew drills or establishing an Ahkio tent with thick gloves on so Soldiers can perform the same routine tasks during the winter. Winter preparation also includes a lot of classroom instruction on cold regions, cold injury prevention, and stove employment procedures in addition to more training on cold weather tactics and techniques. For the rest of the year, from October through March, units focus on collective Arctic training to take advantage of the cold weather that consistently surrounds Fort Wainwright.

### Arctic Tactics — Shoot, Move, Communicate

The Arctic is one of the most challenging environments that Army Infantry Soldiers can maneuver in. Not only can the enemy kill, but the extreme, harsh, and austere environment can be even more relentless and persistent in killing those on either side of the conflict. In the extreme cold, individual discipline is put to the test because any indiscipline may lead to permanent injury or death. If an Infantry Soldier forgets

to bring a jacket or gloves to field training in the lower 48 states, the consequences may be minor. If this occurs during field training in the Arctic, the consequences are dangerous, making it unsafe for that Soldier to be in the field at all. Arctic Soldiers treat their cold weather clothing and equipment with the same care and seriousness as their weapon system.

**Shoot** — In the Arctic, sustaining life while maintaining one's weapon is counterintuitive. The human core temperature must remain relatively warm while one's weapon must remain cold. Whether the primary weapon is an M4 carbine or an M240B, all weapon systems are kept in the cold to prevent condensation. All weapon systems are susceptible to condensation, which will then freeze when reintroduced

*Soldiers from 1/11 IBCT conduct a 15-mile road march prior to a platoon attack at the Yukon Training Area.*



to the extreme cold. Soldiers keep their weapons outside, including when sleeping in their Ahkio tents. Soldiers place their weapons, ammo, and other gear outside of their tents to prevent condensation from forming. After firing their weapon systems, Soldiers immediately cover them up with a poncho, when time permits, to prevent condensation from occurring inside the barrel or inner mechanism.

**Move** — 1/11 IBCT Soldiers embrace a maxim that the division deputy commanding general of operations, Canadian BG Louis Lapointe, often states: “If you sweat, you die!” Arctic Infantry Soldiers conduct 15-30-mile ruck marches to get to ranges in the Yukon Training Area near Fort Wainwright. Rucking in -15 degrees is challenging because the pace must be slow enough to prevent sweating, which is dangerous in the extreme cold for two reasons. First, perspiration can easily lead to heat exhaustion, especially because inexperienced Soldiers tend not to drink water when it’s cold. Second, when one sweats in the cold, that perspiration immediately turns to ice. When the body stops moving, that ice quickly creates conditions for hyperthermia.

The key to rucking long distances in the extreme cold is to walk at a pace that is neither too fast nor too slow. This pace is dependent on many factors but can typically range from 20-25 minutes per mile. As each squad drags an Ahkio sled that weighs more than 200 pounds, leaders must also take this into consideration when rucking to their objective rally point.

**Communicate** — Radio communication in the extreme cold is challenging because of many factors. Electromagnetic

interference by ionospheric disturbances is frequent in the Arctic, which significantly degrades the effectiveness of skywave propagation. Using any kind of battery-operated equipment in the Arctic is not sustainable for long periods because batteries rapidly expire in frigid temperatures. The extreme cold also reduces the output voltage of batteries, which decreases the distance radios are able to transmit. Low battery voltage can also cause frequency drift to occur. Further, infantry movement frequently occurs in the low grounds and forested areas to prevent enemy detection, which hinders any line-of-sight radio transmissions. Also, retransmission sites on high grounds are difficult to get to in the snow and make easy indirect fire targets for the enemy.

High frequency (HF) and satellite radio communication is also challenging in the Arctic. The ionosphere in the Arctic has a dense level of electron precipitation that disrupts HF frequency. Simultaneously, satellite communication mainly relies on satellites that orbit the equator, while non-equatorially orbiting satellites are few, and hence, do not provide consistent satellite connectivity. Arctic Infantry Soldiers using dismounted radios often maintain their radios in thermal bags and keep them warm using hand warmers. Manipulating radio buttons with thick gloves becomes another challenging task that Soldiers must practice often.

### Considerations for Arctic Operations

There are a few unique, interrelated nuances when planning and executing Arctic operations: dichotomy of scale, command and control, time, and sustainment.

*Arctic Wolves from 1/11 IBCT assault an objective during a platoon live-fire exercise at the Yukon Training Area in Alaska.*





## Dichotomy of Scale

When envisioning an Arctic operation, a likely scenario may involve specialized, decentralized units operating in key nodes. In extreme cold environments, nimble forces that can move through forests with snowshoes, skis, sleds, and snow machines can be more advantageous than an unwieldy large force that is dependent on road networks and power-generation requirements. Divisions and corps headquarters provide superior warfighting resources and a data-centric, analytical and coordination hub that will be crucial to fight and win the war against any peer threat in the extreme cold.

However, there will be a communication challenge between echelons of command when conducting warfare in the extreme cold. The challenge lies between the highly digitized, power-generated equipment that divisions and corps wield and the deliberately low-technology-enabled Arctic infantry forces. Typically for non-Arctic forces, battalions and brigades with a wheeled platform and powered communication systems can bridge the gap between actions on the ground and communicating with higher headquarters. However, Arctic infantry forces may not have a wheeled platform with powered communication systems nearby due to the austerity, effects of snow, and ruggedness of the environment. To be successful in the Arctic, Soldiers must be proficient on Arctic fieldcraft techniques of maintaining communications with their higher headquarters. During inevitable occurrences in which communication systems fail to operate in the extreme cold, the initiative of leaders to “cross-talk” with adjacent units and the philosophy of mission command become paramount.

During a recent field training exercise in the Yukon Training Area, an infantry battalion experienced a dichotomy of scale. The battalion command post (CP) had intermittent frequency modulation (FM), HF, and internet communications with its brigade headquarters. This was due to the combination of dense electron precipitation and lack of non-equatorially orbiting satellites during the evening of the battalion’s attack. Compounding this issue, the battalion had sporadic FM communications with its companies that were only five kilometers away. Even with established communication windows, the company CP had even worse FM communications with its platoons. The CP consisted of a vehicle and warming tent in the woods. Platoons conducted movement and patrol base operations in the low ground and in thick vegetation.

In the blistering cold, a platoon that was a supporting effort conducted an attack without any battalion or brigade assets such as artillery support, mortars, or current intelligence updates from either aerial or ground sensors. This platoon also knew that if it sustained any simulated casualties, evacuation would be laborious on foot and time consuming. The platoon leader took initiative by communicating with an adjacent company for any intelligence updates. Since the platoon did not have 60mm mortars, it could not synchronize



*Snipers from 1st Battalion, 5th Infantry Regiment participate in a night platoon live-fire exercise at the Yukon Training Area in Alaska.*

indirect fires in its attack. After the platoon seized the objective, the platoon leader was able to reach the company CP to inform them of the successful seizure of the objective. The company CP informed the platoon leader that the company commander was not located at the CP but was with the main effort platoon conducting an attack. Not knowing the situation with the main effort, the platoon leader sent a ski team to establish link-up with the company commander. While this occurred, the supporting effort platoon initiated a hasty defense.

While this successful platoon attack by the supporting effort may still seem like a failure of synchronizing resources and massing effects in modern U.S. Army training, this is the harsh reality of conducting operations in the extreme cold. Throwing more technology to tactical units to synchronize resources simply may not work. Trying to set conditions for a platoon or a company to maneuver with higher-level assets may not be realistic. What works: individual soldier knowledge and discipline in Arctic fieldcraft, mission command, initiative, communication windows, adjacent unit “cross-talk,” and tactical patience.

## Command and Control

In the Arctic, commanders must get comfortable with not having immediate communications from subordinate leaders. Commanders must obviously establish robust primary, alternate, contingency, emergency (PACE) plans to mitigate unnecessary breaks in communication. Nevertheless, the Arctic will naturally enable commanders to exercise mission command as Arctic Infantry Soldiers operate with initiative. There are too many factors that can occur with a dismounted radio that can inhibit a successful radio transmission. The emergency protocol in the PACE plan may just be a reliable ski team that can swiftly go back and forth to relay critical information. A commander must have the tactical patience to accommodate the “E” of the PACE plan. Considerations

like reinvigorating “commo windows” rather than monitoring a radio net 24 hours a day are very real requirements in the Arctic because of battery and electromagnetic spectrum management challenges.

### Time

Time is a key factor when planning an Arctic operation. Simple environmental planning factors for conducting reconnaissance, breaching an obstacle for an attack, or establishing an area defense may take three to five times longer in the extreme cold. Various factors contribute to this increase in time.

Even in intense cold environments from -5 to -25 degrees F, using mittens becomes important to prevent injury. In the extreme cold from -25 to -40 degrees F, thick mittens are crucial, and a balaclava must be worn over the face to prevent frostbite and facilitate breathing. When wearing balaclavas, Soldiers must remove eyeglasses or put on snow goggles because the exhalation fogs up eyeglass lenses, which then immediately freezes. Food consumption also increases as the body requires more calories to maintain heat. All these contribute to an increase in time to conduct any type of operation.

When planning Arctic operations, factors that form or reduce precipitation are important. Snowfall or ice fog hinders aerial assets, significantly hinders vehicular movement, and prevents visibility for all ground sensors, including the light infantry. Simultaneously, heavy snow or ice on the ground facilitates easier ground movement when Soldiers negotiate the terrain with skis, snowshoes, and sleds. Another potential benefit of the extreme cold environment is that snowfall is rare when temperatures reach -10 degrees F and below. This is because extreme cold environments have less humidity in the air to form precipitation.

An operational planner can make reasonable planning assumptions that in the extreme cold of -25 degrees F and below, precipitation may be unlikely and visibility may be favorable. However, any rise in temperature towards 0 degrees will likely establish a climate favorable for snowfall. Further, the sun’s effects on snow and ice are also important. Both unimproved and improved roads can get icy as snow melts, even when below freezing. Icy roads can further impede sustainment operations and create havoc on vehicle operators.

### Sustainment

Sustaining a battalion or larger unit in the extreme cold requires a lot of time, a trafficable route, specialized vehicles, and redundancies. A route that is clear of not only enemy ambushes but also thick snow and debris is problematic for most of the Arctic region. Tracked platforms are significantly more effective than wheeled platforms for over-the-snow mobility. Water transport platforms (e.g., water buffalo,



*Arctic Wolves from 1/11 IBCT establish an Ahkio tent during training in Alaska.*

Hippo, Camel) can all freeze in a few hours without a warming mechanism. While an M978 Heavy Expanded Mobility Tactical Truck (HEMMT) fueler with snow chains on all its wheels can transport up to 2,500 gallons of fuel, sustainers at Fort Wainwright can only typically deliver 1,000 gallons during the winter to accommodate the heavy, uphill movement through the snow-packed mountain roads of the Yukon Training Area.

Maintenance operations in the extreme cold are equally time consuming. Small metal components, hoses, gaskets, pumps, and hydraulic systems easily get brittle and break. When a vehicle breaks down, maintainers require an oversized, lighted warming tent to house the vehicle for repair. When the tent warms up to about 20 degrees F, maintainers can take off their mittens and have the dexterity of their gloved fingers to conduct repairs. Light is required because the Arctic is mostly dark during the winter months. Lights and warmth for the repair tent require a fuel-based generator, which compounds the logistical requirement to maintain vehicles in the extreme cold.

Conditions in the Arctic are unforgiving. The extreme cold environment is relentless and will not show mercy to anyone or anything. To thrive in this environment, one must respect, study, and embrace the dangers of the extreme cold. One must get comfortable with the discomfort that the extreme cold bears on all its inhabitants.

### Being Comfortable Being Uncomfortable — The Epitome of Thriving in the Arctic

The 11th Airborne Division’s sobriquet is “Arctic Angels,” and the response is fittingly, “Arctic Tough!” While Arctic Soldiers are keen on preventing cold weather injuries, Soldiers must also know the difference between being tough and being unsafe. Not wearing gloves in the extreme cold is outright foolish and dangerous, not tough. If fingers or toes get cold and numb, that is an immediate cause to pause



training and immediately provide medical aid to prevent an injury. The first part of being “Arctic Tough” is knowing one’s physical limits against the cold — and knowing how to prepare for the cold. Once the body or a body part loses heat, it has a very difficult time gaining heat unless one applies an external heat source such as a hand warmer or goes into a warming shelter.

The second part of being “Arctic Tough” is the mental aspect of being comfortable being uncomfortable. What this means is that Soldiers must not seek “cozy warmth” as the goal when outside in the extreme cold weather; they must be content with the body being a little uncomfortable, whether it is an itch or simply feeling a little uncomfortably cool. Even at night when resting in a sleeping bag inside a thermal shelter at below freezing temperatures, Soldiers must force themselves to accept that their minds and bodies are comfortable enough to get adequate sleep and rest. When this paradigm shift occurs, Soldiers leap from merely surviving to actually thriving in the Arctic. Being “Arctic Tough” means understanding the cold, along with its effects, and being smart about how to gain the initiative in this environment.

### Conclusion

Training for the next war in the extreme cold is hard — extremely hard because the environment is relentless. In the Soviet-Finnish Winter War of 1939, more than 60,000 Soviet soldiers succumbed to cold weather injuries. The Soviet soldiers’ lack of cold weather clothing and individual knowledge and discipline of Arctic fieldcraft contributed to their cold injuries. On the other hand, the Finnish soldiers grew up in the extreme cold environment that subsequently became the battlefield in the war. Today’s U.S. Arctic Infantry Soldiers are training hard in the extreme cold environment that surrounds Fort Wainwright. The U.S. Army is operationalizing its Arctic Strategy with the best clothing, equipment, and training specifically suited for the extreme cold. The U.S. Army’s Arctic brigade is well on its way to becoming a specialized force to thrive in the extreme cold. When the U.S. Army’s Arctic Infantry Soldiers fight in the next war that involves the extreme cold, they will be ready to fight and win.

### Notes

<sup>1</sup> “Arctic Sea Ice Minimum Extent,” NASA website, accessed from [https://](https://climate.nasa.gov/vital-signs/arctic-sea-ice/#:~:text=Summer%20Arctic%20sea%20ice%20extent,covered%20in%20ice)%20each%20September.)

[climate.nasa.gov/vital-signs/arctic-sea-ice/#:~:text=Summer%20Arctic%20sea%20ice%20extent,covered%20in%20ice\)%20each%20September.](https://climate.nasa.gov/vital-signs/arctic-sea-ice/#:~:text=Summer%20Arctic%20sea%20ice%20extent,covered%20in%20ice)%20each%20September.)

<sup>2</sup> Iskander Rehman, “Lessons from the Winter War: Frozen Grit and Finland’s Fabian Defense,” *War on the Rocks* (20 July 2016), accessed from <https://warontherocks.com/2016/07/lessons-from-the-winter-war-frozen-grit-and-finlands-fabian-defense.>

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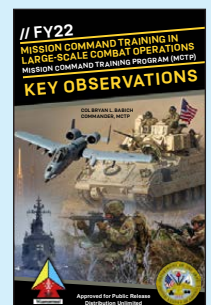
A 1/11 IBCT Soldier conducts marksmanship training at Fort Wainwright.

## NEW FROM THE ARMY CENTER FOR LESSONS LEARNED

### Mission Command Training in Large-Scale Combat Operations Key Observations

The information in this publication is a highlight of Mission Command Training Program (MCTP) observations from Army training in a large-scale combat operations (LSCO) environment. These observations were written by a collaborative group of experienced officers, NCOs, and chief warrant officers working in conjunction with highly qualified expert senior mentors. During this period, MCTP executed four multi-echelon corps and division warfighter exercises (WFXs) in Fiscal Year (FY) 2022. In the first quarter of FY 2023, MCTP conducted a two-division Baltic Scenario WFX and a new Pacific Scenario, which included a joint forcible entry (JFE) and multidomain operations. This publication captures consistent observations from these respective WFXs and is organized by warfighting function to enable training and future operations.

<https://api.army.mil/e2/c/downloads/2023/02/07/591e46d0/23-03-763-mctp-key-observations-fy22-feb-23-public.pdf>



# Logistics Support in the Arctic

MAJ STANLEY C. BERSHINSKY

“Logistics plans and executes the movement and support of forces to include those aspects of military operations that deal with: design and development, acquisition, storage, movement, distribution, maintenance, and disposition of materiel.”<sup>1</sup> This remains constant across the U.S. Army, but it takes a much more detailed approach in the Arctic. From extreme cold weather (ECW) to terrain, the environmental effects on personnel, equipment, and supplies force the integration and application of operational art and science in order to extend operational reach, enable freedom of action, and prolong endurance for the commander. Cold weather injuries (CWIs), resupply operations, equipment capability shortfalls and maintenance, and supply sustainability all must be taken into account when planning logistics operations. In the Arctic, the environment is your greatest enemy and an ally that you must respect and master.

