On the morning of 30 November 1939, six Soviet infantry divisions flooded over the Finnish border of the Karelian Isthmus following a two-hour artillery bombardment, initiating what would become known as the Winter War.\(^1\) While only spanning 105 days, the fierce and inventive nature of the fighting would serve as a precursor to the impending global conflagration that would soon ignite Europe. Outnumbered 5 to 1, the Finnish armed forces executed a stubborn defense that traded space for time while inflicting massive casualties on the Soviet aggressors.\(^2\) The Finnish political leadership needed time to seek Western assistance, or failing external support, retain a strong position from which to negotiate.\(^3\) While Finland would eventually concede to harsh Russian demands, the time that was afforded to the diplomatic proceedings resulted in Finland retaining its independence. Thus, the Winter War can be viewed as an overall strategic victory for Finland despite the territorial concessions that were made.

Defensive operations rarely receive the study and attention that offensive operations typically do. While offensive operations tend to capture the imagination of readers with tales of bold maneuvers and spirited attacks, the defense has seldom received an enthusiastic audience, outside of tales of “heroic last stands.” Though the Winter War in some ways does constitute the later, that is not why this under-studied conflict deserves more attention. As the United States increasingly refocuses on large unit, combined arms operations, military professionals who have spent the last decade and a half reading about Algeria and Malaya may be looking to places like Finland for historical examples from which to draw inspiration. Given the actions of Russia (and Russian proxy forces) in recent years, a review of the time when a much smaller nation inflicted massive casualties on the Russian Bear may be worth the study — for both the United States and our Baltic allies.

Background

Finland was, in a sense, a victim of geography. With their proximity to the “cradle of the revolution” — Leningrad — the Finns were likely destined for an invasion regardless of any political wrangling.\(^4\) Known today as St. Petersburg, the city sits at the extreme Western frontier of Russian territory on the eastern periphery of the Karelian Isthmus. Of special concern to Soviet military planners was that at its closest point the distance from the Finnish border to Leningrad was only 32 kilometers.\(^5\) Soviet security concerns extended to the sea as well, and their military planners eyed the Baltic islands — particularly the Aaland archipelago. The archipelago held strategic value, as control of the islands would result in naval

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dominance of shipping in the Gulf of Bothnia and the Gulf of Finland, particularly traffic into and out of Leningrad. The Soviets were also keenly aware of the Scandinavian ore that transited the Gulf of Finland and the importance of controlling that sea lane. As Russia’s relationship with Germany soured and Stalin’s concerns over German aggression increased, the Russians’ urge to act increased. The ore, the fact that the land bridge pointed at Leningrad, and the country’s desire for naval supremacy — combined with the assumption that they could easily overwhelm their tiny neighbor — provided sufficient rationale for the Soviet invasion.

Consisting of 400,000 men, the initial Soviet invasion force attacked at nine different points along the 1,600-kilometer Soviet-Finnish border. As the Finnish commander, Field Marshal Carl Gustav Mannerheim, had anticipated, the main thrust came across the Karelian Isthmus. The realistic Mannerheim, a combat-tested career soldier, embraced the harsh truth that Finland could not outright defeat Soviet aggression. Mannerheim noted in his memoirs that “for 20 years active delaying actions on the Karelian Isthmus had become almost a dogma in their training.” Thus, the overall strategy for Mannerheim and his forces became what modern doctrine would define as a delay.

The Use of the Delay

A form of retrograde operations, the delay is defined in modern U.S. Army doctrine as an operation in which a force under pressure “trades space for time by slowing the enemy’s momentum and inflicting maximum damage on the enemy without, in principle, becoming decisively engaged.” The time bought with the lives of Finnish soldiers would enable their government to appeal to Western nations for assistance. The Finns hoped that the collective moral consciousness of the West would lead to an intervention and military assistance. In the case that they did not receive external support (which they did not), Mannerheim acknowledged that his best option was to dig in his heels and make the price of invasion too high for even the Soviet leadership to accept. With enough of a delay, coupled with a fierce defense, the Finns’ secondary plan was to resist strongly enough to wring a negotiated settlement out of the Russians.

It is helpful to study the Finnish delaying tactics by analyzing the area of operations as two separate regions: the Mannerheim Line on the Karelian Isthmus and the region north of Lake Ladoga. The wooded terrain north of Lake Ladoga was the scene of devastating raids by Finnish ski-troopers that caught the world’s imagination during the winter of 1939-40. While much attention has been paid to the novel, almost romantic fight of the ski troopers, the main effort was concentrated on the Karelian Isthmus. There, with its trenches and defensive works, the fighting bore more similarities to World War I than the combat experienced by most other World War II participants.

