

Air-Ground Success and Failure: Lessons Learned from Korea, November to December 1950

A Monograph

by

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Abstract

Air-Ground Success and Failure: Lessons Learned from Korea, November to December 1950, by Major John C. Henderson, 56 pages.

The 2018 National Defense Strategy describes a global security environment rife with continuous competition against rival regimes that desire to create a new world order hostile to the United States' national interests. Accordingly, the primary national security concern is now inter-state strategic competition. While succeeding in competition may deter rival regimes' hostile actions, what if this deterrence fails and competition escalates to armed conflict? The Joint Force must then resort to coercion to compel the rival to change their behavior. Joint operations tend to leverage superior air power to support military coercion. Rivals recognize this advantage and seek ways to either match the capability or asymmetrically counter it. This situation is evident in the Western Pacific as tensions continue to fester between the United States and China. In this monograph, the author examines the application of air power in support of joint operations during the Second Chinese Offensive in Korea from November to December 1950. At that time, the United Nations Command (UNC) planned to fight to the Yalu River and reunify the Korean peninsula. Despite significant advantages in land, sea, and air over the Chinese Communist Forces, the UNC failed to achieve their goal and withdrew south of the 38th parallel. Today's Joint Force can learn valuable lessons from the UNC's failure that remain relevant to use of coercion and force projection. The intent of the author is to use an analysis of a historical case study to educate military planners on possible pitfalls that may preclude success before embarking on a limited, coercive campaign against the People's Liberation Army in the Western Pacific region.

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Abbreviations

A2AD	Anti-access, area denial
ADP	Army Doctrine Publication
AI	Aerial interdiction
CAS	Close Air Support
CCF	Communist Chinese Forces
FEAF	Far East Air Force
FEC	Far East Command
FM	Field Manual
ID	Infantry Division (US Army)
IRC	Information Related Capabilities
ISR	Intelligence, Surveillance, and Reconnaissance
JP	Joint Publication
LOO	Line of operation
MAW	Marine Air Wing
NAVFE	Naval Forces Far East
NDS	National Defense Strategy
NKPA	North Korean People's Army
PLA	People's Liberation Army
RCT	(Infantry) Regimental Combat Team
ROK	Republic of Korea
TF	Task Force
UN	United Nations
UNC	United Nations Command

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Introduction

The 2018 National Defense Strategy (NDS) describes a global security environment rife with competition as rival regimes attempt to create a new balance of power and world order hostile to the United States' national interests.¹ Accordingly, the primary national security concern is now inter-state strategic competition vice terrorism, a threat that requires the nation's military to adapt how it operates.² This is a stark change from the past 20-year focus of the Global War on Terror. The future operating environment requires a Joint Force able to compete with rival regimes, thrive within their areas of influence, and remain postured around the world to blunt rivals' military aggression when armed conflict occurs.

As a result, the Joint Force introduced the competition continuum in Joint Doctrine Note 1-19 as a signal that the legacy continuum of conflict that spans from peace to war is inadequate for the future operating environment.³ This change necessitates the need for the Joint Force to posture to not only deter rival's hostile actions, but remain capable of coercing a rival to change their behavior when deterrence fails and competition escalates to armed conflict. Since the collapse of the Soviet Union, the Joint Force benefited from unmatched technological superiority during combat operations to support its military coercion; however, those clear advantages no longer exist during contemporary conflict with peer adversaries.

Of particular concern is the increasing competition for strategic relevancy between the United States and China that may portend armed conflict. This challenging situation is nowhere more apparent than in the Western Pacific region. China continues to claim territorial sovereignty

¹ US Department of Defense, "Summary of the 2018 National Defense Strategy of The United States of America – Sharpening the American Military's Competitive Edge" (Washington, DC: Government Publishing Office, 2018), 1.

² Ibid., 2.

³ US Department of Defense, Joint Doctrine Note 1-19: *Competition Continuum* (Washington, DC: Government Publishing Office, 2019), 2-4. See also US Department of Defense, Joint Publication 3-0, *Joint Operations* (Washington, DC: Government Publishing Officer), I4-5, V4-5, VII-5.

over maritime water ways and islands, and militarize the area to assert their legitimacy. These actions threaten the United States' regional allies and partners, and violate the international rules-based order. Moreover, the United States no longer possesses clear technological advantages in the military domains if armed conflict occurred with China over these aggressive actions.⁴ Thus, when deterrence does fail, the United States may find its efforts to leverage military coercion limited and ineffective. This predicament may undermine the United States' regional relationships as allies and partners question the United States' ability to support them, and instead accede to China's demands.

A key element of the United States' military coercion is its air power. Military aviation provides significant advantages that span the joint warfighting functions. One advantage most visible is the ability of air power to deliver destructive firepower from the skies across great distances. China recognizes this advantage and seeks ways to either match the capability or asymmetrically counter it. Therefore, the Joint Force must evaluate its ability to project force via air power before embarking on a coercive campaign to restore order in Western Pacific. The study of operational art can facilitate the evaluation. With numerous US military obligations around the world and challenges with force projection, the concepts of basing, lines of operation (LOOs), and operational reach are three critical, interrelated elements of operational art that warrant examination when considering the use of coercive military force in the Western Pacific's expansive maritime environment.

The significance of this monograph is that it provides an analysis of how a Joint Force's failure to understand the importance of operational art and science can inhibit force projection, degrade attempts at military coercion, and lead to possible defeat in conventional armed conflict. The intent of the author is to use an analysis of a historical case study to educate military planners

⁴ US DoD, "2018 NDS," 3. See also US DoD, "Military and Security Developments Involving the People's Republic of China, 2020: Annual Report to Congress" (Washington, DC: Government Printing Officer, 2020), i-ii, vi-ix.

on possible pitfalls that may preclude success before embarking on a limited, coercive campaign against the People's Liberation Army (PLA) in the Western Pacific region. The study's conclusions may be useful when designing operation plans for the Western Pacific in response to Chinese aggression.

During November and December 1950 of the Korean War, the Chinese Communist Forces (CCF) halted the United Nations Command's (UNC) offensive to the Yalu River to reunify the Korean Peninsula.⁵ Despite the UNC's apparent superiority across land, sea, and air, they instead ceded significant territory to the CCF and retreated south of the 38th parallel.⁶ The operation was a failure because of their overconfidence in the capabilities of air power and a lack of understanding of operational art and science. As a result, the conflict would continue for three more years until the United States threatened the use of nuclear weapons.⁷

Today a potential armed conflict with China in the Western Pacific may span the first and second island chains as opposed to only the Korean peninsula. Additionally, the PLA now possesses modern military capabilities in all domains that rival those of the US military in quality and quantity throughout the region. Furthermore, the United States still faces the challenge of

⁵ Far East Command (FEC), General Headquarters (GHQ), "Command Report November 1950" (Released 31 March 1951), 3-5. See James S. Lay Jr, National Security Council (NSC) Executive Secretary, *NSC 81/1: United States Courses of Action With Respect to Korea, Update 1* (Washington, DC: NSC Report, 1 September 1950), 2, 6; *NSC 81/2: United States Courses of Action With Respect to Korea, Update 2* (Washington, DC: NSC Report, 14 November 1950), 1-2. Sources available in ISCARTL Archives.

⁶ FEC, GHQ, "Command Report December 1950" (Released 25 May 1951), 1-2. Source available in ISCARTL Archives.

⁷ The significance of this threat was much greater than previous. The atomic weapons used at Hiroshima and Nagasaki in August 1945 relied on fission to produce 15 and 20 kiloton blasts respectively. On November 1, 1952, the United States successfully tested the first thermonuclear weapon at Enewetak atoll that relied on fusion to produce a 10,000 kiloton (or 10 megaton) blast, approximately 500 times more powerful than the atomic weapon at Nagasaki. Both types of weapons are considered nuclear weapons; however, the latter is much more destructive. Overall, the US's development of thermonuclear weapons enhanced US military coercion efforts during the Korean War. Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, NY: Cornell University Press, 1996), 137, 140. See also Melissa Chan, "What is the Difference Between a Hydrogen Bomb and an Atomic Bomb?" *Time*, September 22, 2017, <https://time.com/4954082/hydrogen-bomb-atomic-bomb/>; Stephanie Pappas, "Hydrogen Bomb vs. Atomic Bomb: What's the Difference?" *Live Science*, September 22, 2017, <https://www.livescience.com/53280-hydrogen-bomb-vs-atomic-bomb.html>.

projecting credible combat power over 5,000 miles from the continental United States as it did in 1950, a challenge not faced by the Chinese at either time. Thus, future conflict is no longer reminiscent of the tale of “David and Goliath,” but a possible foreshadow of a modern tale of “Goliath and Goliath.” The former was disastrous for the United States in 1950, and the latter could be even worse today if the United States military does not learn from its past failures. Therefore, Joint Force planners must not ignore the importance of operational art and science to integrate action and facilitate success when pursuing a coercive strategy of denial that requires the use of air power.

This monograph uses a qualitative methodology to analyze a historical case study of the Korean War to identify lessons learned relevant to the application of operational art and science. The monograph examines the events of the Second Chinese Offensive between 24 November and 15 December 1950, and some of the causal factors that contributed to the UNC’s retreat. While the UNC’s primary objective of clearing communist forces from North Korea failed, its use of air power to avoid the destruction of its subordinate commands during a massive retrograde operation is worthy of study. Of interest are the 1st Marine Division, US Army Regimental Combat Team 31 (RCT-31), and the US 2nd Infantry Division (2ID) retrograde operations considering those commands faced the brunt of the Second Chinese Offensive with mixed results.

Furthermore, this monograph focuses on the three traditional domains of warfare: land, sea, and air. The decision does not disregard the importance of the newer domains: space, cyberspace, and information. The former two domains did not exist at the time, and the latter was not as prevalent at the operational level of war as it is today. Moreover, the monograph’s examination aligns to the contact, blunt, and surge layers of the 2018 NDS’s Global Operating

Model; as competition escalates to armed conflict, and the United States requires some form of a conventional military response via a combination of land, sea, and air domains.⁸

The monograph concludes with relating the lessons learned from the case study to the current operating environment in the Western Pacific. While the character of future conflict with China is different than seventy years ago, legitimate parallels exist with respect to the United States' desires to avoid unnecessary escalation, limited war objectives, and maintenance of a status quo favorable to the United States and the international rules-based order.⁹ The lessons learned from the historical case analysis are linked to today's conditions to identify issues for military planners to consider when developing future military options as means to support national policy objectives.

Despite air power's prevalence in contemporary operations, many may remain unfamiliar with different terms and concepts related to its use. In combat environments, three mission sets tend to prevail: air superiority, air interdiction (AI), and close air support (CAS). Air superiority is a primary concern in combat operations, and addresses the need to gain and maintain control of the air to support operations.¹⁰ Air forces focus on the counter air fight to retain their ability to apply air power in pursuit of other air power missions sets. Overall, establishing air superiority is requisite for effective AI and CAS.

The combination of AI and CAR are critical capabilities of air power that enhance the effectiveness of surface operations. "AI is operations to divert, disrupt, delay, or destroy the

⁸ "These are, respectively, designed to help us compete more effectively below the level of armed conflict; delay, degrade, or deny adversary aggression; surge war-winning forces and manage conflict escalation; and defend the U.S. homeland," (last with respect to homeland layer). With respect to conventional military capabilities, one can view the layers as the posture of military forces in proximity, nearest to farthest, to an adversary or region of competition/conflict. See 2018 NDS, 7.

⁹ Ibid., 8.

¹⁰ Air superiority is a concept that addressed by a Joint Force Air Component Commander when conducting defensive and offensive counter air (DCA and OCA) operations. Department of Defense, Joint Publication 3-30, *Joint Air Operations* (Washington, DC: Government Publishing Office, 2019), I-1, II-4-II-7, III-12.

enemy's military surface capabilities before it can be brought to bear effectively against friendly forces, or to otherwise achieve enemy objectives," and does not normally require detailed integration with friendly forces due to distance.¹¹ Whereas, "CAS is air action by aircraft against hostile targets that are in close proximity to friendly forces and requires detailed integration of each air mission with the fire and movement of those forces."¹² While the former sets favorable conditions before friendly forces engage in combat, the latter is used to increase the lethality and ability to create various combinations of firepower destroy the enemy once in combat.

Overall, the concepts of air superiority, AI, and CAS form a triad of air operations that necessitates the cooperation of all forces to create operational plans that balance the application of each mission. Striking a balance is essential because a Joint Force possesses finite aviation assets to generate sorties to allocate in support each mission set.¹³ A lack of cooperation and unity between commanders and staffs of various Joint Force components may lead to an unbalanced plan that introduces risks that an enemy may seek to exploit for their benefit.

Finally, one must understand the relationships between the elements of basing, LOOs, and operational reach. "A base is a locality from which operations are projected or supported," and "directly affects the combat power and other capabilities a joint force can generate."¹⁴ In succinct words, bases serve as locations to concentrate and project military force abroad.

¹¹ The term 'interdiction' is used in place of AI throughout the rest of the monograph. See Department of Defense, Joint Publication 3-03, *Joint Interdiction* (Washington, DC: Government Publishing Office, 2016), II-1-II-3.

¹² In the historical case study, CAS refers only to fixed-wing aircraft since the concept of CAS via rotary-wing aircraft originated after the Korean War. Otherwise references to present-day CAS include the use of both types of aircraft. See Department of Defense, Joint Publication 3-09.3, *Close Air Support* (Washington, DC: Government Publishing Office, 2014), ix.

¹³ A sortie is "an operational flight by one aircraft." The monograph frequently uses the term sortie, and it is a key element of several interrelated tables produced by the author. Additionally, while sortie refers to any type of operational flight of a single aircraft, throughout the monograph is primarily refers to a single aircraft flying either a close air support or air interdiction mission. See JP 3-30, GL-7.