With temperatures that can reach -65 degrees Fahrenheit, the extreme cold is a primary factor in planning logistics support to U.S. forces.<sup>2</sup> Of utmost importance is the prevention of CWIs. All personnel must understand how to effectively operate in Arctic ECW conditions and trust in the proper use of their personal protective equipment. Injuries such as frostbite and hypothermia debilitate Soldiers and have an extreme impact on a unit's readiness. The issuance of appropriate cold weather gear and the enforcement of proper use are paramount in the prevention of CWIs. Along with proper wear of gear, Soldiers cannot overexert themselves during operations due to perspiration which can directly result in those injuries.

Refueling and water resupply pose significant risks to Soldiers due to the extreme cold. Fuel does not freeze until extremely negative temperatures which can cause immediate frostbite when it comes in contact with Soldiers' skin. This requires insulated and fuel-proof clothing for our petroleum supply specialists. For water resupply operations, Soldiers require insulated and waterproof clothing to mitigate their layers from becoming saturated and thus causing CWIs. To prevent injuries to Soldiers, leaders must conduct regular and thorough CWI checks in addition to ensuring proper wear and use of individual personal protective equipment (PPE). Units must also incorporate and enforce work-rest schedules to minimize prolonged exposure to the elements.

In terms of U.S. Army equipment's ability to operate in the Arctic, many of our ground and aviation platforms struggle to effectively operate in Arctic ECW conditions. Through numerous field training exercises and rounds of experimentation, Soldiers identified numerous capabilities to support operational requirements. However, those unique or commercial off-the-shelf solutions lack the requisite supply or maintenance support to ensure sustained operation. These maneuverability shortfalls in Arctic conditions impose limitations on logistics in terms of responsiveness and survivability. The extreme cold temperatures reduce aviation assets' ability to consistently support aerial delivery and sling-load operations while ground resupply experiences a considerable reduction in speed. Commanders and logisticians must take these factors into consideration when developing movement and maneuver plans so they do not outpace the distance and speed at which they receive their required resupplies.

Ice and snow create difficult problem sets when attempting to traverse ground lines of communication. Most U.S. military tires are not rated or suitable for these conditions, which compounds the difficulty of traveling along non-permissive routes and only further decreases the speed of logistics support. Logisticians should also take weight distribution of their loads into account during convoy preparation as light loads can lead to an uncontrollable vehicle in icy conditions. When developing convoy and aerial resupply operations, planners must take into account the increased time for equipment preparation and travel. Driver's training is a critical component of preparing for Arctic convoys. Soldiers must



Photos by John Pennell

*A fuel truck from the 725th Brigade Support Battalion (Airborne) and snow machines stage along the Donnelly Drop Zone in Alaska on 8 February 2021 as part of Arctic Warrior 21.*



understand how their equipment will handle in the extreme conditions and be comfortable in how to operate under those conditions. Another mitigation is the utilization of tire chains, but Soldiers must train on the proper installation as incorrect application can lead to damaged equipment and ineffectiveness during operations.

Terrain features in the Arctic present their own unique problem sets based upon the time of year and temperature. Key terrain analysis is crucial to successful execution of operations. Something as simple as a steep grade or a sharp turn can have negative impacts on convoy operations. The mountainous terrain and densely wooded areas associated with the Arctic present numerous obstacles when conducting resupply operations. From steep terrain to frozen rivers and lakes, Soldiers face conditions that impede logistics support. Focused driver's training and experienced crews with well-maintained equipment are the best mitigations to these challenges.

Over-the-snow mobility can assist with engaging these challenges, but equipment such as snow machines and small unit support vehicles (SUSVs) are not readily available or lack the requisite sustainment support. Logistics organizations play a large role in maintaining ground lines of communication through implementation of military vehicle-mounted snowplows. The plows are crucial pieces of equipment when it comes to clearing sustainment areas as well as maintaining roads for continued travel.

The Arctic ECW conditions also pose a risk and present additional problem sets for classes of supply. Preservation of classes of supply becomes a much more difficult task due to freezing. Civilian-contracted refrigeration trailers and trucks are the primary means of maintaining rations due to the fact that the multi-temperature refrigerated container system (MTRCS) ineffectively prevents these items from freezing in extreme negative temperatures. Due to the need of preserving and mitigating food items such as fresh fruit and vegetables from freezing, food service specialists will experiment with innovative items such as insulating covers for the MTRCS. Arctic water resupply using water trailers such as the water buffalo, Camel, and Load Handling System Compatible Water Tank Rack (Hippo) have installed heating elements to mitigate freezing, but operators must expertly maintain these systems to reduce the risk of frozen water and burst pipes. The proper functioning of these heating elements is vital to sustaining Soldiers across the battlefield.

As previously discussed, fuel freezes at extremely negative temperatures and poses a CWI risk to our Soldiers. Soldiers must also apply detailed care during refueling operations to mitigate soil contamination. The ground is frozen during the winter months, which prevents effective contamination remediation. Fuel and hydraulic lines can freeze and crack, causing petroleum spills along with non-mission capable



*A Soldier with the 539th Composite Truck Company extends a fuel hose to refuel waiting vehicles during Joint Pacific Multinational Readiness Center 22-02.*

equipment. Another consideration is the increased utilization of bulk fuel due to more consistent use of equipment. Soldiers consistently operate vehicles for warmth and to mitigate freezing of the equipment. Generators and heaters are in constant use for life support and should be treated with the same importance as a pacing item.

Equipment maintenance due to unscheduled services increases significantly during Arctic ECW conditions. Bench stock and shop stock, along with thorough preventive maintenance checks and services, will help curb the effects from this, but supplying the necessary parts to the point of need can be cumbersome due to the weather conditions. Battery life is another problem in the extreme cold for vehicles, lights, optics, and numerous other pieces of equipment. Maintenance shelters are a premium item in keeping our combat power in the fight. Although the lightweight maintenance enclosure does not possess the requisite insulation or heating capability to conduct maintenance operations in Arctic ECW conditions, we are testing insulated structures to determine the best fit for enabling field maintenance.

Equipment requires a thawing period before mechanics can perform diagnostics or repairs. That, combined with the need to protect Soldiers from the elements, makes maintenance in the Arctic a very difficult task. In an interview with *Army Sustainment*, MG Brian Eifler, commanding general of U.S. Army Alaska and the 11th Airborne Division, said: "In the Arctic, changing a windshield wiper in -50 F temperatures is absolutely a significant event."<sup>3</sup> Due to vehicle accidents and equipment becoming mired in the snow, recovery operations increase during the winter months as well. While it is common practice to include recovery vehicles in most military convoys, that practice is pertinent during Arctic convoys.

In support of warfighter maneuverability, troop transport operations are vital. Medium tactical vehicles (MTVs) with

cargo area covers and installed troop heaters serve as primary means of Soldier transport across the area of operations. These assets ensure Soldier warmth along with expedited travel. The systems are also great tools for mitigating equipment and supply freezing. Leaders cannot place enough emphasis on the maintenance and utilization of troop transport assets.

Through tough, realistic training, units within Alaska continue developing expertise in Arctic ECW operations and how to effectively support warfighters in these conditions. The best method of understanding what it means to provide robust logistics to our Soldiers in the Arctic is to train in the conditions we expect to fight in. As MG Eifler stated, "We have to be ready no matter what, and that starts with training that stresses us in all the right ways to achieve that expected dominance."<sup>4</sup> Logisticians must also thoroughly understand the concept of maneuver in order to fully implement the principles of sustainment and provide options to the combatant commander. While we must always consider the adversary, Arctic operations will always require leaders to plan for the environment to be one of the greatest threats to our forces and our mission.

### Notes

<sup>1</sup> Army Doctrine Publication 4-0, *Sustainment*, July 2019, 1-1.

<sup>2</sup> 2LT Nathan Bedel, "Water Mitigations in the Arctic," *Army Sustainment* 54/4 (2022): 17, accessed 12 December 2022 from <https://www.alu.army.mil/alog/currentissue.pdf>.

<sup>3</sup> MG Brian S. Eifler, interview by Mike Crozier, "Meeting the Arctic Challenge," *Army Sustainment* 54/4 (2022): 16, accessed 12 December 2022 from <https://www.alu.army.mil/alog/currentissue.pdf>.

<sup>4</sup> Ibid.

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# Patient Hold Goes Cold

CPT SARAH SCHWEI

Warfighting in the Arctic poses several logistical challenges that force medical personnel to consider different modalities of medical treatment. Taking part in extreme cold weather training events creates significant environmental challenges and provides valuable learning opportunities that will help shape the future of Army nursing care in the Arctic.

One such major exercise, Arctic Warrior 21, involved more than 1,300 Soldiers and incorporated airborne operations, situational training exercises, and live-fire exercises in the Donnelly Training Area near Delta Junction, AK. The two-week cold weather training event kicked off with a joint forcible entry operation (JFEO) when more than 100 paratroopers from what was then the 4th Infantry Brigade Combat Team (Airborne), 25th Infantry Division safely jumped from C-17 and C-130 aircraft. Ambient temperatures during the exercise ranged from -11 to -40 degrees Fahrenheit, with wind chill temperatures dropping below -64. This training exercise posed a significant environmental challenge and provided a multitude of lessons learned that will ultimately enhance medical capabilities in the Arctic climate.

During the JFEO, the 3rd Battalion, 509th Parachute Infantry Regiment established Role I immediately near the drop zone, while the 725th Brigade Support Battalion provided Role II support, including patient hold services, seven miles from the airfield. A supporting element from 1st Stryker Brigade Combat Team (SBCT), 25th Infantry Division established Role I in buildings with access to running water and stable heat.

The first medical care a Soldier receives is provided at Role I, also referred to as unit-level medical care. This role of care includes immediate lifesaving measures and treatment provided by designated combat medics or treatment squads. Major emphasis is placed on those measures necessary for the patients to return to duty or to stabilize them and allow for their evacuation to the next level of care. These measures include maintaining the airway, stop-



Photo by SSG Alex Skripnichuk

**Medics with 3rd Battalion, 509th Parachute Infantry Regiment check the vitals of a patient during Arctic Warrior 21 at Donnelly Training Area, AK, on 12 February 2021.**



ping bleeding, preventing shock, protecting wounds, immobilizing fractures, and performing other emergency measures as indicated.

The Role II military treatment facility (MTF) provides a greater capability to resuscitate trauma patients than what is available at Role 1. Those patients who can return to duty within 72 hours are held for treatment. Role II care provides medical evacuation (MEDEVAC) from Role 1 MTFs and provides Role 1 medical treatment on an area-support basis for units without organic Role 1 resources. The Role 2 MTF has the capability to provide packed red blood cells (liquid), limited x-ray, clinical laboratory, operational dental support, combat and operational stress control, operational public health, patient hold services, and when augmented, physical therapy and optometry services.

In preparation for the JFEO, the Role II utilized Light Medium Tactical Vehicles to ground transport medical equipment sets in issued hard cases. The convoy to the drop zone area lasted nearly 24 hours, and prolonged exposure to arctic temperatures led to freezing of liquid medications and intravenous fluids. The command surgeon mandated lactated Ringer's solutions be disposed after freezing but authorized the use of thawed normal saline, if used with a fluid warmer. Several medications lacked specific data if safe for human use after freezing, proving it is crucial to prevent freezing during transport by keeping them in a temperature-controlled vehicle.

In snow-packed areas, deployment of tent structures also proved challenging, taking more than four hours to set up. Commanders mandated use of gloves to decrease risk of contact frostbite, but this limited hand dexterity. Once heated, the snow beneath the tent floor melted into an ice sheet, creating a slick environment when transporting notional casualties. Soldiers and medics donned ice cleats and springs to prevent falls, but those could increase premature tent floor damage.

Standard-issue tent heaters were insufficient in effectively heating medical or trauma patients, even with on-site commercial technician troubleshooting. At sub-zero temperatures, the tents never exceeded 51 degrees. Generators often failed daily, which further dropped average temperatures inside the Role II. Leaders tested industrial heaters to augment, but we could not safely utilize them without effective ventilation.

Our Role II's standard equipment package only included Hypothermia Management and Prevention Kits and wool blankets. However, simulated patients remained uncomfortably cold with these measures so we recommended the use of their personal sleep systems. In later field training exer-



Photo by MAJ Jason Welch

**Paratroopers from the 725th Brigade Support Battalion and air crews from 1st Battalion, 52nd Aviation Regiment conduct a medical evacuation rehearsal near Fort Greely, AK, on 8 March 2022.**

cises, we ordered and tested Bair Huggers, which improved patient comfort.

Regarding frostbite, our unit provided water buffalo heaters that maintained water in a warmed liquid state. However, in cases of chilblains or superficial frostbite, we had no device that would effectively circulate water between 102 and 108 degrees F. Our Role II providers later discovered commercial sous vide cooking devices in emesis basins could maintain this temperature without excess water waste.

In summary, effective medical care and patient hold within standard-issue Role II sets proved incredibly challenging in sub-zero temperatures. Warfighting in the Arctic environment poses several logistical challenges and forced us to consider different modalities of medical treatment. With the potential for large-scale combat operations, the Arctic poses a unique threat where both air and ground evacuation may be unavailable, which may prolong patient hold times. Ultimately, the Arctic Warrior 21 exercise provided valuable learning opportunities that will help shape the future of Army nursing care in the Arctic. Through equipment enhancements and modified table of organization and equipment changes to accommodate Arctic specific needs, Army Medicine will be better prepared for an Arctic conflict.

**Author's Note:** *The former Arctic Warrior exercise is now the Joint Pacific Multinational Readiness Center-Alaska (JPMRC-AK), a regional Combat Training Center (CTC) rotation enabled by JPMRC and the Joint Readiness Training Center. Rotation 23-02 will advance the readiness of Arctic-capable forces for future employment within the U.S. Army Pacific Command area of responsibility and beyond. It will also advance the objectives of the U.S. Army Arctic Strategy.*

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# A COLD, SOGGY, BOGGY SLOG: GROUND FORCES IN HIGHER LATITUDE COMBAT

DR. LESTER W. GRAU

There are apparently no spots on the planet that are so remote, so inhospitable, and so devoid of transport and infrastructure that man will not fight over the possession of them. Mountains, jungles, and deserts have all seen their share of combat. People have even fought in the Arctic and in proximity to the Antarctic — and not just the indigenous populations. The land areas approaching and within the Arctic and Antarctic Circles provide unique challenges to military operations. Terms to describe this combat have included northern warfare (a Western-centric term that excludes the areas near the Antarctic), arctic warfare (a term which excludes the Antarctic as well as those inhospitable areas south of the Arctic Circle), and cold weather combat (there are permanent ice and snow-covered areas, but much of this area is devoid of snow and cold during the summer thaw, and movement and combat during the thaw can be quite difficult and requires different techniques and equipment). Geographers refer to the sub-Arctic, Arctic, sub-Antarctic, and Antarctic belts. The sub-Arctic and sub-Antarctic belts do extend at places below 40 degrees northern and southern latitudes, however, so this is not particularly definitive. Higher latitude combat generally occurs above 55 degrees northern and southern latitudes, understanding that blizzards, ice storms, and snowstorms do occur frequently and regularly below 55 degrees northern and southern latitudes. Sub-arctic combat is not necessarily easier than arctic combat, it just has different challenges.

## A Quick, Recent History of Higher Latitude Combat

Significant large-scale combat has taken place in the higher latitudes. The terrain, weather, and limited infrastructure impose severe difficulties on untrained and non-acclimated soldiers. The prime concerns are mobility and shelter. Tactics and force structure require modifications and adjustments.<sup>1</sup> Equipment does not run as efficiently and may require special lubricants, garaging, fuels, and support. Everything takes more time. The past 100 years have witnessed some major confrontations in the higher latitudes. The future will undoubtedly see similar confrontations.