With the prescient understanding that any Soviet attack would be focused on an advance up the Karelian Isthmus, Mannerheim considered that stretch of land the key to Finnish defenses. In addition to the obvious proximity to Leningrad, Karelia was only lightly wooded and had several usable roads, two conditions which appeared to favor the mechanized Russian army. However, the area was peppered with lakes and marshes, which served to canalize the avenues of approach in the region. The topography of the isthmus, coupled with temporary barriers and strongpoints, gave the defenders a distinct advantage. Mannerheim referred to this 45-mile long strip of land as “our Thermopylae” for its geographic significance. The defenses that were built there became known as the Mannerheim Line.

Fighting the Defense

Forward of the Mannerheim Line was the first element of the Finnish delaying strategy — the covering force. The covering force occupied a buffer zone between the Mannerheim Line and the frontier, which was between 12-30 miles deep at different points, and was the first Finnish contingent to make contact with the Russian invaders. The 21,600-man strong covering force was mobilized on 6 October in order to defend the frontier while the field army was mobilized. On 11 October, the government authorized the mobilization of the field army, and 300,000 men began to deploy along the frontier. By 25 October, the rapid mobilization of the field army was complete, and the main task of the covering force had been fulfilled before the first Soviet forces crossed the border. With its main duty accomplished, the covering force set to laying mines and booby traps as well as destroying civilian housing to deny the Soviets shelter in the buffer zone.

The damage done to the Russians by booby traps set by the covering force was both physical and psychological. There were more traditional delaying tactics, such as the destruction of the railroad bridge at Terijoki (which stopped Russian mechanized movement for a crucial 10 hours), but the biggest impediment to Russian progress proved to be the small unit-level engagements and the fear they provoked. In addition to poisoned wells and sporadic sniper fire, the Russian soldiers were met by several other nasty surprises. Cheap, trip-wire operated pipe mines were hidden in snow banks and detonated at the abdominal level. Undetectable by electronic devices, wooden mines were buried that could blow the tread off of a tank, resulting in Soviet infantry slowly advancing in front of tanks to probe the ground with sticks. Some mines were only partly filled with explosives before being submerged in lakes; retaining buoyancy for several days, the mines would eventually surface to blow up the ice and deny tank movement across a clear, even surface. Fear of these lake mines led to the Russians avoiding the lakes as thoroughfares and moving into the constricted countryside — just as the covering force intended.

Field Marshal Mannerheim had intended for a longer initial delay with the “forward zone” strategy, but several miscommunications contributed to the withdrawal of Finnish troops in some sectors. Once ground had been given up, his subordinate field commanders did not believe it was prudent to attempt to dislodge the Russians who had advanced to the recently vacated positions. Within hours of the invasion,
the lack of modern anti-tank weaponry made itself painfully apparent as a major Finnish failure in preparation. There were some episodes of panic amongst Finnish forces encountering tanks for the first time before they began using field expedient means to engage the advancing armor. During the fighting in the buffer zone, 80 tanks were destroyed by the covering forces wielding little more than satchel charges and bundles of stick grenades. With the field army already in position and the initial contact with Soviet forces resulting in some of the planned delays, the covering forces displaced to the relative safety of the main defensive line (MDL) and by 6 December were essentially integrated with the positions on the Mannerheim Line.24

Contemporary comparisons of the Mannerheim Line to France’s heavily built and defended Maginot Line were exaggerated by both creative journalists and Soviet propagandists. Exaggerated reports of the durability of the line served to explain away the failures and slow progress of the initial Soviet invasion.25 In fact, only two out of the 110-plus strongpoints of the Mannerheim Line — the Poppius Bunker and the “Million Dollar” Bunker — could compare to the complex, heavy strongpoints of the Maginot Line.26 While those two bunkers were nearly forts (complete with camouflaged anti-tank gun positions, multiple strands of barbed wire, and mines), their quality was the exception not the rule for Finnish static defenses.27

The incorporation of the terrain with their manmade defenses proved to be of enormous importance to the Finnish defenders. In addition to barbed wire entanglements, landmines had been sown along the natural avenues of approach.28 Amazingly, the primary anti-tank devices available to the Finnish army were naturally occurring — large, granite rocks had been sunk into the ground in rows to serve as obstacles.29 Some of the lightly wooded areas were selectively cleared as a way to guide unsuspecting Russian forces into positions within deadly Finnish fields of fire and pre-plotted artillery targets.30 Defensive positions, or strongpoints of various design, were located in supporting positions to overwatch the Finnish obstacles.

