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An “Entirely Different Ballgame”

THE MARINE CORPS AND NATO EXERCISES IN ARCTIC NORWAY, 1978–86

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Abstract: The U.S. Marine Corps consistently delivered substandard performance during training exercises in the Arctic in the late 1970s to mid-1980s. An examination of archival records, journal articles, student papers, and interviews with participants provides two explanations for the long period in which Marines were regarded as “rather poor winter warriors.” First, to overcome the challenges of Arctic operations, the Marine Corps had to make sustained, often slow, improvement in the three-step process of learning to survive, move, and fight in the Arctic. Second, the Corps’ culture simultaneously hamstrung and accelerated improvement in this Arctic trinity. Ultimately, the Corps’ slow road to success in the Arctic highlights the dependence of strategic change on proficiency at the lowest tactical levels.

Keywords: Arctic, Norway, arctic exercises, North Atlantic Treaty Organization, NATO, Cold War, military innovation

In March 1978, a group of frustrated U.S. Marines met in Camp Lejeune, North Carolina, to debrief their recent participation in Arctic Express 78, a North Atlantic Treaty Organization (NATO) exercise in Arctic Norway. The officer in charge of the exercise force, company commander Captain Bruce A. Gombar, began his comments by detailing the stark deficiencies in training and equipment his Marines faced during their deployment. He claimed that “the equipment the Marine Corps now uses for cold weather is based on stuff we used in Korea. It is antiquated. It is too bulky. It is too heavy.” Though the Korean winter had tested the Corps’ mettle during the famous 1950 retreat from the Chosin Reservoir, such conditions were dwarfed by the much harsher climatic and geographic challenges of the Arctic. Gombar also criti-

cized as insufficient the few weeks of training afforded his Marines, stating, “There has got to be an extensive period of indoctrination before going over there. There should be a long period, at least two months, before a unit goes on an exercise in the Arctic.”¹ The Marine Corps, he argued, was insufficiently acknowledging the unique challenges of Arctic operations.

Even more emphatic were the concerns of Gombar’s company gunnery sergeant, R. F. Singer. Singer spoke at length and with great emotion, asserting that “if we went to war tomorrow, we would arrive with troops that would be seeing snow for the first time in their lives and one thing that I think we have to drop right now, is the idea that we did it in Korea, we can do it in Norway. . . . In Norway we are talking about Arctic warfare, not cold weather warfare, we are talking about Arctic warfare and it is an entirely different ballgame.” Singer questioned the wisdom of a rapid

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¹ Maj John J. Clancy III et al., Arctic Express 78 After Action Review, audio recording, 14 May 1978, Oral History Program (hereafter OHP), Archives, Marine Corps History Division, Quantico, VA (hereafter MCHD), tape 1, 4:50, 13:30.

deployment to Norway, challenging his interviewers to imagine “the shock, when this kid from Florida, [or] Puerto Rico, who has never seen snow in his life, steps off of a C-130 and they [officers] say [to him]: ‘the enemy is that way.’” Finishing with the dire prediction that “in time of war we are going to be in a heap of trouble if we fly a BLT [Battalion Landing Team] over there,” Singer claimed that a vast and icy chasm separated strategic aspirations from tactical reality.² It was one thing to sing of combat in the “snow of far-off northern lands.”³ It was quite another to actually fight there.

The next seven years confirmed the accuracy of Gombard and Singer’s negative assessments of Marine Corps capabilities. In 1979, normally reserved Norwegians even commented on the questionable state of the Corps’ cold-weather capability, telling a *New York Times* reporter, “If you [the Marine Corps] want to do the job up here, do it well. Otherwise, drop it.”⁴ An official Marine Corps report written in 1983 admitted “embarrassment” at the Service’s inadequacy in the cold, particularly in comparison to other NATO troops.⁵ As one officer sheepishly admitted in 1985, “Previous performance during winter exercises in North Norway . . . have been of a lower standard than we as Marines like to accept.”⁶ Despite a mountain of opinions and publications, the Corps seemed unable to meet the challenge of the Arctic.

This substandard performance is puzzling as, in the later 1970s and early 1980s, the Marine Corps had strong external and internal incentives to excel on the Northern Flank. With assigned tasks in war plans, political pressure to prove its value to NATO, and desires for budgetary security and institutional relevance, the Corps had many reasons to excel in these highly pub-

licized exercises.⁷ Further, the Corps’ cherished self-image as a global force ready for “every clime and place” should have encouraged more intentional preparation for the Northern Flank.⁸ Despite such political and cultural motivations, however, for almost a decade the Marine Corps’ record in Norway was one of meager improvement and inconsistent proficiency. Not until 1985 did the Service begin a run of successful exercises, suddenly emerging as a “credible force in the cold weather environment of Norway.”⁹

An examination of archival records, journal articles, student papers, and interviews with participants provides two explanations for the long period in which Marines were regarded as “rather poor winter warriors.”¹⁰ First, to overcome the challenges of Arctic operations, the Marine Corps had to make sustained, often slow, improvement in what contemporaries commonly referred to as the three-step process of learning to “survive, move, and fight” in the Arctic.¹¹ No force could effectively fight the Soviet threat without first learning to *survive* and *move* in Arctic weather and terrain. This demanded appreciation of and deliberate preparation for the unique environment of northern Norway. Second, features of the Corps’ culture (not aberrant bugs) simultaneously hamstrung and accelerated improvement in the Arctic trinity.¹² Experienced and innovative leaders, appropriate resources, and realistic training would prove necessary to overcome lackadaisical “Marine macho” and closely related over-generalized readiness for every climate.¹³ Ultimately, the Corps’ slow road to success in the Arc-

² Clancy et al., Arctic Express 78 After Action Review, tape 1, 7-10.

³ Quotation from the “Marine’s Hymn.” For lyrics, see Col Robert Debs Heintz Jr., *Soldiers of the Sea: The United States Marine Corps, 1775–1962*, 2d ed. (Baltimore, MD: Nautical and Aviation Publishing Company of America, 1991), front matter.

⁴ John Vinocur, “U.S. Marines Struggle to Cope with Norway’s Arctic,” *New York Times*, 26 May 1979.

⁵ LtCol M. G. Coe, “Cold Winter 83, Norwegian Army OJT, After Action Report,” 1983, Exercises, box 166, folder 6, Archives, MCHD, 2.

⁶ Maj M. E. Clough, “Cold Winter ’85: ‘Good to Go’ Arctic Warriors,” *Marine Corps Gazette* 69, no. 9 (September 1985): 65.

⁷ Allan R. Millett, *Semper Fidelis: The History of the United States Marine Corps*, 2d ed. (New York: Free Press, 1991), 608.

⁸ “Every clime and place” is a line from the “Marine’s Hymn.” See Heintz, *Soldiers of the Sea*, front matter.

⁹ Maj Jerry L. Durrant, “In Every Clime and Place: USMC Cold Weather Doctrine” (student paper, U.S. Army School of Advanced Military Studies, 1991), 14.

¹⁰ Capt Arne O. Hagtvedt, “Letters: Traveling Light on Skis,” *Marine Corps Gazette* 69, no. 9 (September 1985): 67.

¹¹ Office of Naval Research, “Conference on Cold Weather Operations, 1982,” 1982, Studies and Reports, box 209, folder 6, Archives, MCHD, 3–10; and BGen Richard F. Vercauteren, interview with author, 22 September 2021.

¹² The author is indebted to Professor Katherine Unterman for suggesting this metaphor.

¹³ Volunteer Training Unit 12-50, USMCR, Anchorage, Alaska, “Arctic and Cold Weather Warfare,” 1977, Studies and Reports, box 208, folder 16, Archives, MCHD, 17.

tic highlights the dependence of strategic change on proficiency at the lowest tactical levels.

Though Marines had participated in earlier exercises in Norway, the importance of these events grew in the mid-1970s as an alignment of interests drew together the Corps and the Norwegian military. The need to defend Norway had been a part of NATO war planning since 1957.¹⁴ Part of NATO's vulnerable Northern Flank, Norway's strategic significance lay in its position relative to the maritime choke points known as the Greenland–Iceland–United Kingdom (GIUK) Gap. Though the GIUK Gap was not decisive terrain equal to NATO's Central Front in Germany, in wartime its possession was essential. The flow of reinforcements to Western Europe relied on control of the GIUK. Similarly, naval offensives against the Soviet Navy's Northern Fleet would first have to transit the gap.¹⁵ As one contemporary defense intellectual explained, "World War Three may not be won on the Northern Flank, but it could definitely be lost there."¹⁶

In 1965, however, NATO planners pronounced Norway's airfields and coastline indefensible against the growing Soviet forces located in Murmansk, the northwesternmost region of Russia.¹⁷ By 1977, a force of 400 combat aircraft and 7 Soviet divisions, including motorized rifle divisions, an airborne division, and a naval infantry brigade, stood poised to form the Soviet Northwestern TVD (theater command). Though all ground units but the airborne and naval

infantry brigade were maintained at Class B levels of personnel, they possessed special equipment for arctic warfare and robust infrastructure for rapid reinforcement to wartime strength and had rehearsed potential missions in major exercises in 1968, 1970, and 1975.¹⁸ Intelligence estimates—confirmed post-Cold War by retired Soviet generals—assessed that Soviet war plans included the seizure of coastal Norway, likely through an amphibious and airborne *coup de main* combined with a multidivision invasion into Finnmark, the nation's northernmost region.¹⁹ NATO needed a solution for its Norway problem, specifically a well-trained force capable of rapid deployment.

