

We Know Who We Are, But ...

Where will we fight?

by Col J.J. Carroll, Jr., LtCol Michael Zimmerman & Maj Brett Swaim

In an open letter to the Commandant, published in March 2019 by *War on the Rocks*, Maj Leo Spaeder asks the question, “Sir, who am I?”¹ This article has fostered significant discussion around the central point of whether the Marine Corps has lost its way in the wake of nearly two decades of landlocked counterinsurgency campaigns in Iraq and Afghanistan. That question—or more aptly that crossroads—is not new territory for the Corps. As Maj Brian Kerg highlights in his response, the Marine Corps faced similar questions in the interwar periods between the First and Second World Wars.² During that time, seminal figures in modern Marine Corps doctrine, like Maj John Russell and LtCol “Pete” Ellis, came forward to advocate for the Marine Corps’ role as an amphibious and light naval-infantry, influencing the trajectory of the Corps for decades.

Fortunately, the recently released *Commandant’s Planning Guidance* conclusively answered the question of who we are.³ In that directive, General Berger removed all doubt as to the Marine Corps’ identity, highlighting in bold on page one, “[T]he Marine Corps will be trained and equipped as a naval expeditionary force-in-readiness and prepare to operate inside actively contested maritime spaces in support of fleet operations.”⁴ However, as history has taught us, simply identifying who we are as the Fleet Marine Force is an incomplete answer. In concert with our reorientation on amphibious operations, we will do well to learn the lessons of Marines like Pete Ellis and ask the difficult questions about where those capabilities are likely to be most relevant. After all, history is a

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useful guide for charting a course for the future, but it is only a guide and not a mandate for repetition. We should use this opportunity to think critically about the next fight. In the end, what made Pete Ellis such a revered figure in Marine Corps history was not simply his correct prediction that amphibious operations were the key to defining the future role for the Marine Corps, but an articulated vision that those operations were going to be an integral part of a conflict he foresaw in the Pacific. Thus, as the Marine Corps focused on its preparations for the next battlefield in the years between World War I and World War II, the doctrine, equipment, and training were all driving toward fighting and winning in a specific theater and with a specific future goal.

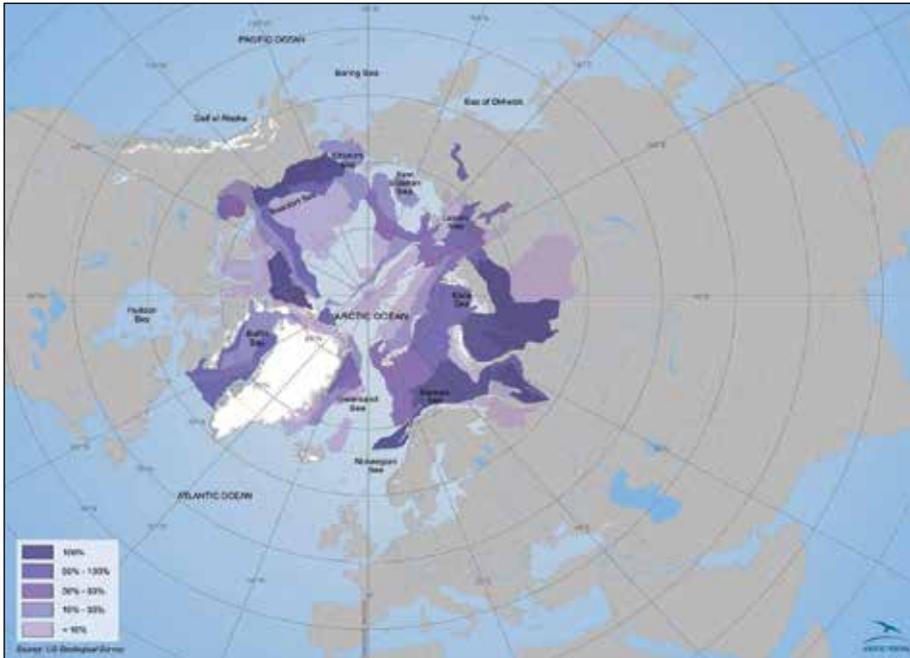
As we execute the *Commandant’s Planning Guidance* and pivot back to our amphibious skillset as the Fleet Marine Force, the most pressing question should be “where do we think we will fight?” Answering that question will drive our investment in equipment, training, and tactics to meet the challenges on the horizon. When asked where the next conflict is likely to be, many Marines will reflexively