The Russians, specifically their tanks, faced layers of defense as they first approached the Mannerheim Line; after negotiating ditches, snow-covered swamps, and mud, they encountered the minefields and tank traps. After maneuvering in and around the first belt of obstacles, the invaders faced artillery fire that had accurately been pre-planned before the invasion. Beyond the killing fields of the artillery targets awaited the anti-tank rock obstacles, log obstacles, and camouflaged gun positions. It was only after these layers of defense that the tanks could break through to be inside Finnish lines, at which point they would be facing the almost fanatical bravery of satchel charge-wielding anti-tank teams.31 The major challenge for the Russians remained the cracking of the strongpoints of the Mannerheim Line.

The composition of the strongpoints on the Mannerheim Line were varied in their construction. Some strongpoints were built of logs reinforced with a five-foot thick wall of sandbags.32 Many strongpoints were simply a combination of log-roofed bunkers and earthworks.33 Higher quality strongpoints were concrete pillboxes.34 The strongpoints were generally connected by trenches of varying depth and quality, depending on the time available to the defenders and the hardness of the ground itself. It was from these generally rudimentary defenses that the Finns would emerge to face the crushing waves of Russian tanks and infantry.35

Part of the explanation for the Finnish ability to withstand the mechanized Russian onslaught for as long as they did was the Russians’ lack of armor-infantry coordination. Due to an undeveloped doctrine of combined arms, the Russians’ two strongest elements — tanks and waves of infantry — were not integrated into one effort. As the Finns learned of the Russian tendency to allow tanks to outpace infantry support, they could focus on the dismounted infantry behind the tanks. By positioning their guns behind the armored vehicles, the Finns could mow down Russian infantry with their automatic weapons.36 Additionally, as the Russian tanks became separated from their infantry support, they became vulnerable. Isolated tanks could be engaged with satchel charges and other handheld explosives when approached from blind spots by brave Finnish anti-tank teams. While ammunition was in short supply, Finnish artillery was utilized to disrupt Russian attacks and separate attacking tank and infantry units.37 The Finnish defenders maximized Russian weakness in coordination as well as their own obstacles and meager artillery assets. By separating the attacking tanks and infantry, the Finns could engage them in the ways that best suited their defense.

During the first offensive against the Mannerheim Line, the Russian units were badly decimated, losing three-fifths of their tanks.38 However, even the most optimistic Finn knew that the Russians were not going to be stopped permanently at the Mannerheim Line. Units were put to work constructing both an intermediate and a final line of fortifications to give the isthmus defense some much-needed depth.39 The Mannerheim Line withstood the Russian assault from 6 December 1939 until 15 February 1940 when Mannerheim ordered a general retirement to the Intermediate Line (with the exception of the defenses at Taipale, which became a salient on the northern edge of the isthmus).40

The Intermediate Line varied in strength by sector but was generally of lesser quality than the Mannerheim Line had

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been. While the center of the line was nearly as strong as the Mannerheim Line, the majority of the Intermediate Line was much weaker, typically characterized by some trenches, very few bunkers, and some barbed wire entanglements. One Finnish general disdainfully referred to the Intermediate Line as little more than a "colored line on a map." While the Mannerheim Line had held for 78 days, the Intermediate Line would only delay the Russians for 12 days.

The delay made possible by the Finnish army’s pitched defensive fighting provided their political leaders with time to quietly pursue Western support while simultaneously holding out for the possibility for a negotiated settlement. However, by the time the Finns had retrograded to the final defensive line, Mannerheim knew the die was cast and that he had to commit everything to save Viipuri, Finland’s second largest city. Located on the Gulf of Finland, Viipuri was the southern anchor of the Rear (the third and final) Line. The defenses in the vicinity of Viipuri were one of two areas on the Rear Line, including the area near Taipale on the opposite end of the peninsula, where the Finns integrated coastal guns into their defensive plans. During the closing days of the Winter War, when the ice was strong enough to support Russian vehicles closing on Viipuri, the coastal guns of the Gulf provided some relief for the beleaguered defenders.

The Finns used the coastal guns, which fired shells designed to puncture the armor of battleships, to smash the frozen waterways being used to move Russian forces, drowning invaders in company-sized formations. The six-inch coast-defense rifles in the Taipale sector were employed like giant shotguns, firing "airbursts of shrapnel" on advancing Russian troops. The Finns maximized every weapon in their arsenal, and improvised when necessary, to delay the Soviet invaders in Karelia and buy time for the diplomats.