¹⁴ The historical case study primarily focuses on basing as related to a locality that can support air operations from permanent bases, forward operating bases, or an aircraft carrier (sea-base). See Department of the Army, Army Doctrine Publication 3-0, *Operations* (Washington, DC: Government Publishing

Moreover, basing reduces the length of LOOs between military forces and potential areas of conflict. LOOs are the avenues across which military forces move to act on an objective..¹⁵ Thus, shorter LOOs imply that a military force can respond to an area of conflict sooner. Combining multiple bases and their corresponding LOOs to a set of objectives also provides the Joint Force various options of how to reach those objectives. Increased options facilitate increased operational flexibility for the Joint Force which in turn increases the complexity a potential adversary must overcome if they choose to escalate conflict.

Lastly, operational reach is a function of basing and LOOs that manifests in the operating environment as the “distance and duration across which a joint force can successfully employ military capabilities.”¹⁶ Operational reach may be viewed as directly related to the combination of basing and LOOs, as either bases or LOOs in a region increase so too does operational reach. Overall, Operational reach is applicable to all services, and is critical to a Joint Force’s ability to sustain operations and produce the effect they desire while attempting to achieve their military objective, and actions beyond a unit’s operational reach risk premature culmination.

Literature Review

Dr. Robert Pape’s book, *Bombing to Win: Air Power and Coercion in War*, presents a detailed analysis of the effectiveness of different coercion strategies supported by air power that

Office, 2019), II-10-II-11. See also Department of Defense, Joint Publication 5-0, *Joint Planning* (Washington, DC: Government Publishing Office, 2017), IV-35.

¹⁵ ADP 3-0, II-7, defines a LOO as “a line that defines the directional orientation of a force in time and space in relation to the enemy and links the force with its base of operations and objectives. Lines of operations connect a series of decisive points that lead to control of a geographic or force-oriented objective.”

¹⁶ Department of Defense, Joint Publication 5-0, *Joint Operations*, (Washington, DC: Government Publishing Office, 2017), IV-35-IV-26, also states, “reach may be constrained by the geography, threats, and environmental conditions in and around the operational area. Reach may be extended through forward positioning of capabilities and resources.” Moreover, ADP 3-0 explains that “operational reach is a tether; it is a function of intelligence, protection, sustainment, endurance, and combat power relative to enemy forces.” See also ADP 3-0, II-10.

can compel an adversary to accede to one's demands. First, he explains the logic of coercion as a simple cost versus benefit equation. "When the benefits that would be lost by concessions and the probability of attaining these benefits by continued resistance are exceeded by the costs of resistance and the probability of suffering these costs, the target concedes."¹⁷

Second, of the four coercive strategies examined, Pape argues that the most effective through history is a strategy of denial.¹⁸ He supports his argument through a qualitative analysis of 40 coercive air campaigns, and whether his theory could predict the success or failure of the strategy. He also provides more in-depth analyses of the successes and failures of all four strategies in five largest coercive air campaigns of the 20th century, which includes the Korean War in 1951 and 1953. Overall, Pape's conclusions regarding strategies of denial as the superior option for coercive air campaigns remain relevant today given the general desire for armed conflict to remain limited in scope, and the proliferation of nuclear weapons that greatly reduces the effects of nuclear coercion.¹⁹

Moreover, author reviewed seventeen books and official histories that chronicle the general events leading up to and during the Chinese Second Offensive of the Korean War. This monograph's case study initially relied on a few seminal accounts of the conflict from authors such as Roy Appleman, T.R. Fehrenbach, and Allan R. Millett, all renowned military historians. Each presents their own unique narrative and different approach to retelling the story of the

¹⁷ Pape, *Bombing to Win*, 16.

¹⁸ A conventional strategy of denial is about eliminating an adversary's military means required to achieve its military objectives. This results in the defeat of the adversary's military strategy, and will tend coerce the adversary to alter their behavior according to the coercer's demands. Ibid., 10-11, 19-20, 314-315. In contrast to Pape, Dr. Thomas Schelling's book, *Arms and Influence*, paints a more uninhibited view of military coercion. Dr. Schelling focuses his analysis on the "diplomacy of violence," the ability to threaten unmitigated violence and destruction on an adversary. He adopts this view due to the continued development of nuclear weapons, and how their existence now underwrites the use of any type of military force. Whereas Pape prefers strategies of denial, Schelling can be viewed to prefer strategies of punishment to compel an adversary to concede to one's demands. See also Thomas Schelling, *Arms and Influence*, (New Haven, CT: Yale University Press, 2008), 33-34.

¹⁹ Pape, *Bombing to Win*, 315-318, 325.

Korean War, and specifically the events of the Second Chinese Offensive that occurred in the winter of 1950. Together all three authors provide complementary narratives and extensive documentation of the conflict.

Appleman provides several in-depth retellings of events in his books, *The US Army in the Korean War: South to the Naktong, North to the Yalu; Disaster in Korea; and East of Chosin*.

The former provides a rich background that articulates the progression of the war from its beginning and ends prior to the calamitous setbacks that the UNC would experience in late November 1950. Appleman's final entry entitled "The Pregnant Military," situation sets the stage for General MacArthur's decision to continue the attacks of the US 8th Army and US X Corps to the Yalu, however in a highly uncertain and precarious situation.²⁰ The latter two books provide intimate narratives of the surprise and rapid retreat of 8th Army at the Battle of the Ch'ongch'on River north of Pyongyang, and the destruction of RCT-31 at the Chosin Reservoir. Both provide distinctive accounts of the military operations in those confrontations reinforced by a plethora of personal accounts of those who were present.

Fehrenbach and Millett each provide their narrative of the conflict in *This Kind of War* and *The War For Korea, 1950-1951: They Came From the North*, respectively. When reviewing these texts, the author focused on the portions that chronicled the events of November to December 1950. Fehrenbach provides an expansive account of the entire conflict that ranges in perspective from the geo-political to the individual soldier. His narrative is a mix of particular details of specific events and broad general context that defined the overall conflict.²¹ Moreover,

²⁰ Roy Appleman, *US Army in the Korea War: South to the Naktong, North to the Yalu* (Washington, DC: US Government Printing Office, 1986), 770-776.

²¹ Fehrenbach's account of the Korean War is reminiscent of the balance between particular details and general abstractions that a historian takes when covering an expansive period of history as explained by John Lewis Gaddis. Millett also uses this style; however, tends to remain more general than particular. The fact that Millett did not serve during the Korean War while Fehrenbach did explains the difference in his approach as he reflected on primary sources without the benefit of personal experience in Korea. See John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (Oxford: Oxford University Press, 2002), 14-15.

Millett's account focuses heavily on the geo-political interplay between the United States, North Korea, China, the Soviet Union, several key military leaders, and the United States and Chinese units engaged in the conflict.

Whereas the previous authors' accounts focus heavily on land operations, Conrad Crane, Robert Futrell, and Richard Hallion's books tell the tale of the contributions of air power to the Korean War. Crane's book, *American Air Power Strategy in Korea, 1950-1953*, provides a broad overview of the successes and failures of air power during the war, tensions between the Army, Air Force, and Navy over air power consideration, and how the war shaped the future of military aviation. Because of his broad approach, Crane alludes to the works of Futrell and Hallion as superb studies of the Air Force's and Navy's aviation efforts. Futrell's *The United States Air Force In Korea, 1950-1953* is a comprehensive 800-plus page history of nearly all aspects of the newly independent US Air Forces' contributions to the Korean War and the importance of those contributions to a wide range of strategic and tactical air operations. Furthermore, Hallion's *The Naval Air War in Korea* provides a similarly detailed, but not as expansive history of naval aviation when compared to Futrell. Hence, all three authors' books are complementary and provide rich detail for analysis.

Finally, the monograph considers official military histories and other various primary source materials. Official histories from the US Army's Center of Military History, US Marine Corps' Historical Division, and US Navy's History and Heritage Command. These histories helped cover the occasional gap in narratives between the previous mentioned authors, or provided additional details not previously captured. Most important is this monograph's collection of unit war diaries, command reference books, and special action reports that cover the case study. The author gathered these documents to corroborate the narratives of each author considered, and support the creation of several figures that relate air and ground operations across

time and space as a part of the monograph's analysis.²² While extensive, some gaps in primary source documents still exist. Nonetheless, the collection of documents cited in this monograph provide a foundation for continued refinement and future research.

Operational Art and Science and Force Projection

“Operational art is the cognitive approach by commanders and staffs to develop strategies, campaigns, and operations to organize and employ military forces by integrating ends, ways, and means.”²³ The two main functions of operational art are to ensure that: “military actions are aligned with, and directly support strategy,” and “tactical actions occur under the most advantageous conditions possible.”²⁴ After political leadership establishes a policy objective (an end) and elects to use military force (a way), a Joint Force command designs an operational approach that aligns units and tactical actions (the means) to support the policy objective. To accomplish this, the Joint Force uses the elements of operational art and other planning concepts to develop military options that best achieve the desired political objective. Since World War II, limited political objectives are often the norm and tend to constrain the Joint Force's scope of potential military operations.

Furthermore, most US military operations require commanders to project capable military force far from the nation to support the political objectives with limited capacity. Since the end of World War II, total active duty US military strength has declined from 12,055,884 in 1945 to 1,379,800 personnel in 2020 except for notable, but temporary, increases in support of the Korean and Vietnam Wars after they started.²⁵ In general, this decrease in personnel

²² Special thanks to the efforts and assistance of two archivists in particular: Mr. Russell Rafferty of the US Army's Combined Arms Research Library at Fort Leavenworth, KS, and Ms. Tammy Horton of the US Air Force's Historical Research Agency at Maxwell Air Force base in Montgomery, AL.

²³ ADP 3-0, II-1.

²⁴ Ibid.

²⁵ US Department of Defense, “Selected Manpower Statistics: Fiscal Year 1997” (Washington, DC: Government Printing Office, 1997), 23, 51-53; See also International Institute for Strategic Studies,

corresponds to the nation's desire to pursue limited political objectives when military force is required. Nonetheless, the US military remains engaged in operations around the world, and, thus, must assess how to respond to emerging crises while balancing global commitments. This situation increases the complexity of contemporary force projection because the decision to surge forces to address a regional crisis may require a reduction in forces elsewhere. Short of an existential threat to the United States that necessitates significant increases to the US military, political and military leaders must consider how to posture military forces abroad to set conditions for long-term competition and potential future conflicts. Thus, the elements of basing, operational reach, and LOOs are critical elements to consider for force projection.

Projecting force is a common challenge for many maritime nations, and, not least of all, the United States. The United States' ability to generate and project credible military capabilities with limited capacity from the nation's borders alone does not support operational responsiveness in times of crisis. The LOOs extending from the continental United States across either the Atlantic or Pacific Oceans to regions important to national interests exceed 3,000 miles. These large distances reduce the nation's operational reach and constrain the ability to produce effects with military force that support national objectives. Hence, forward basing of military capabilities becomes imperative and enhances the Joint Forces' ability to respond to crisis when required.

The other half to crafting viable operational approaches to support force projection requirements is operational science. While operational art provides a conceptual design that requires further refinement, operational science addresses the mechanics of how the design can manifest considering the facts of the current situation and resources available. The author views operational science as the actual capacity a Joint Force can leverage to support operational art's conceptual design. As related to the joint functions, movement and maneuver, fires, and

The Military Balance: The Annual Assessment of Global Military Capabilities and Defence Economics, 2020 (Self-published, IISS, 2020), 46.

sustainment are the three functions where operational science is most visible. Knowledge about movement tables, weaponeering, and consumption rates are a few basic but critical examples of operational science that influence how a unit may perform in various situations. A thorough understanding of a unit's capabilities and limitations contributes to realistic estimates of performance that inform if the design provided by operational art is feasible.²⁶ Thus, it is imperative that the Joint Force is well-versed in the mechanics of their units when planning for and executing operations that require force projection of credible military capabilities.

Overall, the synergy of operational art and science is the backbone of successful military operations. While tactical excellence of individual units can overcome disadvantageous situations and exploit advantageous situations, their actions tend towards results with limited scope and duration. However, operational excellence throughout a command can ensure various tactical actions reinforce each other and identify opportunities to achieve long-term success regardless of the situation. Thus, the understanding of operational art and science is a must for successful military operations, and modern military operations necessitates the thoughtful use of operational art and science with careful consideration of basing, LOOs, and operational reach central to that necessity.

The Political Context of Conflict in 1950

While armed conflict between the UNC and the CCF and North Korean People's Army (NKPA) was center stage during the Korean War, the war occurred against the greater backdrop of the United States and Soviet Union's competition for world dominance. National Security Council resolution (NSC) 68 characterizes the conflict as a struggle between ideologies of

²⁶ The staff works through an iterative process that considers the dual perspectives of operational art and science to provide the commander the opportunity to make the best possible decision on how to conduct military operations while operating within competitive time constraints. See Jamshid Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity, A Platform for Designing Business Architecture*, 3rd ed. (Burlington, MA: Elsevier, 2011), 89-93.

democratic freedom and communist oppression underscored by the threat of mass destruction via atomic weapons.²⁷ Moreover, despite the United States' superior potential military capacity compared to the Soviet Union, the United States' conventional military capabilities decreased since the conclusion of WWII while the Soviets' increased.²⁸ The threat of another world war loomed on the horizon with no certainty who would be the victor. Thus, regardless of the violent back-and-forth conventional conflict that occurred between the United States and China in Korea, the true concern remained the United States' ability to deter and defeat the Soviet Union's global agenda.

In response to the ideological conflict, the United States developed an overarching policy to guide all future actions. This policy was to "foster a world environment in which the American system can survive and flourish."²⁹ Subordinate elements of the policy were to "develop a healthy international community," and the concept of containment of Soviet communism.³⁰ Combined these subordinate elements drove the United States to remain engaged around the world with all elements of national power in an attempt to deter communist aggression in all forms. Thus, when North Korea invaded South Korea, the United States interpreted that action as an affront to its political policy. Subsequently, the United States became militarily involved on the Korean peninsula to stabilize the situation and restore the status quo antebellum irrespective of the United Nations' (UN) goal to reunify the peninsula.³¹ If possible the United States would support the UN's objective only if it could do so without risking an escalation to general war with

²⁷ James S. Lay Jr., National Security Council Executive Secretary, *NSC 68: United States Objectives and Program for National Security* (Washington, DC: NSC Report, 12 April 1950), 4, 7-9, 37-38. Source available in ISCARTL Archives.