Throughout the late 1960s and 1970s, the Norwegian populace grew increasingly alarmed by the build-up of Soviet strength on Murmansk's Kola Peninsula.²⁰ In June 1968, as NATO weighed its response in case of violent repression of the Prague Spring, the Soviet

¹⁴ Anthony Cave Brown, ed., *Dropshot: The United States Plan for War with the Soviet Union in 1957* (New York: Dial Press/James Wade, 1978), 80, 96, 150, 180.

¹⁵ Mats R. Berdal, *The United States, Norway, and the Cold War, 1954–60* (New York: St. Martin's Press, 1997), 48, 174–75; and David B. Crist, "A New Cold War: U.S. Marines in Norway and the Search for a New Mission in NATO," in *New Interpretations in Naval History: Selected Papers from the Fourteenth Naval History Symposium Held at Annapolis, Maryland, 23–25 September 1999*, ed. Randy Carol Balano and Craig L. Symonds (Annapolis, MD: Naval Institute Press, 2001), 344–45.

¹⁶ Robert Weinland, "War and Peace in the North: Some Political Implications of the Changing Military Situation in Northern Europe" (Conference on the Nordic Balance in Perspective: The Changing Military and Political Situation, Center for Strategic and International Studies, Georgetown University, Washington, DC, 1978), as quoted in Marian K. Leighton, *The Soviet Threat to NATO's Northern Flank* (New York: National Strategy Information Center, 1979), 94.

¹⁷ NATO North Atlantic Military Committee, Standing Group, "Memorandum for the Military Committee, Contingency Study, Northern Norway," 14 October 1965, DSGM—Standing Group, NATO Archives Online, 3.

¹⁸ Class B personnel are those deemed essential to local foundational operations. Capt G. R. Villar RN, "Amphibious Warfare Forces in Europe and the Soviet Union," U.S. Naval Institute *Proceedings* 103, no. 11 (November 1977): 112–13, 115–17; Rolf Tamnes, *The United States and the Cold War in the High North* (Brookfield, VT: Dartmouth Publishing, 1991), 234–35; Robert G. Weinland, "The Soviet Naval Buildup in the High North: A Reassessment," in *The Military Buildup in the High North: American and Nordic Perspectives* (Lanham, MD: University Press of America, 1986), 30–41; Henry Van Loon, "The Kola Fortress-I," in *NATO's Defence of the North*, ed. Eric Grove (London: Brassey's, 1989), 49–57; and MajGen Sir Jeremy Moore RM, "Land-Air Operations in the North," in *Britain and NATO's Northern Flank* (New York: St. Martin's, 1988), 133–39.

¹⁹ RAdm Edward Wegener, FRGN, *The Soviet Naval Offensive: An Examination of the Strategic Role of Soviet Naval Forces in the East-West Conflict*, trans. Henning Wegener (Annapolis, MD: Naval Institute Press, 1975), 28–32; VAdm Rolf Steinhaus, FRGN, "The Northern Flank," in *Problems of Soviet Sea Power as We Approach the Twenty-First Century*, ed. James L. George (Washington, DC: American Enterprise for Public Policy Research, 1977), 137–57; Director of Central Intelligence, "National Intelligence Estimate 11-15-82: Soviet Naval Strategy and Programs through the 1990s," March 1983, 19, 50; Kjell Inge Bjerga, "Politico-Military Assessments on the Northern Flank 1975–1990," Conference Report (Bodø, Norway: Parallel History Project, 20 August 2007), 2–3; Phillip A. Petersen, *The Northwestern TVD in Soviet Operational-Strategic Planning* (Washington, DC: Office of Secretary of Defense, Office of Net Assessment, 2014), 1–2, 15–20; and Petteri Jouko, "Fragile Border?: Role of the Border Guard in the Finnish Defence Planning during the Early Cold War" (Conference Paper, 47th Congress of the International Commission of Military History, Wrocław, Poland, 2 September 2022).

²⁰ John Lund, *Don't Rock the Boat: Reinforcing Norway in Crisis and War* (Santa Monica, CA: Rand, 1989), 19; Tamnes, *The United States and the Cold War in the High North*, 252–71, 278–94; Rolf Tamnes, *Norsk Utenrikspolitikk Historie*, vol. 6, 1965–1995 (Oslo, Norway: Norwegian University Press, 1997), 61–146; Crist, "A New Cold War," 345–48; and Orlo K. Steele and Michael I. Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001* (Washington, DC: History Division, Headquarters Marine Corps, 2011), 97–98.

Union executed a highly threatening demonstration of its new strength in the High North. Between 7 and 12 June, 50,000 Soviet troops suddenly appeared within 2 kilometers of the mere 450 Norwegian troops manning the Norwegian-Soviet border near Kirkenes. Soviet authorities refused to explain why this snap exercise had occurred or why hundreds of tank and artillery cannons pointed directly at Norwegian defensive positions. Shaken by this clear warning to NATO, the Norwegian government asked their press to “kill the story” to prevent panic.²¹ As a result of this and other acts of intimidation, by 1975, Norway had expanded its defense expenditures, achieving the highest growth rate in the alliance.²² Citizens of a small state, torn between “fear of abandonment” and “fear of being drawn into the competition of extraneous powers,” Norwegians increasingly surrendered to the former, reversing their longstanding reticence toward NATO and favorably viewing its role in their defense.²³

Meanwhile, the Marine Corps acceded to pressure from the Gerald R. Ford and James E. “Jimmy” Carter administrations to take more seriously its assigned mission as NATO’s reserve, a responsibility the Service had long honored in the breach. As the Corps studied a potential European conflict, however, it feared that on NATO’s Central Front its Marine Air-Ground Task Forces (MAGTFs) would lose unit integrity, with its aircraft commandeered by the Air Force and ground units employed piecemeal under the Army.²⁴ Service studies questioned whether the Corps even possessed sufficient tanks and antitank weapons to credibly face a Soviet motorized rifle or tank division attacking over the open terrain common

to northern or central Germany.²⁵ As a result of such concerns, throughout the 1970s many Marines claimed NATO was the wrong fit for the Corps.²⁶

In contrast to NATO’s Central Front, a Norway contingency mission offered a means of demonstrating value to NATO in a manner that suited Marine Corps capabilities and preferences.²⁷ Flying over Arctic Norway in 1978, the commander of Fleet Marine Forces Atlantic (FMFLANT), Lieutenant General Robert H. Barrow, saw an environment where a lighter force had a chance against Soviet formations. Coastal Norway’s narrow roads and constricting defiles could limit the forces a Soviet motorized rifle division could bring to bear, all while stringing out its logistics train and exposing its flanks to attack from land and sea.²⁸ Most importantly, in Arctic Norway, the Corps could avoid the Army and Air Force’s *idée fixe* of Central Germany’s Fulda Gap, allowing it to fight independently according to its own doctrine.²⁹ In Norway, MAGTFs might have a chance of fighting and winning.

Policymakers formalized this marriage between a nation seeking military aid and a Service in quest of a realistic yet politically valuable mission. Beginning in December 1976, a bilateral study group comprising U.S. and Norwegian military officers, defense officials, and diplomats detailed potential points of cooperation between the two nations.³⁰ In 1978, these

²¹ Kirsten Amundsen, *Norway, NATO, and the Forgotten Soviet Challenge* (Berkeley, CA: Institute of International Studies, 1981), 36–37.

²² “Probing NATO’s Northern Flank,” *Time*, 27 June 1977, 26; and Col Joseph H. Alexander, “The Role of the Marine Corps in the Defense of North Norway,” U.S. Naval Institute *Proceedings* 110, no. 5 (1984): 184.

²³ Johan Jørgen Holst, *Norwegian Security Policy for the 1980’s* (Oslo, Norway: Norwegian Institute of International Affairs, 1982), 16, CNA Library; and Johan Jørgen Holst, “Norwegian Security Policy: The Strategic Dimension,” in *Deterrence and Defense in the North*, ed. Johan Jørgen Holst, Kenneth Hunt, and Anders C. Sjaastad (Oslo, Norway: Norwegian University Press, 1985), 100.

²⁴ Col R. H. Thompson, “II MAF NATO Employment Conference Report,” 18 May 1978, Studies and Reports, box 260, folder 1, Archives, MCHD, 2, 6, 9, and encl. 3, 1–7; and Col John Jack William Hilgers, interview with author, 11 February 2022.

²⁵ LtCol M. T. Cooper and Maj B. L. McClain, “Marine Corps Tank and Antitank Capability Improvement Measures Staff Study,” April 1975, Studies and Reports, box 227, folder 4–6, Archives, MCHD, iv, 8, 10–11, 18, 32, C-1–C-6.

²⁶ Maj Perry W. Miles, “Finding Better Use of the USMC than Commitment to NATO,” *Marine Corps Gazette* 61, no. 12 (December 1977): 31–34; Col Ernest R. Brydon, “No Tanks in Europe,” *Marine Corps Gazette* 60, no. 11 (November 1976): 13; and Capt Mark F. Cancian, “NATO Obsession to the Corps,” *Marine Corps Gazette* 63, no. 6 (June 1979): 24.

²⁷ Crist, “A New Cold War,” 350–51.

²⁸ Gen Robert H. Barrow, interview with BGen Edwin H. Simmons, 13 December 1989, transcript (Oral History Section, MCHD), 405.

²⁹ Gen George B. Crist, interview with Benis M. Frank, 10 January 1989, transcript (Oral History Section, MCHD), 185–91. For more on the U.S. Army’s central front fixation, see John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973–1982* (Fort Monroe, VA: U.S. Army Training and Doctrine Command Historical Office, 1984), 82–86; Paul Herbert, *Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5* (Fort Leavenworth, KS: U.S. Army Combat Studies Institute, 1988), 25–36; and Frederick W. Kagan, *Finding the Target: The Transformation of American Military Policy* (New York: Encounter Books, 2006), 19, 67.

