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MOUNTAIN WARFARE IN THE CANADIAN ARMY

There is a nice sound to the phrase "mountain warfare." It has a ring of daring; it sounds cleaner than trench warfare and lighter than tank warfare. The only thing that can match it is the war in the air, and that has become too deadly to be nice any more. It has also become too familiar; while war in the mountains is still strange enough to sound romantic. Except, of course, to the men who have to fight it.

- McKay Jenkins, *The Last Ridge*

AIM

1. A decade long involvement in Afghanistan has amply highlighted the requirement for Mountain Warfare (MW) training in the Canadian Army (CA), including a need for specialized training. The Pakistan Army (PakArmy) has been involved in MW in Kashmir for almost 60 years, in high altitude and extreme environments of the Siachin region for over 30 years, and has been conducting Counter Insurgency (COIN) in areas along the Afghan border for well over a decade. A comparison of the training techniques of the Canadian and Pakistan armies can augment collective knowledge while providing significant insight for capacity building and preparing the CA for MW. The aim of this paper is to analyze the MW training in the CA, highlight lessons learned by the PakArmy, and recommend measures to enhance MW capability in the CA.

INTRODUCTION

2. Mountain warfare is a specialized branch of combat with unique characteristics. It requires military leaders and soldiers to train and gain experience to understand the peculiarities of mountainous terrain and its impact on combat. The history of MW bears witness that the forces which avoid preparation and training for this most difficult task of operating and combating in mountainous terrain do so at their own peril. Military history has recorded the fate

of those forces whose commanders failed to prepare for the unusual problems of employing and moving armies through the mountains. Alexander the Great lost 50 percent of his force while crossing the Taurus, Hannibal in the Alps, Napoleon on the Saint Bernard pass, Suvorov on the Saint Gotthard, and Russian forces during the Balkan Wars of 1877. All of these armies suffered heavy casualties due to lack of preparation to fight in the mountains.¹

3. Notwithstanding the examples above, combat in the alpine environment is not a matter of antiquity, rather it is a current reality. The United Kingdom and Argentina fought in the mountainous terrain of South Sandwich and South Georgia Islands during the 1982 Falklands War. Pakistan, China, and India have fought three major wars in the Karakorum and the Himalaya mountain ranges over the control of Kashmir since 1947. Canada also had a recent experience of mountain operations in Korea, the Balkans, and the inhospitable Hindukush Range in Afghanistan.² This paper will identify the requirement of a MW capability for the CA investigating why the CA should invest resources to build this capability. The limitations of the existing training packages would be assessed against the lessons from the PakArmy's combat experience. Finally, few recommendations will be proffered to hone the CA's MW capability. These recommendations are intended to make the CA more efficient in conducting MW during operations in countries like Afghanistan, Iraq or in any other future conflict in support of peace.

¹James Lucas, *Alpine Elite: German Mountain Troops of World War II* (London: Jane's Publishing Company Limited, 1980), 12.

²Pat Stogran, "Fledgling Swans Take Flight: The Third Battalion, Princess Patricia's Canadian Light Infantry in Afghanistan," *The Canadian Army Journal* Volume. 7, no. 3-4 (Fall/Winter 2004), 14. The Canadian Armed Forces conducted operations in Afghanistan for more than 12 years in a number of different roles involving air, land, and sea assets. Their activities included combat, security, development, support, and training operations in varying capacities and regions in Afghanistan.