respond “the Pacific,” making history a complete circle. However, a critical review of conflict drivers suggests that the next battlefield will likely be a place with vast resources but unsettled claims of ownership, a place where immense fortunes are at stake but with few clear lines granting authority over those resources. The area above the Arctic Circle contains an abundance of untapped resources, but control and ownership of those resources is in question, gaining the attention of our biggest competitors: Russia and China. Countering their influence in this vastly littoral region will make control of the sea and the adjacent land of paramount importance.

As the Marine Corps shifts to return to our amphibious purpose, and we come to the realization that our theater is likely to be the austerity of the thawing Arctic, we must then complete the lessons of history and lean forward to prepare the Corps to fight and win in that environment. Doing so will require wise investment in capabilities, training, and doctrine.

A Lesson from History

On 25 April 1913, in Guantanamo Bay, Cuba, then LtCol John A. Lejeune,



Map 1. The Arctic region. (Map by the Arctic Portal.)

Capt H. C. Snyder, and Capt D. B. Wills created the Marine Corps Association to bring officers closer together and foster an organized system of education through shared experiences. The Association believed,

The publication of articles prepared by officers, together with the criticisms of such articles by other officers, will offer an incentive to officers to study professional subjects with a view to preparing other articles themselves for publication and distribution to the service.⁵

It was Maj John Russell's "A Plea for a Mission and Doctrine," in the second published *Gazette*, which created the chain reaction resulting in LtCol Ellis' prophetic and detailed plea for the Marine Corps to focus on amphibious operations.⁶ Ellis was confident in the Marine Corps mission of supporting the Navy

by performing the land operations necessary for the successful prosecution of war by the fleet ... the purpose of the naval service is to fight, and the purpose of the Marine Corps is to help the Navy win.⁷

In other words, he viewed the Marine Corps role as being tied to the Navy in a very practical way.

Many Marines know Pete Ellis as a pioneer in the field of amphibious warfare; but that accolade does not fully account for Ellis' passion and vision.⁸ Yes, he developed doctrine for amphibious operations, but what cemented his legacy was the vision he cast for employing amphibious forces in the Pacific in order to defeat an emerging adversary in the Japanese during a future war.⁹ Based on his study of emerging great power competition, he predicted the war with Japan nearly twenty years prior to the attack on Pearl Harbor.¹⁰ Thus, when that war finally came, the Marine Corps was prepared with the doctrine, training, and equipment needed to fight because LtCol Ellis studied Japan's military capabilities and correctly determined their most likely course of action.¹¹ His status as a prophet of Marines resides in a dual reading of his two most well-known publications: "Naval Bases; Location, Resources, Denial of Bases, Security of Advanced Bases" and "Advanced Base Operations in Micronesia." Published in 1921, these documents comprised the core of Ellis' body of work up to that time and pushed the Marine Corps to develop amphibious doctrine with eyes fixed on application in the Pacific. As we find ourselves once more at that junction, coming out of a landlocked

war and needing to return to our role in helping the Navy win, we must re-center on our naval purpose as the *Commandant's Planning Guidance* directs but also look critically at the map and study our competitors to determine where our doctrine will have the most relevance.

The Arctic: Scene of the Next Conflict

Though the Arctic is historically a place where cooperation has far outpaced conflict, it is not immune from the negative effects of competition over natural resources. (See Map 1.) From conflicts involving whaling in the 17th century to disagreements involving fishing in the present day, economic forces spawns friction in the region.¹² As the Arctic sea ice recedes and more resources become recoverable, particularly oil and natural gas, the potential for tensions to rise only grows. The Arctic has long been known to hold immense potential for oil and natural gas production. In 2008, the United States geological survey estimated that the area above the Arctic Circle contained at least 13 percent of the planet's easily recoverable oil reserves and 30 percent of its natural gas.¹³ The below figure highlights the location and probability of recovery of those reserves.¹⁴

As the Arctic ice recedes, the region is likely to become one of substantial competition over subsurface mineral rights, but the economic competition does not end there. The Arctic is home to several prime shipping routes including the Northern Sea Route along Russia's Arctic coastline, the Northwest Passage near Canada's northern coast, and the Transpolar Sea Route.¹⁵ (See Map 2.)

