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THESIS

**WINTER IS COMING: ENSURING U.S. SPECIAL FORCES
ARE PREPARED TO FIGHT AND WIN IN A COLD
WEATHER ENVIRONMENT**

by

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**WINTER IS COMING: ENSURING U.S. SPECIAL FORCES ARE PREPARED
TO FIGHT AND WIN IN A COLD WEATHER ENVIRONMENT**

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ABSTRACT

For the past 17 years, United States Special Forces (USSF) has been decisively engaged in the Global War on Terror. Due to the deployment cycle and training requirements focused on deployments in the Middle East, many valuable skillsets, including the ability to fight, maneuver, and survive in extreme cold weather environments has atrophied across the force. In a majority of USSF units, extreme cold weather training is synonymous with high altitude and mountaineering training. Some teams and units do specialize in this type of terrain and train to a high level in technical mountaineering tasks, but too often the focus is on technical mountaineering skills and not how to survive and sustain operations in extreme cold weather environments. The recent 2018 National Defense Strategy, the multi-domain battle concept, and actions taken by peer and near-peer adversaries, all call for a shift in focus from the Middle East to adversaries such as Russia, China, and North Korea. Conflict with any of these adversaries will likely include some aspect of cold weather warfare. This research effort will define an adequate cold weather capability for USSF, and make recommendations to reach that capability.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	after action report
AMWS	Army mountain warfare school
AO	area of operations
AOR	area of responsibility
COA	course of action
GWOT	global war on terrorism
MCMWTC	Marine Corps mountain warfare training center
MEDEVAC	medical evacuation
METL	mission-essential task list
NPS	Naval Postgraduate School
NWTC	Northern warfare training center
OCONUS	outside the continental United States
ODA	operational detachment-Alpha
PCS	permanent change of station
SF	special forces
SOAMS	special operations advanced mountain school
SFG(A)	special forces group (airborne)
SOF	special operations forces
TTP	tactics, techniques, and procedures
1st SFC(A)	United States Army Special Forces Command (Airborne)
USASOC	United States Army Special Operations Command
USSOCOM	United States Special Operations Command
UW	unconventional warfare
VEO	violent extremist organization

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I. INTRODUCTION

A. BACKGROUND

Since the start of the Global War on Terror (GWOT), several key capabilities have atrophied within United States Army Special Forces (USSF). Deployment cycles, pre-mission training (PMT) requirements, and a focus on the operational environment in the CENTCOM area of operation have all contributed to this decline. Among these capabilities is a robust cold weather warfare capability.¹ The Army defines cold weather environments as “regions where cold temperatures, unique terrain, and snowfall have a serious impact on military operations.”² Operational plans requiring USSF to operate in extreme cold environments, peer adversaries operating in and contesting allied territorial claims in the Arctic, and maintaining a capability on par with key allies all require building and maintaining a robust cold weather warfare capability. Other than units required to operate in isolated operations in cold and mountainous areas in Afghanistan, cold weather warfare tasks are prioritized below other tasks, or non-existent within USSF, because proficiency in cold weather warfare is not deemed mission critical in the contemporary operating environment.³ As a result, a tendency exists to relegate cold weather training to the USSF mountaineering community. However, conflating cold weather training with mountaineering training has proved inadequate.⁴ Mountains are inherently cold, so it is vitally important that USSF mountaineers can operate in cold weather environments, but extreme cold does not necessarily require the presence of mountains. A distinction is required between mountain and cold weather warfare, and a broader swath of the force must be prepared to operate in cold, non-mountainous environments. As the military shifts

¹ Seth Robson, “Cold-weather training ramps up as afghan combat mission Wraps Up,” *Stars and Stripes*, February 11, 2015, <https://www.stripes.com/news/us/cold-weather-training-ramps-up-as-afghan-combat-mission-wraps-up-1.328903>.

² Department of the Army, *Mountain Warfare and Cold Weather Operations*, ATP 3-90.97 (Washington, DC: Department of the Army, 2016), 1–3.

³ Scott Pierce, “Mountain and Cold Weather Warfighting: Critical Capability for the 21st Century,” (School of Advanced Military Studies United States Army Command and General Staff College, 2008), 2.

⁴ CPT John Ferry, personal communication, February 21, 2018.

focus from insurgencies and violent extremist organizations in the Middle East, to peer or near-peer adversaries such as Russia, China, and North Korea, the possibility of larger formations of USSF personnel operating in extreme cold weather is a distinct possibility.

The Multi-Domain Battle (MDB) concept is an approach for the U.S. to counter peer and near-peer adversaries in the 2025–2040 timeframe.⁵ The MDB concept calls for small, scalable, self-sustained units, to operate autonomously in hostile or denied environments against a peer or near-peer adversary. High-end war with North Korea, Russia, or China would certainly involve fighting in the cold, and as such, units need to be prepared to operate in that environment. While no unit would truly be able to “self-sustain” in an extreme cold environment, any amount of training that will improve survivability and lethality will benefit those units within the joint force required to operate in extreme conditions. Under the MDB concept, units must be capable operating in any operational environment.

Special Operators are inherently adaptable soldiers; however, extreme cold is an unforgiving environment and the skills required to be successful are challenging to learn on the job or in isolation prior to executing an operation. Issuing state-of-the-art cold weather gear alone is not a solution. Operators must have real experience surviving and operating in extreme cold environments. When accustomed to operating in hot or temperate climates, many things are taken for granted such as battery life, fuel consumption, functionality of screens and devices, munition ballistics, and general mobility. These are just a few examples of factors that require training and experience to understand how the cold weather will impact them and operations. A unit deploying to an extreme cold weather operational environment who expects to conduct business as usual with the addition of a down parka and a warm sleeping bag will undoubtedly fail. That unit must dramatically adapt its tactics, techniques, and procedures in order to operate effectively. If the unit is unable to learn and adapt quickly, it will quickly become a liability, increasing the risk to personnel and their ability to accomplish the mission.

⁵ Multi-Domain Battle: Combined Arms for the 21st Century (Department of the Army, 2017) http://www.arcic.army.mil/App_Documents/Multi-Domain-Battle-Evolution-of-Combined-Arms.pdf

Creating and maintaining any capability requires the valuable resources of time and money. Allocating resources to cold weather training will come at the cost of developing or maintaining other, perhaps equally important capabilities. Ensuring USSF is prepared to meet potential operational requirements with an adequate cold weather capability is challenging in a resource constrained environment. Requisite training methodologies, expertise, and equipment needed for operators to survive and fight in extreme cold weather exist inside and outside the Army. Further analysis is required to develop innovative ways of leveraging off the shelf resources and expertise to efficiently build capability.

For the United States Special Operations Command (USSOCOM), the Special Operations Advanced Mountain School (SOAMS) serves as the lead for SOF mountaineering.⁶ Aspects of the training conducted at SOAMS include cold weather training, but this training is focused on mountaineering operations. Within USSF, generally the only operators attending training at SOAMS come from mountain detachments, and as a result, mountain detachments are often the only units that have experience and training operating in extreme cold conditions. This is inadequate, given the potential threat of conflict in the Arctic, North Asia, or Northeastern Europe with the current emphasis on countering the threats promulgated by revisionist states. The 10th Special Forces Group (SFG) addressed this concern in 2018 through the formation of a cold weather warfare committee internal to the Group, tasked to provide cold weather training (not mountaineering) to the Group's formations.⁷ The 10th SFG formed this committee because 10th SFG, who partners with NATO SOF, realized that their partners often maintain a significantly better cold weather warfare capability.⁸ Operators unprepared for operating in a cold weather environment, training alongside NATO SOF allies, could pose a liability to their partners. In order to maintain relevancy and operational preparedness in the cold weather environment, 10th SFG realized the importance of building adequate capability.

⁶ United States Special Operations Command, U.S. Special Operations Forces Baseline Interoperable Standards - Mountaineering Operations, 350–34 (MacDill Air Force Base: United States Special Operations Command, 2017).

⁷ SGM Rolf Jensen, personal communication, February 15, 2018.