²⁸ Ibid., 17, 31-33.

²⁹ Ibid., 21.

³⁰ Ibid.

³¹ Lay Jr., *NSC 81/1*, 1-3. Source available in ISCARTL Archives.

either China or, most importantly, the nuclear capable Soviet Union.³² Overall, the United States desired to limit armed conflict to ensure it did not jeopardize its global standing considering its delicate military force posture vis-à-vis the Soviet Union.

Considering the desire to prevent the escalation to general war, the United States' primary focus on the Korean peninsula was at restoring the 38th parallel. NSC 81/1 supported military operations both south and north of the 38th parallel, the latter only permitted if necessary, to force the withdrawal of NKPA from South Korea.³³ Furthermore, US military action north of the parallel outside of the scope of forcing the NKPA withdrawal, such as unifying the peninsula, were not "clearly authorized by existing Security Council resolutions."³⁴ The only exception to this stipulation was if the NKPA rapidly collapsed in light of UNC military action, North Korea rejects UN terms to a surrender, and there was no "evidence of a substantial risk of a clash with Soviet or Chinese Communist forces."³⁵ Thus, it appears evident that United States possessed a limited political aim at the onset of the Korean War.

With the political aim established, but under continuous evaluation, General Douglas MacArthur, Commander of the UNC forces, and his staff began crafting their operational approach to secure the 38th parallel. Through a variety of operations spanning land, sea, and air, the UNC reached the 38th parallel by early October 1950.³⁶ The UNC proceeded to conduct operations north of the parallel in accordance with previously permitted guidance. Nonetheless, the situation was about to change. By 1 November, US forces directly engaged Communist Chinese Forces near Unsan, the context of the conflict evolved, and a risk of general war with the

³² Ibid.

³³ Lay Jr., *NSC 81/1*, 4-5. Source available in ISCARL Archives.

³⁴ Ibid., 7.

³⁵ Ibid., 11.

³⁶ US Department of the Army, US Army Center of Military, *The Korean War Chronology (Online)*, Phase 2.

Chinese escalated.³⁷ NSC 81/2 stated the need to immediately identify the intentions of the Chinese, and recommended to the President to “continue military operations in accordance with current directives.”³⁸ NSC 81/1 provided the current directives and despite their limited aims, General Douglas MacArthur would choose to continue operations to the Chinese border.

There and Back Again: The UNC in Korea, November – December 1950

Had they interfered in the first or second months it would have been decisive. We are no longer fearful of their intervention. We no longer stand hat in hand. The Chinese have 300,000 men in Manchuria. Of these probably not more than 100–115,000 are distributed along the Yalu River. Only 50–60,000 could be gotten across the Yalu River. They have no Air Force. Now that we have bases for our Air Force in Korea if the Chinese tried to get down to Pyongyang there would be the greatest slaughter.

—General Douglas MacArthur, *Substance of Statements at Wake Island Conference, 15 Oct 1950*

The developments resulting from our assault movements have now assumed a clear definition. All hope of localization of the Korean conflict to enemy forces composed of North Korean troops with alien token elements can now be completely abandoned. The Chinese military forces are committed in North Korea in great and ever increasing strength. No pretext of minor support under the guise of volunteerism or other subterfuge now has the slightest validity. We face an entirely new war... .. This command has done everything humanly possible within its capabilities but is now faced with conditions beyond its control and its strength.

—General Douglas MacArthur, *CINCFE to the Joints Chief of Staff, 28 Nov 1950*

On 19 October 1950, the CCF crossed the Yalu River south and entered the Korean War.³⁹ The CCF’s presence in the battlespace would change the character of the conflict facing the UNC. Despite this intervention, UNC forces continued their attack north to the Yalu River with incredible effectiveness and signaled a possible quick end to the war.⁴⁰ The UNC’s ability to establish and maintain continuous air superiority throughout the Korean War was crucial to

³⁷ Ibid.

³⁸ Lay Jr., *NSC 81/2*, 1-2. Source available in ISCARL Archives.

³⁹ Allan R. Millett, *The War for Korea, 1950-1951: They Came From the North* (Lawrence, KS: University Press of Kansas, 2010), 291, 297, 341.

⁴⁰ Ibid., 295-296.

maintaining this momentum.⁴¹ With ownership of the skies, UNC air forces, most specifically American air forces, could employ a full range of aviation capabilities to engage both the North Korean People's Army and the CCF, and influence the tempo for 8th Army's and X Corps' attacks north.⁴² However, this momentum would not last. On 24 November 1950, the CCF began the Second Chinese Offensive, forcing the UNC's offensive to culminate, transition to the defensive, and prolonging the conflict.⁴³

This leads one to ask what factors contributed to the UNC's culmination after the CCF's surprise attack when it appeared victory was within the UNC's grasp, and could the UNC have prevented their culmination. Moreover, their culmination occurred despite their apparent advantages in relative combat power compared with the CCF especially given the UNC's major advantage in air superiority.

Robert A. Pape's theoretical framework in *Bombing to Win* provides a lens used to investigate why the application of air power did not propel the UNC's offensive to the Yalu River or prevent the UNC's retreat from North Korea. Moreover, the case study focuses on a conventional coercive strategy instead of a nuclear coercive strategy, namely a strategy of denial. First, this choice aligns with General MacArthur's assessment on 6 November 1950 that the "current mission is limited to the destruction of those forces now arrayed against us in North Korea."⁴⁴ Second, despite the setbacks that would occur by the end of 1950, President Truman still wanted to ensure the localization of the Korean War, and did not approve the use of atomic

⁴¹ Conrad C. Crane, *American Air Power Strategy in Korea, 1950-1953* (Lawrence, KS: University Press of Kansas, 2000), 173. See Richard P. Hallion, *The Naval Air War in Korea* (Tuscaloosa, AL: University of Alabama Press, 2011), 151; Robert F. Futrell, *The United States Air Force in Korea, 1950-1953* (Washington, DC: US Government Printing Office, 1983), 692.

⁴² ADP 3-0, II-8, defines tempo as "the relative speed and rhythm of military operations over time with respect to the enemy."

⁴³ Millett, *The War for Korea, 1950-1951*, 335.

⁴⁴ Appleman, *US Army in the Korea War*, 771.

weapons.⁴⁵ Overall, both the initial conditions and the resulting strategic situation near the end of the Second Chinese Offensive reinforces the appropriateness of this examination's conventional coercion perspective.

The case study examines why air power was ill postured to pursue a strategy of denial focusing on operational interdiction and CAS during the events of November and December 1950.⁴⁶ Strategic interdiction of the CCF was not a viable option at the start of the Korean War as evidenced by the limit of advance for all UNC forces at the Yalu River to avoid incursions into China.⁴⁷ This limit was established to reinforce localization of the conflict to the Korean peninsula and reduce the possibility of escalation with China and the Soviet Union. Moreover, while the efficacy of operational interdiction is debatable after the stalemate in the summer of 1951, it did contribute to the initial defeat of the North Korean People's Army because it targeted the correct vulnerabilities. Thus, operational interdiction may disrupt the CCF attack if it exploits the correct target sets.⁴⁸ Additionally, if a commander's intent is to destroy the enemy forces engaged in direct combat with one's own forces, CAS is a logical use of air power. Then why did the tactical application of air power fail to produce the desired outcome?

A Withdrawal in the East: The Chosin Reservoir

The US Army X Corps' operations in the eastern theater at the Chosin Reservoir show the potential merit of the focused application of tactical air power. From 27 November to 11

⁴⁵ Millett, *The War for Korea, 1950-1951*, 357-363.

⁴⁶ Two different coercive strategies succeeded during the Korean War. In 1951, a strategy of denial succeeded to bring the Chinese to the negotiating table where they would accede to all terms except for stipulations regarding the return of Chinese prisoners of war. In 1953, a strategy of risk backed with the threat of nuclear weapons ended the conflict with the Chinese, and resulted in the armistice between North and South Korea that remains today. See Pape, *Bombing to Win*, 86, 137-140.

⁴⁷ Crane, *American Air Power Strategy in Korea, 1950-1953*, 49-50.

⁴⁸ Futrell concludes that the Air Force's appreciation of the importance of air interdiction increased by the end of the Korean War; the USAF viewed it as one of their unique core capabilities. Hallion supports that air interdiction may have influenced the war at the start, but questions its effectiveness once the stalemate began. See Futrell, *The United States Air Force in Korea, 1950-1953*, 692; Hallion, *The Naval Air War in Korea*, 207.

December, 150,000 soldiers of the CCF 9th Army Group attacked RCT-31 and the 1st Marine Division on the east and west sides of the Chosin Reservoir respectively.⁴⁹ A key element to the successful breakout was concentrated CAS from naval aviation provided by the 1st Marine Aircraft Wing (MAW) and Task Force (TF) 77's massed carrier squadrons that provided approximately 2,200 sorties over eleven days, and is estimated to account for half of the 40,000 casualties inflicted on the CCF 9th Army Group.⁵⁰ This application of air power helped conserve the 1st Marine Division's operational tempo, prevented their destruction, and blunted the impact of the CCF 9th Army Group's surprise offensive.

From 27 November to 4 December, the 5th and 7th Marine Regiment of 1st Marine Division fought a retrograde action on the west side of Chosin Reservoir from the division's forward line of troops at Yudam-ni to Hagaru-ri.⁵¹ A robust fire support plan supported by artillery and aviation aided the regiments' withdrawal over sixteen miles on a single road in mountainous terrain. Each regiment benefited from a direct support artillery battalion and a third battalion in general support. This task organization allowed the regiments to plan a withdrawal that featured near constant artillery coverage over the entire movement.⁵² Additionally, TF 77 and 1st MAW made CAS of forces at Chosin Reservoir their top priority, and intensified their efforts after 1 December when 1st MAW took primary responsibility for supporting X Corps' operations.⁵³ The concentration and complementary effects of ground and air firepower

⁴⁹ This estimate includes 12 divisions of approximately 10,000 troops each and a mix of other combat and support units. Millett, *The War for Korea, 1950-1951*, 339, 542.

⁵⁰ Hallion, *The Naval Air War in Korea*, 82, 85.

⁵¹ 1st Marine Division, "Special Action Report for the Wonsan – Hamhung – Chosin Reservoir Operations, 8 October – 15 December 1950, Volume 1," 22. Source available in Korean War Project War Record Archives.

⁵² Lynn Montross and Nicholas A. Canzona, *US Marine Operations in Korea 1950-1953, Volume 3: The Chosin Reservoir Campaign* (Washington, DC: Government Printing Officer, 1957), 177, 180, 249, 253-255, 367-368.

⁵³ 1st Marine Air Wing, "Historical Diary: November 1950," 8-9; "Historical Diary: December 1950," 3. See 1st Marine Division, "SAR, Volume 2 (2 of 2), Annex AA-PP," Annex CC, 3; Appendix E, 7-8. See also "USS *LEYTE* (CV-32): Narrative Report of Action for the period 5 November through 30

facilitated the regiment's movement through channelizing terrain while the CCF attempted to encircle them. By 4 December, the two regiments weathered the onslaught of 3 CCF divisions and arrived at Hagaru-ri, where 3d Battalion 1st Marines repulsed elements of a separate CCF division a few nights before.⁵⁴ Figures 1 and 2 provide a broad visual depiction of the ground operations of the CCF, RCT-31, and 1st Marine Division.

November 1950," 4-5, 11; "USS *LEYTE* (CV-32): Narrative Report of Action for the period 1 December through 26 December 1950," 2, 5. Sources available in Korean War Project War Record Archives, and Naval History and Heritage Command Archives.

⁵⁴ 1st Marine Division, "SAR, Volume 1," 26, 31-32. Source available in Korean War Project War Record Archives.

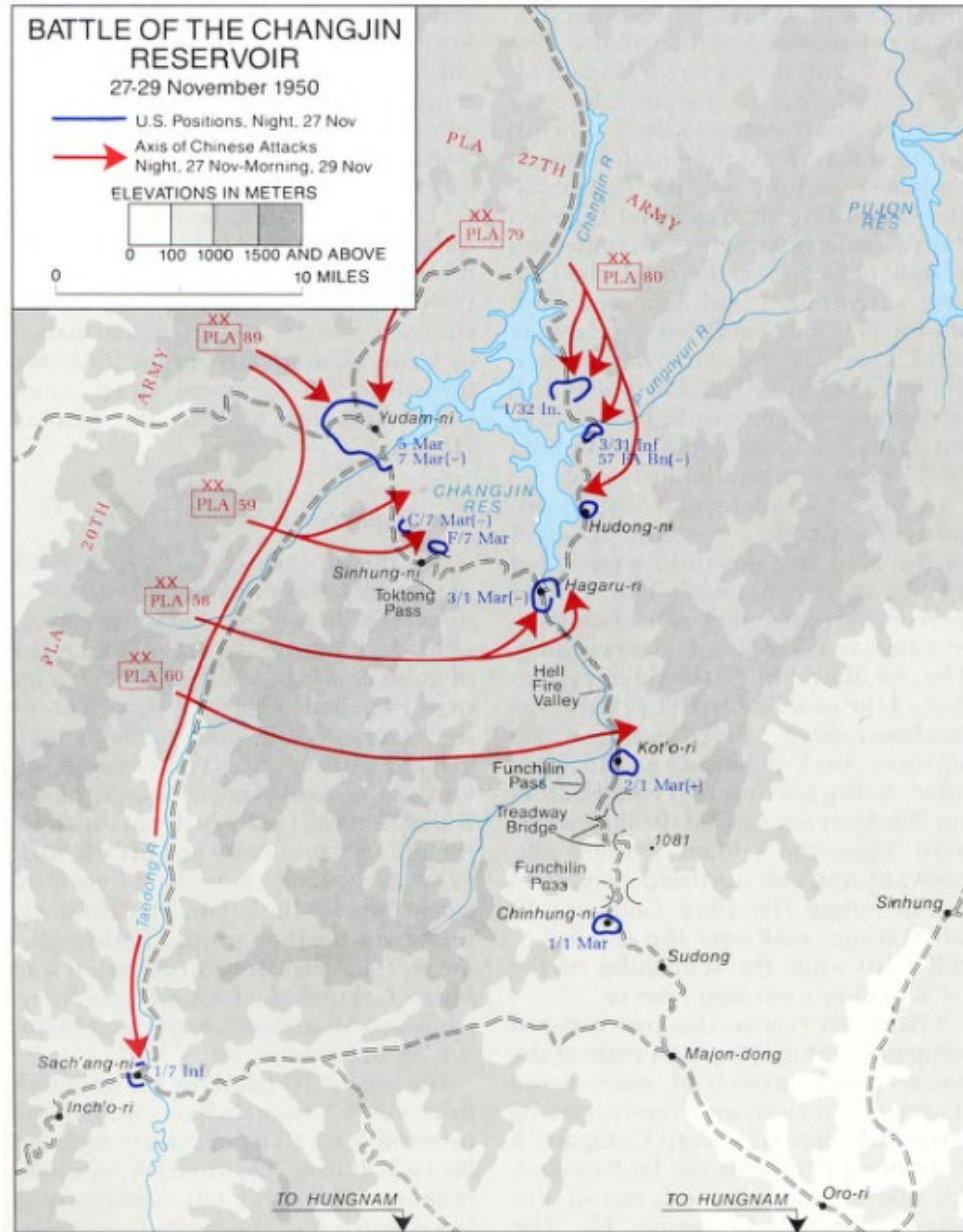


Figure 1. Map of CCF, RCT-31, and 1st Marine Division operations at Chosin Reservoir from 27-29 November 1950. Billy C. Mossman, *Ebb and Flow: November 1950 – July 1951* (Washington, DC: Government Printing Office, 1990), 95.