THE NEED FOR SPECIALIZED TRAINING IN MOUNTAIN WARFARE

Requirement of Mountain Troops

4. Mountains comprise 24 percent of the Earth's landmass. More than half of humanity is dependent on mountains for water as the majority of rivers across the globe are fed from mountain sources. Most of the historical wars had at least some battles fought in the alpine territory. Canada itself has numerous mountain ranges with the Rocky Mountains roughly spanning one quarter of its landmass.³ Despite this, the CA does not have any dedicated mountain force or unit. Considering the size of the CA does it really need one? Should it invest resources and efforts to build a dedicated force for alpine operations? Furthermore, the existing doctrine already has a small portion dedicated to MW and some training is already being conducted. Are all these measures not enough? The best way to answer these questions is to consult history and understand the tasking of the CA. From antiquity to the most recent times, all major armies faced a requirement for soldiers trained in MW. May it be the armies of Western Europe, France, Italy, Austria, Germany, or the US, all arrived at the same conclusion and followed identical patterns of training and equipment procurement.⁴ During World War-I Germany raised an elite force of alpine troops known as the "Gebirgsjager". During World War-II this force was expanded to an entire Corps and accredited numerous victories due to its superior training and skill sets. The US Army raised its 10th Mountain Division during World War-II to deal with combat in difficult hilly terrain. PakArmy also has a Northern Light Infantry Regiment comprising over 20 battalions deployed to defend the Northern Areas of Pakistan. The CA also had a recent experience of mountain operations in Korea, the Balkans, and in Afghanistan. David Bercuson wrote in his book *Blood on the Hills*:

³United States, Department of the Navy, Marine Corps Reference Publication MCWP 3-35.1A *Small Unit Leader's Guide to Mountain Warfare Operations* (Washington D.C.: GPO, 2013), 1-3.

⁴*Ibid.*

Canada's soldiers went to the peninsula [Korea] poorly armed and equipped, inadequately trained for the type of war they were about to fight, unprepared for their encounter with Korea and Koreans, and ready to do battle based on their experiences fighting the *Wehrmacht*. Canada made a political commitment to make a military contribution to a war for which its army was not ready [more than 25,000 Canadians served in Korea in less than 36 months and over 500 soldiers never returned].⁵

5. The CA exists with a purpose to conduct land operations in defence of Canada, operate with the United States (US) for defence of North America, and also remain ready to conduct full spectrum operations abroad with allies.⁶ The CA's recent involvement in the alpine operations in Korea, the Balkans and in Afghanistan has highlighted the importance of preparing its leaders and troops for MW and combat in high altitude. Currently, the CA has limited focus to prepare standing units specially trained or equipped to deploy to a mountainous theatre.⁷ To remain operationally viable and meet its military commitments to North Atlantic Treaty Organization (NATO), the CA needs to develop proficiency in mountain operations. It needs to carve out a niche for itself as an expeditionary force capable of rapid response in MW.

⁵David J. Bercuson, *Blood on the Hills: The Canadian Army in the Korean War* (Toronto: University of Toronto Press, 2002), xiii.

⁶Department of National Defence, *Advancing With Purpose: the Army Strategy (3rd Edition)* National Defence and the Canadian Forces (Ottawa: Commander Canadian Army, 2014), 2-4.

⁷The 3rd Battalion Princess Patricia's Canadian Light Infantry (3PPCLI) has one company trained for mountain operations.

Alpine Training Capability

6. In the absence of dedicated mountain units, the next best option would be the availability of an elaborate MW training capability. In order to attain rapid re-posture from the combat deployments in the plains or the deserts to focus on the operational preparedness for MW, a dedicated training infrastructure is required. Currently, the troops earmarked for deployment in Afghanistan mostly train at unit level based on personal or their unit's past experience in Afghanistan. To develop a true capability, the units must train as they will fight. The lack of a collective training package raises a further question: to what extent has the CA formalized its doctrine and prepared a capability to participate in mountain operations?

7. Despite its prolonged involvement in Afghanistan, the CA has a relatively limited focus on formal mountain training. The existing training package comprises three courses. The Basic Mountain Operations Course, that can be run on a decentralized basis,⁸ the Advance Mountain Operations Course,⁹ and the Complex Terrain Instructor Course run at the 'Canadian Army Advanced Warfare Centre' (CAAWC) in Trenton.¹⁰ These courses impart basic mountaineering skills at the individual level. Through these courses the soldiers learn individual skills but the individuals alone do not provide the Army with a capability. These courses do not focus on collective or combined arms training. With a harsh winter and vast arctic territory in Canada, it is

⁸John W. MacDonald, "Ain't No Mountain High Enough: A Canadian Mountain Warfare Capability?" (Joint Command and Staff Program Course Paper, Canadian Forces College, 2015), 22. The course prepares individuals to move through mountainous terrain. It creates a pool of qualified personnel to draw from for subsequent more technically demanding courses.