⁸ SGM Rolf Jensen, personal communication, February 15, 2018.

The challenge 10th Group and the other groups will face in conducting cold weather training is the aforementioned lack of relevant doctrine and resources. Mountain and cold weather training centers do not have the capacity to focus their training specifically on cold weather and provide the throughput necessary to train a broad swath of the force. Units require detailed manuals and TTPs in order to conduct unit level training on cold weather tasks. Analysis is required to determine what an adequate level of proficiency is for USSF, and how to best achieve that proficiency. USSF has a unique mission set, and certain cold weather training tasks may be more important than others.

B. RESEARCH QUESTION

How should USSF ensure that it is prepared to provide sufficient forces capable of countering threats while fighting and surviving in an extreme cold weather environment?

1. Methodology

Building on lessons learned from the Winter War (1939-1940) and Korean War (1950-1953), this research will make the case for why a robust cold weather warfare capability is necessary in the future and define what that capability needs to be for USSF. Utilizing the Multi-Domain Battle concept, and current threats from Russia, China, and North Korea, this research effort will analyze the threat and make a case for the likelihood of USSF, having to operate in the cold. The contemporary threats promulgated by revisionist states compel our joint force to be prepared to counter their capability in any environment and in any domain. A land war in northern Europe or Asia, as evidenced from historical examples, will certainly involve some aspect of cold weather warfare.

The result of this research will be recommendations to 1st Special Forces Command (A) regarding the operational necessity of cold weather training, and how to leverage resources to ensure that USSF is prepared to meet future operational requirements with an adequate capability. This research will cover: future operational requirements and required capability for USSF, analysis of current capability, gaps in current training venues and doctrine, analysis of cold weather training tasks required to support the USSF mission, development of a recommended framework to measure proficiency, and recommendations to efficiently build capability.

In order to analyze current capability, this research effort will compile data from the five Active Duty SFGs to ascertain their current cold weather warfare capability. This research effort will only use data from the last two years, because the average turnover of ODA members is two to three years. If an ODA has not trained on a given task in two years, it can be assumed they are not proficient on the task.

This research effort will analyze current cold weather doctrine and training venues to determine what gaps exist in doctrine and the various mountain and cold weather training centers will be researched to assess their throughput and period of instruction (POI). Once this research effort understands the current resources available to Operators, it will become apparent what is currently possible, and where future resources need to be invested.

This research effort will conduct analysis of cold weather training tasks required to support the USSF mission to assess what aspects of cold weather training must be prioritized to ensure ODAs can reach an adequate capability. USSF mission sets are unique, and the training will likely need to be tailored to support the unique mission set. Aspects of USSF missions often require operators to conduct operations with autonomy, further away from logistical support and infrastructure than conventional units. Extreme environments make this even more difficult and require operators to be well versed in how to thrive in the operational environment. Once this research effort defines and recommends an adequate capability for USSF, it will develop a framework which will break down the necessary cold weather tasks. This framework can measure an individual unit's level of proficiency.

Once the operational necessity of creating and maintaining a robust cold weather warfare capability is established, and analysis is conducted on cold weather training tasks required of operators, the research effort will develop a recommendation on where to invest resources in order to fill the gap in current resources and training venues which will allow USSF to reach an adequate level of capability.

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II. HISTORICAL CONTEXT

History is filled with case studies demonstrating that a lack of preparedness for operating in extreme cold weather increases risk to personnel and their ability to accomplish their mission. Two historical case studies that demonstrate the successes and failures of opponents with disparate capability to conduct cold weather warfare are the Russo-Finnish Winter War, and the Korean War. In both these conflicts, the weaker side gained an asymmetrical advantage over their opponent due to their enhanced cold weather warfare capability. Survivability, mobility, and lethality are the three components of proficiency in cold weather warfare, which together, build the capability to successfully operate in the cold. The following vignettes demonstrate the importance of survivability, mobility, and lethality in the cold weather environment.

A. WINTER WAR

During the Winter War, Finland demonstrated that soldiers prepared for the cold can defeat their opponent, even when faced with overwhelming odds.⁹ The Finns gained a tactical and operational advantage over the Soviets by outmatching the Soviets proficiency in cold weather mobility, and survivability. At the outset of the war, Finnish soldiers were capable cross-country skiers, wore proper clothing which protected them from the harsh temperature (regularly reaching -50 degrees Fahrenheit) and provided camouflage against the snow. The majority of the Soviet infantry were not equipped with skis, which inhibited mobility, and wore standard khaki uniforms, which did not provide adequate warmth or camouflage in the snow, inhibiting survivability. While the dismounted Soviet infantry struggled and often failed to simply survive in the harsh conditions, Finnish Soldiers used their training and environment to their advantage. The freedom of maneuver and protection from the harsh conditions enjoyed by the Finns enabled them to penetrate Soviet lines and conduct hit-and-run tactics further demoralizing the Soviet troops. In the battles of

⁹ Chris Mann and Christer Jorgensen. *Hitler's Arctic War: The German Campaigns in Norway, Finland, and the USSR 1940-1945*. South Yorkshire: Brown Bear Books Unlimited, 2002.

Tolvajarvi and Suomassalmi in December 1939 and January 1940, one Brigade of Finnish Soldiers destroyed two Soviet Divisions.¹⁰

B. KOREAN WAR

During the winter of 1950–1951, the harshest winter of the Korean War, U.S. Forces learned many hard lessons. The 1st Marine Division faced temperatures ranging from 20 degrees Fahrenheit to -30 degrees Fahrenheit during their march from Chinhung-ni to Udam-ni near the Chosin Reservoir. Heavier than usual snowfall and high wind created deep snowdrifts, and slopes loaded with wind slabs in steeper terrain restricted mobility. The Chinese, much more accustomed to operating in their home terrain and climate, utilized dismounted tactics carrying light weapons supported by crew-served machine guns that enabled them to maneuver on the less mobile Marines who were often tied to defensive positions and larger artillery pieces.¹¹ The Marines quickly learned that much of their training and understanding of how to employ weapons did not apply while operating in sub-zero temperatures, which greatly inhibited the Marines lethality.¹² Mortar systems were significantly impacted by the cold, and challenging to employ. In order to seat the mortar's baseplate properly, holes must be dug through the snow to reach the ground. If the ground was frozen hard in subzero temperatures, the ground would not give way while the mortar was fired, causing the baseplates to fracture. Frozen ground also impacted the Marines' ability to dig foxholes and fortify positions, often requiring explosives to dig in. Utilizing the proper lubrication to ensure the continued functioning of weapons also proved critical. "Arctic" lubrication is required in machine guns and carbines when the temperature dips below subzero. If normal lubrication is used, the weapon system is prone to seizing.¹³ Restricted mobility often prevented the Marines from utilizing

¹⁰ Mann and Jorgensen, *Hitler's Arctic War: The German Campaigns in Norway, Finland, and the USSR 1940–1945*, 28.

¹¹ Department of the Navy, *Infantry Operations and Weapons Usage in Korea: Winter of 1950–1951*, FMFRP 12–6 (Quantico: Department of the Navy, 1989), 6.

¹² Karl Warner, "Combating Cold Korea," U.S. Army Heritage and Education Center, November 10, 2010, https://www.army.mil/article/47963/combating_cold_korea.

¹³ Department of the Navy, *Infantry Operations and Weapons Usage in Korea: Winter of 1950–1951*, 20–23.

support from vehicle supported artillery, heavy mortars, and armor. Because the enemy often closed on the Marines' positions rapidly, which precluded the use of close air support, the Marines were required to fight using close quarters tactics: hand grenades, small arms, bayonets, and even hand-to-hand fighting. After action reports suggest that the Marines did not anticipate this sort of fight and should have spent more time devoting training to these tactics,¹⁴ which would have increased their lethality.