³⁰ Tamnes, *Norsk Utenrikspolitikks*, 61–90.

efforts culminated in an order from Secretary of Defense Harold Brown directing the Marine Corps to commence planning for the “rapid reinforcement of Norway with an airlifted, brigade-sized force.”³¹ The Marine Corps had been officially designated as the U.S. contribution to the defense of Arctic Norway.

As the seven ensuing years would demonstrate, however, the Corps had to first come to terms with the environmental challenges unique to its new mission. The Northern Flank offered both promise and peril. The long Norwegian coastline, cut with deep cliff-lined fjords, ice-free due to the warm waters of the Gulf Stream, suggested a littoral perfect for military landings. The reality, however, was that adequate beaches were few and ringed by towering snow-covered mountains, rising sharply from the sea. The climate inland was harsh, with temperatures as low as -45 degrees Fahrenheit, winds more than 40 knots for more than 10 percent of the year, snow depths of 2–3 feet for 200 days a year, and snowbanks higher than 10 feet. Below the rocky, barren peaks, roads were few and often poorly kept. For most of the year, the best mobility was off-road where a deep blanket of frozen snow allowed movement on skis or specially designed tracked vehicles. As a result, Norwegian defense proved most vulnerable to Soviet attack in the depth of winter when the temperatures were coldest and the snow at its deepest and hardest-packed. These harsh months were also those for which Marines were least prepared.³²

Military units in the Arctic had to first respect the cold. As a study written by Marine reservists stationed in Alaska opined in 1977: “No other climate in the world is so unforgiving and merciless to the unprepared, the untrained, and the under-equipped. . . .

In many respects, as an ‘enemy,’ it can be far deadlier to one’s troops than any opposing forces one is likely to encounter.”³³ Hypothermia, frostbite, trench foot, chilblains (skin lesions), snow blindness, dehydration, and death from exposure stalked military columns in the High North.³⁴ Cold weather and combat injuries could occur far from roads, presenting a logistical nightmare for treatment. At a 1982 bilateral cold weather conference, one physician used history to describe the effects of cold weather, saying, “Napoleon started with 385,000 and had 250,000 cold weather injuries and/or dead. The Germans, in just two months, November and December 1941 and into 1942 had 100,000 cold weather injuries requiring 15,000 amputations. Close your eyes and imagine that load on your medical evacuation system.”³⁵ Worse still, troops had to confront the winter climate, cold-weather injuries, and the enemy during extended periods of darkness, as the polar sun often lay below the horizon. As one officer later described this environment, “In the Arctic it is about surviving, moving and fighting. In that order. If you try to fight, move, and survive you are going to die.”³⁶

Company-size forces sent to Norwegian winter exercises in 1978 and 1979, however, seemed to disregard the realities of this hellishly cold and dark environment. Equipped with Korean War-era cold-weather clothing and World War II surplus wooden skis and snowshoes and lacking a dedicated cold-weather training facility in the United States, Marines predictably performed poorly.³⁷ A nonchalant approach to predeployment training principally caused this lack of proficiency. For example, during Arctic Express 78, 40 percent of the Marines who conducted preparatory training never deployed due to transfer, court-martial, injury, or other causes. As a result,

³¹ Alexander, “The Role of the Marine Corps in the Defense of North Norway,” 186; Tamnes, *The United States and the Cold War in the High North*, 247; and Crist, “A New Cold War,” 357–59.

³² The description of the effects of Norwegian geography and climate on military operations are taken from Maj John Victor Rowland, RM, “The Land Battle for North Norway in the 1980s: A Perspective of Russia’s Strategy and Tactics for the Arctic Theater” (research paper, Marine Corps Command and Staff College, 1979). Rowland was a British Royal Marines officer with experience operating in Norway. Several of the officers interviewed by the author referenced Rowland’s work and expressed that it was well-known in the Marine Corps during this time.

³³ Volunteer Training Unit 12-50, USMCR, Anchorage, Alaska, “Arctic Mobility Study, 1977,” 1977, Studies and Reports, box 208, folder 11, Archives, MCHD, 2.

³⁴ “Conference on Cold Weather Operations, 1982,” 3-58–3-91.

³⁵ Office of Naval Research, “Norwegian–United States Cold Weather Conference: Final Report,” 1987, Studies and Reports, box 265, folder 6, Archives, MCHD, 3–97.

³⁶ Vercauteren interview.

³⁷ Millett, *Semper Fidelis*, 609; and Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 98.

two weeks before flying to northern Norway, 33 new Marines, all untrained for Arctic warfare, joined the exercise force. Liabilities in extreme cold weather, these Marines dragged down the tempo and lethality of their own unit and the better-trained and better-equipped NATO allies.³⁸ The following year, a similarly poorly trained group of Marines deployed for Cold Winter 79. In an embarrassing incident, Norwegian soldiers rescued a group of hypothermic Marines from a mountaintop. Meanwhile, prominent newspapers circulated rumors that the Marine Corps' exercise force was concealing a high number of cold-weather casualties. Assessing this dangerous incompetence, one Norwegian officer commented that the issue was not a lack of "strength or will"; individual Marines had proven sufficiently tough. Rather, the problem was a prioritization of toughness over adequate training, resulting in an "overwhelming" number of "elemental mistakes."³⁹

This prioritization reflected what Alaskan Marine reservists had maligned as dangerous overreliance on the Corps' ethos of toughness. In a grassroots cold-weather manual written in 1977, they predicted the poor outcome of the 1978 and 1979 exercises, stating that in the Arctic "there is no room for showoff antics to impress other services with the Marine 'macho', or ability to tough it out."⁴⁰ Three years later, these same Reserve officers wrote a second manual, claiming that the Marine Corps had not heeded their earlier warnings. Inexperienced leaders and negligent planners, they argued, relied too heavily on the allegedly innate toughness of Marines and not enough on methodical preparations. Basing their claims on personal observations of recent exercises and conversations with NATO allies, the officers expressed fears that the Corps was "not really facing up to the challenges and realities" of the Arctic.⁴¹

Precedent existed for the default emphasis on machismo feared by the Alaskan reservists. For ex-

ample, following a February 1964 winter exercise at the Mountain Warfare Training Center (MWTC) in Bridgeport, California, a regimental commander, Colonel Angus M. Fraser, recommended that future units not use tents in the subzero alpine environment. Tents, Fraser stated, interfered with the rapid acclimatization of Marines to the weather. More critically, they did not imbue in Marines the mental toughness needed to endure extreme cold. If implemented, this reckless recommendation might have proved perilous for future training exercises. Fortunately, Fraser's division commanding general, Major General William T. Fairbourn, rejected the recommendation, describing tents as both essential to safety and tactical success.⁴² Where Fairbourn gained this insight is unclear, however, with the deactivation of MWTC in October 1967, the already limited number of Marine Corps leaders trained for cold-weather operations decreased even further.⁴³ Subsequently, as the Corps pivoted to the Arctic, Marines in the late 1970s and early 1980s suffered from inexperienced leadership, poor equipment, and inadequate training. Trapped in the *survive* step of the Arctic trinity, Marine Corps units fell far short of the expectations of NATO allies.

As the scale of its participation in cold-weather exercises expanded beginning in 1980, the Corps continued to underestimate the demands of training for Arctic warfare. The deployment of 36th Marine Amphibious Unit (36th MAU) to Anorak Express 80—the first battalion-size winter deployment of Marines to northern Norway—set the tone for the next four years of exercises.⁴⁴ Despite the fact that it was formed specifically for Anorak Express 80, 36th MAU was an ad hoc force with a training plan designed for multiple scenarios.⁴⁵ This immediately put it at a disadvantage when compared to the specially organized, trained, and equipped cold-weather formations of

³⁸ Clancy et al., Arctic Express 78 After Action Review, tape 2, 53:42.

³⁹ Vinocur, "U.S. Marines Struggle to Cope with Norway's Arctic."

⁴⁰ Volunteer Training Unit 12-50, "Arctic and Cold Weather Warfare," 17.

⁴¹ Mobilization Training Unit AK-1, USMCR, Anchorage, Alaska, "Arctic and Cold Weather Warfare, Volume III," 1980, Studies and Reports, box 209, folder 2, Archives, MCHD, xi.

⁴² 2d Battalion, 1st Marines, "SNOWFEX 1-64 Post Exercise Report," 1964, Exercises, box 91, folder 10, Archives, MCHD.

⁴³ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951-2001*, 88-89.

⁴⁴ 36th Marine Amphibious Unit, "Anorak Express 80, Final Exercise Report," 1980, vol. 1, Exercises, box 160, folders 1-6, Archives, MCHD, 5.

⁴⁵ 36th Marine Amphibious Unit, vol. 2, 5-9; and 1st Battalion, 2d Marines, "Command Chronology August 1979-May 1980," 9 May 1980, Command Chronology Files, Archives, MCHD.

other NATO participants. The most glaring manifestation of this ad hoc structure was the flawed training plan imposed on 1st Battalion, 2d Marines, the principal exercise force. Despite the efforts of its battalion commander, Lieutenant Colonel John W. Ripley, an officer experienced in cold-weather operations, the unit suffered through a frenetic predeployment training plan.⁴⁶ Beginning with combined arms training in the humidity of Camp Lejeune, North Carolina, his Marines next traveled to the dry heat of Twentynine Palms, California. Epitomizing the irony of a unit bound for Norway first training in the Mojave Desert, Marines lugged both their desert and cold-weather equipment with them to California.⁴⁷ After a month in the high desert, they traveled to the Sierra Nevada Mountains for training at a partially reopened MWTC.⁴⁸ Unfortunately, the weather proved unseasonably mild. As the official after action report stated, “More severe weather would have been required to thoroughly complete tactical pre-deployment Arctic Warfare training.”⁴⁹

Notably, 36th MAU’s illogical work-up was no accident. Marine Corps leaders saw their Service as an “expeditionary force in readiness” with a “worldwide” mission, demanding “flexibility, mobility and global character.”⁵⁰ Deploying units, they argued, even those executing a specific task such as 36th MAU, had to be ready for contingencies beyond their primary mission, even at the expense of specialized training. Arctic Norway would severely test this theory.