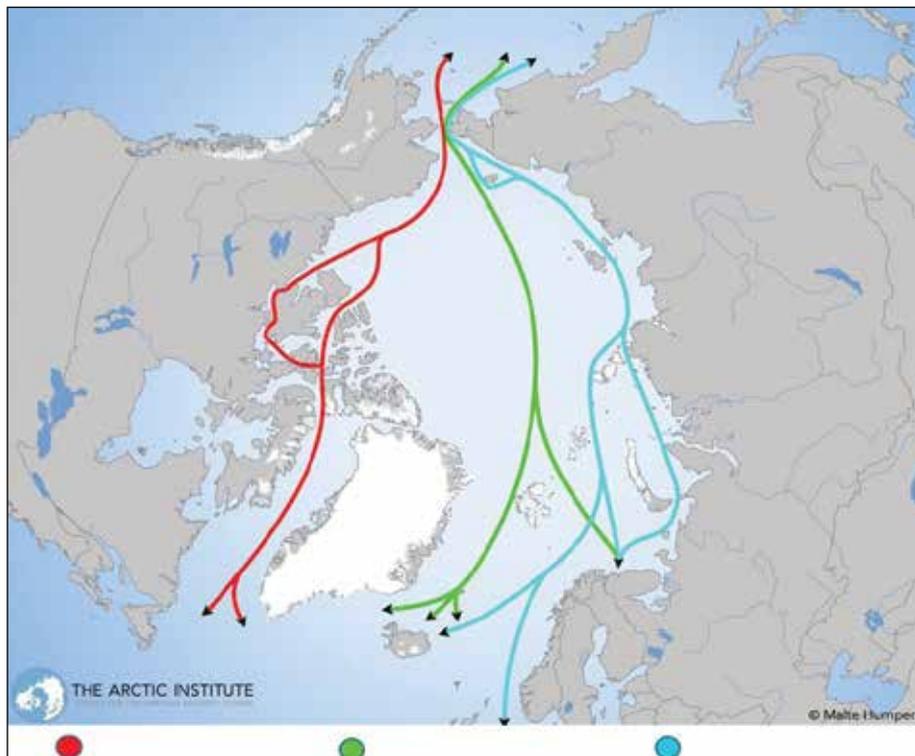
These routes provide a shorter transit time between the world's largest ports which are predominately in Asia and Europe. For example, to move goods between the port of Hamburg (Germany) and Shanghai (China) currently covers about 20,000 kilometers if transiting the Suez Canal and takes about 48 days.¹⁶ Utilizing the Northern Sea Route, that same voyage is approximately 14,000 kilometers, reducing the duration by about 14 days.¹⁷ The result is a significant savings in reduced fuel and operations time of the ship.

In addition, the Northern Sea Route does not require transit through areas of instability along the Red Sea and the Horn of Africa.

Controlling these emerging sea routes and ensuring freedom of navigation in international waters will become increasingly important as climate change makes these passages more routinely trafficable. Ensuring the free and open use of sea lanes is a principle of United States national security concern—as evidenced by the routine freedom of navigation operations in the South China Sea—and is expressly one of the main pillars of the United States National Security Strategy for the Arctic. Released in 2013, the strategy states that one of the guiding principles is to safeguard peace and stability in the region.¹⁸ Underneath that principle it states:

This principle will include United States action, and the actions of other interested countries, in supporting and preserving international legal principles of freedom of navigation and overflight and other uses of the sea related to these freedoms, unimpeded lawful commerce, and the peaceful resolution of disputes. The United States will rely on existing international law, which provides a comprehensive set of rules governing the rights, freedoms, and uses of the world's oceans and airspace, including the Arctic.¹⁹

This puts the interests of the United States at odds with recent actions by the Russian Federation. In a far reaching set of regulations, the Russian government established rules for transiting the Northern Sea Route by requiring foreign warships to provide advanced notice for permission to use the route and requiring those ships to take on Russian pilots during the transit; these requirements violate international law principles of sovereign immunity and freedom of navigation.²⁰ As the ice recedes and traffic increases along the Northern Sea Route, Russian regulations will need to be contested so that they do not become customary international law. That means that sea power will be needed in the region to conduct freedom of navigation operations and ensure international norms remain intact, consistent with the United States'



Map 2. Passages through the Arctic. (Map by Malte Humpert, The Arctic Institute.)