⁹Canadian Environmental Assessment Agency, "Archived – Canadian Forces Advanced Mountain Operations (AMO) Course Session 11," last accessed 3 February 2018, <http://www.ceaa.gc.ca/052/details-eng.cfm?pid=61349>. Training activities at the Advance Mountain Operations Course include hiking, climbing, scrambling, rappelling, mountaineering, and rescue scenarios on natural terrain obstacles such as cliffs, rivers, glaciers and high alpine areas.

¹⁰The CAAWC is the former Canadian Forces Land Advanced Warfare Centre. It also remained as the Canadian Parachute Centre.

surprising that none of these courses are run in the winters. Furthermore, these courses are not linked to the training of units earmarked for deployment in mountainous terrain. The capabilities that these courses really provide to the CA must be assessed to capitalize upon their viability.

8. The adage “shoot, move and communicate” is extremely significant for mountain operations. The CA’s current individual training system focuses only on ‘movement’.¹¹ The marksmanship for alpine country is significantly different from what the soldiers are used to on conventional ranges. Attaining high standards of marksmanship for alpine operations by practicing in starkly different terrain conditions available at Trenton might be a long shot. Lester Grau, a research coordinator at Fort Leavenworth, Kansas wrote:

First off, it is much harder to determine range in the mountains, second, if you shoot uphill or downhill using flat-land marksmanship techniques, you will shoot over the target every time. Third, the wind, the temperature and the humidity is different in the mountains – and all play havoc with normal flat-land ballistics.¹²

9. A fundamental pre-requisite of MW training is the physical fitness and muscle development for the mountainous terrain. Activities as mundane as running and marching become significantly more challenging at medium to high altitudes.¹³ It is therefore, imperative to impart training for long-distance climbing and marching in suitable hilly training areas to

¹¹The existing courses teach soldiers the use of ropes and the basic techniques of moving through a mountainous terrain.

¹²Lester W. Grau, “Small Arms Fire,” *Mountain Warfare and other Lofty Problems: Foreign Perspectives on High-Altitude Combat*, (Foreign Military Studies Office: Fort Leavenworth, KS, 2011), 1.

¹³United States, MCWP 3-35.1 *Mountain Warfare Operations* . . . , 1-5. Low mountains have an elevation of 305 to 914 meters (1,000 to 3,000 feet) with summits usually below the timberline. High mountains usually exceed 914 meters (3,000 feet) and are characterised by barren alpine zones above the timberline.

effectively operate in the unforgiving, complex and compartmentalized mountainous terrain.¹⁴ The location of CAAWC in Trenton is not ideal to impart training for alpine operations. Most armies from countries with mountainous terrain have well-established training institutions in appropriate areas.¹⁵ PakArmy has a High-Altitude School in Rattu located at the confluence of the Himalayas, Hindukush, and the Karakoram ranges in Northern Kashmir.¹⁶ Furthermore, PakArmy's Junior Leaders Academy at Shinkiari, Infantry School, and Staff College at Quetta are located in mountains and run different leadership and operational planning courses to train its officers and troops for MW. Thus the CA's mountain training conducted away from mountains might not yield the best results.

Challenges of Mountain Operations

10. Mountain operations are often decentralized and mostly take place at the squad or platoon levels where the quality of junior leaders (JLs) is decisive. In mountains, small bands of soldiers with mountaineering expertise could tie up large enemy formations and grind them down in a grueling war. This is particularly true in COIN operations. Furthermore, the mountain climate severely affects the weapons, equipment and health of troops.¹⁷ Extra precautions and qualified JLs are required to avoid these adverse effects.¹⁸ Offensive operations in MW are also much

¹⁴The level of required training increases with the relative increase in height of the mountains. For altitudes below 13,000 feet, an understanding of navigation, route selection, climbing techniques, the use of ropes, and general procedures to operate in snow clad mountains might suffice. At higher altitudes, soldiers must be acquainted with more complex techniques on similar lines of mountain expeditions.