In 1918-1920, some 14,000 U.S. Army combat and support troops deployed near the ports of Murmansk and Archangel in northwestern Russia and near the port of Vladivostok in the Russian Far East. Their mission was to protect the quantities of war supplies that the allies had shipped to the armed forces of the Tsar during World War I. Civil war swept over Russia as the Whites [Russian counterrevolutionaries] fought the Reds [Bolshevik revolutionaries]. Japan, the Brit-



Department of the Army photo

*American troops haul supplies forward to units on Attu in May 1943.*

ish Empire, France, Italy, Poland, Serbia, Romania, China, and Greece also sent contingents to support the intervention.<sup>2</sup> About 50,000 Czech soldiers, originally with the Austro-Hungarian Army, were trapped inside Russia and tried to transit eastern Russia to the Pacific Ocean and then to sail to France and eventually join the allied forces fighting there. Japan and Britain were hardly neutral, and the U.S. Army was hard-pressed to maintain some form of neutral posture while acting with the allies. On occasion, the U.S. forces fought Bolsheviks along with other allied forces. The 27th Infantry Wolfhounds, in conjunction with a Japanese division, marched more than a thousand miles in pursuit of retreating communist soldiers. U.S. Soldiers guarded the ports and portions of a 2,000-mile stretch of the Trans-Siberian railroad. U.S. forces also maintained and enforced a truce of sorts between warring Russian factions.<sup>3</sup> Not all the allied intervention forces were involved in higher latitude combat, but enough were to realize that these regions require different training, tactics, equipment, and support.

On 30 November 1939, the Soviet Union attacked Finland in the Winter War that lasted until 20 March 1940. It was a short, brutal war that cost the Red Army 65,384 killed in action (KIA) or died of wounds, 14,142 missing in action (MIA), 186,584 wounded in action (WIA), 5,468 prisoners of war (POWs), and 9,614 cold-weather casualties.<sup>4</sup> Finnish casualties were lower (some 26,662 dead and 39,886 wounded), but Finnish forces were much smaller and the Soviets won the 105-day war. Some of the fighting occurred on the Kola Peninsula within the Arctic Circle, but the main fight occurred in south and central Finland.<sup>5</sup> The Finnish forces were able



to withstand the Soviet onslaught for as long as they did due to their specialized training, acclimation, and familiarity with winter movement.

In May 1943, the U.S. 7th Infantry Division landed on Attu in the Aleutian Island chain to oust Japanese occupying forces. A few months later, a combined Canadian-7th Infantry Division force invaded the nearby island of Kiska. Expulsion of the 3,000-man Japanese force cost U.S. forces some 3,929 casualties, of which 1,481 were deaths. More than half of the casualties resulted from the cold, wet environment; lack of proper cold weather gear; and friendly fire incidents in the fogged-in terrain.<sup>6</sup>

In October 1944 the largest Arctic ground operation in history occurred in Northern Finland and Norway between the Soviet 14th Army and the German 20th Mountain Army. The 133,500 men of the Soviet Army, supported by the Soviet Northern Fleet, faced some 45,000 Wehrmacht and German allies. The Soviet Petsamo-Kirkenes offensive forced the German army to withdraw and captured the crucial Finnish nickel mines in Pechanga/Petsamo. The Soviets massed ski troops, naval infantry, artillery, and tanks, supported by 30 engineer battalions, horse and reindeer transport companies, and significant airpower. The Soviet advance was successful but limited by the retreating German destruction of the meager road network.<sup>7</sup> Soviet losses were 21,233 (6,084 KIA and 15,149 WIA) in the 23 days of fighting.<sup>8</sup> Soviet sources estimate German losses at 18,000 KIA and 713 POW.<sup>9</sup>

On 2 April 1982, Argentina invaded the British Falkland Islands (Malvinas). The islands are some 300 miles east of the South American coastline and about the same southern latitude as the northern latitude of Attu Island in the Alaskan Aleutians. Britain responded with a naval and amphibious task force, and on 21 May British ground forces landed. On 14 June, Argentina surrendered. During the 74-day conflict, Britain lost 258 killed and 777 wounded in addition to two destroyers, two frigates, two auxiliary vessels, and 34 aircraft. Three Falkland Islands civilians (British citizens) were killed. Argentina lost 649 killed, 1,068 wounded, and 11,313 captured in addition to losing a submarine, a light cruiser, and 98 fixed-wing aircraft.<sup>10</sup>

### **Climate and Terrain**

The Arctic and sub-Arctic belts are not of uniform width, but bend, narrow, and expand due to prevailing winds and geographic features. The sub-Arctic belt generally falls between 50 and 70 degrees north latitude. The sub-Antarctic belt contains very little land mass other than the southern tips of Argentina and Chile plus some southern islands. The sub-Arctic characteristically has very cold winters and short cool or mild

summers. Permafrost prevails in much of the area except along the southern border and in islands and areas bordering the ocean. Temperatures can range from -40 to 85 degrees Fahrenheit. Coniferous trees (pine and spruce) create large forests (taiga) in the Russian and Canadian sub-Arctic. These forests are home to bears, fox, wolves, wolverines, bobcats, moose, caribou, and rabbits.

The tundra climate is found between 60 and 75 degrees latitude and is normally along the coast of the Arctic Ocean. This climate has a very harsh winter and a cool summer. During the summer, much of the snow and ice melts to form marshes and bogs. However, some of the deeper parts of the soil remain frozen [permafrost] to a depth of three feet. Temperatures range from -50 to 50 degrees Fahrenheit. Trees do not survive in the tundra, but mosses, lichen, and algae do. The tundra is home to polar bears, musk ox, arctic foxes, caribou, and lemmings.

The ice cap climate is found over the north and south poles, much of Greenland, some northern islands, and at the top of the highest mountains. There, the temperature seldom climbs above freezing, no vegetation grows, and the animals (polar bears, seals, albatross, and penguins) are found along the sea coast but not in the interior. While Antarctica is a large landmass continent, there is no land mass beneath the ice of the North Pole. Antarctica is far colder than the Northern Polar Region. Temperature extremes of 6 to -129 degrees Fahrenheit have been recorded in Vostok, Antarctica.

The higher latitudes contain much of the world's land mass. The northern higher latitudes have long been occupied by native peoples, whereas the human population of the Antarctic is comprised of temporary residents working in research settlements and even more temporary tourists. Although military expeditions conducted much of the Antarctic exploration, the Antarctic Treaty, which came into effect on 23 June 1961, bans military activity in Antarctica while treating the continent as a scientific preserve with freedom of scientific



*A member of the Alaska State Defense Force surveys the outskirts of Nome, AK, as part of a state domain awareness exercise on 1 March 2022.*

Photo by Victoria Granado

investigation. By treaty, military personnel and equipment may only be used for scientific research and other peaceful purposes, such as transport and logistics, on the continent. Despite this and other treaties, seven countries retain claims on part of Antarctica while Russia and the United States have reserved the right to make future claims. Other treaties prohibit mineral and energy extractions in Antarctica; however, recent mineral and oil discoveries there might lead to exploitation and confrontation despite the existing treaties.

### Mobility and Maneuver

Vast swampy tundra, mountains, rivers, large quantities of boulders, and limited roads complicate mobility and maneuver in the higher latitudes. It is a difficult region for even simple engineering projects, and in winter, deep snow drifts, the polar night, and low temperatures add to the difficulty. Weather is always a complicating factor, and radio communications are often interrupted by meteorological conditions. The Russians consider March/April through October as the best time for maneuver in the north. Snowmelt starts in the spring, and the “white nights” allow for 24-hour observation. Military advances and retreats normally follow roads, rivers, beaches, and trails across the tundra. Military objectives are frequently villages, road intersections, defiles, isolated heights, mountain passes, river-crossing sites, and water-landing points. Tracked vehicles are often optimum for movement, but they can tear up the rather delicate earth surface and create their own obstacles.<sup>11</sup>

The Germans who fought the Soviets in the Arctic had a different view. “The characteristics of terrain and climate in the Far North are such that winter is the more favorable season for offensive campaigns, while summer is more suitable for defensive operations. Early and late winter are particularly favorable for attack operations; midwinter with its deep snow is a less appropriate time for offensive warfare.”<sup>12</sup>

According to the U.S. Army’s June 1971 Field Manual 31-71, *Northern Operations*, “The most suitable time for ground operations is from midwinter to early spring before the breakup period. The snow is ‘settled,’ giving well-trained and supported troops an excellent opportunity for oversnow mobility. During this period, operations are possible even in a roadless wilderness. Early winter, after the formation of ice, is also favorable; however, it does not afford well-trained troops the same oversnow and cross-country mobility as midwinter... In midwinter, the environmental factors — extreme cold and snow — may be used to advantage by leaders with initiative and ingenuity.”<sup>13</sup>

Why the marked difference in opinion between the three countries? Russia prefers the warmer weather with nearly



Photo courtesy of Alaska State Library, U.S. Army Signal Corps Photograph Collection

*American Soldiers dig a tractor from the mud on Attu in 1943.*

24-hour visibility, a reduced requirement for warming-up stations during operations, lessened chances of blizzards and other incapacitating weather for the trade-off of more difficult cross-country and road mobility. They build their wheeled and tracked vehicles with high clearances for use in their native terrain. Their track width is usually broader than similar U.S. tracked vehicles.

The Germans, who started World War II with narrow tracks on their tracked vehicles and low road clearances on their wheeled vehicles, were mired in the Russian spring thaw and autumnal heavy rains [распутица]. The frozen soil and frozen lakes and rivers of the severe Russian winter permitted cross-country mobility for German vehicles. However, the deep snows of midwinter, along with the debilitating cold, again limited mobility and maneuver. The Germans put wider tracks on their tracked vehicles and used a lot of captured Soviet wheeled vehicles but still were never as mobile on Russian terrain as the Soviets. Cold-weather casualties during the severe Russian winter plagued the German forces throughout the war.

The differences in opinion may be a result of the nations’ perception of higher latitude warfare. Winter wars are seldom limited to a single season, and the armies involved are there for the duration. The Russians are accustomed to living and working in the winter and have a long history of winter combat. They fought the Winter War with Finland entirely during the winter, launched their incursion into Afghanistan over the snow-covered Hindu Kush Mountains, and completed their withdrawal over those same mountains during the winter. The Russians consider snow as a normal combat condition and a prime design factor in building military vehicles. The Russian T90 tank has higher ground clearance, lower ground pressure, lower silhouette and considerably less total weight



than the U.S. M1A2 tank. The Russian MT-LBV is an effective armored transport fielded in the 1980s that is still the premier winter tracked vehicle. But fighting in the winter is more than equipment; it requires remarkable efforts in preventing cold weather casualties and maintaining mobility.

Amphibious landings and raids are often a major component of arctic ground maneuver.<sup>14</sup> During the spring and summer, rivers and lakes provide the ability to move and maneuver using shallow draft boats with low overhead clearance. However, navigation of glacier-fed waterways can be treacherous due to the shifting channels, sand or gravel bars, and other obstructions.

Perhaps the answer is that there is not a single optimum maneuver season for high-latitude combat, and even if there were, high-latitude combat is seldom settled over a single season. Simple tasks take longer in the higher latitudes, and complex tasks may become impossible. The primary concern of high-latitude combat is to keep one's soldiers alive, disciplined, and capable of coordinated combat. The optimum maneuver season will be a function of the mission, enemy, terrain, logistics, and weather.

### High-Latitude Combat

Ground combat in the Arctic often begins with the contending forces not in direct combat, and the depth of the objectives can be significant. This requires combined-arms task organization blending tanks, mobile infantry, mortars, artillery, and engineers. If the region has lakes, amphibious vehicles may be needed in the summer, whereas skis will do as well in the winter. Flanking detachments frequently work with air assault forces to seize road junctions and bridges. Planning considerations for the scheme of maneuver include swamps, regions of deep snow pack, order of march, flank and rear security, and increased combat support. Movement across snow may require marking the way with dye, coal dust, or oil. Naturally, flank and rear attacks are better than frontal attacks. Ground combat may require movement during polar nights, blizzards, fog, and snow storms. Most of this movement will be directed by compass azimuth or satellite signal. In many areas of the Arctic, compasses and satellite signals are not reliable. Keeping units warm, intact, and moving will be a challenge.<sup>15</sup>

"The ability to carry out a march in winter may be the basis for the successful outcome of a battle. If possible, the enemy must be surprised, and surprise is more likely if the troops avoid highways and roads and move across terrain which is considered impassable. Experience has shown that enemy resistance is weakest in terrain that he considers inaccessible, and that cross-country marches frequently permit envelopment of his position. The enemy is particularly susceptible to attack on his flanks and rear. A frontal attack is very difficult in deep snow, even when it is executed on skis."<sup>16</sup>

Eike Middeldorf fought the Red Army in World War II, and in 1956 he published *Taktik im Russlandfeldzug: Erfahrungen Und Folgerungen*, an excellent examination of effective

tactics of the Wehrmacht and Red Army. The following sections on offensive and defensive winter combat are extracted from Chapter 7 which deals with winter warfare.<sup>17</sup>

### Offensive Winter Combat

Offensive winter operations are usually accompanied by significant losses in men and material. However, winter operations carried out during the worst winter conditions have often proven successful. It is difficult to conduct strong offensive action with decisive results in winter. The critical point of the attack is realized later than in a summer attack. The maneuver element is tied to the roads; therefore, the formation becomes very compact and may be cut off easily. Flanking a strong pocket of resistance takes a great deal of time and requires a great deal of effort by the force. In the majority of cases, a frontal attack over a deep snow cover is impractical. If these will not work, a double envelopment is necessary. Attacking at night or during fog or a snowstorm will facilitate a flanking attack. Every attack must be carefully prepared. Combat actions, as a rule, are conducted along narrow lines (for example, along a road or deployed for the seizure of a nearby inhabited area). The firing positions of heavy weapons, antitank weapons, and artillery, in the majority of cases, are positioned close to the road. A specially-trained ski unit may be used to expeditiously attack the flank or rear of the enemy.

Using a map to determine one's location in the winter leads to mistakes. Besides using the map, it is necessary to conduct a thorough physical reconnaissance, especially in areas of snow drift. If the weather or wind direction changes, it is necessary to again conduct a physical reconnaissance of the area. Aerial reconnaissance can provide information about the presence of roads through vehicle tracks. Moving and stationary forces can be detected by lights during the winter night. Preparation for an attack during winter requires more time than during summer. The assembly area is closer to the enemy, and occupying it needs to be conducted quickly while using existing cover to get into it. Clearing the avenue of approach to the assembly area must be done at night.

Attack missions should not be too deep, for example seizing a village, a piece of forest, or an important road. Heavy weapons need to be moved forward as much as possible to the forward line in order to avoid shifting positions at the start of combat as that takes a great deal of time. Special attention must be given to considering the difficulty of moving forces under winter conditions.

In the offensive, infantry must cross ravines and other terrain features during movement; however, these places may experience heavy snow drifting. Tanks must travel along elevated terrain, avoiding twisting slopes and hollows covered with snow drifts. They also have to bypass sections of open ground.

If the ground is frozen solid and the snow cover is not deep, the lethality of high explosive fragmentation rounds increases. Under such circumstances, try to disperse the

force over a larger area. Winter advances, like advances in forests, are conducted along individual, important axes, requiring that forces be deeply echeloned. During the second stage of the advance, it is necessary to conduct feint attacks, reconnaissance by battle, artillery strikes, and other measures to mislead the enemy. It is important to remember that after beginning an advance, it is practically impossible to change its direction.

If the advance does not achieve its goals, it is best to transition to the defense along an advantageous line or even withdraw to an assembly area in order to reorganize and rest before resuming the attack. Any winter advance makes major demands on the engaged forces. Winter combat requires battle-hardened forces that have experience in the conduct of winter combat.

### Defensive Winter Combat

It goes without saying that winter defense is far easier to conduct than a winter advance. The main element of the modern advance is maneuver, especially over great distances while constrained by deep snow and limited daylight. Further, many winter nights are characterized by good visibility, supported by defensive possibilities of conducting effective fire. On the other hand, winter defense allows a defender to conduct a surprise attack without abandoning his defensive positions while destroying an unsupported enemy force that is unprepared for defense.

The main differences between a winter and a summer defense are as follows:

- \* When the ground is frozen solid, preparation of defensive positions and construction materials entails a great deal of time. During the fall, when the fighting is still in full swing, it is necessary to construct rear area defensive positions in time using combat formations and local inhabitants. Even after a successful advance, it may be more advantageous to withdraw forces into prepared positions than try to build positions under unfavorable circumstances and suffer more casualties. The timely withdrawal of forces into prepared positions may limit the number of forces necessary for the defense.