National Security Strategy. Just as that same principle has required a strong Navy and Marine Corps Team in the Pacific, the remote and harsh environs of the Arctic require the full spectrum of sea power, including amphibious capabilities, to respond to contested areas.

The economic import of the Arctic assures it will be the next frontier in the great power competition between the West, Russia, and China. Taking into account the mineral resources and the shipping routes, there is a significant amount of profit at stake. However, beyond the law of the sea, there are very few established rules for “who owns what” in the region. The Arctic has long been thought of as a “global commons,” belonging to no one because of its harshness, remoteness, and almost complete inaccessibility. As the climate changes and a greater quantity of resources become available, those attitudes of global cooperation are likely to change as well. Competition for the resources and sea lines of communication will have few international rules and governing structures to prevent malign actions. As indicated above, Russia has already shown a willingness

to bend or even violate international norms to set whatever rules it deems appropriate in the Northern Sea Route. To further its reach, Russia has pursued a claim through the United Nations for an Arctic underwater feature called the Lomonosov Ridge. In 2007, Russia planted a titanium Russian flag on that ridge—at the bottom of the ocean—and has submitted a claim to have the entire area, which extends up and over the North Pole and into the Western Hemisphere, declared part of Russia's extended continental shelf. If the United Nations approves the claim, then the area will be treated like Russia's exclusive economic zone, granting Moscow the rights to things like the oil and gas for a several thousand square kilometer swath of the Arctic.²¹ Events like this are evidence of Russia's incremental effort to dominate the Arctic and expand its ability to dictate terms for the region.

To ensure its influence over the area, the Russian Federation has undertaken a large Arctic defense investment and revitalization project. In fact, Russia's military expansion in the Arctic is the largest since the Soviet era.²² Russia has also built or refurbished over twenty in-

stallations above the Arctic Circle to go along with its significant investment in capabilities and training. As the below figure shows, that number dwarfs the total number of installations possessed by the rest of the world. (See Map 3.)

Arctic Military Facilities²³

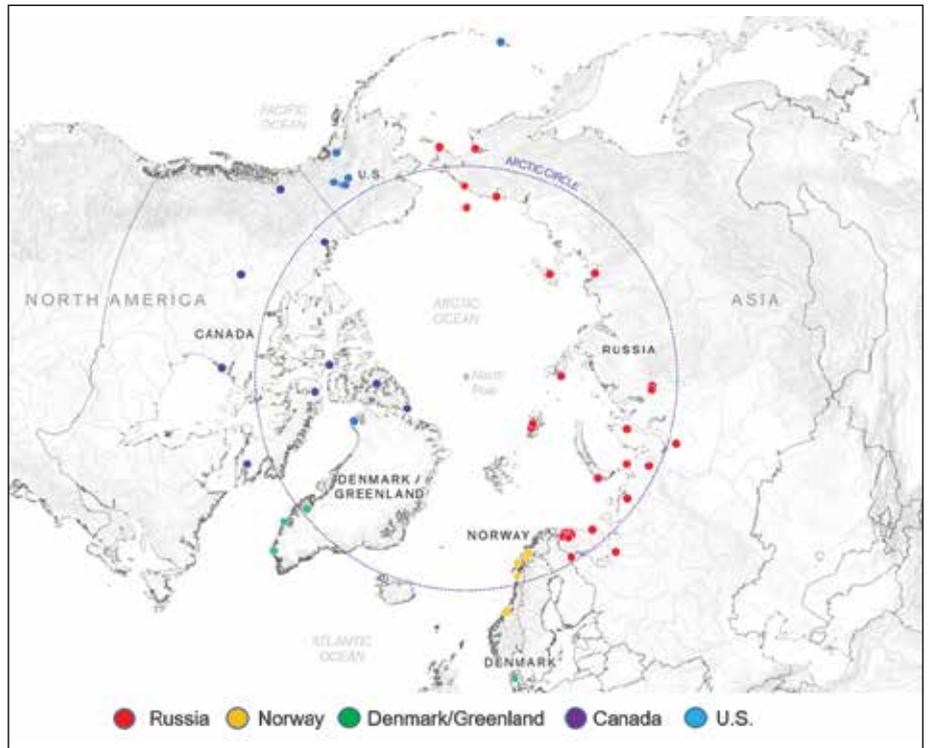
Thus, Russia is postured to have forces and facilities in the area to exert influence and shape the region to its benefit. Given Russia's behavior in other portions of the globe, there is no reason to believe the ultimate aim will be any different than what has already been demonstrated in places like the Black Sea. Russia seeks to dominate and will use every tool at its disposal, across the spectrum of national power, to tilt the region to its benefit. This is especially true given how much of Russia's identity is tied to the Arctic and how important the region is, not only economically but but psychologically, to Moscow.²⁴