Both the Winter War and the Korean Winter Campaign of 1950–1951 demonstrate that underestimating the impacts of the cold, by assuming that the same tactics used in warmer climates can be employed, are errors which can have serious consequences. While primarily conventional conflicts, lessons learned from these cases are applicable to contemporary SOF operations in a cold weather environment. The small unit hit-and-run tactics employed by the Finns in the Winter War, and the mobility enjoyed by the Chinese in the Korean War were decisive in both conflicts. The ability to execute small unit raids and provide enhanced mobility in restricted environments are salient aspects of SOF operations and capabilities. It is critical to remember these successes and failures to ensure that historical lessons are not lost. This is particularly important today, when fighting in cold weather environments is a very real possibility.

¹⁴ Department of the Navy, *Infantry Operations and Weapons Usage in Korea: Winter of 1950–1951*, 36.

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III. LITERATURE REVIEW

Providing units with the necessary resources to conduct their own training is the only way to build adequate capability at the unit level. For cold weather warfare, adequate capability is measured through proficiency in survivability, mobility, and lethality training tasks. Training centers are an excellent venue for individual training, but even when a unit pays to send Operators to school, turnover and PCS cycles often prevent units from maintaining proficiency. Learning how to survive and operate in the cold are not complex tasks, but they do require resources in terms of manuals, the right equipment, and access to appropriate environments. Repetition builds experience and capability at the unit level.

A. DOCTRINE

The Army and Marine Corps maintain three manuals which serve as doctrine for cold weather operations; *Mountain Leader's Guide to Winter Operations*,¹⁵ *Cold Regions Operations*,¹⁶ and *Mountain Warfare and Cold Weather Operations*.¹⁷ In addition to these manuals, training centers such as the Marine Corps Mountain Warfare Training Center (MCMWTC) in Bridgeport, California, the Northern Warfare Training Center (NWTC) in Black Rapids, Alaska, and the Army Mountain Warfare School (AMWS) in Camp Ethan Allen, Vermont, publish pamphlets and internal documents which support their respective training courses.¹⁸ To reinforce the idea that the Army conflates mountaineering and cold weather warfare, the most recently updated ATP is titled, "Mountain Warfare and Cold Weather Operations." In the introduction, "Mountain Warfare and Cold Weather Operations" suggests that while very few U.S. military units specialize in mountainous or cold weather environments, competitors exist who do maintain the capability to sustain

¹⁵ Department of the Navy, *Mountain Leader's Guide to Winter Operations*, MCRP 3-35.1B (Washington, DC: Department of the Navy, 2013)

¹⁶ Department of the Army, *Cold Region Operations*, ATP 3-97.11 (Washington, DC: Department of the Army, 2011).

¹⁷ Department of the Army, *Mountain Warfare and Cold Weather Operations*, ATP 3-90.97 (Washington, DC: Department of the Army, 2016)

¹⁸ United States Army Northern Warfare Training Center. *Cold Weather (CWLC, CWOC & CWIC) Student Handout*. Black Rapids, AK, 2015.

operations in an extreme cold environment.¹⁹ The manual is large in scope but wanting in detail. It is primarily focused on the operational-level planner. It addresses a broad range of planning considerations; but does not provide sufficient detail at the tactical level in how to specifically conduct training or operate in the cold. The manual directs units toward the NWTC, MCMWTC, and AMWS for individual soldiers and Brigade level units to conduct training in mountain or cold weather warfare.

Cold Region Operations is significantly more detailed than Mountain Warfare and Cold Weather Operations. Cold Region Operations is more useful to the Operator at the tactical level, as it covers terrain and weather analysis, cold weather injuries, nutrition, wear of uniforms, self-care, mobility, weapons considerations, tactical considerations, and sustainment.²⁰ The purpose of Cold Region Operations is to provide Soldiers and Marines the resources to conduct full spectrum operations in a cold weather environment. The limitation of this manual is that it is primarily directed toward conventional forces. USSF often uses off the shelf equipment, and specialized, small-unit TTPs which fall outside the scope of this manual.

Similar to Cold Region Operations, The Marine Corps' Mountain Leader's Guide to Winter Operations provides a wealth of information useful to Operators at the tactical level, however, it is focused toward conventional forces. This manual is primarily focused toward cold weather operations in mountainous terrain, and covers topics such as operations in avalanche prone terrain, ski techniques, glacier travel, and snow shelters.²¹ While this information is useful, it is primarily directed toward units required to operate in technical mountain terrain, which falls outside the scope of this research which is focused on the training necessary for USSF units, other than Mountain Detachments, to survive and fight in cold, non-technical terrain.

¹⁹ Department of the Army, *Mountain Warfare and Cold Weather Operations*.

²⁰ Department of the Army, *Cold Region Operations*.

²¹ Department of the Navy, *Mountain Leader's Guide to Winter Operations*, MCRP 3-35.1B (Washington, DC: Department of the Navy, 2013).

Current Army or Marine Corps organization does not account for units specializing in mountainous or cold weather environments.²² Additionally, no actual proponent exists specifically for cold weather operations.²³ Each of the mountain and cold weather training centers maintain internal documents, tactics, techniques, and procedures (TTPs),²⁴ for operating in cold and mountainous environments, but most of these resources support the associated training course from which they were derived. While valuable resources, these documents do not serve as doctrine. Current doctrine primarily targets conventional units and capabilities. Detailed doctrine specifically related to Special Operations in cold weather environments is lacking. A gap exists in doctrine that specifically supports USSF unit level training and education.

B. ACADEMIC PAPERS

Several academic papers written by military officers discuss the importance of reinvigorating mountain and cold weather training.²⁵ While these papers provide excellent analysis and make a strong case for the necessity of competent military mountaineers (who can operate in the extreme cold), they generally continue to propagate the idea that mountain and cold weather training are synonymous. Two recent Naval Postgraduate School theses by MAJ Dennis Cook and MAJ Edwin Clarke examine the SOF mountaineering training program through the lens of the operational requirements at the Group level.²⁶ Cook and Clarke both acknowledge that regionally aligned SF Groups may have significantly disparate operational requirements. 10th and 1st SFG, who are regionally oriented toward Europe and Asia respectively, are more likely to encounter technical, high altitude, and cold mountain terrain than the other Groups.²⁷ In addition to the mountains,

²² Pierce, “Mountain and Cold Weather Warfighting: Critical Capability for the 21st Century,” 7–8.

²³ United States Special Operations Command, U.S. Special Operations Forces Baseline Interoperable Standards - Mountaineering Operations.

²⁴ United States Army Northern Warfare Training Center. Cold Weather (CWLC, CWOC & CWIC) Student Handout. Black Rapids, AK, 2015.

²⁵ Lt Col Pierce, “Mountain and Cold Weather Warfighting: Critical Capability for the 21st Century.”

²⁶ Edwin Clarke, “Enhancing the U.S. Special Operations Mountaineering Program,” (Master’s thesis, Naval Postgraduate School, 2012).

²⁷ Dennis Cook, “Optimizing the Special Forces Mountaineering Program.”

those regional areas have non-mountainous environments that are cold. The operational environment dictates that mountain detachments should not be the only formations capable of operating in the cold. Frameworks exist which measure the capability of Mountain Detachments to operate in cold and mountainous environments, but no such framework exists for other detachments to measure proficiency in operating in the cold alone. If the U.S. were to engage in high end war with a peer or near-peer competitor in the high north, large formations of USSF, in addition to Mountain Detachments, would be required to operate in a cold environment.

C. NORWEGIAN COLD WEATHER TRAINING AND DOCTRINE

The Norwegian School of Winter Warfare (NSWW) is considered a premier winter warfare training center, and Norway is also home to the NATO Cold Weather Center of Excellence. NSWW is the proponent for Norwegian cold weather operations, and in addition to providing training, NSWW maintains and updates several detailed manuals which cover various aspects of cold weather warfare. The most recently updated manuals were published between 2010–2013. The manuals are titled: Winter Conditions Leadership and Training, Personal Clothing, Nutrition, Winter Injuries, Safe Routing and Navigation, Bivouac, Use and Maintenance of Equipment, Snow Awareness, and Avalanche Rescue.²⁸ These manuals provide units the detailed information required to conduct unit level training, as they provide sufficient information for an inexperienced unit to conduct safe training.