As elements of 1st Marine Division fought their way east, RCT-31 also attempted to withdraw south from the west side of Chosin Reservoir to Hagaru-ri. From 27 November to 2 December, the CCF 80th Division engaged RCT-31 in fierce close combat.⁵⁵ By the end of the

⁵⁵ Roy Appleman, *East of Chosin: Entrapment and Breakout in Korea, 1950* (College Station, TX: Texas A&M University Press, 2007), 55-56.

engagement, RCT-31 was destroyed. The unit suffered an estimated 2,600 casualties out of 3,000.⁵⁶ Numerous factors contributed to the destruction of RCT-31 ranging from poor communications, loss of experienced leaders, exhaustion from constant fighting, and exposure to the elements.⁵⁷ No combination of operational interdiction or CAS could overcome these disadvantages. Regardless, the use of air power did reduce the CCF's offensive pressure for short durations as RCT-31 attempted their breakout. On the final day, RCT-31 was the main effort for CAS, and received twenty of forty-five flights of CAS from 129 naval aircraft. However, only one Tactical Air Control Party remained and the RCT's command and control infrastructure had already collapsed, thus, making it very difficult to coordinate air support in conjunction with ground operations.⁵⁸ Despite the prioritization, air power did not prevent RCT-31's destruction, and only delayed the outcome at best. Figure 2 provides a broad visual depiction of their failed withdrawal on the east side of Chosin Reservoir.

⁵⁶ Millett, *The War for Korea, 1950-1951*, 340. See Appleman, *East of Chosin*, 300-301, 342-343.

⁵⁷ Appleman, *East of Chosin*, 300-301, 305-306.

⁵⁸ Captain Edward Stamford was the officer-in-charge of the remaining Tactical Air Control Party. He possessed experience as a Marine Naval Aviator in WWII and had extensive training in coordinating air support before the Korean War. Several soldiers believed they would not have survived the attack if not for Captain Stamford's coordination of numerous close-in air strikes, some of which causing American casualties. Regardless, the consensus appears to be supportive of his efforts despite some fratricide given the situation. Appleman, *East of Chosin*, 208-215, 244, 320, 338. See also 1st Marine Division, "SAR, Volume 1," 26.; "SAR, Volume 2 (2 of 2), Annex AA-PP," Annex CC, Appendix E, 8. Sources available in Korean War Project War Record Archives.

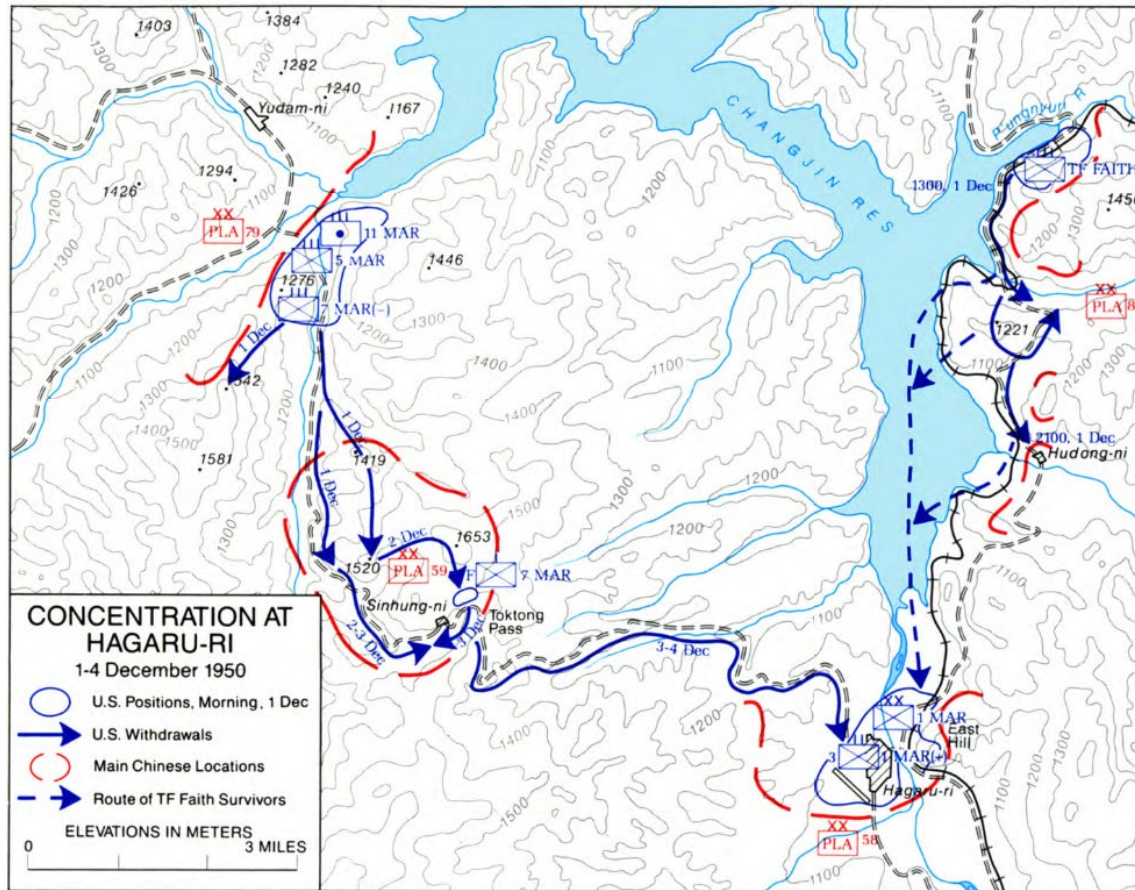


Figure 2. Map of CCF, RCT-31, 1st Marine Division operations at Chosin Reservoir from 1-4 December 1950. Billy C. Mossman, *Ebb and Flow: November 1950 – July 1951* (Washington, DC: Government Printing Office, 1990), 133.

While US Army and Marine elements consolidated at Hagaru-ri on 4 – 5 December, 1st Marine Division finished plans for the forty-five mile movement to Hamhung.⁵⁹ The final push would replicate the successful air-ground integration of 5th and 7th Marine's trek from Yudam-ni, but in a more concentrated manner.⁶⁰ Aviation support for the Chosin Reservoir area could now focus on a single extended column. 1st MAW recorded 1,853 sorties flown by Marine, Navy, and Air Force aviation in support of X Corps' withdrawal from 4 – 11 December; 911 by

⁵⁹ 1st Marine Division, "SAR, Volume 1," 27. Source available in Korean War Project War Record Archives.

⁶⁰ Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 286-287.

1st MAW, 648 by TF 77, and 294 by FEAF.⁶¹ The majority of these sorties provided CAS: 761 of 911 by 1st MAW and at least 201 of 648 by the Navy.⁶² While FEAF did contribute sorties to the withdrawal, only 54 of 294 were combat related.⁶³ Nevertheless, both FEAF and Fifth Air Force offered their entire medium and light bomber wings, respectively, to support X Corps.

In addition, 1st Marine Division had its entire artillery regiment, 11th Marines, available for support.⁶⁴ The Division divided the batteries of the 1st, 3d, and 4th Artillery Battalions to support the head and rear of the column, 7th and 5th Marines respectively.⁶⁵ Additionally, the 2d Artillery Battalion, attached to 1st Marines, was assigned the mission of providing fires along the main route from Hagaru-ri, Koto-ri, and Chinhung-ni that led to the beachhead at Hungnam.⁶⁶ Finally, the US Army 3d Infantry Division provided artillery support from the 92d Armored Field Artillery Battalion positioned at Chinhung-ni with Task Force Dog, and would cover the end of the withdrawal.⁶⁷ Overall, 1st Marine Division's final 45-mile withdrawal benefited from substantial firepower from the air and land. Figure 3 provides a broad visual depiction of 1st Marine Division's withdrawal to Hungnam after consolidating their force with survivors of RCT-31 at Hagaru-ri.

⁶¹ 1st Marine Air Wing, "Historical Diary: November 1950," 8-9; "Historical Diary: December 1950," Reports #14-21. Sources available in Korean War Project War Record Archives.

⁶² The Navy contribution to CAS was most likely greater. The USS *LEYTE* supported the 201 sorties; however, two other carriers were present as well. Reports from the USS *PHILIPPINE SEA* state CAS was the primary mission for X Corps. Ibid. See also "USS *LEYTE* (CV-32): Narrative Report of Action for the period 1 December through 26 December 1950," 2-3, 5-6; "USS *PHILIPPINE SEA* (CV-47): Action Report for the period 1 November through 31 December 1950," 2. Source available in Naval History and Heritage Command Archives.

⁶³ FEAF's other 240 sorties focused on evacuation of casualties, delivery of combat replacements, and resupply. Futrell, *The United States Air Force in Korea, 1950-1953*, 258-260. See Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 278-283.

⁶⁴ 1st Marine Division, "SAR, Volume 1," 7-8. Source available in Korean War Project War Record Archives.

⁶⁵ Ibid., 287, 312-313.

⁶⁶ Millett, *The War for Korea, 1950-1951*, 338. See US Navy, USMC History Division, "1st Marine Division, SAR, Volume 1," 7-8.

⁶⁷ Millett, *The War for Korea, 1950-1951*, 348. See Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 309, 313, 316, 326.

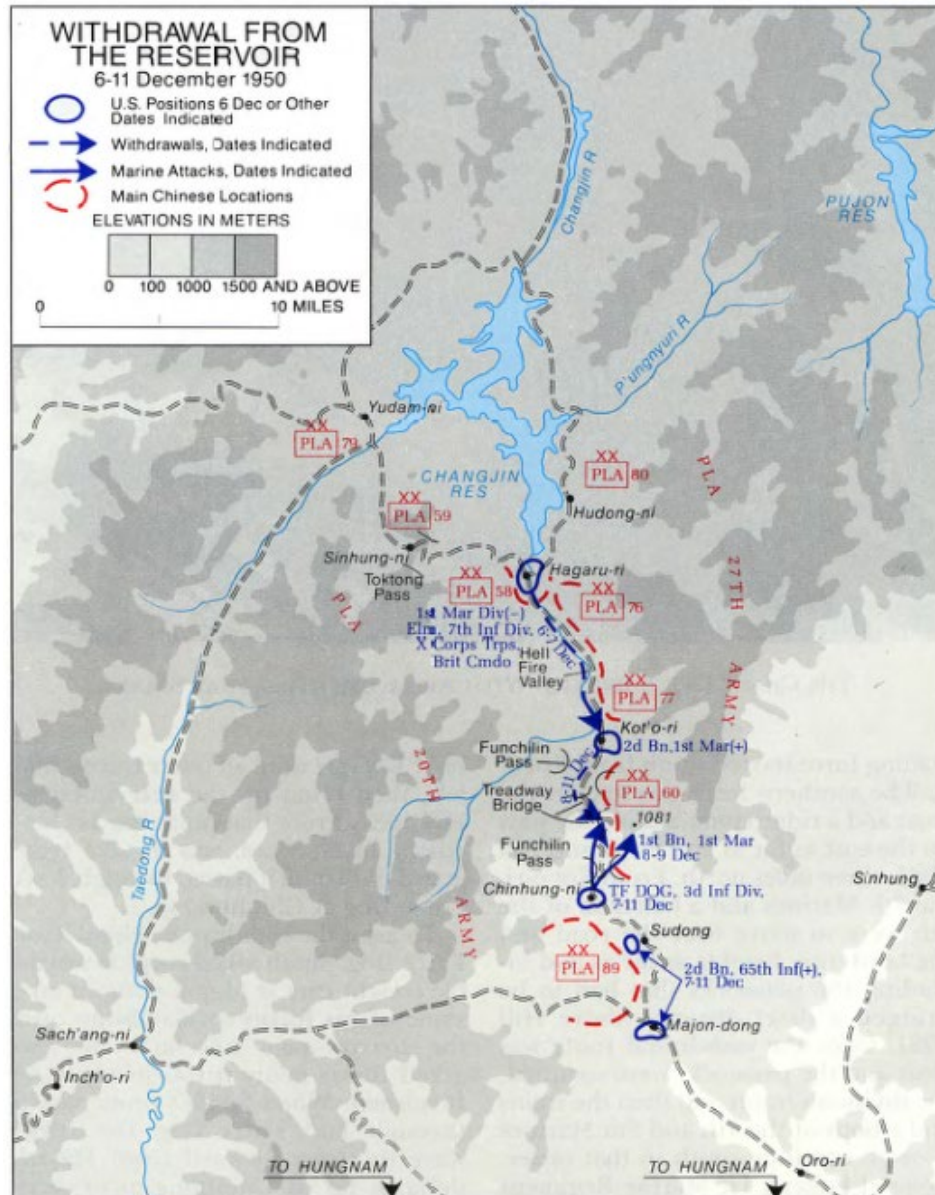


Figure 3. Map of CCF and 1st Marine Division operations at Chosin Reservoir from 6-11 December 1950. Billy C. Mossman, *Ebb and Flow: November 1950 – July 1951* (Washington, DC: Government Printing Office, 1990), 144.