**Annihilation in the Wilderness**

While the war on the Karelian Isthmus was characterized by trenches, strongpoints, and fighting reminiscent of the Western Front during the World War I, the fighting north of Lake Ladoga was mobile and fluid. It was in the center and northern limits of the frontier that the Finns would deftly employ ski troops and annihilate entire Soviet divisions in the wilderness. The region of Karelia north of Lake Ladoga, Karelia-Ladoga, was one of Mannerheim’s major concerns. With two roads leading from the frontier to the interior within a frontage of between 130-160 kilometers, this region was the “back door” to the isthmus.

A Russian penetration in this region could sweep west and south, and attack the Mannerheim Line defenses from the rear (or bypass them all together). It was in these heavily wooded, almost primeval, forests that the Finns would again showcase their mastery of terrain.

The Russian attack north of Lake Ladoga, in the Ladoga-Karelia region, was not a surprise to the Finnish high command. During the 1930s, the Finnish army had anticipated the possibility and held several war games in the region. The overall strategy focused on allowing the Russians to advance before attacking to pin them down, and then attacking exposed supply lines. While this was a logical and coherent plan, it became moot when the Russians attacked with nine rather than the expected three divisions on 30 November 1939. Mannerheim was forced to parcel out the reserve troops that he had been conserving to reinforce the Mannerheim Line to his commanders north of Lake Ladoga to meet the larger than anticipated Russian thrust. It was in the thick woods north of Lake Ladoga that the Finns would experience their first true victories in the Winter War with their motti tactics.

The term motti was most likely coined by some of the woodsmen that made up the Finnish army. In Finnish, motti refers to a bundle of logs or a pile of timber that is held in place by stakes but will later be cut into more conveniently sized lengths of firewood. In the context of the Winter War, the term came to describe the physically isolated Russian units that would be destroyed piecemeal by the Finns. The Finns essentially utilized their knowledge of the terrain and their skill in navigating the winter landscape to dissect the larger Russian elements into small pockets that were more manageable for their small units. In these road-cutting operations, the Finns minimized the Russian advantages.
in firepower and manpower, inflicting a lopsided number of casualties while stopping the Russian advance.\textsuperscript{54}

The terrain north of Lake Ladoga, unlike the Karelian Isthmus, had very few trafficable roads.\textsuperscript{56} It was not the gently sloping, open approaches of the isthmus, but a heavily wooded region that made off-road movement nearly impossible. The mechanized Russian force had to travel along roads out of necessity, a situation that doomed them to the pain of the "motti" process. The typical operation was comprised of three main phases. First, the Finns would pinpoint the enemy and encircle the road-bound Soviet troops to prevent further movement and fix them in position. Quick attacks by airborne infantry were used to overwhelm previously identified weak points and isolate Russian units into multiple pockets. The final phase can best be described as annihilation with the Finns physically destroying the smaller or weaker pockets while the cold and hunger degraded the effectiveness of the larger "motti."\textsuperscript{56} This tactic was utilized with devastating success by the Finns particularly well at the Kemijoki River, and on a larger scale at Suomussalmi and the Raate Road.\textsuperscript{57}

For all their innovation and bravery, the Finns could not withstand the Russian onslaught indefinitely. On 12 March 1940, a peace agreement was signed in Moscow, and a ceasefire went into effect the next day at 1100 local time. While the Finns ceded over 25,000 kilometers of territory to the Soviets and would fight the Continuation War starting in June 1941, by the end of the World War II they retained their independence.\textsuperscript{58} The delaying tactics of Mannerheim and the Finnish army temporarily checked the Soviet invasion and gave the Finns a much stronger position to negotiate from than had the invaders made it to Helsinki.

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While there have been obvious advances in military technology and geopolitics since 1939, some concepts remain timeless. Elements of the strategy and tactics of the Winter War are still relevant given the current geopolitical situation. With the increasingly assertiveness of Russia since 2014, the Scandinavian and Baltic states have much to gain by studying the actions of the Finnish army during the Winter War. It would behoove the states on Russia's periphery to incorporate the tactical and operational lessons of the Finns' delaying operations into their current planning.

Beginning with the 2014 annexation of Crimea, modern Russia has reaffirmed itself as a threat to Eastern Europe.\textsuperscript{59} Increasingly, the Russian military has both overtly and covertly provoked its neighbors. NATO fighter aircraft scrambled over 100 times during 2014 to intercept Russian aircraft. Increasing concerns over Russian intentions have contributed to the strengthening of relations between Finland and Sweden, including the formation of a joint naval task force.\textsuperscript{60} A recent study conducted by the RAND Corporation detailed that in the Baltic region, Estonia, Lithuania, and Latvia are at particular risk for Russian incursions. The war games that the RAND study is based on indicated that NATO forces would not be able to even reach the Baltic states before Russian forces reached capital cities like Tallinn in Estonia and Riga in Latvia.\textsuperscript{61}

The Baltic states should specifically take heed of the delaying tactics that served the Finns well during the Winter War. While technology has changed and the weather of the Winter War was a crucial variable that generally helped the Finnish cause (and cannot be artificially replicated by a defender), there remain several lessons to be learned. While none of the Baltic or Scandinavian states could withstand a Russian invasion on its own, by adopting some of the delaying tactics of the Winter War, the defenders could stand a chance in trading space for the time it takes for NATO forces to respond.