Another reason the Norwegians maintain excellent capability across their force, is that they recognize the distinction between mountain and cold weather warfare. The arctic, sub-arctic tundra, and northern steppes of Asia are all areas that are often featureless, relatively low in elevation, yet bitterly cold. Large military formations in the past have operated in these environments, and they will likely do so again. The risks associated with being unprepared to operate in the cold are profound, and the lessons learned from previous operational successes and failures should not be forgotten. It is critically important to

²⁸ The Norwegian Armed Forces, *Instruction in winter service - winter conditions, leadership and training*, UD 6–81-1E (Rena Military Camp, Norwegian School of Winter Warfare, 2013).

separate mountain and cold weather warfare because it is simply not feasible for large formations to reach an acceptable level of proficiency in military mountaineering due to the technical considerations and specialization that it requires. If the majority of cold weather training is conducted as a consequence of training in the mountains, too many formations will never receive proper training. Cold weather training does not necessarily require the same specialization and focus of mountaineering and can be incorporated concurrently into other training tasks if units are provided the resources to conduct the training safely. Prevention of cold weather injuries is paramount, and simply understanding how to properly prevent injury is a big step in improving survivability and conducting training safely.²⁹

²⁹ Degroot, David, John Castellani, Jeffrey Williams, Paul Amoroso. "Epidemiology of U.S. Army Cold Weather Injuries, 1980 –1999." *Aviat Space and Environ Med*, no. 74 (May 2003): 564–570. <https://www.ncbi.nlm.nih.gov/pubmed/12751587>, 3.

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IV. THE THREAT AND CURRENT CAPABILITY

A. POTENTIAL HOT SPOTS FOR COLD WEATHER WARFARE

The military defines cold regions as, “any region where cold temperatures, unique terrain, and snowfall significantly affect military operations for one month or more each year.”³⁰ Cold regions are further subdivided into three categories; the arctic (area north of latitude 66 32’ N), subarctic (area north of latitude 50 to arctic), and temperate sub-regions (areas south of subarctic impacted by cold).³¹ Collectively, these three regions encompass a substantial portion of the earth that includes the Arctic, Antarctica, most of North America, Europe, Central Asia, and North Asia. In addition to these defined regions, several cold and mountainous sub-regions exist closer to the equator. These regions include the Caucasus, Andes, Himalaya, Hindu Kush mountain ranges, and their adjoining higher altitude areas.

Figure 1 depicts the cold regions of the world as defined in Mountain Warfare and Cold Weather Operations. The military defines the areas north of line A in the northern hemisphere, and south of line A in the southern hemisphere as severely cold. In these areas, “mean annual temperatures stay below freezing, maximum snow depths exceed 60 cm, and ice covers lakes and rivers for more than 180 days each year.” This area encompasses most of Canada, the Arctic, Antarctica, Greenland, and northeastern Russia. The areas of the northern and southern hemispheres between lines A and B are defined as moderately cold. This area encompasses most of the United States and Eurasia, where the mean temperature is below freezing during the coldest months of the year. The current threat of conflict in many of these areas is substantial, and it is imperative to ensure forces are available who are prepared to operate in these environments.

³⁰ Department of the Army, Cold Region Operations, 1-1.

³¹ Department of the Army, Cold Region Operations, 1-1.

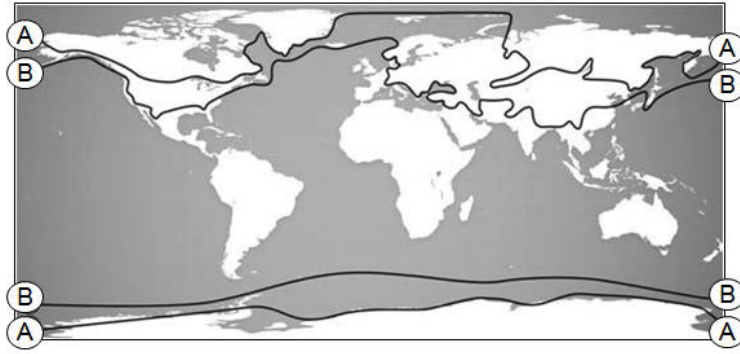


Figure 1. Cold Regions³²

The United States is being challenged by peer and near-peer adversaries (as well as violent extremist organizations) in all of the above defined cold regions within the northern hemisphere. Revisionist states militarizing and contesting territorial claims in the Arctic, the looming potential for conflict on the Korean Peninsula, Russia's anti-NATO rhetoric threatening the Baltic states, and conflicts amongst allies and VEOs operating in central Asia are all reasons to seriously consider the prospect of USSF operating in these cold regions.

1. The Arctic

As global warming melts the polar ice caps, areas in the Arctic which were previously inaccessible are now becoming trafficable.³³ The Arctic is rich in natural resources, and several states maintain territorial claims to the region. Competition to exploit newly accessible natural resources, securing land and militarizing the region to protect shipping, and dominating new avenues of approach between continents could set the conditions for a new cold war.³⁴

³² Source: Department of the Army, Cold Region Operations, 1-2.

³³ Caroline Mortimer, "Russia is building up its Arctic military presence and NATO should be worried, says new report," *Independent*, September 7, 2017, <http://www.independent.co.uk/news/world/europe/russia-arctic-military-presence-nato-worried-us-report-tensions-north-america-a7934741.html>.

³⁴ Todd South, "A New Cold War," *Army Times*, July 30, 2018, <https://www.armytimes.com/news/your-army/2018/07/30/a-new-cold-war-how-the-army-is-preparing-for-a-fight-in-the-arctic/>.

As depicted in Figure 2, Denmark, Norway, Canada, Russia, and the United States all maintain a territorial claim to some portion of the Arctic. The untapped oil and natural gas potential of the Arctic is estimated at \$35 trillion, making the region ripe for exploitation. In addition to the raw materials, utilizing the arctic to transport goods is becoming incredibly profitable. Transporting goods between East Asia and Northern Europe along the Northern Sea route cuts of 30–40% of the distance ships are required to travel through the traditional Suez Canal route.



Figure 2. Arctic Territorial Claims Map³⁵

³⁵ Source: South, “A New Cold War: How the Army Is Preparing for a Fight in the Arctic.”

Currently, out of all the nation-states with a territorial claim in the Arctic, Russia is in the lead in terms of strategy, spending, and infrastructure development. The Arctic was sliced up in the early 1990s following the fall of the Soviet Union, and Russia contends that it was forced to negotiate from a position of weakness. Russia is currently attempting to expand their territorial claim and dominate the region. Russia's current strategy in the Arctic employs a number of military, diplomatic, legal, and economic tools to expand their claim in the region. Militarily, Russia has manufactured and deployed several new nuclear powered icebreaking ships (outmatching U.S. and NATO capability), built over 12 new airfields, 16 deep water ports, 20 air defense radar sites, and established cold weather training centers to train their ground and naval forces in preparation to operate in the region.³⁶

In 2015, Russia established the northernmost military base in the world, located along the 80th parallel on the island of Alexandra Land.³⁷ The base is designed to house up to 150 soldiers for a period of 18 months, and allows the Russians train their soldiers, exercise command and control, and sustainment of units operating in the Arctic for extended periods. The ability to train and exercise this capability provides the Russians an advantage in terms of preparing forces to operate Arctic.

Russia is not the only revisionist state aggressively investing in the Arctic. China, a country with no legitimate territorial claim in the Arctic, but with a growing Navy and economic capacity to underwrite Arctic infrastructure projects, is expanding its influence in the region in an effort to expand its markets.³⁸ Chinese shipping companies have begun utilizing Arctic trade routes, and China announced its claim to develop what it refers to as the "Polar Silk Road." China's stated policy goals in the Arctic are; "to understand, protect, develop and participate in the Governance of the Arctic, so as to safeguard the common

³⁶ Daniel Goure, "U.S. & NATO Need an Arctic Strategy to Counter Russia," Real Clear Defense, November 8, 2017, https://www.realcleardefense.com/articles/2017/11/08/us_nato_need_an_arctic_strategy_to_counter_russia_112602.html.