China has also taken notice of the warming Arctic and the economic potential. In 2018, China released its first ever policy document on the Arctic and outlined its goals for the region which are to "understand, protect, develop and participate in the governance of the Arctic."²⁵ China's Arctic Policy attempts to justify its envisioned role by stating,

The utilization of sea routes and exploration and development of the resources in the Arctic may have a huge impact on the energy strategy and economic development of China, which is a major trading nation and energy consumer in the world.

This highlights China's economic interests as the major reason for wanting to expand its role in the governance of the Arctic.

To exert its desired influence in the region, China recently launched its first ice breaker, the *Snow Dragon*, and has continued to invest in a number of heavy ice breakers to build a more robust capability.²⁶ This investment in equipment for the region underscores China's Arctic ambitions along with what it considers the "Polar Silk Road." Although it only extends through Russia's Northern Sea Route currently, it could certainly expand to other avenues—like the



Map 3. Arctic military facilities. (Map from The Barents Observer.)

Transpolar Sea Route—as the ice recedes. Beyond the ice breaking improvements, China has also sought to expand its influence in the region by attempting to acquire port facilities and offering to build airports in Greenland: an effort to solidify China's status as a self-described "near Arctic" country.²⁷ While those efforts have failed thus far, they demonstrate a resolve for Arctic legitimacy that is unlikely to subside as the economic advantage of the region increases. This assessment was recently echoed in the DOD's Annual Report on Chinese military power.²⁸ That report contains two "special topics" culled out for emphasis to Congress, and one of those topics is "China in the Arctic." There, the DOD highlighted China's Arctic ambitions and the steps China has taken to gain legitimacy in the region through investment in infrastructure, scientific research facilities, and economic development. Thus, the future Arctic environment is certain to contain the political and military influences of both Russia and China.²⁹ In fact, the Russia-China Arctic partnership has already begun. Recently, a joint Russian-Chinese drilling platform in

the Kara Sea (adjacent to the Barents Sea) discovered one trillion cubic meters of natural gas deposits, representing a significant economic axis for the United States' two main competitors.³⁰

The key that will unlock the age of Arctic competition will be accessibility. Though significant portions of the Arctic are currently not trafficable because of the polar ice cap, climate change is steadily reducing the extent and thickness of that ice.³¹ Current projections show that within this century the Arctic will be ice free in the summer.³² Thus, as the Arctic Ocean turns from white (ice covered) to blue (ice free), the region takes on a different feel, and access to natural resources changes in scale of potential availability. This difference becomes especially apparent when the region is viewed without its traditional white—ice extensive—covering. Below is a depiction of the how the United States defines the Arctic which was recently included in a Congressional Research Services report to Congress on the region.

From the highlighted area it is readily apparent that, while the region contains a large amount of sea space, there are

also hundreds of islands and thousands of miles of coastline, making the littoral zone a dominant feature. (See Map 4.) To project power in the region and control the sea, it will be necessary to have a significant amphibious capability in order to respond to crises and contingencies. Thus, much like the Pacific in the years between World War I and World War II, the Arctic appears to be a theater where the ability to project power from ship to shore will be highly relevant.