One of the challenges facing modern Baltic and Scandinavian states is similar to one that had faced the Finns in 1939 — the lack of armor or anti-tank weaponry.\textsuperscript{62} While Finnish improvisation and the eventual acquisition of a limited number of Bofors guns helped the Finns address Soviet armor during the Winter War, it should be noted that their efforts were never enough to either destroy or evict the Soviet army.\textsuperscript{53} To address this disparity, the RAND study recommends a forward positioning of NATO or U.S. armored brigade combat teams in the Baltic region as well as a return to the highly integrated ground and air doctrine recognized as "AirLand Battle" in the 1980s.\textsuperscript{63} Regardless of a nearby NATO force, the Baltic states specifically should independently invest heavily in modern anti-armor weapons and medium-to-heavy armored forces of their own. Modern Baltic states can learn from the oversights of Finnish politicians during the 1930s, who did not invest in tanks — as tanks are not exclusively offensive weapons but can also be utilized in the defense. A key to any delaying action in the Baltics would be armored units employed as a mobile reserve, reinforcing units where they were needed but also serving in an anti-tank capacity in their own right.\textsuperscript{55}

The Finnish mastery of terrain during the Winter War, both with their integration of natural terrain into their defenses, and their engagement techniques (for example, luring Russian tanks onto frozen lakes with fake roads before blasting holes in the ice) is a military concept to be emulated.\textsuperscript{64} The Baltic states, however, would not have the same relative advantage in their hypothetical defense. Rather than the naturally canalizing Karelian Isthmus, the eastern areas of the Baltics favor the invader more than the defender. While there are still woodlands, the terrain is generally more open and has a significantly higher number of trafficable roads.\textsuperscript{65} What they can do, however, is stress depth in their defensive plans. The construction of a series of heavily manned defensive lines would likely not be effective; without the natural terrain to tie into, any form of "Baltic Line" would likely lack the stopping power that the Mannerheim Line had. A series of separate positions, in depth, would better serve a delaying Baltic force. While some positions would have to be substantial in their own right, especially those astride major roadways or cities, depth would help the Baltic states attrit Russian forces as they drove westward.

Another lesson from the Winter War is the focused targeting of supply trains. While horses may no longer be employed

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to move supplies, all modern militaries require a significant logistical “tail” to support their combat soldiers. While it is unlikely that the modern world will see ski-borne troops attacking road-bound columns again, motti tactics can still be adapted to fit a potential Russian incursion scenario. There are several modern military advances that could be factored into this process. A contemporary motti could feature retrograding, covering forces sowing improvised explosive devices (IEDs) along roads to either block key routes with disabled vehicles, or to detonate on key command and control vehicles. These same forces could mimic the physical isolation that the Finns imposed by launching electronic warfare (EW) attacks — by “jamming” voice and digital communications, the invaders would be isolated from their networks and their higher headquarters. Strikes on supplies being moved forward could be conducted remotely, by unmanned aerial vehicles (UAVs), with little risk to personnel. The spirit of Finnish motti tactics could live on if these tactics were implemented by the Baltic states.

It would be a significant investment for both the United States and NATO to position the troops necessary to deter Russian aggression in the Baltics. According to the RAND study, at least seven brigades (at least three of which being armored) would suffice as a deterrent. Casting aside whether or not this estimate is accurate, no one can deny that the political process needed to approve and move such a large force is not a quick one. The best strategy for Baltic states is to immediately focus on expanding their capabilities while lobbying for an increased NATO presence. Both the Baltic and the Scandinavian states can draw inspiration for new strategies from the Finns performance during the 1939-40 Winter War. Mobile armored reserves, modern motti tactics, and a focus on depth could serve as short-term defensive solutions for the Baltic and Scandinavian forces in the face of increased Russian belligerency.

Notes

4 Ibid, 8.
5 Ibid, 8.
6 Ibid, 7.
7 Ibid, 8.
9 Ibid, 49.
10 Ibid, 82.
12 Sander, *The Hundred Day Winter War*, 78.