³⁷ AFP, "Russia builds massive Arctic military base," The Telegraph, October 20, 2015, <https://www.telegraph.co.uk/news/worldnews/europe/russia/11944219/Russia-builds-massive-Arctic-military-base.html>.

³⁸ Dillow, "Russia and China Vie to Beat the U.S. in the Trillion-Dollar Race to Control the Arctic."

interests of all countries and the international community in the Arctic, and promote sustainable development in the Arctic.”³⁹

As revisionist states aggressively pursue sophisticated strategies to dominate the Arctic, it is imperative that NATO, the US, and Canada develop a strategy to counter Russian and Chinese efforts to control the region. Unfortunately, the U.S. is behind its adversaries in these efforts.⁴⁰ In order to deter Russia and China from encroaching on U.S. and allied territorial claims and dominate the region, the U.S. and its allies must develop a legitimate military capability, able to demonstrate force in the Arctic, to act as a deterrent. This requires greater investment in icebreaker ships, military bases and infrastructure, expanded naval presence, and ground troops capable of operating in the Arctic.

2. North Korea

While the Arctic is a developing region of potential conflict, other problem areas throughout the globe exist where U.S. troops would be required to operate in the cold if the U.S. entered into a conflict. North Korea remains a viable threat to U.S. National Security. As the U.S. learned during the Korean War, operating in North Korea during the winter months is a brutal prospect. The 1st Marine Division’s experiences during the Korean War demonstrate that proficiency in mobility, survivability, and lethality are critical while fighting in the cold terrain on the Korean Peninsula. With tensions escalating between the U.S. and North Korea, any unit potentially called upon to deploy to the Korean Peninsula in crisis should conduct extensive cold weather warfare training as part of that unit’s standard, annual training requirements. Temperatures in North Korea often drop to -30 degrees Fahrenheit in the winter months, and regardless of the time of year that hostilities begin, the conflict would likely prove long enough that troops on the peninsula would face fighting in the winter months.

³⁹ China’s Arctic Policy (The State Council Information Office of the People’s Republic of China, Beijing, 2018) http://english.gov.cn/archive/white_paper/2018/01/26/content_281476026660336.htm.

⁴⁰ Dillow, “Russia and China Vie to Beat the U.S. in the Trillion-Dollar Race to Control the Arctic.”

3. Russia

In Europe, Russia continues to antagonize and implicitly threaten NATO's eastern flank, particularly in the Baltic region which includes; Poland, Lithuania, Latvia, Estonia, and Finland. Russia's recent activities in Crimea, Eastern Ukraine, and Georgia, coupled with Putin's increased anti-NATO rhetoric, create a significant concern for conflict in the region. In late 2018, Russia, China, and Mongolia took part in the largest military exercise since the Cold War, Vostok 2018. The exercise took place in eastern Siberia, and aspects of the exercise included cold weather training for the estimated 300+ thousand troops taking part in the exercise.⁴¹ While a major conventional military clash between Russia and NATO is possible, it is unlikely, and in the contemporary environment, conflict will likely be carried out by SOF forces in the "grey zone" area of conflict. This concept of persistent grey zone conflicts in eastern Europe necessitates that SOF, more so than conventional forces, must be prepared to operate in the high north. USSF partners and allies in the high north region maintain a robust cold weather warfare capability, and it is imperative that USSF can match or exceed their capability in order to maintain relevance. Additionally, if conflict escalated into war, environmental conditions would necessitate USSF to operate in the cold, high north operational environment.

4. Central Asia

Other than the threat of North Korea, there is potential for conflict across cold areas of Asia and Central Asia. The geography of Asia and Central Asia is dominated by the Himalaya and its subranges. The water runoff from the Himalaya forms the major river systems which sustain life and shape trade across the continent, and the high-altitude steppes surrounding the range make a unique, cold climate in many areas relatively close to the equator. Additionally, this region has a nexus of four major nuclear powers (Russia, China, India and Pakistan), several countries with Islamic separatists and extremists, one ongoing U.S. conflict (Afghanistan), and one ongoing major conflict between two nuclear

⁴¹ Andrew Higgins, "300,000 Troops and 900 Tanks: Russia's Biggest Military Drills Since Cold War," New York Times, August 28, 2018, <https://www.nytimes.com/2018/08/28/world/europe/russia-military-drills.html>.

states over the Jammu-Kashmir region (India and Pakistan).⁴² This region is a hotbed of ethnic hostilities, ungoverned spaces, hosts routes trafficked by violent extremist organizations, and holds substantial, untapped natural resources. Conflict anywhere within this region will include some aspect of cold weather warfare.

B. USSF CURRENT CAPABILITY

In measuring the quality of cold weather training, it is important to evaluate the training through the lenses of increasing proficiency in mobility, survivability, and lethality. As discussed in previous chapters, these three areas are the components of proficiency which build capability. Mobility measures a unit's ability to move and maneuver, mounted or dismounted, in the cold weather operational environment. Survivability measures a unit's capability to self-sustain and thrive in the cold weather operational environment, and lethality measures a unit's ability to bring lethal force to bear on the enemy.

Given the likelihood of USSF operating in a cold weather environment while facing future threats, it is imperative to understand USSF's current capability to fight in the cold. In an effort to ascertain the current cold weather warfare capability across USSF, this research effort collected after action reports (AARs) of ODAs conducting cold weather training during a two-year period (April 2015-April 2017). From the five active duty Special Forces Groups (SFGs), this research effort obtained nine AARs. While it is likely that more training was conducted without producing a formal AAR, the lack of documented cold weather training from the SFGs suggest that across the force, USSF is not conducting significant cold weather training.

In addition to the lack of total training, a majority of the training documented within the AARs was conducted by Mountain Detachments. Much of this training consisted of mobility training, which amounted to downhill ski training inside of established ski resorts, followed by backcountry or cross-country skiing during the execution of a full mission

⁴² Pierce, "Mountain and Cold Weather Warfighting: Critical Capability for the 21st Century," 40.

profile or other training requirement. The evidence obtained in the AARs, supports the premise that a majority of cold weather training conducted by USSF is currently executed by Mountain Detachments, as a consequence of their mountaineering mission essential task list (METL) training.

A common theme throughout the AARs was a lack of survivability training. While the ODAs did train mobility tasks by conducting ski, snowshoe, and snowmobile training, they consistently failed to improve their proficiency in survivability by subjecting themselves to long periods (greater than 24 hours) of continuous exposure to the cold weather environment. Additionally, lethality tasks were often not addressed. Units must understand the nuanced impacts of cold weather on their weapon systems and their ability to employ them. Simply conducting short-duration mobility training is not adequate.

Part of the problem is USSOCOM and USASOC do not currently require units to conduct cold weather training as part of their unit readiness on a large scale. USSOCOM manual 350–34 (2017) is the training directive that specifically outlines cold weather training standards for SOF, but it does so in the context of training for mountaineering operations.⁴³ 350–34 outlines specific cold weather tasks which must be trained in order to gain and maintain a qualification as a basic mountaineer, senior mountaineer, or mountain leader. In accordance with USSOCOM policies, the only SOF personnel required to conduct such training are those personnel assigned to Mountaineering Detachments. Additionally, much of this required training is individual training. Rarely, do units exercise staff functions above the ODA level, conduct mission command training while subordinate units are conducting complex tactical missions sets in a cold weather environment, or conduct sustainment and support operations above the ODA level, nor are the units required to do so.