By 11 December, the last units of 1st Marine Division closed on Hungnam, and X Corps finally concentrated its entire force.⁶⁸ The division's retrograde action was a well-orchestrated operation that wrought devastation on the CCF 9th Army Group, and facilitated X Corps ability

⁶⁸ Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 332. See Edward M. Almond, LtGen (Retired), US Army, "Reflections on the Hungnam Evacuation, Korea, December 1950," (August 1, 1973), 6-7.

to complete its amphibious withdrawal by 25 December.⁶⁹ While many factors contributed to success, the integration of air support and ground fires was a decisive element that allowed the division to maintain operational tempo in light of constant CCF pressure; a conclusion that numerous soldiers, sailors, airmen, and Marines agreed on.⁷⁰ Regardless, X Corps would withdraw its entire force from Hungnam by the sea despite the combined efforts of land, sea, and air power.

Overall, the withdrawal was a tactical and operational success for 1st Marine Division and X Corps respectively. Nonetheless, UNC's offensive operations designed to destroy enemy forces between them and the Yalu River were disrupted by the CCF attack and culminated soon afterwards.⁷¹ While this defeat was a clear setback, X Corps was in a favorable position to possibly resume the offensive once concentrated in vicinity of Hungnam; however, the ongoing rapid retreat of 8th Army in the west threatened X Corps with strategic encirclement, and eliminated the chance of a new offensive in North Korea.⁷²

A Withdrawal in the West: The Ch'ongch'on River and the Gauntlet

In addition to X Corps' results in the east, one should also examine US 8th Army's operations in the western theater. 8th Army's forward line of troops ran west to east along the Ch'ongch'on River, and consisted, in order, of US I Corps, US IX Corps, and the Republic of Korea (ROK) II Corps.⁷³ Of particular interest is the fate of the 2ID during the withdrawal from the Ch'ongch'on River from 25 November to 1 December. Operating under IX Corps, 2ID was

⁶⁹ Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 356-359. See also FEC, GHQ, "Command Report December 1950" (Released 25 May 1951), 13-14. Source available in ISCARL Archives.

⁷⁰ Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 350. See also FEC, GHQ, "Command Report December 1950," 17-18, 20-21; X Corps, Headquarters, "Special Report on Chosin Reservoir, 27 November to 10 December 1950," 42-43. Sources available in ISCARL Archives.

⁷¹ FEC, GHQ, "Command Report November 1950," 4-5. Source available in ISCARL Archives.

⁷² Ibid., 11.

⁷³ Millet, *The War for Korea, 1950-1951*, 335-336.

the only US unit east of the Ch'ongch'on River, and was positioned west of the Republic of Korea (ROK) II Corps' left flank.⁷⁴ On the evening of 25 November, the 8th Army and the CCF 13th Army Group collided along the entire line.⁷⁵ The CCF main effort focused its 40th Army and combined strength of its 38th and 42d Armies on 2ID and the ROK II Corps respectively.⁷⁶ The ROK II Corps was routed, and exposed 2ID to the wrath of massed Chinese forces from their front and right flank.⁷⁷ Figure 4 provides a broad visual depiction of CCF and US 8th Army operations during the initial 3 days of the CCF surprise attack at the Ch'ongch'on River.

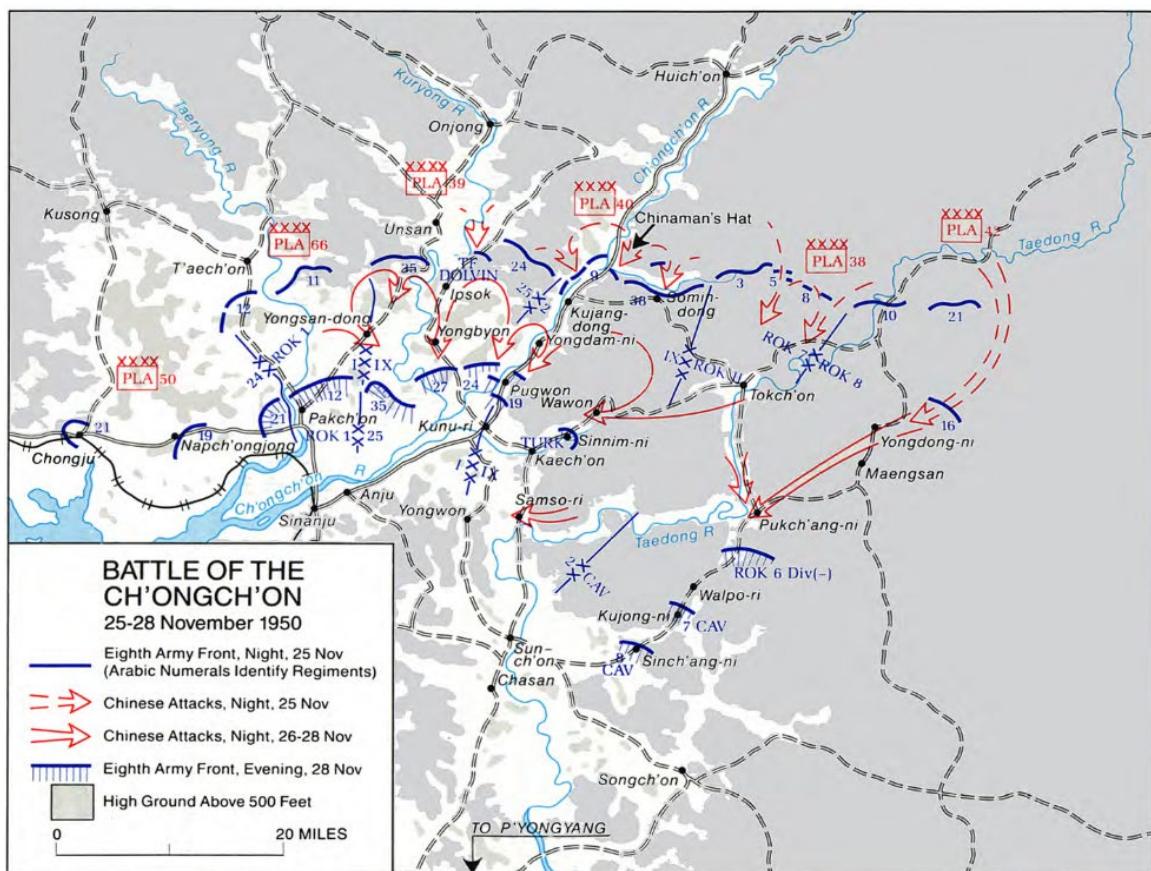


Figure 4. Map of CCF and US 8th Army operations during the battle of the Ch'ongch'on from 25-28 November 1950. Billy C. Mossman, *Ebb and Flow: November 1950 – July 1951*

⁷⁴ Millett, *The War for Korea, 1950-1951*, 335-336.

⁷⁵ Appleman, *Disaster in Korea, the Chinese Confront MacArthur*, (College Station, TX: Texas A&M University Press, 1989), 74-76.

⁷⁶ Millett, *The War for Korea, 1950-1951*, 318, 336.

⁷⁷ *Ibid.*, 336-337. See Appleman, *Disaster in Korea*, 101.

(Washington, DC: Government Printing Office, 1990), 66.

While 2ID's right flank disintegrated, the CCF 39th Army applied significant pressure on the 25th Infantry Division, the left flank of 2ID.⁷⁸ 25ID was unable to hold its position during the CCF's attack, and another gap opened in the 8th Army front.⁷⁹ From 25-28 November, 25ID covered their withdrawal south to Anju with both artillery and air strikes and attempted to halt the CCF advance.⁸⁰ On the 27th, this included seventy-five CAS sorties, the largest allocation to any division in 8th Army that day, and a night time CAS mission from B-26 medium bombers.⁸¹ Despite the focus, air power integrated with 25ID's ground operations did not halt the CCF advance. The breadth of the attack's frontage, the large number of CCF forces, and the fact that similar attacks occurred simultaneously across the majority of 8th Army's front, lessened the effect of concentrated close air support. Due to the loss of the right flank, 25ID's struggle against the 39th Army, and a similar situation further west with the ROK 1st Division, 8th Army ordered I Corps and IX Corps to withdraw to the Ch'ongch'on River at 1055 on 28 November.⁸² This would mark the end to the UNC's plans to march to the Yalu and reunify the Korean peninsula. Figure 5 provides a broad visual depiction of the CCF's continued attack and exploitation of US 8th Army's withdrawal from the Ch'ongch'on River.

⁷⁸ Appleman, *Disaster in Korea*, 102.

⁷⁹ Ibid., 140.

⁸⁰ Ibid., 113, 127-130.

⁸¹ Appleman, *Disaster in Korea*, 113, 127-130. See also Historical Division, Air University, "United States Air Force Operations in the Korean Conflict: 1 November 1950 – 30 June 1952," 31.

⁸² Appleman, *Disaster in Korea*, 130-131, 146-147, 150-153.

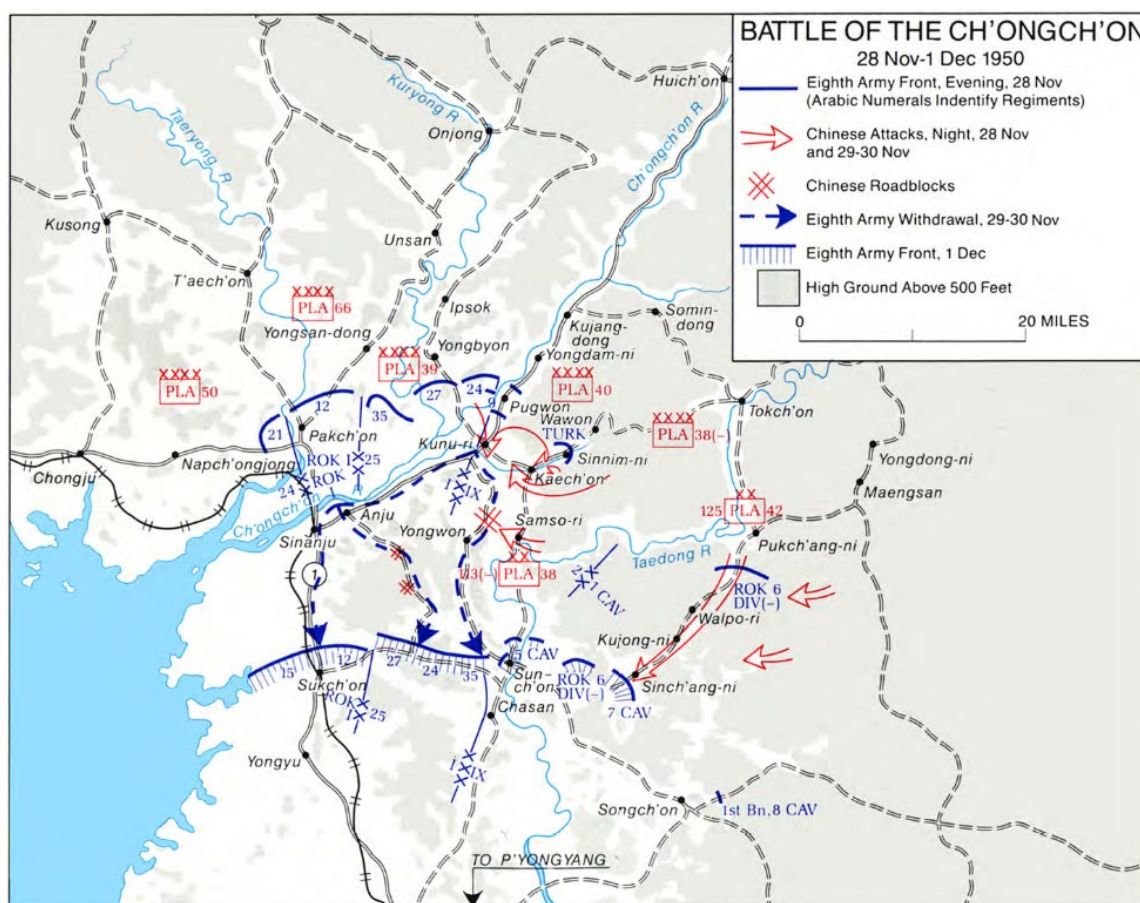


Figure 5. Map of CCF and US 8th Army operations during the battle of the Ch'ongch'on from 28 November – 1 December 1950. Billy C. Mossman, *Ebb and Flow: November 1950 – July 1951* (Washington, DC: Government Printing Office, 1990), 106.

Now, 2ID faced a rapidly deteriorating situation with its right flank torn open, its left flank collapsing, and an attack across its entire front by the CCF 40th Army.⁸³ The constant CCF pressure threatened to encircle 2ID as the attack forced the division into a salient along 8th Army's front. Beginning the evening of 25 November, the CCF 40th Army's surprise attack struck the 9th and 38th Infantry the hardest, the left and right flanks of the division respectively.⁸⁴ Each regiment began to withdraw to new battle positions and attempt to slow the speed of the

⁸³ Appleman, *Disaster in Korea*, 174.

⁸⁴ Millett, *The War for Korea*, 337. See also 2d Infantry Division, Headquarters, "War Diary: 1 – 30 Nov 50," 30; 9th Infantry Regiment, "History of the 9th 'Manchu' Infantry Regiment for November 1950," 4; 38th Infantry Regiment, "Command and Unit Historical Report: November 1950," 10-12. Sources available in Korean War Project War Record Archives.