Finally, the Arctic has the distinction of being extremely remote. By most estimates, little more than four million people live above the Arctic Circle with an overall population density similar to the Sahara Desert or the Australian Outback.³³ This makes the Arctic far less inhabited than most areas within the Pacific theater, with much less infrastructure, and consequently far fewer anti-ship capabilities to threaten amphibious assets. This austerity also means far less life support is available from the local area, and because of minimal investment and geography, the communications infrastructure is lacking. Thus, the Arctic region puts a premium on forces that can operate self-sustained for long periods of time. Without significant infrastructure and with huge swaths of uninhabited or sparsely inhabited coastline, the Arctic presents a prime environment for amphibious operations to help support maritime operations and national interests in an emerging frontier.

We Must Prepare

Returning to our amphibious core competency and identifying where the next challenges are likely to occur is still an incomplete equation. The product of the answers to “who are we” and “where will we operate” must be the development of doctrine, equipment, and training to allow the Marine Corps to meet those future challenges. When it comes to doctrine, while the central concepts of amphibious operations are universal, the harsh and remote Arctic will require the development and refinement of tactics, techniques, and procedures to deal with a unique operating environment. Though the Arctic is warming, it is far



Map 4. Arctic Boundary as defined by the Arctic Research and Policy Act (ARPA). All United States and foreign territory north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas, including the Arctic Ocean and the Beaufort, Bering and Chukchi Seas; and the Aleutian chain. (Map Allison Gaylord, Nuna Technologies, May 27, 2009.)

from warm; doctrine will need to be developed for cold weather and over-the-snow operations.

The Arctic is a treacherous place because the climate is exceedingly dangerous; the cold will kill you without any help from the enemy. According to a British study covering multiple countries across the globe, cold weather is twenty times deadlier than hot weather.³⁴ Given this finding, it is not surprising that the history of warfare is littered with examples of the dangers associated with fighting in extreme cold weather when not properly trained or prepared. The Marine Corps learned this lesson during the Korean War. Col Homer Litzenberg, the Commander, Regimental Combat Team 7 during the Chosin Reservoir Campaign, specifically noted in his after-action report, “Hot weather, however uncomfortable it may be, is fighting weather as compared to sub-zero cold which seems to numb the spirit as well as flesh.”³⁵ The cold of the northern Korean Peninsula inflicted more casualties on Marines than enemy action during the Campaign, making the extreme cold weather an adversary in its own right.³⁶ This lesson is but one of many from history that serves as a stark warning for how different and dangerous extreme cold can be.³⁷

Apart from just the temperature, the lack of infrastructure in the Arctic and the harsh terrain must also be planned for. Lessons from history abound that being tied to the very limited number of roads in the high north is a plan destined to fail. During the Winter War between Finland and the USSR, the battle of Suomussalmi saw 11,000 Finnish soldiers defeat the Soviet 9th Army with a strength of about 50,000.³⁸ This was achieved because, unlike the Soviet Army, the Finnish forces were not dependent on paved roads but operated cross-country. As the Marine Corps examines the likely terrain we will fight in, doctrine will need to be developed to ensure that the core tenants of maneuver warfare, fire and maneuver, can be executed in an area where cross-country movement over rugged terrain will be critical.³⁹ Determinations will need to be made for whether Marines will primarily maneuver via vehicles, skis, or snow shoes, and the expected range and rate of advance in the different geographic zones (plateaus, plains, mountain ranges, and forests) with these differing equipment sets.

Once the doctrine is developed, critical follow-on decisions can be made to program procurement actions to obtain

the necessary gear and equipment to execute that doctrine. For example, before procuring a new ski system, the Marine Corps needs to identify how far and how fast they would wish their Marines to travel, over what terrain, and with what gear. A reconnaissance platoon traversing an Arctic plain might need a very different platform than scout snipers in an Arctic mountain environment. The Marines of an artillery battery will require a very different method of maneuvering over the snow compared to an infantry platoon. But the predominant factor in all of these is that there will be few roads, and the existing roads will be heavily protected or denied.

Once the doctrine and equipment decisions are made, then the Marine Corps can establish training programs to ensure standards can be met. The harsh climate and rugged environment of the Arctic can be replicated in places like Mountain Warfare Training Center in Bridgeport (MWTC), but units can also be trained by experts in Arctic warfare in Europe. Currently, the Marine

should be given the responsibility of gaining and maintaining cold weather expertise. That will provide six infantry battalions with the necessary training and equipment to operate in the Arctic. These forces can also be assigned to operational plans in cold environments in Europe and the Korean peninsula. Those regiments would receive priority for summer and winter exercises at MWTC and be the primary audience for the MWTC formal schools as well as cross-training and interoperability training with partners and allies.