As expected, the low temperature, ice, snow, and precipitation faced at Anorak Express 80 far exceeded anything 36th MAU had previously experienced. The conditions affected both the performance of the Marines and, more tellingly, the maneuver and fire support

assets critical to waging the “fast-paced, armor-mech operation” for which the MAU had been task organized.⁵¹ Artillery batteries proved difficult to emplace in the deep snow, making them slow to move and vulnerable to counterfire. Artillery and mortar fuses sometimes failed to detonate in the snow or rounds landed in deep snowbanks, defying the ability of an observer to adjust the fire.⁵² The 36th MAU proved a force far from adequate to halt a Soviet advance, even on the favorable terrain of northern Norway.

Simultaneously, the promise of easy maneuver also proved illusory. Employing a robust detachment of amphibious assault vehicles (AAVs), 36th MAU attempted to launch amphibious operations to outmaneuver enemy units. Unfortunately, a dearth of landing areas along the rocky coast and narrow beach exits limited the usefulness of this tactic. Once past the coast, mobility severely worsened. Marines learned that AAVs could not easily traverse snow, often overheating as they plowed through deep banks. Meanwhile, 36th MAU’s trucks and jeeps crawled through narrow passes, unable to move off the icy roads. Though the Norwegian Army did provide a few purpose-built Swedish Bandvagn 202s (BV-202s), there were not enough of these wide, rubber-tracked vehicles to maintain the desired pace of operations.⁵³

Similarly, dismounted infantry struggled through the deep snow and bitter cold. The majority of Marines moved on snowshoes, heavily burdened by equipment and packs weighing more than 90 pounds. Only small reconnaissance elements had attained marginal proficiency on cross-country skis. These skis, drawn from World War II and Korean War stocks, were antiquated. Made of wood and requiring careful waxing, they attached to the heavy vapor barrier boots—nicknamed Mickey Mouse for their resemblance to the round white feet of Walt Disney’s famous creation—using onerous bindings featuring an aluminum plate at the toe. The aluminum plate had a major defect: with every stroke of the ski, it made a clapping

⁴⁶ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 123–24.

⁴⁷ 36th Marine Amphibious Unit, “Anorak Express 80,” vol. 1, 1, 6; and MajGen James R. Battaglini, interview with author, 17 September 2021.

⁴⁸ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 98.

⁴⁹ 36th Marine Amphibious Unit, “Anorak Express 80,” vol. 1, 7.

⁵⁰ Thompson, “II MAF NATO Employment Conference Report,” 2; and Gen Louis H. Wilson, interview with BGen Edwin H. Simmons, 25 June 1979, transcript (Oral History Section, MCHD), 203, hereafter Wilson oral history.

⁵¹ 36th Marine Amphibious Unit, “Anorak Express 80,” vol. 2, 1-1.

⁵² 36th Marine Amphibious Unit, “Anorak Express 80,” vol. 2, 5-11, 6-2.

⁵³ 36th Marine Amphibious Unit, “Anorak Express 80,” vol. 2, vi-1, 9-2-9-3, and vol. 4, 15.



Photo by JFC Gary Miller, USN, no. 6349936, Combined Military Service Digital Photographic Files 1982–2007, Records of the Office of the Secretary of Defense 1921–2008, RG 330, NARA, College Park, MD

Marines of 36th MAU coming ashore onto Kjerkevik Beach from a Landing Craft Utility (LCU) 1655 during Exercise Cold Winter 81. Note the thick parkas, heavy snowshoes, and large rucksacks.

noise akin to stomping on concrete, hardly the noise desired for a reconnaissance element. Whether in vehicles or afoot, 36th MAU quickly found itself road-bound, exposed to attacks from well-trained opposing NATO exercise forces.⁵⁴

While an increased allocation of aviation units at Anorak Express 80 did alleviate some shortfalls in mobility, this also raised concerns of tactical feasibility. First, 36th MAU employed its helicopters in an unrealistic manner. Modern Soviet air defenses could easily destroy helicopters, forcing low-altitude flying techniques to hide from radar and dodge ground

fire.⁵⁵ Even flying behind Norway's sharp mountains and snow-covered ridges did not guarantee safety. Due to the immobility of dismounted Marines, helicopters had to land close to enemy positions, exposing the aircraft to enemy missiles and guns. Additionally, despite readily available cold-weather flight publica-

⁵⁴ 36th Marine Amphibious Unit, "Anorak Express 80," vol. 2, 3-3, 9-3; Lessons Learned, in 36th Marine Amphibious Unit, "Anorak Express 80," vol. 2, 1; Col John C. Scharfen, "Cold Weather Training: The Absolute Necessity," *Marine Corps Gazette* 65, no. 2 (February 1981): 41; and LtGen Richard F. Natonski, interview with author, 23 September 2021.

⁵⁵ The 1973 Yom Kippur War demonstrated the efficacy of integrated radars, surface-to-air missiles, and anti-aircraft guns. In a conflict with the Soviet Army in Norway, the Marine Corps would have faced such sophisticated air defenses, exposing helicopters to significant risk, specifically while in the slow final approach to landing zones. These risks would increase with proximity to concentrations of enemy forces. While there were tactics to mitigate these risks, none were foolproof. When exercises ignored these realities of modern warfare to compensate for deficiencies in over-the-snow mobility, they cultivated potentially deadly wartime habits. For a discussion of the Corps' need to recognize and adapt to modern air defenses, see Maj Frederic L. Gatz, "Training Helicopter Crews," *Marine Corps Gazette* 59, no. 4 (April 1975): 49–50; and Maj G. W. Caldwell, "The Destruction of the Soviet Air Defense System," *Marine Corps Gazette* 69, no. 12 (December 1985): 65–70.



Photo by Cpl H. M. Coffey, no. 6367704, Combined Military Service Digital Photographic Files 1982–2007, Records of the Office of the Secretary of Defense 1921–2008, RG 330, NARA, College Park, MD

A Marine patrol from Company F, 2d Battalion, 2d Marine Division, moves through icy wooded terrain during Exercise Alloy Express 82.

tions, Arctic conditions surprised 36th MAU's pilots. Flying in the days before global positioning systems, they found navigation over featureless white snow fields challenging, particularly during the long Arctic night. More treacherously, powdery snow created whiteout conditions as helicopters landed, blinding the aircraft crew and causing disembarking Marines to disappear into a machine-made blizzard.⁵⁶ The shortfalls of Anorak Express 80, cataloged in hundreds of after action report entries, foreshadowed future exercises where survival seemed the best the Marine Corps could hope for.

The next exercise, Cold Winter 81, exacerbated the deficiencies experienced at Anorak Express 80. Task organized in what its operations officer later described as “ad hocery at the highest level of ad hocery,”

the exercise force executed a predeployment plan emblematic of adherence to over-generalized readiness for any climate.⁵⁷ The Marines of Cold Winter 81 first spent a month in Panama conducting jungle training before traveling to Twentynine Palms for combined arms training. They then boarded an amphibious ship for a training scenario involving “Cuban backed guerrilla [sic] forces in a Latin American country.”⁵⁸ Next, they completed a mere 14 days of training at Camp Ripley, Minnesota, where weather again proved unseasonably warm.⁵⁹ Ultimately, the exercise force would spend more time sailing to Norway than training for the cold weather it would face there.

⁵⁷ Vercauteren interview.

⁵⁸ 1st Battalion, 6th Marines, “Command Chronology, July–December 1980,” 5 January 1981, Command Chronology Files, Archives, MCHD, 4.

⁵⁹ 1st Battalion, 6th Marines, “Command Chronology for the Period of 1 January 1981 to 30 Jun 1981,” 8 July 1981, Command Chronology Files, Archives, MCHD, 1, 3–4.

⁵⁶ 36th Marine Amphibious Unit, “Anorak Express 80,” vol. 2, III-3, III-3–III-4, IV-1.

Predictably, this flawed training produced a poor outcome as Marines failed to adapt to the unique Arctic environment. For example, a common technique in milder climates was for subordinate leaders to travel to headquarters to receive orders for the next day's attack. These leaders would then return to their units to issue more specific instructions. This method depended on free and quick movement. At Cold Winter 81, this assumption proved invalid. Weighed down with aged equipment and inadequately trained on snowshoes, Marines moved sluggishly back and forth through the icy cold and long darkness of the Arctic night. When morning came, time spent planning and coordinating had already exhausted the attacking force. Fortunately, improvements did occur in terms of small unit survival, as demonstrated when "during a white out, a squad hunkered down had to be rescued the next day, luckily they had been trained for these circumstances."⁶⁰ At least this time, the Corps would not suffer rumors of mass evacuations of frostbitten and hypothermic Marines. Unfortunately, merely surviving the weather and avoiding bad press fell far short of NATO expectations.

Preparation for Alloy Express 82 began with comparative advantages. The exercise force, again a task-organized 36th MAU, contained leaders with experience in Arctic conditions, including the commanding officer, Colonel Carl E. Mundy III, operations officer Major James R. Battaglini, and a highly respected junior officer, First Lieutenant Edward Gregory. Following the youthful yet experienced Gregory's lead, 36th MAU executed a four-phase training plan culminating in 15 days spent at Camp Ripley. Unfortunately, while Camp Ripley provided low enough temperatures, it also had an unusual lack of precipitation (ironically, while 36th MAU trained in Minnesota, its home base in coastal North Carolina received unseasonably heavier snowfall). The lack of snow perpetuated insufficient proficiency in over-the-snow mobility. More damaging, however, were the three weeks spent sailing to Norway, which reversed Marines' tolerance for cold weather and prevented sustainment training.