- \* The selection of defensive positions will be different for a winter defense from a summer defense. For example, rivers, lakes, and swamps are no obstacles in the winter. Frozen rivers running into the depths of the defense often provide a ready and covered route through the forward defensive belt. Villages, which in the summer are often avoided, are unavoidably converted into important populated centers in the winter. Therefore, it is necessary to convert them into individual strong points, laid out for all-around defense. In the villages, it is necessary to reinforce underground basements with local building materials and use these as bunkers.

- \* The enemy will attempt to build fortifications in open areas in order to protect his forces. Open areas in the forward defenses may only be lightly held. No-man's land, particularly during the day, will only come under fire, but military security forces will not enter. At night it will be necessary to send

reconnaissance groups and listening posts into no-man's land. It will be necessary to fully occupy those defensive areas where visibility is limited such as sections of forest, brush, or broken terrain. This will prevent a surprise attack by an infiltrating enemy.

In the winter, as in the summer, it is necessary to pay particular attention to the layout of the anti-tank defenses. This is particularly important to positions located near rivers and swamps where a strong freeze can quickly convert these into 'tank country.'

Trenches, dugouts, and separate weapons positions must be built to their proper dimensions, although the depth of these can be lessened by piling up snow, dirt, and ice to achieve the proper depth. Well-fortified observation posts are constructed side by side with the larger number of dug-in firing positions.

In the majority of cases, units and gun crews will only be able to construct one well-fortified primary fighting position. Therefore, it is necessary to prepare additional "snow positions" to the rear of the primary positions. These have snow walls up to 1.5 meters high and are used as alternate or separate positions or else to shelter subunits held in reserve.

If the enemy attacks through deep snow, his movement is constricted and the defender can open up on him earlier with all types of weapons. The enemy will be readily seen against the snow and present an excellent target. Further, the defender should strive to open fire earlier from his concealed positions, forcing the attacker into deep snow and exhausting his force. On the other hand, the concentrated fire of the attacking enemy is less dangerous than in the summer.

If the enemy advances over an open area (for example, on a frozen lake or a plain without ravines), it is better to let him advance closer to the forward edge of the battle area (FEBA) and then open up with surprise, powerful fire.

During the conduct of a winter defense, the reserve is located significantly closer to the FEBA and is significantly larger than in the summer. From this it follows that the defender should maintain a smaller-than-usual force on the FEBA and a larger-than-usual force in the depths of the defense. In the winter, it is necessary to frequently rotate the subunits located on the FEBA. After the subunits have warmed up and rested, it is preferable to return them to the same sectors of the defense that they held earlier.

During the conduct of the defense in the winter, the forces must remain particularly determined since the slightest retreat may result in the loss of warming bunkers and a withdrawal into the unknown.

### Conclusion

Soldiers and units cannot learn high-latitude and winter combat by merely reading books and articles. They have to learn by doing. If the unit does not have seasoned "sour-doughs," it takes much longer to train the unit. A soldier may



learn the basics with a month of training in the environment, but it will take a winter to train a unit to a minimal level of effectiveness. Living in a cold climate does not create a winter warrior any more than living near a football stadium creates a great quarterback.<sup>18</sup>

Military history is filled with many examples of the tragic effects of conducting winter and high-latitude combat without proper training and equipment. The United States has not been involved in serious winter combat since the Korean War, and there are not enough units trained and equipped for winter and high-latitude combat in the force. The military requirement for potential commitment to high-latitude and cold-weather combat is growing and should be a concern for U.S. and allied leadership.

**Editor's Note:** A longer version of this article was first published in our April-July 2016 issue. Read it at [https://www.benning.army.mil/infantry/magazine/issues/2016/APR-JUL/pdf/2%20Grau\\_Slog.pdf](https://www.benning.army.mil/infantry/magazine/issues/2016/APR-JUL/pdf/2%20Grau_Slog.pdf).

## Notes

<sup>1</sup> Many senior leaders believe that Army doctrine is universal and can be applied to all areas of operation in all conditions. The climactic conditions in the Arctic require major modifications to tactics and, therefore, force structure.

<sup>2</sup> Japan sent the largest contingent of any of the major powers to the Far East. They originally deployed more than 70,000 troops and finally topped out at 250,000 prior to their total withdrawal in 1922.

<sup>3</sup> D. M. Giangreco, *United States Army: The Definitive Illustrated History* (NY: Fall River Press, 2011), 246-250.

<sup>4</sup> *Grif sekretnosti snyat: Poteri vooruzhennykh sil SSSR v voynakh, boevykh deistviyakh i voennykh knofliktakh* [The Secret Seal Is Lifted: Casualties of the Armed Forces of the USSR in War, Combat Actions, and Military Conflicts] (Moscow: Voenizdat, 1993), 99.

<sup>5</sup> Carl Van Dyke, *The Soviet Invasion of Finland 1939-1940* (London: Frank Cass, 1997) provides a good overview of the war, mostly from a Soviet perspective.

<sup>6</sup> Giangreco, 290. Much of this fighting was defensive, hopping from trench to trench. Future arctic combat may resemble this — establish a tem-

porary defensive line, infiltrate/penetrate, take the next line, move logistics up, then start the whole process again.

<sup>7</sup> David M. Glantz and Jonathan M. House, *When Titans Clashed: How the Red Army Stopped Hitler* (Lawrence, KS: University Press of Kansas, 1998) provides a concise summation of this operation. James Gebhardt, *The Petsamo-Kirkenes Operation: Soviet Breakthrough and Pursuit in the Arctic, October 1944* (Fort Leavenworth, KS: Leavenworth Press, 1989) is the most comprehensive study of this operation in the English language.

<sup>8</sup> *Grif sekretnosti snyat*, 210.

<sup>9</sup> Kh. Khudalov, "Petsamo-Kirkeneskaia operatsiia" [Petsamo-Kirkenes Operation], *Voenno-istoricheskiy Zhurnal* [Military History Journal], No. 10 (October 1969): 116.

<sup>10</sup> The Falkland Islands conflict of 1982, <http://www.falklandswar.org.uk>, accessed 6 June 2014.

<sup>11</sup> V. Kuselev and I. Vorbyev, "Nastuplenie v severnykh rayonakh" [The Offensive in Northern Regions], *Armeiskiy sbornik* [Army Digest], February 2013, 2-3. Repeated movement of tracked vehicles over the same arctic terrain will soon close the area to further movement. Ski movement of units works, but it is difficult to train a unit to minimum standards for ski maneuvers, let alone resupply.

<sup>12</sup> Department of the Army Pamphlet 20-292, *Warfare in the Far North*, October 1951, 7.

<sup>13</sup> Field Manual 31-71, *Northern Operations*, June 1971, 1-4, para 1-9.

<sup>14</sup> Viktor Leonov, *Blood on the Shores: Soviet Naval Commandos in World War II* (Annapolis, MD: Naval Institute Press, 1993), 63-127.

<sup>15</sup> Kuselev and Vorobyev, 3.

<sup>16</sup> *Army High Command, Taschenbuch für den Winterkrieg* (Berlin, 5 August 1942), translated and issued by Military Intelligence Division, German Winter Warfare, Special Series No. 18, War Department, Washington, D.C., 15 December 1943, 7. This manual, based on German experience of fighting in the Russian subarctic in 1941 and 1942, was captured by U.S. forces and translated for their use. Page numbers refer to the translation.

<sup>17</sup> Eike Middeldorf, *Taktik im Russlandfeldzug: Erfahrungen Und Folgerungen* (Hamburg: E. S. Mittler & Sohn, 1956) translated into Russian and published as *Russkaya Kampaniya: Taktika i Vooryzhenie-SPB* (Moscow: Poligon, 2000). Since the German original was not available to this article's author, he used the Russian version accessed on 19 November 2014 at [militaria.lib.ru/h/middeldorf/07](http://militaria.lib.ru/h/middeldorf/07). Eike Middeldorf was a company and field grade officer during World War II and rejoined the Bundeswehr in 1956. He retired as a major general with last posting as Chief of Staff of III Corps in Koblenz.

<sup>18</sup> Nathan Fry, "Survivability, Sustainability, and Maneuverability: The Need for Joint Unity of Effort in Implementing the DoD Arctic Strategy at the Tactical and Operational Levels," *Military Review* (November-December 2014) addresses many of the concerns and challenges involved in preparing a U.S. force for arctic combat.



Photo by John Pennell

*Infantry Soldiers from 3rd Battalion, 21st Infantry Regiment move through the Donnelly Training Area in Alaska on 22 March 2022.*

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# Russian Battalion Tactical Group Mission Training in the Arctic

DR. LESTER W. GRAU  
DR. CHARLES K. BARTLES

Russian battalion tactical groups (BTGs) serve a variety of tactical needs. First, they are the best-trained, most-ready, fully deployable subunits in the motorized rifle or tank brigades/regiments, manned at almost full strength with contract soldiers. Second, they can fight subordinate to a brigade or regiment. Third, they can fight independently of the brigade or regiment as advance guards, flanking guards, rear guards, forward detachments, urban combat detachments, raiding detachments, or the primary force in the area. The Russian BTG design can support conventional maneuver warfare or warfare on a fragmented battlefield where open flanks are common.<sup>1</sup>

BTGs are part of the Russian Ground Forces, Naval Infantry, and Airborne Forces (VDV) that are stationed or train in the Arctic. The Arctic is immense, and most of the Arctic land and sea area is part of Russia. Arctic Russia contains the largest area of unexploited natural resources on the planet. Russia is determined to safeguard and maintain control of her Arctic region. The BTG is part of that safeguard.

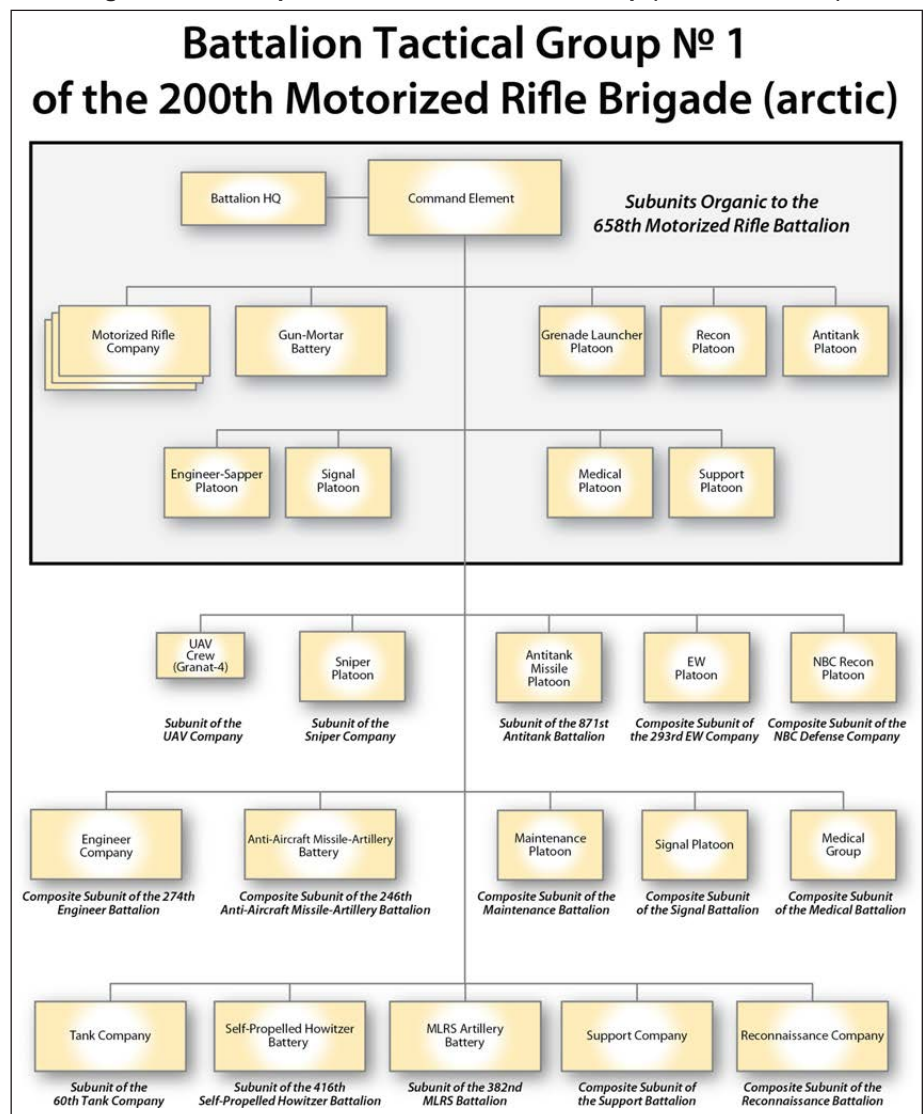
## Composition

Russia feels that NATO (and particularly the United States) constitutes a threat to Russia's Arctic sovereignty. However, Russia also prepares for a different threat — illegal armed formations. These groups may be special operations forces from various countries. Their targets may include gas and oil production, Russian nuclear weapons and power stations, airports, railroad stations, schools, medical facilities, metal extraction and smelting facilities, factories, and transportation infrastructure. A significant number of these potential targets are situated on or near the shore of the 10,700-kilometer Northern Sea Route and includes the ports of Sabetta, Igarka, Dudinka, Dikson, Tiksi, Pevek, Beringovski, and Provedeniya.<sup>2</sup>

Other than Norway, NATO navies have

few ice-class vessels or experienced Arctic sailors. Large-scale conventional maneuver warfare may not be an immediate threat in the Arctic, although this was not always the case.<sup>3</sup> Smaller detachments of trained combatants, however, may be the more pressing threat. The North Sea Fleet has three ground combat brigades (two Ground Forces and one Naval Infantry) located in Russia's western Arctic next to Norway and Finland. There is a motorized rifle regiment in Russia's far eastern Arctic Chukotka Peninsula with expectations of

Figure 1 — Example of a Battalion Tactical Group (circa 2014-2015)<sup>4</sup>





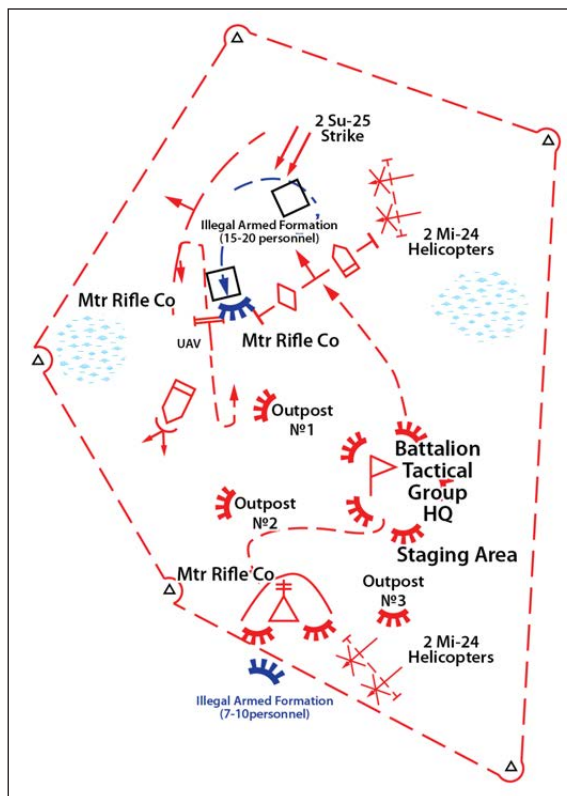


howitzers, multiple launch rocket systems (MLRSs), trucks, and ATVs to their assembly area.

From the assembly area, the Northern Fleet and National Guard force moved to positions to engage and destroy the enemy. Figure 3 shows that two enemy groups are located to the north (15-20 men) and southwest (7-10 men) of the BTG headquarters. The BTG commander secured his base camp area and sent a motorized rifle company to secure the southwest enemy. He further established three outposts guarding the northwest, west, and south of the command post. His main effort is a motorized rifle and tank company attack between two swampy areas. He secured the western flank against the enemy with a motorized rifle platoon ambush and flew an unmanned aerial vehicle (UAV) to monitor the enemy left flank. The main attack started with a Su-25 ground attack aircraft strike by two aircraft on the northern enemy. After an attack by two Mi-24 helicopters on the enemy, the BTG attacked the southwest enemy. The MLRS battery (not shown) fired two concentrations (annotated with black square boxes) in front of the mounted attack. The attack overran the enemy while a motorized rifle company on foot moved to seal the western escape routes. The commander could have used an encirclement, but the swampy areas required a mounted attack.