¹⁵Muhammad Asim Malik, "Mountain Warfare - The Need for Specialized Training" *Military Review* 84, no. 5 (2004): 100. The US Army's MW training school is located in Vermont (altitude – 560 feet) while the US Marine Corps has a MW school in California (altitude – 9000 feet).

¹⁶The institution conducts different training courses round the year including mountain climbing on peaks ranging from 15,000 to 20,000 feet.

Muhammad Asim, "Mountain Warfare . . .", 94. In the early 1940s during its initial training at Colorado, the US 10th Mountain Division suffered more casualties from weather than from its actual mountain combat in Italy.

¹⁸Batteries in communication equipment, Night Vision Devices (NVDs), and certain weapons do not perform optimally due to cold and complicated mechanisms such as those in the surface-to-air missiles often malfunction.

more costly and challenging. The soldiers have to combat not only the enemy but must also brave the harsh elements of the terrain. The best way to overcome these challenges is the effective training of JLS. The CA amply focuses on leadership training; however, it does not have a package specifically designed for the alpine operations.

11. The CAAWC imparts elementary mountaineering skills; it does not prepare combat leaders for MW. In the PakArmy, JLS are trained at the Junior Leaders Academy, the young officers undergo Basic and Advanced Infantry Courses, and Mid-Career Course at the Infantry School that includes physical training in mountains, Tactical Exercises without Troops (TEWTs), and exercises covering basic operational planning and logistics for MW. The Command and Staff College at Quetta trains operational staff through a dedicated MW package spanning operational and logistics planning for both the conventional and COIN scenarios. The PakArmy also imparts a pre-environmental training and a basic mobility phase for battalions earmarked for deployment at high altitudes. For battalions participating in COIN operations in mountains, 'Pre Induction Training' is imparted at specifically designed training areas before transitioning into the field. The US Marine Corps Mountain Warfare Training Centre also imparts MW training from counterinsurgency to near-peer conventional warfare.¹⁹ The CA should also consider an advanced training institution to prepare its leadership for MW along with a fully integrated and broad spectrum unit training program.

12. A significant feature of the CA's operations in Afghanistan was the over reliance on air for logistics, fire support, casualty evacuation, insertion, and extraction of forces. In Afghanistan the Soviet forces also relied greatly on air force and gunship helicopters for fire support, logistic

¹⁹Bryan Guiney, "The Mountain Warfare Dilemma." *Marine Corps Gazette* 98, no. 3 (2014): 22.

maintenance, and airlifting troops into combat until the Mujahideen got hold of Stinger missiles. Although the NATO forces enjoy complete air superiority in Afghanistan and superior aviation and air assets have neutralized numerous inherent issues of MW, but they have not eliminated the requirement for a specialized training that supports a 'boots on the ground' capability. Decentralised combat in mountains requires sophisticated collective training, tight control of attack helicopters and aircraft to effectively manage supporting fire and avoid fratricide. The lift capability of helicopters is severely limited at high altitudes and their employment is also affected in adverse weather conditions. A mixture of resources is therefore necessary to ensure flexibility and reliability.²⁰

13. Defensive and offensive operations in mountains become a difficult proposition without appropriate fire support. The employment of artillery is significantly impacted by the terrain and weather conditions in mountains. The targets are mostly located on the hill tops, reverse slopes, and in ravines. Weather conditions are also unpredictable and the undulating terrain with numerous intervening crests require a large number of observers suitably positioned on dominating features to conduct effective fire support. Selection of gun positions is also difficult due to limited deployment areas and numerous intervening features masking the fire. Currently, due to a lack of appropriate mountain training institution with the CA, the training of gun crew and observers for operations in mountains is conducted in relatively flat terrain and requires reconsideration.²¹

²⁰Muhammad Asim, "Mountain Warfare . . .", 22. Canadian small-unit support vehicles, specially designed for restrictive terrain were particularly useful for logistic support at high altitudes in Afghanistan, whereas the bulky ground-held laser designating system was not. Soldiers' personal loads of more than 50 pounds were too heavy at high altitudes.