More significantly, the warships had limited storage space, curtailing the amount and types of specialized equipment 36th MAU could carry.⁶¹

As a result, on arrival in Norway, Marines at Alloy Express 82 proved once again road-bound and slow. Frequent high winds and bitter cold exacerbated the situation. Even simple activities, such as pitching tents, could take hours as Marines waddled in deep snow in their oversized parkas, thick mittens, and heavy boots.⁶² Undermining hopes of showcasing a Marine Corps amphibious assault, 60-knot gusts and a wind chill of -40 degrees Fahrenheit delayed the culminating landing. Embarrassingly, only a few kilometers away in a better-sheltered fjord, a British Royal Marines unit landed easily, quickly taking their objective. The next day, 36th MAU's public affairs officer, Captain Dale A. Dye, found himself explaining this awkward contrast to Norwegian journalists and the very Soviet Army observers who NATO hoped to deter with a show of Arctic proficiency.⁶³ Ultimately, all that 36th MAU had to show from its improved training plan was enhanced survival skills. While this was not inconsequential, as demonstrated when a patrol successfully rescued themselves—without casualties—after breaking through the ice of a frozen lake, it was far from the defensive force.⁶⁴

Recognizing these disappointing results, leaders acknowledged that something had to change if the Marine Corps were to move past *surviving* to *moving* and *fighting*. A glimmer of this occurred during Alloy Express 82, when Mundy vetoed a plan to use helicopters to compensate for the slowness of Marines

⁶¹ Battalion Landing Team 2/2, "Alloy Express Post Exercise Report," 9 April 1982, Exercises, box 165, folder 3, Archives, MCHD, 1-1; Gen Carl E. Mundy, interview with BGen Edwin H. Simmons, session 12, transcript (Oral History Section, MCHD), 121, hereafter Mundy oral history; Battaglini interview; Capt Dale A. Dye, interview with the author, 11 March 2022.

⁶² Battalion Landing Team 2/2, "Alloy Express," 4-27, 4-46-4-47, 4-50; and Battaglini interview.

⁶³ Knut Sletbakk, "Landsettin i Bjerkvik blåste vekk, men Øvelse Alloy Express går etter planen," *Fremover* (Narvik, Norway), 13 March 1982; "Kongen til Alloy Express," *Arbeiderbladet* (Oslo, Norway), 13 March 1982; Knut Falchenberg, "Amerikansk landgang ble stanset av været," *Aftenposten* (Oslo, Norway), 13 March 1982; Mundy oral history, 143; Battaglini interview; and Dye interview.

⁶⁴ Battalion Landing Team 2/2, "Alloy Express," 4-7; and Battaglini interview.

⁶⁰ Vercauteren interview.

moving on snowshoes over switchbacked roads and trails. Ignoring the pleas of his subordinate commanders, he refused to cheat past the reality of the Arctic conditions. In a real war, Mundy pointed out, enemy anti-air missiles would easily destroy any aircraft that attempted such a maneuver. The Marine Corps, he argued in the exercise after action report, could no longer afford to use technology to mitigate inadequacy in over-the-snow mobility.⁶⁵ It was past time for the Corps to learn to fight like Norwegians.

As Mundy opposed the use of technological shortcuts to get around the central problems of Arctic warfare, other senior leaders implemented similar reforms. Speaking in March 1982 at the first bilateral cold-weather combat operations conference, Major General Alfred M. Gray Jr., the commanding general of 2d Marine Division, admitted to an audience of Norwegians and Marines that his Service's equipment and training was grossly inadequate. After detailing a litany of deficiencies, however, he ended his keynote address optimistically, saying, "Drawing on the experiences of our Norwegian friends . . . I would hope that this conference and others like it would permit us not only to fight but to win."⁶⁶ This was not merely public flattery. Rather, it signaled Gray's commitment to substantial changes in how units trained, deployed, and equipped for Norway.

While in command of 2d Marine Division, Gray gained a reputation as a leader who prioritized hard, realistic field training and championed experimentation.⁶⁷ His advocacy for the cold-weather conference evidenced this emphasis. Gray insisted that the 1982 conference would differ from previous events held in North Carolina, occurring in Norway and featuring bilateral participation. To ensure that the results did

not end up bureaucratically stillborn, Gray convinced the Office of Naval Research to record and analyze the proceedings. Gray found an enthusiastic partner in the Norwegian Army.⁶⁸ For four days, Marines and Norwegians candidly examined the Corps' embarrassing performance in cold-weather operations, proposing solutions that included better cold-weather clothing, higher-calorie rations, modern skis, more appropriate tactics, and more comprehensive training. The post-conference report demonstrated this spirit, providing a long list of action items and ruthlessly pointing out which of these had been identified in the past but never addressed.⁶⁹ Gray's presence at the head of 2d Marine Division between 1981 and 1984, as well as his subsequent assignment as commander of FMFLANT from 1984 to 1987, proved critical for the organizational climate in which future exercises occurred. Gray's subordinate commanders could not claim that they lacked direction to sensibly prepare for the unique environment of the High North.

In the background of the discussions at the cold-weather conference was an emerging capability known as the Norwegian Air-Landed Marine Expeditionary Brigade (NALMEB).⁷⁰ The NALMEB originated in 1978 amid Carter administration skepticism. Planners recognized that time, distance, weather, and competing priorities made it unlikely that NATO's mobile forces could reach the Northern Flank before Soviet forces could seize key terrain. The Northern Flank needed a faster means of reinforcement. A bilateral concept, the NALMEB envisioned Marines rapidly flying to Norway, drawing prepositioned equipment, and then deploying to northern Norway. Initially hesitant to involve itself in land-based prepositioning akin to Army facilities in Germany, the Marine Corps relented when it learned that the prepositioned material would not be drawn from existing Service stocks. Instead, NALMEB would consist of new equipment, purchased with additional funding. For the often cash-strapped Corps, this was too good a deal to re-

⁶⁵ Battalion Landing Team 2/2, "Alloy Express," 4-46, 4-50; Battaglini interview; and Dye interview.

⁶⁶ "Conference on Cold Weather Operations, 1982," 3-12-3-13.

⁶⁷ Terry C. Pierce, *Warfighting and Disruptive Technologies: Disguising Innovation* (New York: Frank Cass, 2004), 87; Gerald H. Turley, *The Journey of a Warrior: General Alfred M. Gray, 29th Commandant of the Marine Corps (1987-1991)*, 2d ed. (Arlington, VA: Potomac Institute Press, 2017), 120-33; MajGen Harry W. Jenkins, *Challenges: Leadership in Two Wars, Washington DC, and Industry* (n.p.: Fortis, 2020), 177; MajGen Harry W. Jenkins, interview with author, 27 September 2021; Vercauteren interview; Col John Bicknas, interview with author, 11 February 2022; and LtGen Michael Dana, interview with author, 20 October 2022.

⁶⁸ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951-2001*, 105.

⁶⁹ "Conference on Cold Weather Operations, 1982," 6-3.

⁷⁰ "Conference on Cold Weather Operations, 1982," 3-12.



Photo by Cpl H. M. Coffey, no. 6368224, Combined Military Service Digital Photographic Files 1982–2007, Records of the Office of the Secretary of Defense 1921–2008, RG 330, NARA, College Park, MD

A Marine of Company A, 1st Battalion, 2d Marine Division, caught in a severe Norwegian blizzard during Exercise Cold Winter 83.

fuse, even if it meant drifting from its preferred amphibious doctrine.⁷¹

The NALMEB had to also overcome political opposition in Norway. As an antinuclear weapons nation with a firm no-basing policy, Norway wished to avoid appearing escalatory to the Soviet Union. The Norwegian government deemed as too provocative sites proposed in northern Norway near Narvik. By 1981, negotiators reached a compromise, selecting sites near Trondheim in central Norway. Additionally, the United States agreed that no aircraft or systems capable of firing nuclear weapons would be forward deployed. Though the Trondheim caves lay more than 600 ki-

lometers from the main combat zone, the NALMEB concept offered viable means of rapid deployment. As NALMEB's stores expanded, exercise forces could increasingly draw well-maintained equipment, specially selected for the Arctic environment, including leased BV-202s and the new BV-206s.⁷² This first Service dalliance with prepositioning, occurring alongside the birth of the Maritime Prepositioning Force, had both strategic and tactical implications. As NALMEB developed, Marines on the ground gained increased capability to move to and within Arctic exercises.

In his remarks at the bilateral conference, Gray also highlighted the importance of the reactivation and expansion of the Corps' cold-weather training facility in California, the MWTC. While training occurred at MWTC during the workup for Anorak Express 80, this was an exception. Founded in 1951,

⁷¹ Jerry L. Durrant, "The Norway Airlanded MEB's Role in Crisis Response for the 1990's" (student paper, U.S. Army School of Advanced Military Studies, 1992), 22; Leif Lundesgaard, *Brigaden i Nord-Norge 1953–1995* (Oslo, Norway: Elanders Forlag, 1995), 268; Mundy oral history, 123; Rolf Tamnes, *Norsk Forsvarshistorie*, vol. 5, 1970–2000 (Bergen, Norway: Eide, 2000), 31–164; Edwin H. Simmons, "Robert Hilliard Barrow, 1979–1983," in *Commandants of the Marine Corps*, ed. Allan R. Millett and Jack Shulimson (Annapolis, MD: Naval Institute Press, 2004), 451; Barrow oral history, 407; and Wilson oral history, 141.