Within the past year (2017-2018), 1st and 10th SFG (A), responsible for operating within PACOM and EUCOM respectively, have attempted to address this concern through the formation of Winter Warfare Committees, internal to the Group, which are responsible

⁴³ United States Special Operations Command, U.S. Special Operations Forces Baseline Interoperable Standards - Mountaineering Operations.

for managing and providing cold weather training to the Group at large. As these committees were only recently established, it is unknown at this time how effective they will be at improving the Group's overall cold weather warfare capability. Some of the challenges facing the committees are a lack of external funding support, or standardized procedures for conducting the training. Since the training is not defined or mandated by a higher command, the Groups are required to self-fund these initiatives and training is dictated by the needs of the Group. The flexibility to adapt training to the Group's specific requirements may be helpful to the Groups internally, however, a lack of oversight, policies, no clearly defined readiness standard, or allocated funding will likely challenge the effectiveness of these initiatives.

In order to ensure that an adequate capability can be met, that capability must be defined (in terms of associated survivability, mobility, and lethality tasks), and a framework must exist which breaks down specific training tasks that are required to meet that capability. The framework will dictate a defined level of proficiency, which can be determined based off an operational requirement. Once units conduct the training specified within the framework, Commanders will understand the actual capabilities of their subordinate units, and they will be empowered to make better informed decisions regarding resource allocation and unit employment.

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V. REQUIRED CAPABILITY

USASOC strategy 2035 outlines one of the key ARSOF Core Competencies as “Living among, training, advising, and fighting alongside the people of foreign cultures (operating in the human-centric and personality-dependent domain).”⁴⁴ This competency describes USSF’s mission to conduct unconventional warfare, foreign internal defense, or security force assistance. These three mission sets are large in scope, and require USSF to draw on a wide range of special operations expertise to enable the success of a partner force. When conducting these mission sets, as implied in the USASOC Strategy 2035, USSF must be prepared to operate and thrive in the operational environment in which it is employed, operating alongside a partner force.

Few environments pose greater operational challenges and risks than operating in a cold weather environment. While conducting unconventional warfare, USSF must be prepared to self-sustain and conduct operations in a denied or semi-permissive environment.⁴⁵ The conditions in a cold weather environment, more so than any other environment, severely impact all aspects of operations, and these impacts must be understood in order to ensure success.

Describing specific tactics, techniques, and procedures for operating in cold weather is outside the scope of this research project. This chapter will outline a framework recommending an adequate capability measured in three levels, which relates to a specific unit’s likely exposure to the environment. Staff sections and command elements, which will generally provide mission command, sustainment, and planning support, will likely enjoy the comforts provided by a forward or advanced operating base. While it is important that these elements understand and have received a basic level of training in cold weather operations, it is more crucial that they have an in depth understanding of mission command and sustainment considerations as it relates to planning and coordinating operations in the

⁴⁴ USASOC Strategy-2035 (Fort Bragg: United States Army Special Operations Command, 2016).

⁴⁵ Department of the Army, Special operations Forces Unconventional Warfare, FM 3–05.130 (Washington, DC: Department of the Army, 2008).

cold weather environment. ODAs and other tactically employed units on the other hand, must have the ability to fight and survive in these conditions. The framework outlines a capability for each level of training, and each subsequent level builds on the last. This will allow commanders to mitigate risk and make better informed decisions regarding unit employment and operational planning.

A. ANTARCTIC METHODOLOGY

This framework of measuring and recommending a level of proficiency based on an individual's or unit's likely exposure to the environment is similar to the manner U.S. scientists and researchers are trained when conducting research in Antarctica. When all U.S. personnel arrive at the McMurdo base, they receive a basic level of training which covers the proper wear of their issued cold weather gear, how to identify and prevent cold weather injuries, and basic terrain and environmental considerations. Following the initial level of training, scientists are then lumped into two other categories based off their research objectives and how far they will stray from the safety of a base. Scientists who will stay close to the base, but venture into the field on day trips, on foot or utilizing vehicles, will receive additional training regarding emergency bivouac procedures, familiarity with their issued survival kits, and more in-depth training regarding the treatment of cold weather injuries. Scientists who will likely utilize aircraft to travel long distances from a base and conduct research in dangerous terrain receive further training on extended cold weather survival, communication systems, glacier travel, and route planning and selection.⁴⁶

This method of requiring a graduated level of proficiency and experience, based on a likely level of exposure, is an effective means of managing time and resources. It is simply not realistic to expect everyone to be trained to a maximum level of proficiency, and so a framework which defines exactly what can be expected of units trained at each level allows commanders to better manage training and unit employment based on their operational requirements.

⁴⁶ Todd Swain, personal communication, June 20, 2018.

B. COLD WEATHER FRAMEWORK

Figure 3 is a recommended framework developed to measure a unit's cold weather capability (through proficiency in survivability, mobility, and lethality tasks). Proficiency is measured in three levels, with the associated tasks under each level. Tasks are further divided into subtasks (see the appendix). Level I, II, and III tasks correspond to a unit's likely exposure to the cold weather operational environment. Tactically employed units conducting operations are required to master Level II or III tasks (based on duration of exposure and mobility requirements), while staff sections and support personnel operating from a base are required to master Level I tasks.

The tasks in Figure 3 are color coded to highlight whether they support mobility, survivability, or lethality proficiencies (see Figure 3 legend). These tasks were selected and sorted based upon this research effort's evaluation of the historical case studies, existing cold weather doctrine, and potential SOF future operational requirements. This research effort defines proficiency in mobility, survivability, and lethality as the components of an adequate capability, and the tasks within figure three define what must be mastered in order to gain proficiency in those areas.

The mobility tasks define what is required to move and maneuver effectively in the cold weather operational environment. Operators must have the ability to utilize a wide range of tactics and equipment including skis, snowshoes, sleds, snow mobiles, and wheeled or tracked vehicles. Operators must be able to understand and read terrain, capable of identifying dangerous terrain, or recognize conditions that impact speed of travel or operational reach. The survivability tasks define what must be mastered to keep operators alive in the cold weather operational environment. Understanding injury prevention and treatment, proper use of clothing and gear, sustainment, mission planning considerations, shelters, camouflage, and rescue operations are crucial to mitigate risk to force. Proficiency in lethality builds upon mobility and survivability. In order to achieve lethal effects on the enemy, operators must first be able to move through and survive in the cold weather operational environment. Once operators arrive at the objective, they must understand how the cold weather environment impacts their weapons and communication systems, so they are employed effectively.

Task #	Task	Type of Training	Training Interval	Training Time	Training Environment
Basic (Level I)					
1	Proper Wear of Clothing and Equipment	Individual	Once	2 hours	Classroom
2	Identify and Prevent Cold Weather Injuries	Individual	Once	2 hours	Classroom
3	Analyze Terrain and Weather	Individual	Once	4 hours	Classroom
4	Risk Management	Individual	Once	2 hours	Classroom
5	Planning and Mission Command Considerations	Individual	Once	8 hours	Classroom
6	Sustainment: Winterization and Classes of Supply Considerations	Individual	Once	8 hours	Classroom
Intermediate (Level II)					
7	Treat Cold Weather Injuries	individual	Once	4 hours	Field
8	Snowshoe techniques	individual	Annual	12 hours	Field
9	Basic Cross-Country ski techniques	individual	Annual	24 hours	Field
10	Snow Mobile Operation	individual	Annual	12 hours	Field
11	Employing Sleds	individual	Annual	12 hours	Field
12	Construct Cold Weather Shelters	individual	Annual	12 hours	Field
13	Patrol Base Operations in Cold Weather	collective	Annual	24 hours	Field
14	Employing Arctic Heaters	individual	Annual	2 hours	Field
15	Route Planning and Selection	collective	Annual	8 hours	Field
16	Operating Vehicles in Cold Weather	individual	Annual	12 hours	Field
17	Weapon Employment and Maintenance	individual	Once	12 hours	Classroom
18	Construct Fighting Positions in Snow Covered Environments	collective	Annual	6 hours	Field
19	Snow Camouflage	individual	Once	4 hours	Field
	Extreme Latitude/Cold Weather impact on Communications	individual	Once	8 hours	Classroom
20	Cold Weather Effects on Batteries and Technology	individual	Once	2 hours	Classroom
Advanced (Level III)					
21	Advanced Cross-Country and Downhill Ski Techniques	individual	Annual	60 hours	Field
22	Crevasse Rescue	collective	Annual	12 hours	Field
23	Movement in Avalanche Terrain	collective	Annual	24 hours	Field
24	Resupply and Sustainment for extended operations	collective	Annual	12 hours	Field
25	Considerations when employing Explosives and Obstacle Construction	individual	Annual	24 hours	Field
26	Casualty Care and Transport	collective	Annual	12 hours	Field
Survivability Tasks					
Mobility Tasks					
Lethality Tasks					

Figure 3. Proficiency Framework

Level I training outlines basic survivability tasks, most of which can be trained once, as individual level classroom training. All Soldiers within a command likely to operate in a cold environment must receive this level of training at a minimum. While tasks five and six (planning/mission command considerations and sustainment: winterization and classes of supply considerations) are considered individual training in terms of understanding how cold weather impacts these functions, it is important that the staff applies this training during collective training events, while providing mission command and exercising staff functions during the execution of tactical level training exercises.