²¹PakArmy has artillery regiments deployed in Kashmir and Siachin that continuously train and even conduct live fire in combat. These are rotated on both Eastern and Western borders for ensuring effective fire support to the troops in combat.

14. The sustainment of forces in mountains is relatively difficult as compared to the other types of terrain. The road infrastructure in mountains is usually a logistician's nightmare and requires experienced staff and meticulous planning.²² The PakArmy focuses on preparing its operational staff for efficient planning of logistic support in mountains. This is achieved through different courses run at the Army School of Logistics and other training institutions. CA must also include such training to enable its logisticians to plan effectively for MW.

15. Finally, the CA's Doctrine for Mountain Operations was written in 1976 and needs revision.²³ It provides rudimentary knowledge and does not cover various important concepts of the alpine operations as already highlighted. It does not address the requirement of individual skills such as shoot, move, and communicate, leadership training for the junior and senior leadership, operational staff training, joint and combined training, and the decentralized small action teams.

CONCLUSION

16. A decade long involvement in the global war on terror and its inherent COIN missions has confronted the CA with certain hard choices. It has to ascertain which mission requirements should be retained, built into the CA, or eliminated. To ensure a force readiness level allowing a relevant and employable force capable of operating in varying terrain, the CA needs to focus upon its MW capability. The Strong, Secure, Engaged policy requires the CA to remain ready for

²²In MW the logisticians always try to ensure provision of logistic support as far forward and closer to the work area as possible. This is done to reduce the expenditure of energy for the forces deployed on ground.

²³Department of National Defence, B-OG-302-005/FP-001, *Mountain Operations Tactics* (Ottawa: DND Canada, 1978).

any future domestic, expeditionary, or training missions with NATO allies.²⁴ The existing involvement of NATO in Afghanistan, and the focus of the US Army on alpine training suggest that the CA may find itself involved in alpine operations in the future as well. The current MW capability of the CA and its training capacity has been highlighted in the paper. A critical analysis of the CA's MW capability and training capacity has demonstrated some glaring gaps. The requirement of some dedicated mountain troops and a need to revamp the existing training methodology and infrastructure was identified. The requirement of combined arms training, and focus on training of JLs and staff officers was highlighted. Finally the need for revision of the existing doctrine on mountain operations was elaborated.

RECOMMENDATIONS

17. Based on the identified challenges, the following recommendations are suggested to address the gaps in the CA's MW capability:
 - a. A dedicated mountain training institution is recommended to be established in the alpine territory of Rocky mountains.
 - b. Mountain training courses should be run in both summer and winter seasons.
 - c. To enhance collective knowledge and capabilities, mountain training facilities available with allied countries should be fully utilized through exchange programs.

²⁴Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy* (Ottawa: DND Canada, 2017).

- d. Professional courses run at various training institutions for officers and soldiers should be embedded with a dedicated MW training package for conventional and COIN scenarios. The package should also include training of commanders and staff officers in operational planning and logistics.
- e. A fully integrated and broad spectrum unit training programme should be chalked out for imparting pre-deployment training to the units earmarked for any mountain operations, especially for the COIN operations.
- f. Weapons training to attain proficiency in individual marksmanship, artillery crew training, and observers should be conducted in mountainous terrain.
- g. The existing MW doctrine should be revised.

18. The adoption of these recommendations will help the CA develop a niche capability for MW and may go a long way to develop a specialized MW capability. The CA has already embarked upon an impressive transformation campaign to address the challenges of the modern battlefield. Expert alpine troops available for deployment on a short notice should be a part of this transformation.

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