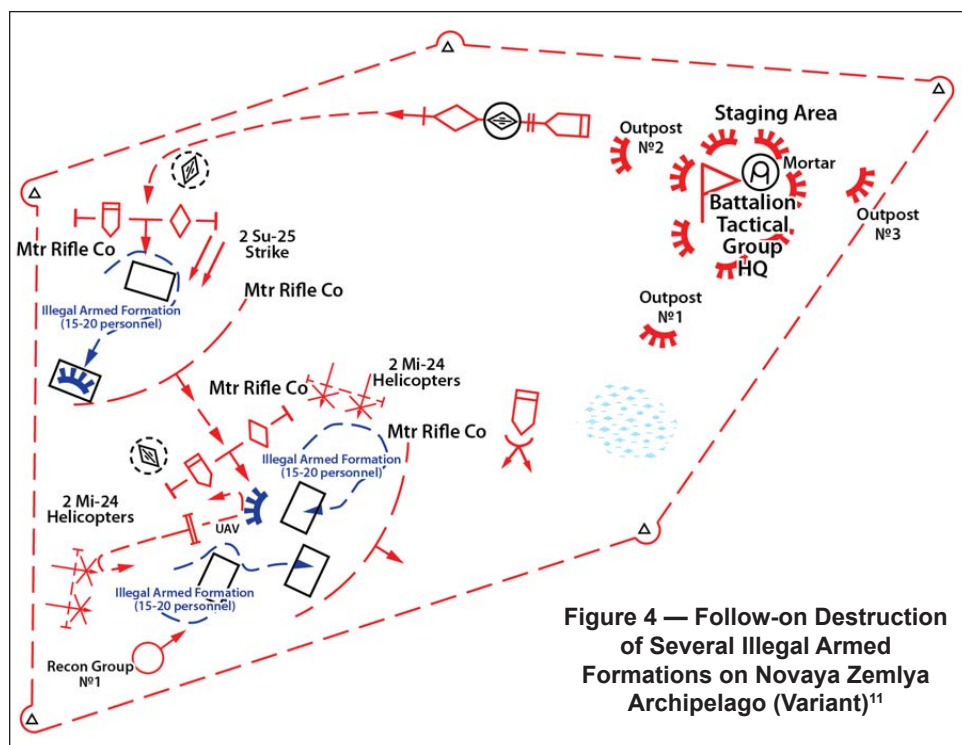
Figure 4 shows an attack against three enemy groups, which had an estimated 15-20 personnel each. One of the groups is to the west, and the other two are to the southwest. The BTG commander secured his base camp area and established three outposts to the east, west, and south. He retained the mortar battery for base camp defense. He sent a motorized rifle platoon to establish an ambush position between the high ground and swamp. He also sent a reconnaissance group to the south of the southwestern position. The main attack (a motorized rifle company, tank company, and artillery battery) conducted a road march

toward the west. A second motorized rifle company (minus) follows and prepares to advance on foot to seal the eastern flank. As the march turned into a coordinated attack, two Su-25s attacked the northern enemy group. The 152mm howitzer battery deployed and began firing artillery concentrations (annotated with black rectangles) consecutively. A motorized rifle company moved on foot to seal the eastern flank of the attack. The attack continued with two Mi-24s attacking the eastern enemy group. The howitzer battery displaced forward and fired a concentration on the eastern enemy group. The mounted attack overran the eastern group. A UAV had been tracking and spotting fires on the western enemy group. The returning helicopters attacked the western group followed by the howitzer artillery concentrations. The mounted attack overran the western group while the reconnaissance group called in fires on the surviving enemy.



**Figure 3 — Destruction of an Illegal Armed Formation on Novaya Zemlya Archipelago (Variant)<sup>10</sup>**

Terrain plays an important role in Arctic combat. Southern Novaya Zemlya has low vegetation and little cover. In October, the ground has not frozen solid yet and so marshy terrain is difficult to traverse. There are few roads. The optimum



**Figure 4 — Follow-on Destruction of Several Illegal Armed Formations on Novaya Zemlya Archipelago (Variant)<sup>11</sup>**



method to deal with smaller groups of enemy on this terrain is to encircle them. However, the ground conditions, lack of roads, and troops required often make this impossible. BTGs establish blocking lines to find and destroy illegal armed formations. BTGs conduct blocking in a single echelon. Artillery usually remains under the BTG commander's control, as does a small reserve. The BTG commander may also control ambush forces, bronnegruppa, a medical evacuation group, and a prisoner control group.<sup>12</sup>

Conducting a blocking action requires one or more blocking lines. When possible, blocking lines take advantage of terrain with good access routes and observation/firing positions. They also support maneuver and provide concealed access to position forces and systems. Camouflage and paint patterns need to change with the seasons and visibility. When a BTG establishes a blocking line, it needs time for reconnaissance and, if coordinating with territorial forces, agreed-on sites for defenses, patrols, observation posts, and bunkers. BTGs establish control points for checking local inhabitants and allowing their transport of cargo through the blocking line. Occupation of the line takes place simultaneously during reduced visibility. Sometimes, subunits proceed on foot 2-3 kilometers from their vehicles.<sup>13</sup>

The encirclement and liquidation of illegal armed formations require accurate and current information on their situation and location. They must be isolated geographically as well as from other enemy elements. Therefore, the encirclement must cover all entries or exits. After conducting the encirclement, there are several ways to destroy an illegal armed formation. The circle can collapse from all sides simultaneously with all subunits moving to the center. Slicing the encircled area into sectors and destroying these sequentially is another option. Collapsing one side of the encirclement, followed by an advance in that direction while the other sides hold the flanks, is also an option. In all situations, aviation and/or artillery strikes precede the destruction of an illegal armed formation. The encircling forces must hold their positions, so they can destroy or capture enemy combatants. During the destruction of the illegal armed formation, the subunits of the encircling forces form into a single echelon with a reserve.<sup>14</sup>

The peculiarities of Arctic environmental conditions are a major determining factor for determining the appropriate course of action for destroying an illegal armed formation. If heavy weapons cannot move into the fight, the BTG may employ towed or man-portable fires. Antiterrorist exercises in

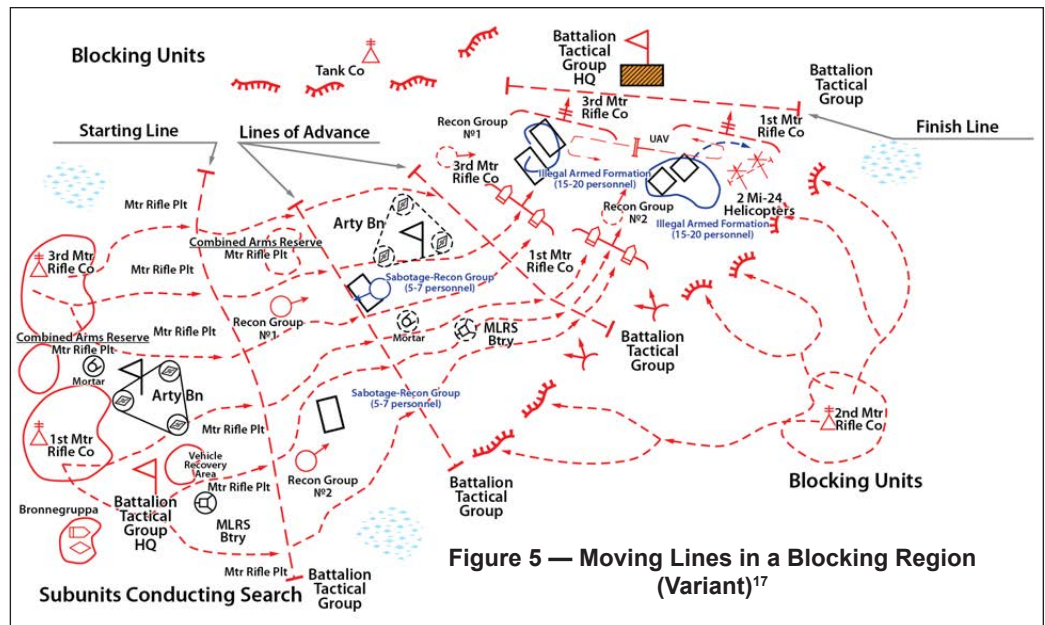


Figure 5 — Moving Lines in a Blocking Region (Variant)<sup>17</sup>

the Arctic have proved the value of mortar fire. After a mortar barrage, dismounted motorized riflemen proceed to destroy the terrorists and capture equipment.<sup>15</sup>

If the mission is to destroy the illegal armed formation's base and/or training center, the BTG may use the block and search method (Figure 5). This includes reconnaissance of the locale to determine where the terrorists are and whether to detain or destroy them. This action will continue with blocking the area and/or conducting raids and reconnaissance raids. Raids or sweeps may be in the form of a continuous line or conducted on various axes in the same direction. These may also be conducted in one blocked area and then combing the rest of the area. The continuous line clears the entire area, whereas the advance on various axes moves on various trails, sectors, and targets to clear one part of the area at a time. Moving from one side on axes, sectors, or targets begins only after the area is blocked. The raiding group of the BTG forms as a single echelon. It is usually formed from subunits of the first echelon (raiding group), artillery subunits (firing group) firing elements in direct support of the commander, an assault group, and a reserve. It may also include some medical and/or prisoner evacuation vehicles. The BTG usually moves from an assembly area to the blocking positions rapidly and simultaneously in order to mask their upcoming action. The BTG commander may deal with detected possible targets by sending a scout team, covering team, and fire team to investigate.<sup>16</sup>

Figure 5 shows a BTG blocking and sweeping a terrorist base and training center in the Arctic. The sweep moves from the southwest to the northeast. The BTG tank company seals the northern side of the sweep, and the 2nd motorized rifle company seals the southeastern side. Six platoons of the 1st and 3rd motorized rifle companies constitute the sweeping element. The BTG's self-propelled howitzer battalion provides firepower, along with the attached 122mm multiple rocket

launcher battery and the organic 120mm mortar battery. An additional motorized rifle platoon (probably a National Guard platoon since the BTG has already deployed all its motorized rifle platoons) constitutes the combined arms reserve. The bronnegruppa is an additional reserve of tanks and BMPs. The battalion command post also controls a medical evacuation element.

Depending on the terrain, visibility, and weather, the BTG could conduct this sweep mounted or on foot with vehicles trailing. The 2nd motorized rifle company moves from its assembly area to blocking positions. The 1st and 3rd motorized rifle companies move to the start line with platoons on line. Two reconnaissance groups from the BTG reconnaissance platoon are forward of the start line. On order, the sweep begins and moves slowly staying on line. Reconnaissance group 2 detects an illegal armed formation of 5-7 personnel and calls artillery fire on it. The advancing sweep reaches the first control line and checks that the line is still intact. Reconnaissance group 1 detects another small enemy group and calls artillery fire on it. The line moves forward, and then the combined arms reserve moves forward of the start line. As the sweep nears the second control line, the artillery battalion, MLRS battery, and mortar battery begin displacing forward by batteries or platoons. The two reconnaissance groups and UAV crew detect two platoon-size enemy groupings. Two Mi-24 attack helicopters attack the eastern-most enemy platoon. After the helicopters exit, the howitzer battalion fires two artillery concentrations on the western-most enemy platoon while the MLRS battery fires two concentrations on the eastern-most enemy platoon. The BTG commander decides to complete the sweep with a mounted attack, employing the battalion's BMPs. The attack succeeds, and the BTG reassembles on the other side of the finish line.

BTGs in the Arctic often work in populated areas or near infrastructure involved with oil and gas transport (key enemy objectives). BTG missions would include establishing military control and dealing with enemy detachments or groups. This will frequently require the encirclement and blocking of enemy forces in an inhabited area in order to destroy or disarm them and then sweep the area including every courtyard and house. The initial blocking line will be on the outskirts of the inhabited area that is outside of the enemy's maximum effective small arms range or at a distance where subunits can observe the area and engage them with fire from prone positions. The troops will occupy commanding heights and rooftops to control the courtyards and observe the main streets.<sup>18</sup>

In some situations, the commander may establish a double line of encirclement. Prior to entering the inhabited area, he will conduct a thorough reconnaissance. He will look for terrorist forces' positions, peaceful inhabitants, and target points for artillery and helicopter aviation. He will establish a finish line beyond which the BTG will not advance or fire in order not to endanger other friendly forces. Armored vehicles will move rapidly under the cover of motorized riflemen.<sup>19</sup>

In order to kill enemy combatants located inside houses, the BTG will establish 3-4 motorized rifle platoons as assault groups reinforced with tanks, direct-fire artillery, and flame (thermobaric) weapons. The assault groups may also have a forward air controller, artillery spotter, and medic. If the encirclement does not succeed, the BTG can hit the retreating enemy with scatterable mines, planned artillery fires, and on-call aviation.<sup>20</sup>

### Security missions

After dealing with the terrorists, the higher command may task the BTG to support the local authorities, guard vital infrastructure, and support the local security forces. Vital infrastructure includes essential support facilities and fixed railroad, highway, and pipeline installations. Companies and platoons normally perform guard (Охрана) duties that include establishing patrols, listening posts, observation posts, technical reconnaissance posts, trip flares, and sensors. Part of the force will be in reserve to prevent the capture or destruction of important sites without involving the main BTG or its reserve.<sup>21</sup> Cover (Прикрытие) involves a wider dispersion of forces and resources to safeguard high-value objectives such as command posts, signal centers, ammunition and fuel dumps, and air defense firing sites. Cover missions involve subunits from squad up to company strength.<sup>22</sup> Defense (Оборона) is undertaken to protect major stationary points (fixed command posts, airbases, supply bases, and major dumps) and require a significant force (as a rule, a fully equipped BTG). In the Arctic, this is normally a 360-degree defense oriented against ground and air attack. The sector defense organizes subunits in areas situated to deal with likely enemy axes of advance. Constituted guard subunits, up to a reinforced platoon in strength, are emplaced, along with obstacles and ambushes. Farther out, guard posts, listening posts, and patrols control the outer entry approaches. Land mines cover the areas between the subunits. The subunits have ammunition, food, fuel, and water reserves on site. Additional forces and systems counter an increased threat against the guarded facility.<sup>23</sup>

BTGs support the local government security forces through the following missions:

- Outposts (сторожевая застава) protect facilities along lines of communication (bridges, tunnels, gas and oil pipelines, gas and oil pumping stations, airports, and harbors);
- Listening posts (секреты) protect approaches to inhabited areas and important government facilities;
- Guard and escort groups (группы охраны и сопровождения) guard and escort truck convoys and railroad trains;
- Sentries (караулы) protect important facilities that provide essential support to the local inhabitants (administrative region);
- Cordon groups (группы оцепления) man control points and patrols;
- Other groups protect public order (комендантские патрули, комендантские посты, маневренная группа);
- Covering (guard) groups (группы прикрытия-охранения)



are contingency forces that undertake sudden unexpected missions expected of reserve groups.<sup>24</sup>

## Conclusion

Russian Arctic BTGs train for self-deployment as well as amphibious and air movement over a vast, difficult area. Designed and equipped for conventional maneuver warfare against modern equivalent Arctic forces, they also train for missions against smaller special-purpose forces and terrorists that pose a threat to the Russian Arctic high-value fuel and metal extraction industry. The six BTGs of the North Sea Fleet Operational Strategic Command work closely with Border Guards, Coast Guard, National Guard, and the other ground forces of the Russian Arctic 14th Corps. Garrisoned near the Finnish and Norwegian borders, the firing at their artillery ranges is audible in Norway. They move regularly by air, sea, and land. They practice riverine exercises, amphibious landings, heliborne assault, long-distance winter road marches, and marshy movements during the Arctic summer.

Elements of several Russian airborne BTGs have trained with the BTGs in the Arctic and have even conducted high altitude, low opening jumps onto the North Pole. As Russia develops its Eastern Military District on the Chukotka Peninsula, across from the Aleutian Islands, the current regiment may have already formed one or two BTGs in its resident regiment. Arctic BTGs fought in the Russian “special operation” in Ukraine and are sure to incorporate lessons from that combat. The BTG is an approach to maintaining a significant Arctic force that can effectively fight both large-scale conventional maneuver combat and widespread tactical combat on some of the most environmentally hostile regions of the planet.