⁷² Alexander, "The Role of the Marine Corps in the Defense of North Norway," 188; Tamnes, *The United States and the Cold War in the High North*, 266–67; and Crist, "A New Cold War," 359–61.

MWTC fell into disuse in the mid-1960s as a result of the Vietnam War. In this period, a reduced cadre offered only small-scale training in limited subjects. The promise of a mission on the Northern Flank inspired a return to large unit training. In 1981, Barrow, now Commandant of the Marine Corps, decided to reactivate MWTC, stating that the facility would be instrumental for “skills that just cannot either be taught or learned by the seat of the pants.”⁷³ In his 1982 remarks, Gray pointed to Bridgeport as the “vital ingredient” to prepare units for Norway.⁷⁴ He stipulated that while improvements to long-neglected facilities would take time and that economic realities limited how many battalions he could send to California each year, these conditions would improve. By the summer of 1984, his predictions proved accurate, and training at MWTC became the standard for units deploying to Norway.⁷⁵

The next exercise, Cold Winter 83, came too early to benefit from these improvements in leadership, prepositioned equipment, and training at Bridgeport. Though the time spent at Camp Ripley increased to 22 days, the weather again proved uncooperative. While temperatures were sufficiently frigid, there was very little snow, forcing the reconnaissance platoon to travel to a nearby civilian ski resort to learn cross-country skiing on machine-groomed snow.⁷⁶ The mild weather at Camp Ripley and systemic issues with manning, training, and equipping forces for the Arctic resulted in predictably abysmal performance at Cold Winter 83. Most troubling was flawed coordination with the Norwegian Army. Particularly heavy snowfall limited the movement of NATO communications, artillery, and logistics units. As a result, frequent, sometimes heated, disputes arose between Marine Corps and Norwegian Army units about boundaries, road usage,

defensive positions, and areas cleared of snow.⁷⁷ This seemed hardly the behavior of an effective alliance.

The next year’s exercise, Teamwork 84, however, showed the benefits of NALMEB and reforms to equipment and training. The exercise force, 4th Marine Amphibious Brigade, drew logistical sustainment and one artillery battery’s worth of equipment from NALMEB. This first use of prepositioned equipment demonstrated the value of the concept and set the stage for future operations. Additionally, the Marine Corps evaluated new equipment fielded as a result of Gray’s bilateral 1982 cold-weather conference. Some Marines at Teamwork 84 tested new Gore-Tex parkas and trousers and polypropylene long underwear. Their review of the lightweight, fast-drying clothing was inevitably enthusiastic after years of over-sized, water-absorbing parkas and base layers. Additionally, cleats, specially designed for ice and snow, were used on select AAVs, adding improved traction and increased off-road ability.⁷⁸ Finally, and most importantly, Teamwork 84 demonstrated a new model of training. While most of the exercise force repeated the typically inadequate 10-day cycle at Camp Ripley, two rifle companies followed this initial training with 26 days at MWTC learning to cross-country ski. This decision had an immediate impact on the conduct of the exercise, significantly increasing the exercise force’s mobility, especially when combined with BV-202s and BV-206s carrying logistics and pulling ski-borne troops up steep slopes in a technique called skijoring.⁷⁹ For the first time, a Marine Corps unit had trained large numbers of Marines on skis and outfitted them

⁷³ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 103, see also 19, 85, 87–90, 98–99.

⁷⁴ “Conference on Cold Weather Operations, 1982,” 3–11–3–12.

⁷⁵ MajGen Harry W. Jenkins, audio recording (Oral History Section, 23 June 1996, MCHD), tape 1, 14:40, hereafter Jenkins oral history; Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, ix–x, 112; and Jenkins interview.

⁷⁶ 1st Battalion, 2d Marines, “Alpine Warrior Operation Order 1-82,” November 1982, Exercises, box 165, folder 4, Archives, MCHD, C-13-A-1; and 1st Battalion, 2d Marines, “Command Chronology July–December 1982,” 1983, Command Chronology Files, Archives, MCHD, 4–5.

⁷⁷ 2d Marines, “Cold Winter 83 Post-Exercise Narrative,” 1983, 4-D-2-E-4, Exercises, box 166, folder 8, Archives, MCHD, 3–4.

⁷⁸ Regimental Landing Team 2, “After Action Report, Teamwork 84,” 1984, Studies and Reports, box 210, folder 1, Archives, MCHD, 56, 58; and BGen Norman H. Smith, “Arctic Maneuvers 1984,” *Marine Corps Gazette* 68, no. 12 (December 1984): 34, 36.

⁷⁹ Regimental Landing Team 2, “Alpine Warrior 83, Implementing Instructions for 4th Marine Amphibious Brigade, Operations Order 3-83,” November 1983, exercises, box 166, folder 3, C-1-A-1-C-1-I-4; 4th Marine Amphibious Brigade, “Command Chronology, July–December 1983,” 21 February 1984, Command Chronology Files, 4; 2d Battalion, 2d Marines, “Command Chronology, January–June 1984,” 16 July 1984, Command Chronology Files, IV-1; 3d Battalion, 8th Marines, “Command Chronology, January–June 1984,” 30 June 1984, Encl. 1, Command Chronology Files, 2; and Regimental Landing Team 2, “Teamwork 84,” Archives, MCHD, 19, 21, 72.



Photo courtesy of MGen Harry W. Jenkins Jr., U.S. Marine Corps

Marines of 1st Battalion, 2d Marine Regiment, skijoring behind a BV-206 in Northern Norway during Exercise Cold Winter 85.

with modern cold-weather equipment. Though most units remained miserably slow-moving and underperforming, the Corps had finally proven that it could achieve the *move* step in the cold-weather trinity.

Observers would rightly praise Cold Winter 85 as an exercise that finally united proper training, equipment, and leadership, reversing seven years of poor performance.⁸⁰ This success directly resulted from conscious efforts to imitate Norwegian tactics and techniques for extreme cold. The primary inspiration behind these efforts was Colonel Harry W. Jenkins, the commanding officer of 2d Marine Regiment from 1984 to 1986. A former instructor at MWTC, he was a proficient mountaineer, a cross-country skier, and an avid student of military history, specifically winter

warfare.⁸¹ Jenkins would eagerly apply this experience and education to the challenges of the High North.

Traveling to Norway for a Cold Winter 85 planning conference, Jenkins found the Marine Corps the subject of polite, if public, ridicule. In the opening comments for the conference, the exercise director, Norwegian brigadier Asbjørn Lerheim, flatly evaluated Marines' performance in cold weather as substandard, even if their presence in Norway was necessary. As Jenkins later explained, "The Norwegians were saying, we love to have you here. You help to keep the Russians off our backs. But we don't think you are any good." This was a fair critique, as Jenkins admitted, "The training program was insufficient, it was incomplete, they [the Marines] didn't have enough time in the snow." Returning home from the conference, Jenkins directed his staff: "We are going to do something different with this one."⁸²

⁸⁰ Regimental Landing Team 2, "After Action Report Cold Weather Training and Operations," 1985, Exercises, box 169, folder 10, Archives, MCHD, II-E-3-3; LtCol William H. Schopf, "The MAB in Norway," U.S. Naval Institute *Proceedings* 112, no. 11 (November 1986): 39; Richard F. Natonski, "Cold Weather Combat: What Is the Marine Corps Doing About It?" (research paper, Marine Corps Command and Staff College, 1988), 6; and Durrant, "In Every Clime and Place," 13.

⁸¹ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 83–84, 102; Jenkins, *Challenges*, 43; and Jenkins interview.

⁸² Jenkins oral history, tape 1, 22:10; and Jenkins interview.



Photo courtesy of MGen Harry W. Jenkins Jr., U.S. Marine Corps Well-trained and confident Marine Corps ski-troops from 2d Marines on the move in Northern Norway during Exercise Cold Winter 85. They are carrying wooden Northland skis.

What Jenkins had in mind were dramatic changes in training for the Arctic. This redesign involved maximum use of MWTC and the NALMEB. The entirety of the exercise force spent five weeks at MWTC before going to Fort Drum, New York, for further cold-weather training.⁸³ Their goal was what many argued was unachievable: to train and equip an over-the-snow capable regimental headquarters and infantry battalion, a total of more than 1,000 Marines proficient on cross-country skis.⁸⁴ Adding to this emphasis on mobility, Jenkins's staff coordinated a NALMEB draw of BV-202s and BV-206s at wartime levels, more than previous units.⁸⁵ Finally, 2d Marines conducted extensive night training to prepare Marines to move on skis in the long Arctic darkness.⁸⁶ That Jenkins's ambitious

⁸³ 2d Marine Division, "Training Sequence for Winter Operations in North Norway," 1984, Exercises, box 169, folder 5, 1; II Marine Amphibious Force, "Arctic Warfare Training for 4th MAB Units," 1984, Encl. 1, Exercises, box 169, folder 4, 1; and Regimental Landing Team 2, "Cold Weather Training," II-C-2, all Archives, MCHD.

⁸⁴ Skepticism that Marines could gain proficiency on skis was deep-seated and widespread throughout the Marine Corps. See Scharfen, "Cold Weather Training: The Absolute Necessity," 36; Alexander, "The Role of the Marine Corps in the Defense of North Norway," 191; and Wilson oral history, 209.

⁸⁵ 2d Marine Division, "Initial Planning Conference for Cold Winter 85," 1984, Exercises, box 169, folder 3, Archives, MDCD, 4; and Clough, "Cold Winter '85: 'Good to Go' Arctic Warriors," 68.

⁸⁶ 1st Battalion, 2d Marines, "Cold Winter 85 Post Employment Report," April 1985, Exercises, box 169, folder 3, Archives, MCHD, 1-2.