However, simply training the infantry in Arctic survival and operations is an incomplete result. The entire MAGTF needs to be trained and capable of operating in the extreme cold and required to participate in tailored cold weather and mountainous exercises at MWTC or abroad with allies and partners. Light armored reconnaissance needs to understand the effects of snow and heat signatures; artillery needs to understand the effects of cold and latitude; rotary-wing aviation needs

the Marine Corps should look back at the interwar years and establish a new “Ellis Group”: a team of Marines experienced in cold weather operations, with a demonstrated creative and ingenious nature, to think about the Marine Corps’ Arctic mission and what will be needed to ensure victory in the next fight. Once the next theater is identified, the Corps can proceed on its mission to man, train, and equip toward that concept. It must also be recognized that the Navy will need to be a close partner in this endeavor. The Marine Corps shift in focus north will require amphibious shipping and potentially ice-capable amphibious shipping with reinforced hulls. The planning for this next battlespace cannot be done in a vacuum; the Navy must be a partner in the development of the Arctic concept.

As the year 2020 approaches, the Marine Corps finds itself at a familiar transition with some familiar choices to make. Just like the generation of officers who approached the interwar years in the 1920s and 1930s, this generation must carefully consider the answers to these questions. While history is a great guide, it is by no means a rote template that merely requires applying the same answers. The Commandant has made it overwhelmingly clear that there is no identity crisis; we know we are not a second land army. The Marine Corps is the world’s premier naval expeditionary force, but that requires returning to our amphibious roots. In doing so, we must study the ever changing globe and think critically about where amphibious doctrine will be most relevant for the Navy in the next conflict, just as Pete Ellis did. Given the abundant resources, lucrative shipping routes, and lack of clear ownership, the next zone of Great Power competition is likely to be in the Arctic. The vastly littoral, harsh, and remote environment above the Arctic Circle makes amphibious operations highly relevant. To prepare for that environment the Marine Corps must make wise decisions to develop doctrine, capabilities and training to allow the Fleet Marine Force to survive and respond to a crisis or contingency in the unforgiving High North.

In addition, regular exercises to ensure Arctic capability need to be placed on the training exercise and employment plan.

Rotational Force-Europe is postured in Norway but exercises in Sweden and Finland while also training with NATO allies that have significant Arctic expertise like the United Kingdom and the Netherlands. Their persistent presence in the Arctic not only provides the Marine Corps with invaluable cold weather operations experience but also ensures the availability of a large cadre of allies and partners that are winter warfare specialists to validate doctrine and equipment decisions. More importantly, these nations can also plan, deliver, and evaluate training in order to make sure that the Marines receive the best possible preparation for fighting in the unforgiving cold.

To align the Marine Corps properly for cold weather competency, one infantry regiment on the East Coast and one infantry regiment on the West Coast

to understand the unique qualities of take-off, flying, and landing in white-out conditions; and logistics needs to understand how to supply, sustain, and maintain the force in this incredibly challenging environment.

In addition, regular exercises to ensure Arctic capability need to be placed on the training exercise and employment plan. A MEB-level exercise should be set every odd year and a MEU-level exercise should be established in every even year to ensure that different levels of MAGTF power are ready to survive and operate in the Arctic environment. The ultimate goal is an eventual MEU deployment to the Arctic either once ice conditions subside or as part of a multinational task force with allied or partner icebreaking capability.