While these tasks can be trained once at the at the individual level, it should be an annual requirement to conduct the tasks collectively during exercises.

Level II training outlines more advanced survivability, lethality, and mobility tasks for tactical units to effectively shoot, move, communicate, and survive in a cold weather environment. The majority of these tasks must be trained in the field. While most of the tasks are individual level training, collective level training tasks which include route planning and selection, and patrol base operations, will employ a number of the other mobility and survivability related tasks included in this level of training. Other than the tasks: treat cold weather injuries, weapons employment and maintenance, snow camouflage, and cold weather effects on batteries and technology, it is recommended that level II tasks are trained annually. Once Operators in a unit are proficient at the individual level in accomplishing these tasks, all the cold weather specific tasks can be trained concurrently with other training events. For example, an ODA tasked with Special Reconnaissance (SR), can conduct a SR full mission profile, in a cold weather environment, in order to fulfill its training requirement to conduct SR. Many of the level II cold weather tasks are executed as a consequence of that training event. Training in this manner saves valuable time and resources for the unit. A unit proficient in all level II tasks has the capability to conduct short duration (less then 72 hours) operations in cold, but safe, non-technical terrain where the unit is not exposed to the risk of avalanches or crevasses.

Level III training builds upon the proficiency gained in mastering level II tasks. A unit proficient in level III tasks acquires the capability to self-sustain for longer periods of time in a cold weather environment and operate in more technical, dangerous terrain. Dismounted proficiency in snowy terrain is a major distinction between a level II and level III certified unit. Advanced cross-country and downhill ski techniques require significant skill and a basic level of orientation and exposure is simply not adequate to gain true proficiency. Even expert skiers, not experienced in skiing with a heavy pack over ungroomed terrain in variable conditions, will find the task challenging. It is imperative that every member of the unit gains an acceptable level of proficiency in this task, as the unit will only be able to move as quickly or capably as its weakest skier. The unit must spend hours, days, and even weeks with heavy loads, on skis, in variable terrain while

training other tasks in order to truly gain proficiency. It is extremely important for a unit to be honest in its current level of training, and ensure new members to the unit are brought up to par before a unit can claim to be level III certified. A unit certified as level III should be expected to operate autonomously, cover long distances without vehicular support, and sustain operations for long periods (over 72 hours).

C. MEASURING CAPABILITY

When measuring a unit's cold weather warfare capability, a unit should only be judged by its least trained member. The cold weather environment poses unique hazards, and an Operator untrained in a given task could quickly become a liability and jeopardize the mission. One of the problems with SOCOM's method of measuring the readiness of Mountain Detachments, is through the system of measuring individual skill training. In order to achieve certification as a Mountain Detachment, per the regulation, the Detachment must have two "mountain leaders," four "advanced mountaineers," and the rest of the Detachment must be certified as "basic mountaineers"⁴⁷ (if the Detachment has one mountain leader, they are still considered capable to operate in Alpine terrain, but the Commander assumes more risk). This method of measuring a unit's true capability can prove misleading for commanders in terms of risk management and planning. The first problem is, all of the training to achieve any one of the three levels of proficiency is individual level training, which can be achieved by an Operator attending the appropriate school (although operators can gain the qualification of basic mountaineer from a current advanced mountaineer). The regulation does not require the unit to perform any of the tasks collectively at a designated interval, although annual recertification is required for the individual.⁴⁸ This brings into question a Detachment's capability to perform complex tasks cohesively and collectively. Secondly, a Mountain Detachment capable to operate in Alpine terrain may only have one "mountain leader." A "mountain leader" may be the only member of the Detachment with any training or experience in an Alpine environment, and yet, that Detachment is supposed to be completely capable to operate in one. If the

⁴⁷ Dennis Cook, "Optimizing the Special Forces Mountaineering Program," 38.

⁴⁸ Dennis Cook, 38.

Detachment's "mountain leader" is killed, injured, or otherwise incapacitated during an operation or training event in an alpine environment, the remaining members of the Detachment may not have the experience required to safely navigate the terrain or complete the mission.

For these reasons, in measuring a unit's level of proficiency to operate in the cold, it is important that the unit is evaluated based upon its capability to conduct collective level tasks, as a complete unit. Individual training is important, and if a member of a unit has the opportunity to attend advanced cold weather training at one of the training centers, his increased capability in no way inherently increases the unit's overall capability. Until that Operator has been able to cross train his entire unit on the training he has received, and the unit has the ability to train the tasks collectively, can it be assumed that the unit is proficient.

D. RECOMMENDATIONS TO BUILD CAPABILITY

The problem with building robust cold weather capability within USSF is the fact that ODAs simply have more requirements than they have time. Piling on additional training requirements in an already time and resource constrained environment is not an effective means of obtaining a desired result. Expecting that every ODA will be able to obtain Level II proficiency in cold weather tasks is an unreasonable prospect. However, by analyzing operational requirements across the Groups, it would be possible to prioritize specific units, and begin to build the capability in those most likely required to operate in a cold weather environment.

1st and 10th SFG (A), based on their regional orientation, are far more likely to deploy to a cold weather environment. These Groups already formed ad hoc Winter Warfare committees, but as addressed in previous chapters, these initiatives are hamstrung by funding constraints and a lack of formalized policies. A potential course of action to remedy this situation is for 1st Special Forces Command (Airborne) (1st SFC (A)), to establish formal cold weather training requirements and policies. This technique was implemented in formalizing the USSF mountaineering program following the death of

Staff Sergeant Jakob J. Nommensen III on Nanda Devi in 1995.⁴⁹ Unfortunately, it took the death of an Operator for USASOC to take the matter of SOF Mountaineering seriously, and task USASFC(A) to implement a program to train SOF mountaineers and mitigate risk.

Hopefully, unlike the case of SSG Nommensen, USASOC and 1st SFC(A) do not need to wait for the death of an Operator(s) to realize the risks associated with untrained units conducting cold weather warfare. By formalizing a program and policies, 1st SFC (A) could provide funding to those groups likely to deploy to a cold weather environment. Instead of building a schoolhouse and focusing on individual level training, this research effort recommends that 1st SFC (A) provide additional funding to the groups for ODAs to execute collective, off-post training (OPT) and Realistic Military Training (RMT) in true cold weather environments, such as training venues in Alaska or with partner forces OCONUS. This training could utilize the Winter Warfare Committee cadre as master trainers, to ensure ODA collective training meets the formalized training requirements mandated by 1st SFC (A). The framework developed in this chapter, could be used as a base for formalizing policy and training standards.

Operators should be supported to seek individual level training at any one of the pre-existing cold weather training centers so that they can bring back knowledge and cross train other operators, but the backbone of training should always be collective. OPTs and RMTs are an efficient way to train cold weather tasks, in conjunction with other METL based training requirements, by executing the training in a cold weather environment. Cold weather tasks can be trained as a consequence of training almost any other ODA METL requirement, simply by conducting the training in the proper environment.

⁴⁹ Dennis Cook, 4.