CCF's advance. By midday 26 November, all three of 2ID's regiments engaged the CCF in close combat and continued to cede ground to the attackers.⁸⁵ Having lost the initiative and offensive tempo, 2ID continued the consolidation of its regiments in to more concentrated defensive positions as the CCF pressed their attack each night.⁸⁶

Throughout these initial days of the attack, 2ID received CAS from Fifth Air Force in support of engagements against the swarming CCF troops with varying results. Nonetheless, any success was tactical in scope and only temporary. On 26 November at hills 219 and 291, 2ID attempted to leverage CAS to disrupt CCF attacks on two companies, but in each situation the application of air power was ineffective and attacks continued with devastating consequences.⁸⁷ Notwithstanding these situations, air power provided a tactical success at hills 393 and 943 on 26-27 November. At the former, integration of CAS with a company counterattack disrupted the CCF advance in that sector.⁸⁸ At the latter, operational interdiction in the form of an aerial recce mission located and destroyed an estimated 600 Chinese troops preparing for an attack.⁸⁹ By the end of 27 November, Fifth Air Force flew seventy-four sorties that day in support 2ID, but the CCF continued to attack.⁹⁰

⁸⁵ Appleman, *Disaster in Korea*, 188-189. See also 23d Infantry Regiment, "Command and Unit Historical Report: November 1950," 9-11; 2ID, "War Diary: 1 – 30 Nov 50," 31. Sources available in Korean War Project War Record Archives.

⁸⁶ Appleman, *Disaster in Korea*, 168, 191.

⁸⁷ At Hill 219, Company B, 9th Infantry, engaged in heavy combat against unrelenting CCF forces. Even with the support of an air strike "with napalm, rockets, and strafing," the Chinese troops continued to attack Company B. Further west at Hill 291, the CCF forces destroyed the 3d platoon and headquarters of Company G, 38th Infantry despite concentrated CAS. *Ibid.*, 165-168, 180-183.

⁸⁸ At Hill 393, Company F, 38th Infantry "killed hundreds of Chinese who... ..tried to overrun its position." The situation was in question until an air strike dislodged the attacking Chinese, and provided an opportunity for friendly forces to finish their counterattack. Not mentioned above, but another success of CAS occurred on 27 November as Company B, 38th Infantry cleared Chinese forces threatening the regimental command post with the assistance of CAS. *Ibid.*, 185-186, 192.

⁸⁹ On 27 November, an air strike combining both napalm and 500-pound bombs sealed an estimated 600 Chinese troops in a mine shaft near Hill 943 in 38th Infantry's area of operations *Ibid.* See also Historical Division, Air University, "United States Air Force Operations in the Korean Conflict: 1 November 1950 – 30 June 1952," 31.

⁹⁰ Appleman, *Disaster in Korea*, 192-193.

On 28 November, 2ID issued Operation Order No. 12 that directed a withdrawal from current positions north of Kujang-dong to Kunu-ri approximately thirty miles to the southwest.⁹¹ By late evening, all three regiments successfully withdrew fifteen miles from Kujang-Dong to Kunu-ri while in constant contact with Chinese forces.⁹² As 29 November progressed, 2ID continued to withdraw to the high ground south of Kunu-ri in vicinity of the Anju - Sunchon road junction under heavy pressure while 5th Air Force provided 113 CAS sorties to the IX Corps sector.⁹³ These sorties reduced the CCF's operational tempo, but did not force their culmination. Simultaneously, 2ID headquarters became aware of a Chinese roadblock to their south on the Kunu-ri – Sunchon road, what would become as 'the Gauntlet'.⁹⁴ Given increasing threat of encirclement by two CCF armies, the division issued orders to withdraw south to Sunchon via 'the Gauntlet' the next day.⁹⁵ By this time 2ID was left to choose from only bad choices, and made the decision without a clear understanding of the extent of the roadblock, a six mile stretch through canalizing terrain covered by mortar and machinegun fire of the CCF 113th Division.⁹⁶

By mid-morning on 30 November, 2ID's harrowing withdrawal through 'the Gauntlet' was well underway and soon fell into disarray. The planned order of march did not happen, and, instead, infantry concentrated at the front of the column and left enabling units such as the division's artillery and engineers more vulnerable to attack in the rear.⁹⁷ Additionally, the 23d

⁹¹ 9th Infantry would lead the withdrawal followed by 38th Infantry whom currently held the right flank of 8th Army while 23d Infantry would hold Kujang-dong as the rearguard before proceeding south also. 2ID, "War Diary: 1 – 30 Nov 50," 32. Source available in Korean War Project War Record Archives.

⁹² Ibid., 33. See 23d Infantry, "Command and Unit Historical Report: November 1950," 12-13; Appleman, *Disaster in Korea*, 200.

⁹³ Appleman, *Disaster in Korea*, 202-203, 210-211.

⁹⁴ 2ID, "War Diary: 1 – 30 Nov 50," 33. Source available in Korean War Project War Record Archives.

⁹⁵ Ibid., 34.

⁹⁶ Appleman, *Disaster in Korea*, 238, 280-282.

⁹⁷ The original plan led with 9th Infantry and ended with 23d Infantry while 38th Infantry dispersed throughout the rest of the column to protect the division artillery and enabler units. The plan would provide infantry protection throughout, and an opportunity to provide artillery fire from the middle

Infantry never followed the division through ‘the Gauntlet’ after holding the rearguard at Kunu-ri. Instead the regiment withdrew west towards Anju after firing a massive barrage of 3,200 105mm howitzer rounds in twenty-two minutes and then destroying the cannons to prevent their capture; the effect disrupted the CCF advance long enough to facilitate the regiment’s movement to Anju free of direct Chinese interference.⁹⁸ Overall, 2ID’s original plan to attack through ‘the Gauntlet’ failed to materialize, and their artillery was in a precarious situation that would require them to rely on air power for fire support.

2ID proceeded south in a column under constant fire that wrought a significant toll on the command. The division’s trek through ‘the Gauntlet’ was slow, and delayed by continuous needs to clear the road of disabled vehicles and equipment.⁹⁹ In support of 2ID, 51st Fighter Interceptor Wing flying F-80, Shooting Stars, from K-14 focused on a large CAS campaign to provide opportunities for soldiers below to continue their fight south.¹⁰⁰ By the early hours of 1 December, 2ID would escape ‘the Gauntlet’ and reach friendly lines near Sunchon. However, the division suffered near 5,000 combat casualties, about one third of its force, and a large loss of equipment.¹⁰¹ The retreat from the Ch’ongch’on River through Kunu-ri and ‘the Gauntlet’ resulted in the destruction of the division as it fought elements of at least four to five CCF

and rear of the column. Most of the infantry, 9th and 38th Infantry and the ROK 3d Regiment ended up concentrated at the front half of the column while the division artillery, anti-air battalion, and 2d Engineer Combat Battalion were at the rear. Appleman, *Disaster in Korea*, 235-238.

⁹⁸ Ibid., 266-271. See also 2ID, “War Diary: 1 – 30 Nov,” 36-37. Source available in Korean War Project War Record Archives.

⁹⁹ 2ID, “War Diary: 1 – 30 Nov,” 35-36. Source available in Korean War Project War Record Archives.

¹⁰⁰ Historical Division, Air University, “United States Air Force Operations in the Korean Conflict: 1 November 1950 – 30 June 1952,” 31-32.

¹⁰¹ The most critical equipment loss was 65 of 84 artillery pieces in addition to significant losses of signal equipment, crew served weapons, and vehicles. In total, General Walker, 8th Army, assessed it lost 5 – 6 artillery battalions and additional air defense battalions assigned to act as provisional artillery. This loss of organic ground-based indirect fires “placed his army in jeopardy.” See 2ID, “War Diary: 1 – 30 Nov,” 37. See also Millett, *The War for Korea*, 347.

divisions.¹⁰² Figure 6 provides a broad visual depiction of 2ID's withdrawal from Kunu-ri and through the 'Gauntlet' while under attack by the CCF.

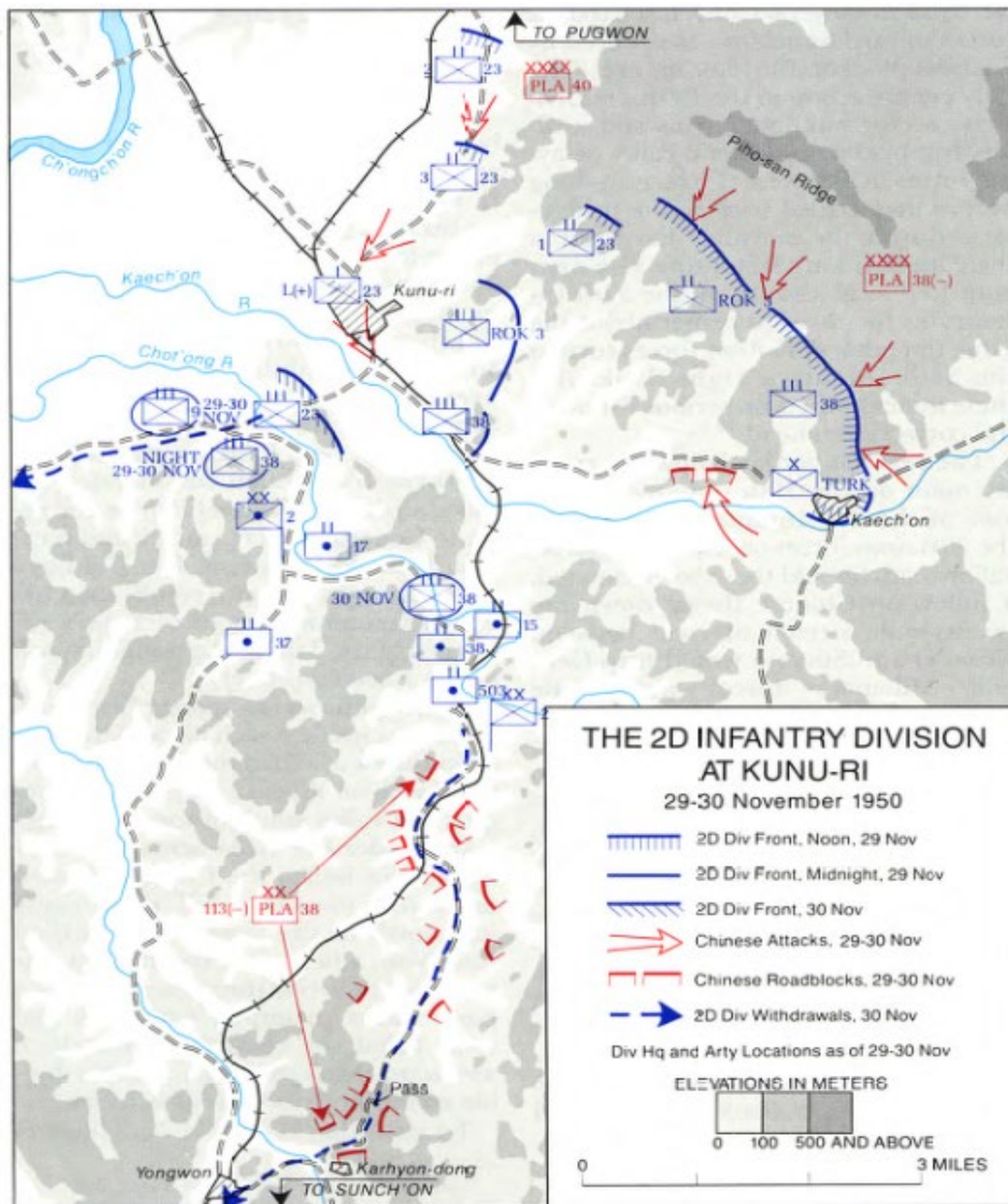


Figure 6. Map of CCF and US 2d Infantry Division operations at Kunu-ri and through the 'Gauntlet' during the battle of the Ch'ongch'on from 29-30 November 1950. Billy C. Mossman, *Ebb and Flow: November 1950 – July 1951* (Washington, DC: Government Printing Office, 1990), 110.

¹⁰² Approximately 40,000 – 50,000 CCF troops. See Millett, *The War for Korea*, 345-346, 542.

Throughout these 7 days, the 2ID fought and survived during the withdrawal, but not without the assistance of the Far East Air Force (FEAF). Both the Fifth Air Force and FEAF Bomber Command prioritized air support to the 8th Army during this period, and increased the focus on CAS after 26 November.¹⁰³ In the last week of November, FEAF flew at least 833 CAS sorties in support of 8th Army.¹⁰⁴ Moreover, it was reported that air strikes accounted for an estimated 10,000 enemy casualties in November, most of which appeared to occur during the last week.¹⁰⁵ While substantial, FEAF's air support did not stop the CCF advance, prevent 8th Army's withdrawal or the destruction of 2ID as an effective fighting force in the face of a massive surprise attack.

Overall, 2ID's defeat was a decisive tactical and operational victory for the CCF that underscored 8th Army's culmination and quick withdrawal from North Korea. The chaos and destruction the CCF brought to bear with their massed, surprise offensive overwhelmed 8th Army across the breadth and depth of the front both physically and mentally.¹⁰⁶ The rapid retreat of 8th Army in the face of the Chinese onslaught was the harbinger of the UNC's operational failure and subsequent ejection from North Korea. Figure 7 provides a broad overview of the entire Chinese Second Offensive as it occurred across North Korea.

¹⁰³ Soldiers of 2ID recalled instances of machine gun links falling directly on their helmets, the heat of napalm searing their faces, and the blasts of exploding rockets and bombs around them as the Air Force pounded the advancing Chinese. See FEC, GHQ, "Command Report November 1950," 17-18. See also Futrell, *The United States Air Force in Korea, 1950-1953*, 254-255; T.R. Fehrenbach, *This Kind of War: The Classic Korean War History* (Lawrence, KS: University Press of Kansas, 200), 227-230.