To achieve all of this development in doctrine, equipment, and training,

Notes

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2. Brian Kerg, "Russell's Century-Old Plea for the Marine Corps," *War on the Rocks*, (Online: April 2019), available at <https://warontherocks.com>.
3. 38th Commandant of the Marine Corps, *Commandant's Planning Guidance*, (Washington, DC: July 2019).
4. *Commandant's Planning Guidance*. There are several sections within the Planning Guidance where this direction to return to our naval purpose and be the Fleet Marine Force. For example, on page four we are directed in bold text to "re-focus on how we will fulfill our mandate to support the fleet" and on the final page the Commandant emphasizes that "we are not experiencing an identity crisis ... [w]e are a naval expeditionary force capable of deterring malign behavior and, when necessary fighting inside out adversary's weapons-engagement-zone to facilitate sea denial in support of fleet operations." The Commandant goes on to drive home the point stating, "We are not a second land army, nor do we aspire to be anything other than the world's premier naval expeditionary force."
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15. Malte Humpert and Andreas Raspotnik, "The Future of Arctic Shipping," The Arctic Institute, (Online: October 2012), available at <https://www.thearcticinstitute.org>.
16. Niall McCarthy, "Global Warming Opens Arctic Passage for Container Ships," *Forbes*, (Jersey City, NJ: Aug 2018), available at <https://www.forbes.com>.
17. Ibid.
18. President Barack Obama, *National Security Strategy for the Arctic Region*, (Washington, DC: May 2013).
19. Ibid.
20. Margarita Assenova, "Russia's New Rules for Northern Sea Route Violate International Law," *Polygraph*, (Online: March 2019), available at <https://www.polygraph.info>.
21. See Levon Sevunts, "Russia Scores Scientific Point in Quest for Extended Arctic Continental Shelf," *The Barents Observer*, (Online: April 2019), available at <https://thebarentsobserver.com>.
22. Andre Osborn, "Putin's Russia In Biggest Arctic Military Push Since Soviet Fall," Reuters, (Online: January 2017), available at <https://www.reuters.com>.
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33. Victor Kiprof, "Where Is the Arctic Circle," *The World Atlas*, (Online: April 2019), available at <https://www.worldatlas.com>.
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35. Lynn Montross and Nicholas A. Canzona, *U.S. Marine Operations in Korea 1950-1953, Volume III: The Chosin Reservoir Campaign*, (Washington, DC: Headquarters Marine Corps, 1957).

36. Ibid. The Chinese also sustained heavy casualties from the extreme cold weather during the Chosin Reservoir Campaign with estimated rates number in the 10,000's.

37. The recent successful experience with familiarization training for desert deployments could serve to obscure the important difference between extreme heat and extreme cold in the minds of decision makers. Extreme heat can be adapted to with some basic training in hydration and managing heat-related casualties. The experiences in Iraq and Afghanistan have shown that the familiarization with a desert environment from pre-deployment training exercises was effective in training Marines to fight in hot weather. History and the objective facts show that the Arctic is simply more demanding and deadly than other climates and requires more time to learn to survive and adapt. Numerous after-action reports from recent Marine Corps cold weather training and exercises in the Nordics show that everything, no matter how trivial or complex, becomes exponentially more difficult in the extreme cold. Therefore, a fighting force must spend significant amounts of time

simply learning how to stay alive before they can even begin to operate in this deadly climate.

38. Allen F. Chew, *FMFRP 12-178, The White Death: The Epic of the Soviet Finnish War*, (Washington, DC: 1971).

39. Without a credible Over-The-Snow (OTS)/All-Terrain Vehicle (ATV) capability, Marine Corps forces will find themselves fixed by roads, water, and bridges. Much like the Soviet 9th Army at Suomussalmi, in challenging environment and terrain, the Marine Corps risks being out maneuvered by an adversary fielding superior capabilities. The Marine Corps currently relies on OTS/ATV platforms being provided by Norway through the BV206, an unprotected and aging platform with 38 years of service, globally approaching its end of service. A European consortium of six nations is working on a BV206 successor program with both protected and unprotected variants, and the U.S. Army and U.S. National Guard are doing the same. The current options under consideration are either BAE-Hagglunds BEOOLF/VIKING or ST-Kinetic EXTREMV/BRONCO. In a

similar vein, adversaries have already fielded new capabilities; the Russian Vityaz DT-XX All-Terrain Vehicle and the Chinese Jonyand JY813—very similar to ST-Kinetic BRONCO. If a tracked vehicle OTS capability is selected as

method of mobility, then a series of programs will need to be established to procure the vehicle and establish stock levels for parts, establish schools for maintenance personnel and vehicle crews as well, as doctrine for employment and concept of use.

>Authors' Note: All opinions expressed in this article are those of the authors and do not reflect the opinions of the DOD, The United States Marine Corps, or United States Marine Corps Forces, Europe and Africa.