Photo courtesy of MGen Harry W. Jenkins Jr., U.S. Marine Corps Gen Paul X. Kelley, Commandant of the Marine Corps (on right, in camouflage uniform), and his aide LtCol Frank Libutti visit Col Harry W. Jenkins's (second from right, pointing) field command post during Exercise Cold Winter in Northern Norway in 1985. Capt James T. Kenney, the headquarters commandant, stands second from left.

vision went unchallenged reflected the enduring influence of Gray's support for risk-taking experimentation within 2d Marine Division.

Jenkins and his staff also sought ways to realistically exploit the advantages of helicopters. The commander of the helicopter squadron assigned to Cold Winter 85, Lieutenant Colonel John F. Dennis, a cold-weather operations enthusiast, had written his 1978 Command and Staff research paper on the subject.⁸⁷ During a reconnaissance of northern Norway training areas, Jenkins and Dennis imagined night landings of ski-borne troops high on the reverse slopes of mountain plateaus, protecting the helicopters from enemy air defenses and muffling their audible signature. Dismounted Marines would then ski down the slopes in the darkness, attacking the flanks and rear of the enemy position before dawn.⁸⁸ These tactics imitated examples from Jenkins's historical studies, specifically the maneuvers of the Finns against the Russians in

⁸⁷ Maj John F. Dennis, "Considerations for Employment of Marine Corps Helicopters in a Cold Weather Environment" (research paper, Marine Corps Command and Staff College, 1978).

⁸⁸ Jenkins oral history.

1939 and the Germans in Norway in 1940 and 1944.⁸⁹ Effectively employing helicopters and backed up with BVs hauling logistics, these tactics brought the cross-country ski into modern warfare. Meanwhile, Dennis, working with his talented and imaginative squadron maintenance officer, Major James Ledford, developed innovative measures to ensure that, despite the harsh climate, sufficient aircraft would remain available to the exercise force. As Mundy had demanded in 1982, appropriate air-ground integration had occurred.⁹⁰

When Cold Winter 85 commenced, 2d Marines proved well prepared. In the first phase of maneuvers, the battalion deployed for the exercise flew into a remote valley and conducted a night ski march, enveloping the enemy and forcing the exercise umpires to reset the scenario. Stirring from his sleeping bag, one surprised British officer exclaimed, "What are you doing here? Americans can't ski!" The 2d Marines would repeat the tactic again, this time destroying the opposing force's artillery, overrunning the command post, and encircling the British, Canadian, and Dutch units. As a senior enlisted member of the British paratroopers complained, "Don't you people ever stop coming?"⁹¹ In disbelief, Lerheim traveled to the site to see for himself this significant change in the performance of the Marine units.⁹² Months later, in a letter written to the *Marine Corps Gazette*, a Norwegian officer praised the Marines of Cold Winter 85, admitting

that previously "Marines were known in these parts as rather poor winter warriors" but that "this year's exercise . . . proved to us all that the Marines have come a long way."⁹³ He then described the elation he felt as he watched Marines unexpectedly outflank his position on skis. Norway had found its Arctic ally.

Meanwhile, Jenkins used the success of Cold Winter 85 as a platform to advocate for better training and equipment. When the Commandant of the Marine Corps, General Paul X. Kelley, visited the exercise, Jenkins detailed the extensive training required to create the over-the-snow capable force. He also showed Kelley the stark contrast between Norwegian and Marine Corps cold-weather equipment as well as promising experimental items tested during the exercise. Jenkins then ambushed Kelley, bringing forward Representative Robin J. Beard, a U.S. congressman who had participated in the exercise as a Reserve officer. Together, they told Kelley that both the focused training plan and new equipment ought to become the Service norm. Returning to the Pentagon, Kelley attacked the problem "like a man possessed," directing standardized training and better gear.⁹⁴

The next year's exercise, Anchor Express 86, demonstrated the changed trajectory of Marine Corps operations in the High North. Predeployment training at MWTC repeated the intensive ski training of Cold Winter 85. In a sudden move, the Corps' logistical bureaucracy deployed experimental skis for testing and issued all Marines in the exercise the Gore-Tex parkas and trousers that had received such acclaim at Teamwork 84. After training at U.S. Army Fort Drum, New York, the exercise force flew directly to Norway and conducted a full rehearsal of a NALMEB draw. Returning with his squadron, Dennis eschewed established, and thus easily targeted, airports, ambitiously launching his helicopters from austere landing areas plowed out of the snow.⁹⁵ Cold Winter 85 had created the model that would be used up to the end of the

⁸⁹ For more on these historical examples, see Earl F. Ziemke, *The German Northern Theater of Operations, 1940–1945* (Washington, DC: Department of the Army, 1959); Allen F. Chew, *Fighting the Russians in Winter: Three Case Studies* (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1981); Jack Adams, *The Doomed Expedition: The Norwegian Campaign of 1940* (London: Leo Cooper, 1989); James F. Gebhardt, *The Petsamo-Kirkenes Operation: Soviet Breakthrough and Pursuit in the Arctic, October 1944* (Fort Leavenworth, KS: Combat Studies Institute, U.S. Army Command and General Staff College, 1989); Henrik O. Lunde, *Hitler's Pre-Emptive War: The Battle for Norway, 1940* (Philadelphia, PA: Casemate, 2009); and Pasi Tuunainen, "Training the US Army to Fight the Red Army in Winter: Former Finnish Officers and Military Knowledge Transfer from Finland to the United States During the Early Cold War, 1947–1964," *Journal of Slavic Military Studies* 29, no. 1 (2016): 110–38, <https://doi.org/10.1080/13518046.2016.1129877>.

⁹⁰ Regimental Landing Team 2, "Cold Weather Training," III-1; Clough, "Cold Winter '85: 'Good to Go' Arctic Warriors," 68; and Jenkins interview.

⁹¹ Clough, "Cold Winter '85: 'Good to Go' Arctic Warriors," 66, 69.

⁹² Durrant, "Every Clime and Place," 14; Jenkins oral history; and Jenkins, *Challenges*, 188.

⁹³ Hagtvedt, "Letters: Traveling Light on Skis," 67.

⁹⁴ Jenkins interview.

⁹⁵ Jenkins, *Challenges*, 189.



Photo by Cpl J. D. Gonzales, no. 6429074, Combined Military Service Digital Photographic Files 1982–2007, Records of the Office of the Secretary of Defense 1921–2008, RG 330, NARA, College Park, MD

A Marine Corps Boeing Vertol CH-46 Sea Knight helicopter landing in “white out” during Exercise Cold Winter 87. Although this photograph was taken during an exercise in 1987, it is representative of the extreme climatic conditions facing helicopter pilots during all winter Arctic exercises.

Cold War.⁹⁶ The Corps had finally proven up to the final step in the Arctic trinity. Thanks to the right leadership, training, and equipment, the Marine Corps was ready to *survive, move, and fight* in the High North.

Conclusion

Considering its proud tradition of innovation, the Marine Corps’ long tolerance of mediocrity on the Northern Flank presents a historical puzzle. That the Corps eventually overcame its steep learning curve in

the Arctic is impressive. Yet, larger questions remain. Why did change take so long? What factors allowed the Corps to achieve its goals? Finally, what does this example suggest about military innovation in new operating environments and strategies?

Analysis of Marine Corps Service culture through the metaphor of “bugs and features” provides one possible explanation for the long road to improved Arctic performance. Typically, when things go wrong, organizations point to bugs in the system while, when things go right, success is attributed to a positive feature. The example of the Marine Corps in Norway challenges this simple paradigm. Both poor

⁹⁶ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 111–26.



Photo by Cpl J. D. Gonzales, no. 6429073, Combined Military Service Digital Photographic Files 1982–2007, Records of the Office of the Secretary of Defense 1921–2008, RG 330, NARA, College Park, MD

A Marine Boeing Vertol CH-46 Sea Knight helicopter taking off from a featureless snow-covered ridgeline during Exercise Cold Winter 87.

performance and eventual success stemmed not from bugs but from features of its Service culture.⁹⁷

Among the features of its culture, the Marine Corps had long deliberately cultivated an image of elitism and toughness.⁹⁸ Possessing the smallest budget in the Department of Defense and a mission that overlapped with other Services, the Corps painted

itself as “first to fight,” ready to do more with less.⁹⁹ Recruit training and Service life indoctrinated this ethos, emphasizing that the timeless will of the individual Marine could overcome any challenge.¹⁰⁰ This ethos, commendable in many scenarios, was exactly what drove Alaskan reservists to decry the danger of trying to “tough out” the Arctic. As they explained in 1980, “Avoid at all costs what we have termed ‘Marine Macho’ thinking. It is not manly and does not enhance the Corps image to needlessly endanger the lives of

⁹⁷ For a study of the effects of Service culture on peacetime military training and organization, see Elizabeth Kier, *Imagining War: French and British Military Doctrine Between the Wars* (Princeton, NJ: Princeton University Press, 1997).

⁹⁸ Craig M. Cameron, *American Samurai: Myth, Imagination, and the Conduct of Battle in the First Marine Division, 1941–1951* (Cambridge, MA: Cambridge University Press, 1994), 49–54; and Aaron B. O’Connell, *Underdogs: The Making of the Modern Marine Corps* (Cambridge, MA: Harvard University Press, 2012), 27–29.

⁹⁹ The best example of this is the 1946 testimony to Congress of CMC Gen Alexander A. Vandegrift that “preceding the recent war the United States possessed the world’s top ranked Marine Corps at an annual cost of \$1,500 per Marine and the world’s eighteenth place Army at a cost of \$2,000 per soldier.” As quoted in Victor H. Krulak, *First to Fight: An Inside View of the U.S. Marine Corps* (Annapolis, MD: Naval Institute Press, 1984), 37.

¹⁰⁰ O’Connell, *Underdogs*, 34–42.