## Notes

<sup>1</sup> Lester W. Grau and Charles K. Bartles, “Getting to Know the ‘Battalion Tactical Group,’” Royal United Services Institute, 14 April 2022, accessed from <https://rusi.org/explore-our-research/publications/commentary/getting-know-russian-battalion-tactical-group>.

<sup>2</sup> V. Vasilenko and S. Subbotin, “Особые задачи для Арктической зоны” [Special missions for the Arctic zones], *Армейский Сборник* [Army Digest]. May 2020, 11. Dudinka is a river port on the north-flowing Yenesei River and the site of multiple Russian Northern Fleet riverine exercises. See Lester W. Grau, “The Russians Train for Arctic Riverine Operations,” *Marine Corps Gazette*, November 2019, accessed from <https://mca-marines.org/wp-content/uploads/Arctic-Riverine-Operations.pdf>.

<sup>3</sup> In October 1944, the Soviet 14th Army (133,500 men, 110 tanks, and 2,100 artillery pieces) defeated the German 20th Mountain Army (45,000 men and 145 artillery pieces) adjacent to the Arctic Barents Sea. The best English-language source is MAJ James F. Gebhardt’s *The Petsamo-Kirkenes Operation: Soviet Breakthrough and Pursuit in the Arctic, October 1944* (Fort Leavenworth, KS: Combat Studies Institute, 1989), accessed from <https://apps.dtic.mil/sti/citations/ADA322750>.

<sup>4</sup> Северный флот на Донбассе? [Northern Fleet in the Donbass?], post on Russian blog, 19 July 2021, accessed from <https://sliv.top/2021/07/19/severnij-flot-na-donbasse/>.

<sup>5</sup> Ibid.

<sup>6</sup> Vasilenko and Subbotin, 12.

<sup>7</sup> The Federal Security Forces (FSB) is the modern version of the KGB. Russia’s National Guard is nothing like the U.S. National Guard. It is a full-time professional military force designed for internal security and prevention of riots, color revolutions, and the like. It has some 300,000 full-time personnel with tanks, armored carriers, artillery, and riot gear.

<sup>8</sup> Vasilenko and Subbotin, 12.

***The BTG is an approach to maintaining a significant Arctic force that can effectively fight both large-scale conventional maneuver combat and widespread tactical combat on some of the most environmentally hostile regions of the planet.***

<sup>9</sup> Ibid, 13.

<sup>10</sup> Ibid.

<sup>11</sup> Ibid.

<sup>12</sup> Ibid. A bronnegruppa (armored mobile reserve) forms from the infantry fighting vehicles or carriers and available tanks after the troops dismount. It provides a mobile, heavily armed reserve normally commanded by a deputy commander. The bronnegruppa is a common mission for the dismounted vehicles rather than the usual western follow and support mission.

<sup>13</sup> Ibid, 15.

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> Ibid, 14.

<sup>18</sup> Ibid, 16.

<sup>19</sup> Ibid.

<sup>20</sup> Ibid.

<sup>21</sup> Ibid, 17.

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

<sup>24</sup> Ibid.

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# Polar Nights, White Nights, and Normal Days and Nights:

## *Arctic Ground Target Identification and Engagement*

DR. LESTER W. GRAU

A fundamental concept of contemporary conventional war under nuclear-threatened conditions is that combat will continue uninterrupted in order to deny the enemy the time to restore his combat potential, maneuver his reserves, and resupply. This is conditional on the ability to fight at any time of the day or night and under any climatic condition. Special features of the Polar region challenge the “normal” concept of night and day. Polar nights occur in the northernmost and southernmost parts of the planet when there is night for more than 24 continuous hours. Polar days [Midnight Sun in the U.S. and White Nights in Russia] occur when the sun stays above the horizon for more than 24 continuous hours. In the Russian Arctic, polar nights run from 2 December through 11 January (39 days), while polar days run from 22 May to 22 July (62 days). This leaves 264 days of relatively normal day and night.<sup>1</sup>

Polar days support round-the-clock artillery and aviation missions while increasing the need to camouflage the force and conceal its movement. Polar nights complicate orientation, the conduct of accurate fire, limit the effectiveness of weapons at their maximum range of fires, and influence the use of aviation. For example, the engineer capability to build defensive fighting positions falls by 25-40 percent during darkness. Low temperatures, strong winds, and frozen soil further degrade engineer capabilities. Targeting visibility in daylight varies by the time of day, illumination, atmospheric precipitation, fog, terrain relief, smoke from fires, gun smoke, camouflage, vegetation, enemy

Background	Type of Target	Limit of Visibility in Kilometers	Background	Type of Target	Limit of Visibility in Kilometers
Forest	Tank	1.9	Grass field	Tank	2.6
	Dug-in tank	1.3		Dug-in tank	1.6
	BMD	1.7		BMD	2.2
	Dug-in BMD	0.8		Dug-in BMD	1.2
	BTR	1.7		BTR	2.2
	Dug-in BTR	0.7		Dug-in BTR	0.9
	ATGM	1.5		ATGM	1.7
	Dug-in ATGM	0.8		Dug-in ATGM	1.2
Snow-covered Forest	ATGM crew	0.65	ATGM crew	0.8	
	Machine-gun crew	0.45	Machine-gun crew	0.5	
	Tank (white camo)	1.8	Snow	Tank (white camo)	2.2
	Dug-in tank white camo	1.1		Dug-in tank white camo	1.4
	BMD (white camo)	1.5		BMD (white)	2.0
	Dug-in white camo BMD	0.8		Dug-in BMD	1.0
	BTR (white camo)	1.5		BTR (white camo)	2.0
	Dug-in BTR white camo	0.7		Dug-in BTR white camo	0.9
ATGM white camo	1.4	ATGM white camo		1.9	
Dug-in ATGM white	0.9	Dug-in ATGM white		1.1	
ATGM crew	0.6	ATGM crew	0.7		
Machine-gun crew	0.4	Machine-gun crew	0.5		

Abbreviations: BMD (Russian: Боевая Машина Десанта, *Boevaya Mashina Desanta*) is an airborne amphibious tracked infantry fighting vehicle; BTR (Russian: бронетранспортёр, *Brone-transportyor*) is an armored transport; and ATGM (Russian: Корнет, *Cornet*) is a second-generation Russian man-portable anti-tank guided missile.

Table 1 — Physical Target Visibility Under Normal Conditions Depending on the Background<sup>2</sup>



technical interference with optical-electronic observation, and building density in cities and hamlets.<sup>3</sup> Electronic night-vision systems assist in night target engagement but are not as effective as daylight observation. The stabilized 30mm 2A42 multi-purpose autocannon on the venerable Russian airborne BMD-2 infantry fighting vehicle has a daylight maximum effective range of 1,400 meters but drops to 800 meters at night using night-vision systems.<sup>4</sup> Russia conducted visibility and detection tests on its equipment on the Arctic Kola Peninsula. The peninsula, located between the White and Barents Seas, has mountains, swamps, forest, tundra, and built-up areas (such as Murmansk). The peninsula has a relatively moderate climate for the Arctic. Tests conducted there, aggregated with the local weather and climate, determined the effect of background conditions against which the soldier scout, forward observer, or gunner could detect and destroy targets.

Clearly, the range of day-lit visibility increases with the degree of target exposure and the contrast between the target and its background. Day-lit tests on the Kola Peninsula ranges had more than 2.5 kilometers visibility and measured the time that it took to detect different targets at different ranges over different backgrounds, first without the use of binoculars or other visual assistance and then with. The mathematical expectation was that, under normal circumstances, the unaided eye could detect a tank in a forest 2.5 kilometers away in 7 seconds when the observer and target were at the same altitude. Differences in background contrast, elevation, and terrain breaks affected the visibility findings. The BMD-2 with the 30mm automatic cannon and the PKT 7.62mm co-axial machine gun were used for the fire missions. With an increase in range, the average time expended engaging targets increased 12-35 percent, 10-30 percent for low hills, and 5-20 percent on the plains. Some 40 percent of the test area involved hills and higher elevation. This required that the vehicle commander and gunner carefully select their observation and firing posts. Dug-in targets were difficult to detect and destroy.<sup>5</sup>

The tests determined that observers could detect small targets (anti-tank guided missile [ATGM] and machine-gun crews) without binoculars or other optics up to 900 meters away. The further the target was from the gunner, the less chance of a hit, and the expenditure of ammunition on distant targets increased. When only part of the target was

Cannon Target						
Target	Background	Distance by Meters and Seconds				
		500m	1,000m	1,500m	2,000m	2,500m
Tank	Forest	3	4	5	6	7
	Grass field	9	10	11	12	13
BMD	Forest	7	7	8	8	9
	Grass field	10	11	12	14	16
BTR	Forest	11	12	13	15	17
	Grass field	10	11	12	13	15
ATGM launcher	Forest	11	12	13	15	17
	Grass field	10	11	12	13	15
Tank white camo	Snow-covered forest	11	13	17	23	44
	Snow	12	15	19	27	51
BMD white camo	Snow-covered forest	8	9	10	12	13
	Snow	15	21	37	46	66
BTR white camo	Snow covered forest	13	14	19	27	50
	Snow	15	21	37	46	66
ATGM white	Snow-covered forest	13	13	15	19	49
	Snow	22	16	41	50	72
Machine-gun Target						
Infantry ≤ squad	Forest	6	7	8	8	10
	Grass field	5	6	6	7	8
	Snow-covered forest	6	7	7	8	9
	Snow	5	5	6	7	8
ATGM crew	Forest	8	8	9	10	12
	Grass field	6	7	7	8	10
	Snow-covered forest	9	9	11	12	14
	Snow	8	8	9	10	12
Machine-gun crew	Forest	8	9	14	33	.
	Grass field	6	8	12	25	.
	Snow-covered forest	10	9	16	33	.
	Snow	8	9	14	23	.

**Table 2 — Mathematical Expectation of the Time to Detect Targets Visually Depending on the Range and Background<sup>6</sup>**

visible, the shots fired were usually high of center mass. The less of the target that was visible reduced the probability of successful target engagement by 1.2 to 1.8 times.<sup>7</sup>

The Kola Peninsula has high humidity and is frequently cloud- or fog-covered with overcast up to 180 days a year (20 days a month in winter, 10 days per month in the summer, and 5-10 days a month in the spring and fall). In the summer, daylight continues for 17 hours or more. Winter

overcast is less than 8 hours a day.<sup>8</sup>

The tests used Russian weapons systems, which generally have lower silhouettes, less mass, less weight, and wider tracks than their western counterpart systems. Furthermore, the Russians design their equipment to function primarily on Russian terrain. However, the Russians are monitoring western tank developments and their incorporation of optical-electronic suppression systems in current and planned tanks (Table 4).

Dust and smoke clouds are common on the battlefield. They can be deliberate smoke screens laid as part of the masking effort or incidental to the battle, usually formed by the impact and explosion of artillery rounds and large-caliber machine guns firing on targets, as well as terrain fires sparked by explosion and tracer rounds. These dust and smoke clouds can obscure or completely hide the target, frustrating target tracking and fire corrections. Factors enhancing dust and smoke clouds include varying ground pressures from explosions, the ground composition and type of ground cover, the type of fires employed, and the wind direction of the surface winds.

Table 5 shows the common types of ground and ground cover on the Kola Peninsula. In dry weather, it gets very dusty, and a moderate wind can create a dust cloud lasting 3-40 seconds. Explosions of different types of ordnance produce their own dust and smoke clouds. A 152mm or 155mm high explosive-fragmentation round cloud will last from 5-20 seconds and restrict visibility 6-7 times.<sup>9</sup> Table 5 shows the time for a dust-smoke cloud created by the stabilized 30mm 2A42 multi-purpose autocannon to disperse. Wind direction is indicated with the weapon laid on 0 degrees of a 360-degree circle and is unrelated to geographic north.

Russia is a northern country, and winter training is normal training. The Russian tests indicate that the ability to detect and destroy enemy targets is often hostage to terrain background, atmospheric conditions, degree of target exposure, enemy optical-electronic suppression

Atmospheric Conditions	Coefficient of Weakening Emanation	Horizontal Meteorological Visibility Distance, Meters
Heavy fog	86.6	20
Dense fog	85.5	50
Moderate fog	21.4	200
Light fog	8.54	500
Heavy haze	2.14	1,000
Light haze	1.07	4,000
Clear	0.427	10,000
Very clear	0.214	20,000
Exceptionally clear	0.0713	50,000

Table 3 — Visual Distance Is Dependent on Atmospheric Transparency<sup>10</sup>

Technical upgrades	Counter Measures	Effectiveness of OEP
<b>M1A2 and Leopard 2 Tanks</b>		
Camouflage paint patterns to mask signature. Laser illumination detectors. Automatic smoke screen system. Optical-electronic jamming system.	Laser and television fire direction system for cannon and missile armaments with laser rangefinder and television aiming. Semi-active laser placement (GPS and target acquisition). Second generation ATGM with semi-active command system for location and target acquisition.	Reduces probability of hit by 1.2-2.3 times.
<b>Future foreign tank systems</b>		
Laser and radar illumination indicator. Automatic systems to create smoke screens, portray false locations and traps. Active optical and radio-location jamming station. Use of "adaptive" technology.	Thermal and radio-location recce systems, ATGM with laser radial-command placement.	Reduces probability of hit by 2-3.5 times.

Table 4 — Effective Foreign Systems to Hide Tanks and Means of Optical-Electronic Suppression (OEP)<sup>11</sup>

Ground at firing position	Wind speed	Wind Direction	Time for the cloud to disperse, sec		
			Minimum	Maximum	Average
Dry grassy ground	1.5	270	15	20.5	17.8
Dry ground w/o grass	1.5	180	8.5	12.4	10.2
Dusty ground	0.5	270	24.5	35	28.3
	1-2	45	16.5	23	18.8
	3-5	240	11.0	21.3	15.1
	3-4	40	3.6	4.5	4.0
Sandy ground	2-2.5	100	3.0	3.5	3.25
Grassy ground after rain	1.5	45	6.5	8.3	7.5
Soggy loamy soil	1.0	80	5	7	6
Caked snow 0.4-0.5 meters	2.5	50	3	5.2	4.1

Table 5 — Time for a Dust-smoke Cloud from a 30mm Automatic Cannon to Disperse<sup>12</sup>



sion, dust, battlefield smoke, and available light. Night-vision devices are effective at close distances but not at longer ranges. Much of the Russian testing was against stationary targets. Movement is always a good indicator of enemy location. Consequently, necessary movement is often restricted to nights or during adverse atmospheric conditions. One-sided illumination markers, direction azimuths, and ground guides are often necessary for nighttime movement. Thermal sensors are a threat to maintaining secrecy as warming tents, generators, and engine warmth can readily give away positions. Radar and radio transmissions also invite enemy counters. Noise carries over long distances of open snow-covered terrain, and acoustic targeting is still part of Russian training. The Arctic adds to normal cold weather challenges, but a study of its special demands and characteristics aids in adapting effectively to the region.

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### Notes

<sup>1</sup> A. Zelenov, "Ночью как днем: Факторы влияющие на ведение боевых действий в северных условиях" [Night is like day: Factors influencing military activity in the north], Армейский Сборник [Army Digest], April 2017, 5.

<sup>2</sup> Ibid, 7.

<sup>3</sup> Ibid, 6.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid, 9.

<sup>6</sup> Ibid, 8.

<sup>7</sup> Ibid, 9.

<sup>8</sup> Ibid, 9.

<sup>9</sup> Ibid, 10-11.

<sup>10</sup> Ibid, 10.

<sup>11</sup> Ibid, 11.

<sup>12</sup> Ibid.

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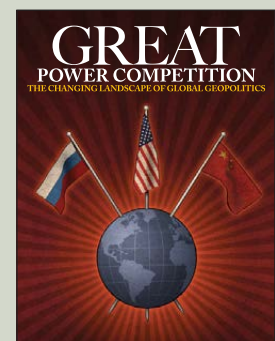
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## From These Hallowed Dead: *Why Memorial Affairs Matters*

CHARLIE COMPANY, 1ST BATTALION, 3RD U.S. INFANTRY REGIMENT (THE OLD GUARD)

A few years ago, we participated in a battlefield staff ride of Gettysburg, along with other leaders from 1st Battalion, 3rd U.S. Infantry Regiment (The Old Guard). Like most staff rides, topics such as the exercise of the principles of mission command, decision making, and the use of terrain dominated the majority of discussions as leaders visited different locations of the battlefield. However, the final stop was unique to a staff ride, ending at the Soldier's National Cemetery or what is also known as the Gettysburg National Cemetery. This is the location where President Abraham Lincoln gave his famous Gettysburg Address, which is now engraved in stone in the south chamber of the memorial in Washington, D.C., that bears his name.