¹⁰⁴ The actual number is probably much higher, possibly closer to twice this amount if not more; an estimate based on a qualitative assessment of soldiers' accounts and FEAF's commitment to the endeavor. Fifth Air Force flew 4,000 CAS sorties in the last week of November and through December. The table on page 134 cites 3,336 CAS sorties flown in December. USAF statistics for the period estimate an average of at least 119 CAS sorties per day during the period. Viewed together, it would appear the number of sorties exceeded 833. See John Schlight, *Help From Above: Air Force Close Air Support of the Army, 1946-1973* (Washington, DC: Government Publishing Office, 2003), 134, 139; Historical Division, Air University, "United States Air Force Operations in the Korean Conflict: 1 November 1950 – 30 June 1952," 187.

¹⁰⁵ FEC, GHQ, "Command Report November 1950," 19. Source available in ISCARL Archives.

¹⁰⁶ FEC, GHQ, "Command Report December 1950," 1-2. Source available in ISCARL Archives. See also Millet, *The War for Korea, 1950-1951*, 343-347.

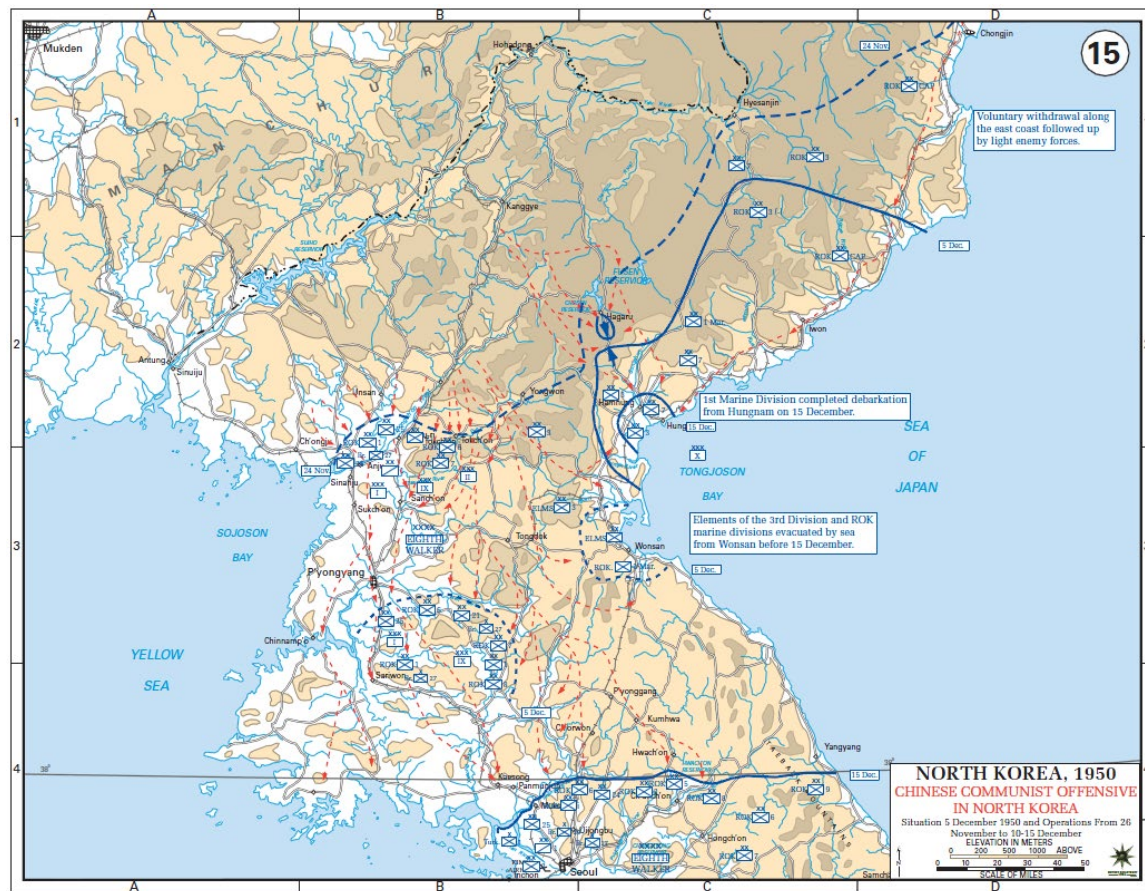


Figure 7. Macroscopic view of the Second Chinese Offensive, November – December 1950. United States Military Academy, History Department.
https://www.westpoint.edu/sites/default/files/inline-images/academics/academic_departments/history/Korean%20War/Korea15.pdf

David vs Goliath: Parity on Land, Superiority at Sea and in Air

During their respective withdrawals, each unit fought a numerically superior enemy that massed where the CCF thought the UNC the weakest. At a macroscopic level, the CCF outnumbered the UNC by 46,000 troops.¹⁰⁷ Qualitatively, this was a negligible advantage. While

¹⁰⁷ The CCF possessed 338,000 ground troops, and the UNC possessed 342,000. Force dispositions and approximate manning-levels estimated. Of note, FEC reported a larger enemy presence in the December Command Report; however, this was also at the end of the month after more CCF forces may have arrived, and most likely includes North Korean forces and non-combat forces. Millett, *The War for Korea, 1950-1951*, 335, 339, 542. See Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 397-398; US Army Center of Military History Publication 19-8, *The Korean War: The Chinese Intervention* (Washington, DC: Government Printing Office, 2000), 14-15; FEC, GHQ, "Command Report December 1950," 4-5. Source available in ISCARL Archives.

UNC ground forces possessed a full range of modern arms spanning machine guns, armor, mortars, and artillery, the CCF primarily possessed light, man and animal packable machine guns, mortars, and light artillery, inadequate ammunition, and were not prepared for cold weather combat.¹⁰⁸ This overall lack of adequate firepower and preparation blunted the CCF attack. However, the CCF possessed the element of surprise, and more infantry battalions compared to the UNC, 456 to 204.¹⁰⁹ The CCF's task organization provided operational flexibility by allowing them to mass individual battalions against dispersed UNC forces without a risking a significant loss in command and control if those battalions were destroyed. Thus, the sizeable ground advantage the UNC possessed before the CCF intervention eroded due to the shock effect of the CCF attack. Additionally, concern of additional CCF reinforcements attacking from Manchuria amplified this effect. Overall, it is the author's assessment that both nation's ground forces present in North Korea were at parity at the start of the Second Chinese Offensive.

Despite the new challenge on land, UNC possessed maritime and air superiority throughout the conflict. In the Sea of Japan, two major naval commands, accounting for 168 ships, supported operations: Combined Task Forces (CTF) 90 and 77.¹¹⁰ Not to discount its importance during the withdrawal from Hungnam, the primary advantage naval superiority provided the UNC during the offensive was naval aviation. From 1 to 23 December, TF 77 provided between twelve and twenty-two tactical combat squadrons afloat.¹¹¹ This massed fleet presented a formidable presence east of the Korean peninsula that remained unchallenged by

¹⁰⁸ Millett, *The War for Korea, 1950-1951*, 300, 306, 317. See also Fehrenbach, *This Kind of War*, 194.

¹⁰⁹ Millett, *The War for Korea, 1950-1951*, 335.

¹¹⁰ Together the two CTFs accounted for 168 different ships ranging from amphibious, naval fire support, logistics, and carrier platforms. At its peak, CTF 77 reached a "strength of 4 attack carriers, one battleship, 2 cruisers, and 22 destroyers," that would prove decisive during the final days of X Corps' withdrawal from Hungnam. See James A Field Jr., *History of US Naval Operations: Korea* (Washington, DC: US Government Printing Office, 1962, online edition), Chapter 9. See also Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 286-287, 378.

¹¹¹ *Ibid.*, Chapter 9.

either the Chinese or Soviets, and ensured the UNC's freedom of action at and from the sea in support of operations on the eastern side of the Korean peninsula.

In addition to air power from naval aviation, Fifth Air Force forward deployed aviation elements from Japan to Korea. At the time of the withdrawal, fourteen tactical combat squadrons were present on the Korean peninsula, eight in North Korea and six in South Korea.¹¹² The contributions of both Air Force and naval aviation quickly established air superiority over the Korean Peninsula.¹¹³ On 1 November 1950, Chinese flown MIG-15s flew from Antung just across the Yalu, and threatened the UNC's air superiority. Nevertheless, the Fifth Air Force maintained the UNC's advantage, but at the cost of dedicated daily sorties for potential air-to-air combat missions by its fighters as opposed to additional sorties for interdiction or CAS over the next two months.¹¹⁴ Despite the UNC's clear advantage in air power in Korea, it failed to stop the CCF ground attack, let alone propel the UNC north to the Yalu as General MacArthur had hoped.

UNC Air Power in Korea

Several figures and tables in Appendix A of this monograph assist with the following analysis of air support in the east and west. These items are meant to complement the previous narratives for operations in vicinity of the Chosin Reservoir and Ch'ongch'on Rivers, and enhance the reader's understanding of how UNC air forces were postured during these operations.

Figures 8 and 9 depict maps of the Korean Peninsula. Figure 8 provides general size comparisons of the Korean peninsula, North Korea, and South Korea with US states to provide the reader a more relatable size reference for the area of operations. Figure 9 depicts the location of UNC air bases (K-bases), ashore and afloat, in and around the Korean Peninsula. Additionally,

¹¹² US Department of the Air Force, Air Force Historical Research Agency, "The USAF in Korea: Campaigns, Units, and Stations – 1950-1953," ed. Judy G. Endicott (Washington, DC: Government Printing Office, 2001), 47, 48, 51, 62, 64.

¹¹³ Futrell, *The United States Air Force in Korea, 1950-1953*, 244.

¹¹⁴ *Ibid.*, 649-695.

it also depicts the approximate location of operations at Chosin Reservoir and the Ch'ongch'on River.

Table 1 depicts the approximate distance in air-miles between air bases and key locations where ground forces fought the CCF during the UNC's withdrawal in the east and west. The distances are representative of aviation specific LOOs. As UNC ground forces withdrew, these distances decreased, but one must also account for the subsequent withdrawal of aviation units further south on the peninsula, aboard naval ships, or back to Japan.

Table 2 depicts the approximate location of various UNC air forces by air base from 24 November to 15 December and complements Table 1. When examined together, the tables show the distances tactical aircraft traveled from their air bases to support the withdrawal of ground forces. Table 2 lists aviation units' location by the Group-level (one echelon above a squadron) per information found in sources from the Air Force Historical Research Agency

Table 3 depicts the approximate quantity of aircraft available by type between the FEAF and naval aviation between 24 November to 15 December. The information provided is not an exact reflection of daily aircraft availability. Various factors impacted aircraft available by day, such as: maintenance requirements, combat damage / losses, distance travelled, etc, thus, the table provides a perspective that errs on the high side of what was available. Tables 1, 2, and 3 combined aid the reader visualize the type and amount of aircraft that could support ground operations by air base, and their distances from key areas on the forward line of troops during the withdrawal.

Finally, Table 4 attempts to depict the amount of tactical combat sorties flown by squadron by day from 24 November to 15 December, but is incomplete due to gaps in information from archived sources. Thus, the table leverages various primary and secondary sources to provide the best information possible. Overall, when studied in conjunction with the other three tables, the table provides the reader a rough understanding of the air effort provided to group forces during the withdrawal. Nonetheless, viewing the raw number of sorties as a measure

of effectiveness is a fallacy. Sortie generation and effectiveness by day is also impacted by distances aircraft traveled to target areas, type of aircraft flown which impacts weapon loadout, and air-ground command and control integration as a few examples.

Air Support in the East

In X Corps' eastern theater, naval aviation provided most of the CAS during the Second Chinese Offensive. 1st MAW's tactical squadrons initially conducted flight operations from Wonsan (K-25) and Yonpo (K-27). Marine Attack Squadron (VMF) 214, VMF-312, VMF(N)-513 supported operations from K-25, VMF-212 and VMF(N)-542 supported operations from K-27, and VMF-323 supported operations from the USS *Badoeng Strait* in its operating area 30 miles offshore in the Sea of Japan.¹¹⁵ Additionally, the USS *Sicily* was present offshore supporting operations, and both ships assigned to Task Group 96.8.¹¹⁶ Finally, the three carriers of TF 77: USS *Leyte*, USS *Philippine Sea*, and the USS *Princeton*, were present offshore supporting operations with their embarked carrier air wings.¹¹⁷ This placed the naval aviation supporting operations in North Korea, from both land and sea, between 50 to 120 miles from the Chosin Reservoir.

The proximity of naval aviation to Chosin Reservoir benefited both 1st Marine Division and RCT-31. Aircraft could provide support to the Marines and soldiers fighting at Chosin Reservoir with little delay. The short travel distances could put aircraft, typically F4U Corsairs or AD-4 Skyraiders, overhead in about twelve to thirty minutes from strip alert assuming a modest cruising speed of 250 mph.¹¹⁸ Naturally, this also allows more time on station to support CAS

¹¹⁵ US Navy, USMC History Division, "1st Marine Air Wing Historical Diary: December 1950," 5. See Field, *History of US Naval Operations: Korea*, Chapter 9. See also Figure 9 in Appendix A.

¹¹⁶ Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 287, 378.

¹¹⁷ Hallion, *The Naval Air War in Korea*, 79-82. See Fields, *History of United States Naval Operations: Korea*, Chapter 9. See also Figure 9 in Appendix A

¹¹⁸ Time estimates reflect distance to fly at cruising speed from the initial takeoff location to the target area. Actual time from strip alert would need account for strip alert procedures: mission brief,

requests. A Far East Command Operations Research office report alluded that “Marine forward air controllers estimated that they got bombs on target within 10 minutes,” and that “Marine aircraft spent about seventy-three minutes over the target area.”¹¹⁹ The true reason for the responsiveness of Marine air support coupled the proximity of airfields and carriers with the estimated 444 total aircraft available at peak strength.¹²⁰ During the withdrawal from Hagaru-ri to Hungnam, “on average, twenty-four CAS aircraft orbited over the column, while other attack airplanes bombed, rocketed, napalmed, and strafed adjacent ridges.”¹²¹ Maintaining airfields and carriers nearby was an obvious advantage for X Corps as a whole, and a good example of effective operational basing of air power.