Marines just to put on a show for a sister service or satisfy one's own image of what the term 'Marine' should mean."¹⁰¹ Yet, so entrenched was the image of elite toughness that even Ripley, an officer experienced in cold-weather operations, defaulted to a heavy emphasis on physical training before Anorak Express 80. While individual fitness no doubt enhanced Marines' performance in the Arctic, no amount of strength and endurance could replace insufficient and inappropriate training and knowledge. It was this exact spirit Norwegian officers challenged in 1979, telling the *New York Times*, "There was no failure of strength of will, but just an inability to cope."¹⁰²

Marine Corps hesitation for regional specialization also had a debilitating impact. The Corps saw itself as an "amphibious force-in-readiness" with a mission that was global in nature.¹⁰³ In this view, excessive preparation for any single mission theoretically came at the cost of overall flexibility. Senior leaders voiced a fear of overspecialization. Under General Louis H. Wilson, Commandant from 1975 to 1979, the Corps had emphasized the need to "stay balanced. Stay relevant. Stay ready. Don't chase the latest trend."¹⁰⁴ Even Mundy, despite demanding greater realism at Alloy Express 82 and commanding the MEB at Cold Winter 85, authored a *Marine Corps Gazette* article to counter calls for greater specialization by junior officers and cold-weather experts. He rested his argument firmly on the totem of general-purpose force readiness, asserting that "the Nation cannot afford for us to lose the ability to do what its Marines are for: go wherever, whenever, and do whatever is required."¹⁰⁵ Though logical, this perspective was also potentially counterproductive, spawning overgeneralization, the equally dangerous antithesis of overspecialization. Overgeneralization explains the illogical workups for both Anorak Express 80 and Cold Winter 81 as well as delays

in reinvigorating the cold-weather training facilities at MWTC and purchasing better equipment. In preparing for "every clime and place," the Corps failed to recognize the unique demands of the Arctic.

Fortunately for the Marines of Cold Winter 85 and the exercises that followed, other features of Service culture balanced out overemphasis on toughness and flexibility. Specifically, innovative leadership, appropriate resources, and realistic training allowed the Corps to overcome the challenges of the Arctic. Though these qualities would come together at Cold Winter 85, the roots of each existed throughout the incremental process of a Service learning to *survive*, *move*, and *fight* in the Arctic.

As the intra-Service school of military innovation theory would predict, leadership proved key to eventual Marine Corps success in the Arctic.¹⁰⁶ Both as commanding general of 2d Marine Division between 1981 and 1984 and later at FMFLANT, Gray set the climate needed for innovation. It is difficult to overstate the significance of Gray's emphasis on experimentation and realistic training during this period. He established the vital protective umbrella for his subordinates to experiment, even at the risk of failure. It was this setting that allowed Mundy at Alloy Express 82 to reverse the easy cheat of using helicopters to unrealistically mitigate abysmal over-the-snow mobility. Similarly, absent Gray's example, it is unlikely that Jenkins would have chosen to "do something different" at Cold Winter 85, imaginatively and effectively melding Scandinavian ski tactics, helicopters, and night operations.¹⁰⁷

Leadership also mattered at lower levels. As senior and mid-grade leaders grew in experience, so did small-unit leaders. Every after action report and manual of the period clearly emphasized that cold-weather operations were fundamentally a small-unit leader's fight. This was the indoctrination in cold-weather skills Gombard had wished for his Marines in 1978. Recurring exercises in Norway, often involving the same units and some of the same Marines, built the institu-

¹⁰¹ Mobilization Training Unit AK-1, "Arctic and Cold Weather Warfare, Volume III," xvii.

¹⁰² Vinocur, "U.S. Marines Struggle to Cope with Norway's Arctic."

¹⁰³ O'Connell, *Underdogs*, 241–45.

¹⁰⁴ Wilson, Oral History, 203; and Gen Anthony C. Zinni, Career Interview, Transcript, 2014, 265, OHP, MCHA.

¹⁰⁵ BGen Carl E. Mundy, "Training in Arctic Warfare," *Marine Corps Gazette* 69, no. 9 (September 1985): 71–72.

¹⁰⁶ Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, NY: Cornell University Press, 1991), 21.

¹⁰⁷ Jenkins oral history.

tional knowledge that allowed junior officers to lead training, as in the case of the youthful Gregory at Alloy Express 82. While Jenkins deserves full credit for his vision for Cold Winter 85, he later admitted that he took command of 2d Marines at “exactly the right time” to harness the experience of young officers and noncommissioned officers and benefit from the climate set by Gray.¹⁰⁸

Working in tandem with leadership were improvements in resources. As political scientist Suzanne Nielsen argued in her study of U.S. Army innovation in the 1970s and 1980s, doctrinal change requires reallocation of resources.¹⁰⁹ Within the short exercise life cycle, no single commander could reform the archaic nature of Marine Corps cold-weather equipment. This was an institutional problem. Experimentation at Teamwork 84, however, indicates that the impetus of Gray’s 1982 bilateral cold-weather conference was beginning to effect change. Jenkins’s skillful politicking at Cold Winter 85 ensured that such experimental gear became the norm, greatly alleviating the misery of Marines using World War II- and Korean War-era clothing and kit. Of equal importance was the gradual embrace of Norwegian equipment, specifically the BVs. Not amphibious, these vehicles did not fit the Marine Corps’ preferred way of war. Nonetheless, the lease of BVs under NALMEB points to a growing realization of the importance of specialization in the Arctic, whether Scandinavian tracked vehicles or customized cleats on AAVs.

More important than these gradual improvements was the repositioning of equipment in the NALMEB, arguably the most drastic change during the period. As Secretary of Defense Brown indicated in 1979 when he challenged Commandant Barrow about whether Marines “always have to storm ashore,” the NALMEB was vastly different from the Corps’ preferred doctrine of amphibious assault.¹¹⁰ Though it met initial resistance, once fully accepted, supplied,

and employed, the NALMEB provided a source of equipment readily accessible and perfectly tailored to the theater. These advantages were critical to long-term success in Norway.

But for practical enhancements in training, the ambitious objectives of Cold Winter 85 would have proven stillborn. Starting with the move away from the chaotic predeployment plans of Anorak Express 80 and Cold Winter 81, prioritized schedules, such as the four-phase plan for Alloy Express 82, gradually improved the quality of training. Training designed specifically for the Arctic environment—insertion by helicopters, movement in darkness, attacks on skis—relied on lengthy and heavily focused periods in the field. This stands in sharp relief to the experience of Cold Winter 81, where Marines sailed to Norway with only two weeks training in the cold after extensive periods spent in jungle, desert, and tropical islands. Specialized environments simply demanded specialized training.

The right training facilities also mattered. The craggy alpine ranges of the Sierra Nevada Mountains of MWTC were the closest approximation available of the jagged and towering coastline of Norway. The five weeks spent by 2d Marines at MWTC, prior to three weeks at Fort Drum, followed by direct flights to Norway, ensured climatic acclimation and sustainment of key skills. The Cold Winter 85 training plan was surely the envy of Marines in previous exercises and points to the significance of the reopening of MWTC and Jenkins’s aggressive use of the base. Of all the lessons of this period, this focused training plan would prove the most enduring, remaining the standard into the 1990s.¹¹¹

For contemporary military practitioners and scholars, the example of the Marine Corps in the Arctic between 1978 and 1985 advances two final conclusions tied to the problems of military change and the making of strategy. First, a lens of Service culture helps explain how features of toughness and flexibility hamstrung progress even as features of leadership, re-

¹⁰⁸ Jenkins interview.

¹⁰⁹ Suzanne C. Nielsen, *An Army Transformed: The U.S. Army’s Post-Vietnam Recovery and the Dynamics of Change in Military Organizations* (Carlisle, PA: U.S. Army War College Press, 2010), vii–viii.

¹¹⁰ Simmons, “Robert Hilliard Barrow, 1979–1983,” 451.

¹¹¹ Steele and Moffett, *U.S. Marine Corps Mountain Warfare Training Center, 1951–2001*, 112.

sources, and training advanced proficiency. This example suggests that future Marine Corps innovation will have to overcome similar organizational preferences. Despite the plaudits of academics and the Service, the Corps has not always proven naturally innovative.¹¹² Like any other organization, it may require tangible measures to ensure lasting reform and modernization.

Second, changes in strategy often depend on tangible improvements at the lowest tactical level. As the NATO Arctic exercises of the late 1970s and early 1980s demonstrated, a wide gulf existed between the “big blue arrows” contained in NATO war plans and the true capabilities of a shivering Marine on skis. Northern Norway provided the Marine Corps its best chance to beat a larger, more heavily armored Soviet opponent, but only if the Corps made the right tactical adaptations. The Corps initially forced its preferred doctrine on its new mission, inadvertently delaying

improvements in Arctic proficiency. Only through leaders imposing tangible, often micro-tactical, improvements in resources and training, did the Marine Corps advance from *survive* to *move* and *fight*, eventually proving equal to NATO’s best cold-weather units.

Ultimately, operational art—the linking of strategic ends with tactical actions—demands appreciation of conditions at the tactical level. Future strategic pivots to new theaters or missions will likely fail absent realistic consideration of and adaptation to new conditions. As the Marine Corps of the 2020s embraces new pacing threats, littoral terrain, missions, concepts, and technology, it would be well served to face its new environment as Gunnery Sergeant Singer did in 1978, equally recognizing both the potential opportunities and palpable realities faced in an “entirely different ballgame.”

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¹¹² Krulak, *First to Fight*, 67–99; and Terry Terriff, “‘Innovate or Die’: Organizational Culture and the Origins of Maneuver Warfare in the United States Marine Corps,” *Journal of Strategic Studies* 29, no. 3 (June 2006): 475–503, <https://doi.org/10.1080/01402390600765892>.