For Lincoln, the address was simple: a dedication of a battlefield cemetery in a way that honors the fallen and their sacrifice. His address, though short, was profound and transcendent, serving as great a purpose today as it did nearly 160 years ago. For those on the staff ride that day, Lincoln's words resonated personally with each Soldier as our battalion is uniquely dedicated to the mission of honoring the fallen in Arlington National Cemetery. Lincoln's words capture the mission and the motive for memorializing sacrifice to the nation and serve as the outline for this article. In his address, President Lincoln does not only appeal to Soldiers but to a wide audience of Americans, united in national identity.

While the mission of those units that perform memorial affairs is no secret, many Americans and service members do not know of the lengths to which America goes to honor the fallen or the level of detail taken to honor their sacrifice. This article will use President Lincoln's Gettysburg Address as an outline to describe memorial affairs and inform readers of the reverence and impact it has both on the military and the nation.<sup>1-2</sup>

### "Four score and seven years ago..."

The opening remarks of President Lincoln's address at the dedication of the Soldier's National Cemetery appeal to the audience he is addressing which includes Soldiers, politicians, local citizens, and family members of the fallen. His words, "Our fathers brought forth on this continent, a new nation conceived in liberty, and dedicated to the proposition that all men are created equal," identified the American ideals in which the rest of the address is grounded and is applicable to all Americans. Today, we see that his remarks, linking military sacrifice with the preservation of American ideals, are equally applicable to the same range and variety of audience. Memorial affairs, while honoring to the Soldier, is for the nation; it means something slightly different to every American but applies to all. The young Soldier currently serving in harm's way, a career officer, the sibling of a service member, a Gold-Star parent, or the civilian with no personal connection to the military — all view a military funeral differently. For some, a military funeral is mournful and full of sorrow; for others, it is patriotic and reverent; and



Photos courtesy of the 3rd U.S. Infantry Regiment (The Old Guard) Public Affairs Office

**Soldiers from 1st Battalion, 3rd U.S. Infantry Regiment conduct a graveside service.**



for others, it is a celebration of a life well lived. More likely though, it is a combination of a little of all of these aspects. The beauty of memorial affairs is that it touches people from every walk of life and is closer in meaning to a wide variety of audiences than anything else in public life. Regardless of their background, it is safe to say that most Americans agree that honoring our fallen and those who sacrifice is an important endeavor. Lincoln's address demonstrates the symbiotic relationship between national ideals and military sacrifice and serves to unite various audiences.

**“We have come to dedicate a portion of that field...”**

As President Lincoln noted, the dedication of a battlefield cemetery was the reason for that gathering in November of 1863. But honoring sacrifice for the cause of the nation would not be limited to Gettysburg. Arlington National Cemetery also traces its roots to the Civil War and today stands as a monument to sacrifice. With an annual budget of more than \$70 million and spanning more than 600 acres, it interns/inurns more than 6,000 service members each year and receives more than three million visitors each year at no cost, including foreign dignitaries, ambassadors, political officials, and the President. Arlington National Cemetery is a shrine to service, a memorial for those who have dedicated their lives for the betterment of others that enjoy living the American ideals. It is a reminder to those who benefit from sacrifice that each headstone is, as the chaplain's invocation so eloquently states, “a brick in the foundation of the liberty on which we stand.”

President Lincoln's comments, “It is altogether fitting and proper that we should do this,” acknowledge the sentiment that investing in land, time, people, and money is not only worthy of the investment but necessary so that “the nation might live.” In these comments, President Lincoln addresses one of the purposes of memorial affairs in linking military sacrifice with upholding national ideals. Honoring America's fallen is necessary to maintain the American ideology, which the military represents. It is also important to note that the military is not just a representative of the society it defends but the best of what a society stands for in its ideals, values, and norms. Soldiers, therefore, are to uphold, defend, and sacrifice for the American way of life. President Lincoln acknowledges this sacrifice and implores his listeners to honor that sacrifice.

**“But, in a larger sense, we cannot...”**

President Lincoln's first two subjects in his address focus on the nation and the role that honoring sacrifice plays. He then turns his attention to honoring the Soldier when he says: “But, in a larger sense, we cannot dedicate – we cannot consecrate – we cannot hallow – this ground. The brave men, living and dead, who struggled here, have consecrated it, far above our poor power to add or detract.” The first mission of memorial affairs is to attribute honors to the Soldier deserving of honor. There are those who receive military honors as retirees, Soldiers who spent their youthful years in dedicated service. There are those who also receive military honors

***While the honors are simple, they are packed with meaning, symbolism, and history. These honors are reserved for those who have paid the price of admittance through service and are therefore deemed worthy to receive them.***

because they sacrificed their lives while actively serving in a combat zone or conducting military operations around the globe. Regardless of category, each Soldier is worthy to receive military honors.

Honor is established on a set of principles, code of conduct, or common moral compass. When Soldiers are buried in a military funeral, the Army bestows honor upon them in the form of a 21-gun salute, Taps, a folded flag, and a final hand salute, all conducted with appropriate reverence. The words of the eulogy by the chaplains echo this sentiment: “No place at Arlington National Cemetery can be purchased; each must be earned through honorable service.” These rendered honors pay homage to the deceased as symbols of thanks for honorable and faithful service given in the cause of American ideals. If it were a business transaction, the labor provided was military service, and the currency is paid in a form of sacred honors, reserved only for this select group. In every funeral, just prior to honors, the chaplain ends his eulogy with a phrase that captures this belief: “In life, he honored the flag; now in death, this flag will honor him.”

When Soldiers render honors to a fallen Soldier or service member, they do not represent themselves, as if they are members in the honored club. Instead, they represent the U.S. Army, a grateful nation, and their Commander in Chief — entities each in their own right worthy of bestowing honor to other parties. They bestow honors to the fallen for service in line with the code of ethics described in our Army Values, Warrior Ethos, and code of conduct. While the honors are simple, they are packed with meaning, symbolism, and history. These honors are reserved for those who have paid the price of admittance through service and are therefore deemed worthy to receive them.

**“The world will little note, nor long remember what we say here, but it can never forget what they did here.”**

President Lincoln's next words draw the listener's attention away from the speaker and on to the Soldier. The same is true in the posture and conduct of those performing the duties of rendering military honors today. The Old Guard Soldiers' bearing and professionalism are without equal in the Army, and for good reason. It is likely that when a family buries their loved one in a military cemetery, the ceremony will be their final interaction with the Army, and their lasting impression. The Old Guard performs the duty of burying America's heroes in Arlington National Cemetery nearly



*Soldiers from the 3rd U.S. Infantry Regiment (The Old Guard) conduct military funeral honors.*

1,500 times a year, but to those families burying loved ones, they only get one. Therefore, the care and attention to detail of ceremonial excellence, uniform standards, and code of conduct are not only impressive but absolutely necessary. The military ceremony must be nothing shy of exceptional, as it represents the epitome of what the Army should be in a single moment. And so each one must be special.

The Old Guard goes to great lengths to maintain ceremonial excellence because it represents the best of what America has to offer. Each Soldier, before conducting any sort of ceremony, must pass a list of inspections and tests ranging from a 70-minute stand at the position of attention, to marching skills, to a 100-point uniform inspection. Every clothing item issued to the Soldier must be tailored, pressed, stitched, painted, cut, pinned, burned, taped, or modified in some way to ensure uniformity and precision. The average Soldier spends anywhere between 40 and 60 hours preparing their uniform for inspection and is subject to random uniform inspections throughout their time in The Old Guard by the battalion and regiment ceremonial officers and NCOs. From the measurement of the press marks in the pants to the precision of the medals rack and the alignments of decorations and insignias, each Soldier's uniform is detailed to the micrometer in a ritual that displays the reverence Soldiers hold for those about to receive honor. Similar to the way most Army units conduct motor pool Monday, leaders from across the regiment spend the first two hours of each week on the parade field practicing and critiquing their individual ceremonial skills. Collectively, teams train for hours every day to get sequences just perfect and synchronized. It is commonplace for a casket team to perform more than 200 flag-folds before being allowed to do one in front of a family.

Rather than the traditional Army beret, each Old Guard Soldier dons a ceremonial cap that is pulled down over

the eyes to hide the Soldier's face, and the uniform lacks a nameplate, making the Soldier both faceless and nameless. Throughout the ceremony, Soldiers remain stoic, still, unwavering, and without eye contact. They do not speak nor interact with family members or visitors. In this moment The Old Guard is the face of the Army and the identity of the Soldiers rendering honors is irrelevant — they are just Army. There's no applause for them, no credit, no story — just honor to be given. This stoicism is intentional and focuses the ceremony on the individual being honored by the Army rather than the individuals conducting the ceremony. We

desired to stress this point, which is why we chose using our unit rather than listing individual names as authors of this article. Memorial affairs is a selfless duty, one that requires humility, strong leadership, and a deep sense of professionalism. The Old Guard embraces the intention of President Lincoln's words here to remain focused on honoring those deserving of honor and not on those rendering the honors.

### **“It is for us the living rather to be dedicated here...”**

President Lincoln then addresses the audience with a challenge and an invocation to action. He says, “It is rather for us to be here dedicated to the great task remaining before us, that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion.” As history has proven, the ideals President Lincoln spoke of in his opening lines require effort and sacrifice and are causes worth pursuing and sacrificing for in order to preserve. Memorial affairs connects the American citizen to the Soldiers who play a role in that preservation. Soldiers are ambassadors of the state who demonstrate the values of the nation in their conduct, character, and values. Soldiers sacrifice certain liberties, comforts, ideologies, and if called to, their lives, for the betterment of the people whom they serve. In this regard, the American people are both the client and the employer of the Army. Dr. Rebecca Johnson connects the civilian and the Soldier when she writes, “the American people do not simply trust the military to levy an unparalleled capacity for violence on their behalf... the American people trust the military with their sons and daughters, husbands and wives, moms and dads.”<sup>3</sup> Memorial affairs provides substance and closure to families who have spent a life placing the needs of the nation above their own. War is risky business, and the trust the American people place in their military is that those risks will be calculated and the sacrifice



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will not be in vain. When the price tag for liberty is a life, the American people deserve to know it was a life well spent. Memorial affairs is the acknowledgement that the military takes the responsibility for managing the risk of life with sober judgment and feels the same weight of loss. It is not just for those who benefit from military service but also serves as an acknowledgment for those who share in the sacrifice: wives, husbands, children, parents, and friends. Lincoln's challenge then to the American people is to take "increased devotion" or an accelerated resolve to uphold the national ideals some have given their lives for. He encourages the listener to not grow weary or lose heart in the midst of sacrifice but to persevere and thrive in the face of adversity and be better husbands and wives, fathers and mothers, siblings, friends, neighbors, and citizens. Therefore, the American way of life and military sacrifice are intertwined, encouraging one another toward a common goal. The honoring of military sacrifice serves as inspiration to those who observe it or as we like to say in *The Old Guard*, "We honor the dead so that the living never forget."

**"...That these dead shall not have died in vain..."**

President Lincoln's words of encouragement are not exclusively for American citizens but also for the military force, both to take increased devotion as well as provide motivation that military sacrifice accomplishes something. By honoring sacrifice, the military instills a confidence in both American service members and civilians that the military will achieve the purposes of the state and care for its people, both in life and in death. Military honors bind those who are serving with those who have completed their honorable service. A military funeral, regardless of venue, connects the lineage of those who have served and sacrificed through military service and binds them in a timeless guild of the American profession of arms. The ethos of being a member of a fraternity, and torchbearer of the profession, motivates Soldiers into more honorable service. This is what it means to steward the profession: to serve, not solely in the current environment, but to live up to the example of those who came before, and to build on the foundation and legacy of those whose memory is transcribed in stone. Those who fall in the line of duty or have lived in commitment to those values serve as guideposts and examples for the rest of us still serving. Therefore, memorial affairs serves as a catalyst for current Soldiers to strive for more virtuous service as a part of something greater than themselves.

For those who have presented a flag to a grieving loved one, the experience is beyond description and impossible to dismiss. When presenting a flag to a next of kin, all ceremony, all moving pieces, all preparation, lead to this one snapshot in time that the family will remember forever. The officer or NCO in charge, drops to one knee, places a folded flag into the lap of the next of kin, and issues solemn condolences on behalf of the President of the United States, the Army, and a grateful nation. These condolences, reserved only for these instances, serve as the personal affirmation that the deceased earned their honors. In this pinnacle moment,

while looking into the eyes of a spouse, mother, son, brother, the heart of the Army and the nation rests in the tender words of one Soldier. For the Soldier passing the flag, the brevity of the situation calls into question his/her own mortality, conduct of service, and life's direction. It is an honor to pass a flag, one that provides meaning and purpose behind your own service. Those passing the flag understand that one day their spouse or their kids will receive a flag in a similar manner. This flag represents more than the cloth it is composed of but forever enshrines the memory of their life and their service to country. Memorial affairs grants the prospect that, one day, those of us who are currently serving will receive similar honors, and that holds us accountable to our own conduct today.

In the Soldier's National Cemetery, the walkway is marked with plaques with stanzas from the poem "The Bivouac of the Dead."<sup>4</sup> Some of these same words are inscribed in gold above McClellan Gate in Arlington National Cemetery. These words expand upon what President Lincoln said in his address:

"Yon marble minstrel's voiceless stone  
In deathless song shall tell,  
When many a vanquished ago has flown,  
The story how ye fell;  
Nor wreck, nor change, nor winter's blight,  
Nor Time's remorseless doom,  
Shall dim one ray of glory's light  
That gilds your deathless tomb"

The final verse is a promise to those who have given their lives in service that their sacrifice will be honored. It is a call to the nation to the unfinished work of preserving liberty and national ideals that "all men are created equal." It is a promise to those who serve, that their sacrifice, whether it requires death or not, will not be in vain. This is the purpose of memorial affairs, and that purpose is worthwhile.

### Notes

<sup>1</sup> For those readers who are unfamiliar with President Lincoln's Gettysburg Address, it may be beneficial to pause and read it to provide context to the outline of this article. The address can be viewed at [https://rmc.library.cornell.edu/gettysburg/good\\_cause/CU\\_copy.htm](https://rmc.library.cornell.edu/gettysburg/good_cause/CU_copy.htm).

<sup>2</sup> Military funeral honors is the official term used to intern or inurn a fallen Soldier. Memorial affairs is the process of conducting military funeral honors. While this article will focus primarily on *The Old Guard* and Arlington National Cemetery, memorial affairs extends to Veterans Affairs, National Guard Bureaus, local military units, and all those around the globe who participate in the mission of honoring America's fallen heroes. Memorial affairs is not exclusive to those killed in combat but includes those who have faithfully served, who have honorably sacrificed their life, or a portion of their life, to the American cause. And while this article primarily discusses the Army, the concept also applies to all branches of service.

<sup>3</sup> Rebecca Johnson, "Serving Two Masters: When Professional Ethics Collide with Personal Morality," in George Lucas' *Routledge Handbook of Military Ethics* (London, 2020), 268.

<sup>4</sup> Theodore O'Hara, "Bivouac of The Dead," 1847 (written in memory of the Kentucky troops killed in the Mexican War), <https://www.arlingtoncemetery.net/bivouac.htm>.

# Why the Army Needs More Stryker Brigades

CPT PAT REYNOLDS

The Army needs more Stryker brigades — or an equivalent mobility platform. The Army's default brigade combat team (BCT) or fighting element should be highly mobile. What that requires are units that are assigned Strykers or an equivalent vehicular platform on their modified table of organization and equipment (MTOE). This is imperative for several reasons.

The average Stryker in the infantry battalions within a Stryker brigade combat team (SBCT) can travel 300 miles on a single tank of fuel — not counting the capacity of carried fuel cans. Compared to infantry brigade combat teams (IBCT) across the rest of the Army, I believe the SBCT is much more valuable to the Army on both the offense and defense. With the current MTOE, IBCTs require outside assets to transport their formations over long distances. Many will say that they can walk, and that is true, but the average Infantry Soldier may not be capable of moving 20 miles a day under a load of 50-plus pounds, which I predict would at times be demanded of light infantry in a fight against a peer adversary in large-scale operations. Airborne and air assault brigades considered, they are highly limited once a vertical envelopment or joint force entry (JFE) into a hostile battle space has been conducted.