VI. CONCLUSION

A. COMMAND EMPHASIS MUST BE PLACED ON COLD WEATHER READINESS

The multi-domain battle concept, 2018 National Defense Strategy, and recent actions by peer and near-peer competitors in cold regions of the world should all focus Commanders on the necessity of taking the prospect of cold weather warfare seriously. USSF as a whole has been focused on the Middle East for almost a generation of professional soldiers. As the entire defense apparatus shifts focus, it is important to be prepared for the next fight. As the U.S. analyzes at its adversaries, many of the most dangerous courses of action will take U.S. troops to a conflict on the Korean Peninsula, in the high north of the Baltic states, or other cold climates throughout Eurasia or the Arctic. The US's competitors, and many of its allies, are investing effort into cold weather training, and it is vitally important that USSF does not fall behind.

Unfortunately, the fact is, cold weather is not pleasant. If left to their own devices, ODAs will not likely spend their OPT and RMT funding training in frigid environments. Command emphasis is required to create a paradigm shift and a sense of urgency amongst ODAs to build their cold weather warfare capability. A formalized cold weather program funded and implemented by 1st SFC(A) will help to ensure this outcome.

B. LEADERSHIP IN COLD WEATHER WARFARE

In addition to command emphasis on training, fighting and training in a cold weather environment poses unique, tactical level leadership challenges. Anyone who has suffered through the mountain phase of Ranger School in the winter months knows the trials faced by leaders attempting to motivate their Soldiers out of their sleeping bags to pull security or conduct weapons maintenance. The typical reaction to extreme cold, for those unprepared, is to "cocoon" inside oneself. Losing all situational awareness and focusing solely on one's current misery and what can be immediately done to improve their current situation. Eventually, the individual becomes sluggish, increasingly unmotivated to do literally anything, and they quickly become a liability to themselves and

their unit. This is a dangerous phenomenon, and requires leaders constantly to monitor their soldiers, and make continuous honest assessments of their condition and capability. The only way for leaders to understand what their soldiers are capable of in the cold weather environment, and improving upon that, is through repetition and experience. A unit operating in the cold for the first time, in combat, will pose a considerable liability. Leaders owe it to their soldiers to ensure they are trained and prepared to operate in an environment they may be required to fight in.

C. RECOMMENDATIONS FOR FUTURE STUDY

The framework developed by this research effort is meant to serve as a starting point for formalizing cold weather requirements and standards for USSF. The appendix further breaks down the training tasks outlined in chapter four into sub-tasks, but does not provide specific TTPs or detailed training agendas. To make training accessible to ODAs, a SOF specific cold weather manual would be incredibly valuable. As detailed in Chapter Two, current resources and doctrine are primarily focused on conventional units. A SOF-specific manual, based on the proficiency framework developed by this research effort, would provide ODAs with limited or no experience a starting point to help guide training events and implement training plans. ODA training is most effective when executed by the ODA itself. Providing ODAs the resources to plan and execute their own training will be a huge step in advancing capability.

APPENDIX

A. LEVEL I TASKS AND SUB-TASKS

1. Proper Wear of Clothing and Equipment

- Layering and wear of ECWCS/Patagonia issued items
- Overheating and remaining dry
- Cold weather clothing materials and off the shelf considerations
- Care of cold weather clothing materials
- Boots - types and equipment requirements (ski/crampon compatibility)
- Sleep systems
- How to pack a rucksack for the cold

2. Identify and Prevent Cold Weather Injuries

- Chilblain
- Frostbite
- Immersion Syndrome
- Altitude Illness
- Hypothermia
- Snow Blindness

3. Analyze Terrain and Weather

- Arctic vs. Subarctic terrain
- Glaciated terrain
- Tundra, muskeg, and perma frost
- Reading clouds and storm types

4. Risk Management

- Managing subjective vs. objective environmental hazards
- Duration of exposure
- Weather impacts on sustainment (air or ground resupply)
- Implications of denied or semi-permissive environments
- Understanding unit capabilities and operational requirements

5. Planning and Mission Command Considerations

- Cold Weather impacts on war fighting functions
- Sustainment: Winterization and classes of supply

- Proper storage and transport of classes of supply
- Cold weather impacts on vehicles and maintenance requirements
- Cold weather specific sustainment (CL III petroleum, oils, and lubricants), individual/unit cold weather gear (uniforms, tents, heaters, skis, snowshoes, snow chains, tracked vehicles, high consumption of medical supplies)
- Non-standard logistics considerations

B. LEVEL 2 TASKS AND SUB-TASKS

1. Treat Cold Weather Injuries

- Treatment for chilblain, frostbite, immersion syndrome, hypothermia, snow blindness, altitude sickness
- Nutrition, hydration, prevention

2. Snowshoe Techniques

- Wear and maintenance
- Ski pole usage
- Breaking trail, ascending and descending

3. Basic Cross-Country Ski Techniques

- Wear and maintenance
- Types of skis
- Boot and binding options
- Breaking trail, ascending, descending, and turning
- Skijouring
- Skiing with a heavy load
- Movement formations

4. Snowmobile Operations

- Maintenance and operation
- Recovery
- Packing and loading

5. Employing Sleds

- Types of sleds
- Rigging
- Use with Skis, snowshoes, snowmobiles

6. Construct Cold Weather Shelters

- Arctic tents
- 4 season commercial off the shelf (COT) options
- Thermal counter-detection
- Improvised shelters
- Condensation and insulation
- Snow caves

7. Patrol Base Operations in Cold Weather

- Operations from shelters
- Zone security
- Detection and counter-detection

8. Employing Arctic Heaters

- Types of heaters
- Safe operation in various shelter types

9. Route Planning and Selection

- Identifying technical or hazardous terrain
- Detection and counter-detection
- Vehicular and dismounted movement speed and planning factors
- Surface impacts on movement (snow type/ice)
- Temperature effect on dismounted movement

10. Operating Vehicles in Cold Weather

- Operating wheeled vehicles on snow and ice
- Operating tracked vehicles on snow and ice
- Maintenance considerations

11. Weapon Employment and Maintenance

- Impacts on direct fire weapon systems
- Impacts on indirect fire weapon systems
- Impacts on long range shooting
- Lubrication and maintenance
- Munition storage

12. Construct Fighting Positions in Snow Covered Environments

- Utilizing sleds, skis, ski poles to create stable firing positions
- Employing weapons while on skis/snowshoes

13. Snow Camouflage

- Covering tracks/track deception
- Utilizing snow drifts, terrain, plowed roads to conceal movement
- Wear of white over trousers/parkas
- Mix of snow and foliage

14. Extreme Latitude/Cold Weather Impact on Communications

- Aurora borealis impacts on amplitude/frequency modulation
- SATCOM degraded or inoperable at extreme latitudes
- Extreme latitude effect on HF

15. Cold Weather Effects on Batteries and Technology

- Cold weather effects on batteries
- Cold weather effects on screens and devices
- Winterizing equipment and proper storage

C. LEVEL 3 TASKS AND SUB-TASKS

1. Advanced Cross-country and Downhill Ski Techniques

- Skiing with heavy loads in variable conditions
- Use of Alpine-Touring Skis
- Ascending/descending steep terrain with skis
- Long range movements on skis

2. Movement in Avalanche Terrain

- Identifying dangerous or avalanche prone terrain
- Safe route selection
- Understanding snow types/snow pack/snow structure
- Types of avalanches and traps
- Beacons and avalanche rescue

3. Crevasse Rescue

- Route selection in glaciated terrain

- Roped movement techniques
- Rescue techniques (5:1, 3:1 pulley systems, buddy and team rescue)

4. Resupply and Sustainment for Extended Operations

- Non-standard logistics
- Air/ground resupply considerations

5. Considerations when Employing Explosives and Obstacle Construction

- Cold impacts on explosives
- Utilizing natural obstacles to channelize movement
- Icebreaking
- Concealing man-made obstacles

6. Casualty Care and Transport

- Long term treatment and care of cold weather injuries
- Transporting patients
- Air/Ground MEDEVAC considerations

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