While IBCTs are uniquely suited to fight in restricted terrain,

Infantrymen in an SBCT are also capable of doing so, as they have the ability to dismount and walk, leaving their Strykers behind. Air assault-, airborne-, mountain-, arctic-, and jungle-specialized light infantry units are unequivocally needed in the Army and provide a unique capability that can be leveraged against an adversary. The unique skills they possess provide flexibility to the Army for future large-scale combat operations or a peer fight. Those capabilities can be taught to other units across the force if that capability needs to be broadly used in a specific theater. All these units are still limited, however, by the necessity to have a light MTOE to fight using their unique capability. Lessons from the Joint Readiness Training Center (JRTC) at Fort Polk, LA, and division-level exercises in the 101st Airborne Division (Air Assault) have shown that light infantry units are lacking specific capabilities in a few key ways.

IBCTs rely on their engineers via the brigade engineer battalion (BEB) to exclusively dig defensive positions that are larger than an individual or two-man position. The BEB has a limited amount of assets and will only be able to accomplish so much in a given amount of time. Fighting positions dug by Infantrymen, in practice, may not be to standard or plentiful enough to create a strong point defense or a defense in depth

*Soldiers from 4th Battalion, 9th Infantry Regiment, 4th Infantry Division, position their Strykers in preparation for a live-fire range at Fort Carson, CO, on 24 January 2023.*

Photo by SGT Willis Hobbs





with survivability positions for the large majority of dismounted infantry. This is due to the limited time they have to prepare positions when they transition from offense to defense or defend the lodgment they have created after a joint force entry from an air assault or airborne operation. This is also because Infantry Soldiers possess only their entrenching tools (E-tools). The E-tool is great, but it may take the average Soldier eight hours to simply dig a position to standard. Often, a unit on the defense will not be in position for that long prior to having to defend itself due to the nature of the Army's military decision-making process and fighting against a thinking and adaptive enemy that is capable of lightning-fast maneuver warfare and, like us, will use disruption and deception tactics. A hasty position is better than nothing and the E-tool gets that job done, but "to standard" positions that we would actually want to defend from take time.

IBCTs are also unable to move very far via their own organic assets. During the last two JRTC rotations I attended, examples of the limitations of the air assault capability were persistent throughout the rotation. (In no way am I arguing to eliminate or decrease the number of air assault or airborne brigades in the Army — we need these capabilities to give the enemy multiple dilemmas and many variables to consider. The Army needs to keep and enhance these as we prepare for a peer fight.) Like airborne operations, weather may prevent an air assault from taking place because the risk to the aviation assets and Soldiers is too great. If the landing zone (LZ) is hot and the aviation assets can't land safely, air assaults will be aborted. What results is the need to transport the Soldiers from the aborted mission to a suitable drop-off location via ground lift assets with an escort from a heavy weapons company or simply having the Infantrymen walk. Naturally, this often results in failure to seize key objectives due to those limited capabilities or success with a cost in time and opportunity. Gun trucks from an infantry heavy weapons company and the Light Medium Tactical Vehicles (LMTVs) we typically use are inherently vulnerable against munitions/ weapons our adversaries possess, limiting our ability to transport Infantry Soldiers over long distances safely.

While infantry battalions in an SBCT have liabilities of their own, they solve both the above capability gaps. In the SBCT, each infantry squad has the capability to carry entrenching equipment that is too burdensome for Infantrymen in the IBCT to carry on foot. A Stryker easily holds multiple full-size shovels, pickaxes, and axes that greatly enhance the entrenching capability of an infantry unit. With all that available at the



Photo by SGT Jerod Hathaway

**Infantry Soldiers assigned to 1st Battalion, 17th Infantry Regiment exit a Stryker during a squad training exercise on 13 January 2023 at Twin Bridges Training Area in South Korea.**

squad level, building a strong point defense and survivability positions gets done much faster. They can also carry much needed anti-tank weapons. Multiple Javelin and Carl Gustaf rounds easily fit inside a Stryker — their value showcased by the war in Ukraine.

Through an MTOE that has the organic capacity to transport all of its assigned Soldiers, the SBCT can move much further than an IBCT. In large-scale combat or a scenario of competition against a peer adversary, maintaining offensive tempo is critical. It is also critical to seize and defend key terrain. The theater and operational environment will likely be vast and require units to be able to move rapidly to deny the enemy use of key terrain, like a road network, or to exploit a breakthrough or an armored unit. The organic speed that the SBCT has allows it to keep up with U.S. armored units and react to rapid movements made by an enemy that is also mounted.

Using the SBCT also prevents armored brigades from getting drawn into infantry fights that they should avoid. Taking and holding key terrain is not the job of an armored unit, nor should it be the job of that unit's associated heavy infantry. The armor needs to be saved for rapid and operational level maneuver, shock tactics, and to exploit breakthroughs on the offense. Its infantry needs to be dedicated to support that role. Stryker brigades can take and hold key terrain and defend it, allowing the armor to be used for what they were made for — lightning maneuver.

When I was a new lieutenant in an SBCT, my battalion commander had all his officers read an article titled "Three Kinds of Infantry," written by then COL Huba Wass De Czege, which appeared in the July-August 1985 issue of *Infantry*. The article is a persuasion piece arguing for the Army to create

a new type of infantry formation. At the time, the Army had the heavy infantry mounted in the Bradley Fighting Vehicle that fought alongside the armor (like we do today) and the light infantry. He called for the Army to create a new “regular infantry” to bridge the gap between the two other types that would become the Army’s go-to infantry. An infantry formation that fights in the vast gap between, on one end of the spectrum, protecting armored formations and, on the other side of that spectrum, fighting in severely restricted terrain or out of a lodgment created by an airborne or air assault operation. I highly recommend his article, which can be read at <https://www.benning.army.mil/infantry/magazine/issues/1985/JUL-AUG/pdfs/JUL-AUG1985.pdf>. Below are excerpts from the article where COL Wass De Czege describes each type of infantry.

**Light Infantry:** “Light infantry is specialized for rapid air transportability, clandestine insertion, very rugged terrain, night operations, infiltrations, raids, and ambushes; it gives off only small tactical signatures. This kind of infantry complements other forces at the strategic, operational, and tactical levels.”

**Regular Infantry:** “One characteristic that clearly distinguishes regular infantry is its ability to move to a key piece of terrain quickly with the paraphernalia it needs to turn that terrain into a fortress and, once there, to be able to do so in a short time. The other characteristic that clearly distinguishes regular infantry is its ability to rapidly reduce fortified positions and well-organized anti-tank defenses that have been prepared in depth.”

**Armored Infantry:** “Armored infantry orients on the advance and protection of the main battle tank. It keeps up with the fastest tanks, gets through close terrain safely, overwatches and secures tanks during movement, clears mines and obstacles in the path of the tanks, and in static positions provides close-in security and protection for the tanks from dismounted infantry, especially at night.”

In my opinion, the Army needs to make the SBCT its infantry brigade of choice. The Army should not think of it as its outlier formation but instead as its regular or standard fighting unit. My battalion commander used to liken the Stryker to the U.S. Army’s halftrack of World War II. We should embrace the Stryker — or a like vehicle as today’s halftrack, a vehicle that gets us to the fight and that enables us win with the mobile arms room concept.

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# The Long-Range Planning Tool

TRAINING MANAGEMENT DIRECTORATE,  
COMBINED ARMS CENTER-TRAINING

“Long-range planning and preparation determine the training required to progress from the unit’s current state of training proficiency to the desired proficiency level. The unit commander conducts long-range planning to sequence training events with resources over time to determine who, what, when, and where to train.”

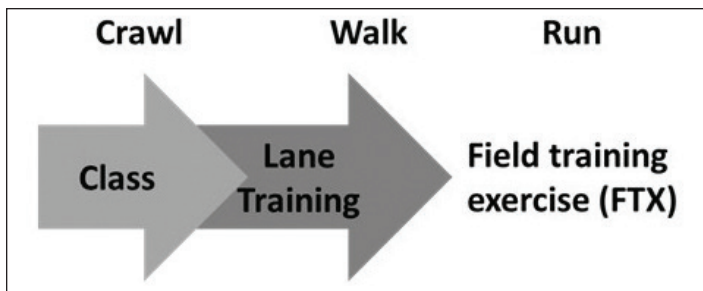
— **Field Manual (FM) 7-0, Training**

**T**rained and ready units are essential for the Army to compete, respond to crises, win in conflict, and consolidate gains during large-scale ground combat in a multi-domain environment. Achieving trained and ready units requires long-range planning to enable progression to the desired proficiency level. Long-range planning sequences training events with resources over time to determine who, what, when, and where to train. It culminates in the publication of annual training guidance and a long-range training calendar. The Long-Range Planning Tool (LRPT) is a capability within the Digital Training Management System ([https://atn.army.mil/unit-training-management-\(utm\)-en/dtms-knowledge-base](https://atn.army.mil/unit-training-management-(utm)-en/dtms-knowledge-base)) that assists commanders in the development of long-range training calendars. It provides a visual representation to assist commanders with the sequencing of training events required to achieve necessary mission-essential task proficiency levels. The user interface is simple, provides flexibility in developing training calendars, and integrates doctrinal concepts from FM 7-0.

The first step in the Training Management Cycle is “prioritizing training.” Commanders and leaders prioritize training to optimize limited training time and resources. They conduct a task crosswalk at each echelon to ensure prioritized tasks, to include mission-essential tasks (MET), weapons qualification, and collective live-fire tasks, nest with and support the higher-level commander’s priorities. The LRPT provides users with the unit task list (UTL) associated with their unit’s table of organization and equipment (TO&E). The UTL provides a list of all tasks a unit is designed to perform based on its TO&E. After identifying the tasks to train during the crosswalk, users select the tasks from the provided UTL. If the desired task is not present or the unit is preparing for a mission outside of its design, users have the option to “Search for Additional Tasks.”

The LRPT helps to simplify the search for training events to achieve required proficiency levels in mission-essential, weapons qualification, and collective live-fire tasks. After the user adds the





Sample crawl-walk-run training events

prioritized tasks to their plan, the LRPT presents a list of recommended proponent-approved training events to train each task from the unit's Combined Arms Training Strategy (CATS). Integrating CATS simplifies the search for training events without the requirement for expertise in CATS. The events for each task provide a progressive (crawl, walk, run) methodology that builds and sustains proficiency. Depending on the unit's assessed proficiency level in a prioritized task, users select the appropriate events. This may include a class (crawl), a situational training exercise (walk), a field training exercise (run), or a combination of events. Users can then enter start dates for each event and add them to the calendar. The LRPT automatically adds the end date based on the recommended duration of the event. An additional benefit is the ability to schedule multi-echelon training at the company level and below. Companies, platoons, and squads can select tasks using the same UTL and add training events to the company calendar.

Part of the flexibility of the LRPT is the ability to edit the calendar. Prior to obtaining calendar approval, users can add or delete events. If the user identifies a conflict on the calendar, they can adjust event dates using a simple drag-and-drop capability. Additionally, the LRPT allows users to create and save multiple plans. The benefit is the potential to create

multiple courses of action to brief and gain the commander's decision. Users can also modify calendars if the commander chooses to blend courses of action or to adjust the calendar based on quarterly, semi-annual, or annual training briefings to the higher commander. Once the commander two levels up approves the training plan and the training calendar during the training briefings, the unit publishes the plan and the calendar as annual training guidance.

Other refinements to the LRPT incorporate doctrinal concepts into the menus and sub-menus. The menu options now address specific aspects of the Training Management Cycle such as "Planning and Preparation" and "Execution." In addition, the LRPT provides an improved user interface from past tools. It consolidates and reorganizes menu items and functionalities into more logical locations.

The LRPT simplifies the process of developing a long-range training calendar. It uses the unit's UTL to allow units to select the prioritized tasks to train. The LRPT provides associated proponent-approved training events for each prioritized task which users can select to build their training calendar. It provides flexibility to quickly adjust the calendar and develop multiple courses of action for the commander's decision. Finally, it incorporates doctrinal concepts from FM 7-0 and provides a logical interface to make it easier to use. In the end, the LRPT supports the Training Management Cycle and facilitates effective and efficient training to enable Army units to accomplish their missions.

For further information and tutorials on the Long-Range Planning Tool, visit the Army Training Network at <https://atn.army.mil/>. For assistance with the tool, contact the ATMS Help Desk at [https://atn.army.mil/help-desk/army-training-management-system-\(atms\)-help-desk](https://atn.army.mil/help-desk/army-training-management-system-(atms)-help-desk).

*A Soldier assigned to the 2nd Stryker Brigade Combat Team, 4th Infantry Division provides security for his formation during Operation Steel Eagle at Fort Carson, CO, on 29 March 2022.*

Photo by MAJ Jason Elmore



# Book Reviews

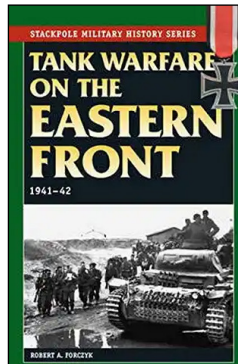


## ***Tank Warfare on the Eastern Front 1941-1942***

By Robert A. Forczyk

NY: Stackpole Books, 2013,  
279 pages

Reviewed by LTC (Retired)  
Thomas G. Meara



**T***ank Warfare on the Eastern Front* is a book that covers the major tank battles on the Eastern Front between Germany and the Soviet Union during World War II. The author, Robert Forczyk, focuses on the armored aspects of these battles from both the weapon system and doctrinal perspectives of both armies during 1941-1942. Forczyk explores both of these perspectives and others in great depth. His analysis provides readers with a comprehensive understanding of the key aspects of these engagements.

The author does an excellent job describing the fundamentally different approaches to the employment of armored forces for both armies. His analysis and description of the different ideas for organization of forces and the doctrine for their employment leave the reader with an understanding of the two different viewpoints on armored warfare at the beginning of the war. The understanding he provides on the organization and doctrinal aspects of these battles is a topic where Forczyk's book provides great value. Another great value is his analysis of the Soviet and German equipment.

His objective approach in describing the qualitative aspects of German and Russian tanks is invaluable because it is not widely understood by many historians and authors on the subject. His comparison of the two adversaries' tanks using the aspects of mobility, firepower, and protection is particularly informative and breaks some popular myths many hold on the superiority of the German machines. The discussion of mobility and reliability in particular, when combined with the author's analysis of the weather and terrain, gives the reader an objective understanding of the relevant qualities of these weapons systems in the harsh operational environment of the Eastern Front.

With a more complete understanding of the organizational, doctrinal, and qualitative aspects of the Soviet and German tanks and the environment on the Eastern Front, the author integrates descriptions of leadership and command philosophies of both armies. This gives the reader a much more complete understanding of these battles than many historical sources provide. This is, from my perspective, the greatest value of this book: its complete and unbiased approach to analyzing and describing these engagements on the Eastern Front.

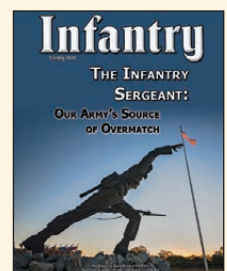
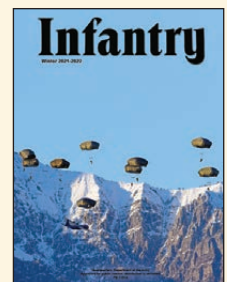
I recommend this book to anyone with a general interest in World War II history or specific interest in armored warfare. The book is well written and at only 279 pages reads quickly. Forczyk provides objective understanding from the immensely valuable perspective garnered from his personal experiences as an armor officer during the Cold War. Its greatest value is the completeness and quality of understanding it provides in relatively few pages.

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*Infantry* is always in need of articles for publication. Topics for articles can include information on organization, weapons, equipment, training tips, and experiences while deployed. We can also use relevant historical articles with an emphasis on the lessons we can learn from the past. Our fully developed feature articles are usually between 2,000 and 3,500 words, but these are not rigid guidelines. We prefer clear, correct, concise, and consistent wording expressed in the active voice.

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Find our Writer's Guide at <https://www.benning.army.mil/infantry/magazine/about.html>. For more information or to submit an article, call (706) 545-6951 or email us at [usarmy.benning.tradoc.mbx.infantry-magazine@army.mil](mailto:usarmy.benning.tradoc.mbx.infantry-magazine@army.mil).





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[www.infantryassn.org/2023InfantryBall](http://www.infantryassn.org/2023InfantryBall)





# Future Issue Themes:

## Summer 2023 - Training Management



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