Furthermore, it also appears 1st MAW sought an opportunity to remain in support of ground forces as long as possible during the withdrawal to the coast.¹²² Already postured well forward, 1st MAW deliberately repositioned its squadrons closer to the Chosin Reservoir. By 5 December, a day after the last elements 1st Marine Division arrived at Hagaru-ri, 1st MAW positioned all ashore combat squadrons at K-27.¹²³ 1st MAW continued to conduct flight operations from K-27 until all X Corps forces consolidated in vicinity of Hungnam around 11 December. On 13 and 14 December, the remaining shore-based combat squadrons of 1st MAW would relocate south to Pusan or back to Japan, but VMF-323 and VMF-214, recently reembarked on USS SICILY, remained afloat to support operations ashore under the control of

transporting pilots to their aircraft, and takeoff. Strip alert was chosen as a reference point because that was the standard posture for USAF aircraft whereas Naval aviation was already airborne on air alert.

¹¹⁹ Crane, *American Air Power Strategy in Korea, 1950-1953*, 60-62.

¹²⁰ See Figure 9 and Tables 1, 2, and 3 in Appendix A.

¹²¹ Hallion, *The Naval Air War in Korea*, 83.

¹²² US Army, ADP 3-0, Chapter 2, 11-12.

¹²³ 1st Marine Air Wing, “Historical Diary December 1950,” 5, 7-8. Source available in Korean War Project War Record Archives.

CTF 90 and in cooperation with TF 77's aircraft.¹²⁴ Moreover, the reduction of air power in the east also only occurred when the decrease of CAS could be replaced by massed naval gunfire.¹²⁵ Overall, 1st MAW realized the precarious position of X Corps and remained directly in the fight as long as possible despite potential risk to its own squadrons.

Overall, air support in the east demonstrated a superior application of operational in support of X Corps' withdrawal and concentration at Hungnam. The ability to base aircraft closer to the front shortened 1st MAW, TG 96.7, and TF 77's LOOs and extended their operational reach. The result was an increase in the total amount of aircraft available and their time on station. An additional, but not as obvious benefit, is the pilots' increased familiarity of 1st Marine Division's and RCT-31's operational area due to repeat sorties in support of each unit. Regardless, the RCT-31 was overwhelmed by circumstances beyond the ability of air power to solve. On a final note, the air support in the west focused on a limited front despite it occurring along a sixty mile withdrawal, and this also enhanced the performance of aviation in support of ground operations.

Air Support in the West

In 8th Army's western theater, FFAF provided most of the air support through Fifth Air Force and Bomber Command. FFAF supported a wide variety of mission sets throughout the conflict: air superiority, interdiction, and close air support with tactical air forces as well as maintaining nuclear deterrence with strategic air forces.¹²⁶ FFAF supported these mission sets with 10 aviation groups spanning a myriad of fighters, light bombers, and medium bombers. Fifth Air Force possessed five groups of fighters and two groups of light bombers while Bomber

¹²⁴ Ibid., 9-10.

¹²⁵ Montross and Canzona, *US Marine Operations in Korea 1950-1953, Volume 3*, 342-343.

¹²⁶ US War Department, Field Manual (FM) 31-35, *Air-Ground Operations* (Washington, DC: US Government Printing Office, 1946), 14. See US War Department, Joint Training Directive, *Air-Ground Operations* (Washington, DC: US Government Printing Office, 1950), 1-3. Sources available in ISCARTL Archives. See also Crane, *American Air Power Strategy in Korea, 1950-1953*, 34-39.

Command possessed three groups of medium bombers, accounting for 276 fighters and 192 bombers..¹²⁷ On 25 November, Fifth Air Forces' fighter groups operated from air bases spanning the entire Korean peninsula: 8th Fighter Bomber Group (FBG) at Pyongyang (K-23), 18th FBG at East Pyongyang (K-24), 49th FBG at Taegu (K-2), 35th Fighter Interceptor Group (FIG) at Yonpo (K-27), and 51st FIG at Kimpo (K-14)..¹²⁸ This placed Fifth Air Force fighters supporting operations in North Korea between 60 and 300 miles from the Ch'ongch'on River. Furthermore, all bomber aircraft operated from air bases spanning the Japanese islands: Kadena, Yakota, Itasuke, and Iwakuni..¹²⁹ This placed all bombers supporting operations between 500 and 950 miles from the Ch'ongch'on River.

The varied distances of USAF airbases to the Ch'ongch'on River reduced the responsiveness of aircraft on strip-alert, and the ability to mass effects of simultaneous sorties on an objective. The travel distances could put aircraft, F51 Mustangs or F80 Shooting Stars, overhead between fifteen to seventy-five minutes from strip alert. Airfields at K-23 and K-24 supported fifteen minute travel times, K-14 supported 40 minute travel times, and K-2 supported seventy-five minute travel times..¹³⁰ The same FEC Operations Research report found that Air Force aircraft took about forty minutes to arrive over a target, and could only loiter for about thirty minutes..¹³¹ In addition, the density and type of aircraft at each airfield are worth note. Seventy-eight Mustangs, slower propeller aircraft, operated from K-23 and K-24, while seventy and eighty-one Shooting Stars, faster jet aircraft, operated from K-14 and K-2 respectively; a total

¹²⁷ See Table 3 in Appendix A.

¹²⁸ See Table 2 and Figure 9 in Appendix A. Note that the 35th Fighter Interceptor Group operated from K-27, Yonpo, and supported X Corps' operations in the eastern zone.

¹²⁹ Ibid.

¹³⁰ These travel times do not account for airfields that B26 Marauders and B29 Superfortresses, light and medium bombers, operated from. Those platforms all flew from various airfields in Japan that would reflect between 2 – 4 hour flight times to target areas at 250 mph. Thus, these platforms were more accustomed to deliberate, preplanned missions versus dynamic, on-call missions.

¹³¹ Crane, *American Air Power Strategy in Korea, 1950-1953*, 62.

of 229 fighters at various distances supporting air superiority, armed recce (a form of operational interdiction), and close air support. This posture places slower, longer loiter propeller aircraft closer to the front, and faster, shorter loiter jet aircraft farther from the front. Overall, it begins to become apparent that the airfield options in the west coupled with supporting three different mission sets would detract from the total air support to 8th Army's ground operations at the front.

Furthermore, Fifth Air Force repositioned its northern most fighter groups further south while 8th Army withdrew. 8th and 18th FBGs displaced from K-23 and K-24 to K-16 and K-13 near Seoul respectively due to the threat posed by the advancing CCF around 1 December.¹³² While the decision was prudent given the risk to the FBGs, it further exacerbated the challenge of providing air support to 8th Army's withdrawal. Given 8th Army's loss of artillery assets, the extended LOO for aircraft was even more detrimental to ground operations. Additionally, both FBGs would relocate further south again after a week. 18th FBG moved to K-10 near Pusan on 9 December, 8th FBG moved to Itasuke, Japan on 10 December.¹³³ This made 51st FBG at K-14 the closest to 8th Army's front for the remainder of the withdrawal. While the distributed airfields and rearward repositioning of bomber groups made CAS and operational interdiction more difficult, it minimized the threat of the CCF offensive from affecting all Fifth Air Force Korean airfields at the same time.

Overall, air support in the west was not well suited to provide concentrated air power in support of 8th Army's withdrawal let alone the original planned offensive to the Yalu River. A review of basing and its effects on LOOs and operational reach suggest that FEAF's posture was more aligned to support overarching strategic aims versus tactical ones. Moreover, the quantity of fighter aircraft available could not generate enough concentrated firepower to halt the CCF advance for a sustained duration. In comparison, Fifth Air Force only possessed about half the

¹³² See Table 2 and Figure 9 in Appendix A. See also Millett, *The War for Korea, 1950-1951*, 343-347.

¹³³ See Table 2 in Appendix A.

fighter aircraft to support 8th Army that Naval aviation possessed to support X Corps. The latter could not halt the CCF advance, thus, it is not probable to expect Fifth Air Force to achieve a different result. Finally, air support in the east had to support numerous units along front that would span 40 miles in breadth (Anju to Tokchon) and twenty miles in depth (Kujang-dong to ‘the Guantlet’), and possessed numerous ground maneuver corridors. The area was too vast for FEAF and, more specifically, Fifth Air Force to support with the assets available.

Conclusion

The combined capabilities of FEAF and naval aviation in the Western Pacific were formidable, and provided UNC with an impressive advantage, but that advantage was not as formidable as perceived. While the CCF respected the capabilities of American air power, they remained undaunted during the Chinese Second Offensive. The CCF acknowledged the advantage of UNC’s air power, adapted their operations to avoid this strength, and continued their attack with unrelenting ferocity. The UNC’s nigh unstoppable force collided with the CCF’s immovable object, and the CCF came out victorious as the UNC’s offensive failed.

1. Neither FEAF or naval aviation were postured to provide adequate firepower in support of the UNC’s offensive desires to reach the Yalu River. In general, the UNC’s air power did not possess the operational reach to sustain and project enough force to have a significant effect on the CCF. Moreover, considering the UNC’s offensive failed, a coercive strategy of denial leveraging air power, if pursued, would not succeed either. Strategies of denial can require as much of a resource commitment as does victory, and the resources available to the UNC during the winter of 1950 were not enough to achieve either outcome. In the end, the CCF were not dissuaded from continuing their attack and achieving their objectives.

2. American air power was postured to support the UNC’s withdrawal; however, with mixed success. In the east, naval aviation’s ability to forward position large amounts of fighter-bomber aircraft afloat and ashore, shortened their LOOs and enhanced their operational reach

across a narrow front during 1st Marine Division's long withdrawal from the Chosin Reservoir. In the west, FEAF's posture assisted 8th Army's withdrawal, but not with the same effectiveness. FEAF's limited amounts of fighter-bomber aircraft operating along LOOs from airfields that spanned the entire Korean Peninsula reduced their operational reach across 8th Army's eighty mile wide front; thus, constrained their effectiveness.

3. Tactical air power achieves its best effects when integrated with ground operations, and complemented with ground-based fires. In the east, 1st Marine Division's performance benefited from well-developed air-ground fires plans established by both the Division and X Corps in concert with 1st MAW that kept massed fires on the CCF while 1st Marine Division withdrew. This facilitated 1st Marine Division's ability to maintain favorable operational tempo relative to the CCF. In the west, 2ID suffered a significant loss of its organic artillery, and inadequate integration of air-ground operations at the division and higher was also a hinderance. This contributed to 2ID's destruction as their operational tempo reduced under the threat of encirclement by the CCF, and having to rely on diminished air power for fires almost exclusively during their trek through 'the Gauntlet.'

Goliath vs Goliath: Parity in the Western Pacific Today

Despite the events in Korea during the winter of 1950, the United States continues to leverage the capabilities of air power to project force and underwrite military coercion. The preeminent example of the United States' faith in its air power remains the events of Operation Desert Storm that defeated the Iraqi Army in a 6-week air campaign and subsequent 100-hour offensive.¹³⁴ China noticed this demonstration of American air power, and it served as a catalyst for China's discussions regarding future conflict against the United States; similar to what

¹³⁴ US Department of the Army, CMH Publication 70-117-1, *War in the Persian Gulf: Operations DESERT SHIELD and DESERT STORM, August 1990 – March 1991* (Washington, DC: Government Printing Office, 2010), 29-35.

occurred during the first six months of the Korean War.¹³⁵ Since then, per the Department of Defense's annual report to congress, it appears China has advanced their military capabilities to approach parity with the US military in the Western Pacific through a combination of symmetric and asymmetric means.¹³⁶ This is a stark difference compared to the balance of military power in 1950.

From an American air power perspective, the United States' current aviation posture in the Western Pacific is reminiscent of its posture in 1950. The US Air Force has two numbered air forces in the Western Pacific, 5th and 7th Air Forces in Japan and Korea respectively. Each of those commands possesses one or two fighter squadrons.¹³⁷ The US Marine Corps has 1st MAW stationed in Okinawa with two fighter squadrons based at Iwakuni, Japan, and the US Navy also has five fighter squadrons based at Iwakuni.¹³⁸ Moreover, the US Navy does not possess the same quantity of aircraft carriers and amphibious assault ships to sea base aircraft from as it did in 1950. The US Navy only possesses eleven aircraft carriers and nine amphibious assault ships to support global operations while also balancing reoccurring maintenance requirements.¹³⁹ Thus,

¹³⁵ Qiao Liang and Wang Xiangsui, *Unrestricted Warfare* (Brattleboro, VT: Echo Point Books, 1999), xix-xxii, 28-32, 36-37, 47-48, 70-74.

¹³⁶ US DoD, "Military and Security Developments Involving the People's Republic of China, 2020: Annual Report to Congress" (Washington, DC: Government Printing Officer, 2020), i-ii, v-ix.

¹³⁷ "PACAF Units," US Department of the Air Force, Pacific Air Force, accessed March 9, 2021, <https://www.pacaf.af.mil/Info/PACAF-Units/>. See also "Pacific Air Forces," Wikipedia, last modified January 19, 2021. https://en.wikipedia.org/wiki/Pacific_Air_Forces#Fifth_Air_Force

¹³⁸ "Subordinate Units," US Department of the Navy, United States Marine Corps, 1st Marine Air Wing, accessed March 9, 2021, <https://www.1stmaw.marines.mil/Subordinate-Units/>. See also "Marine Corps Air Station Iwakuni," Wikipedia, last modified February 22, 2021, https://en.wikipedia.org/wiki/Marine_Corps_Air_Station_Iwakuni.

¹³⁹ While the US Navy possesses more amphibious ships, only nine are capable of supporting air operations for fixed wing aircraft, specifically AV-8B Harriers and F-35B Lightning IIs. Seven *Wasp*-class amphibious assault ships (LHDs) are active. Two *America*-class amphibious (LHAs) assault ships are active. Moreover, the recent loss of the *USS Bonhomme Richard* (LHD-6) to fire while in dock for maintenance degrades this power projection capability. See US Department of the Navy, United States Marine Corps Maritime Expeditionary Warfare Integration Division, *Maritime Expeditionary Warfare Annual Report 2018* (Washington, DC: Government Publishing Office, 2018), 12-15. See also IISS, *The Military Balance 2020*, 49-50.

the ability to position naval aviation at sea near an objective area is more limited today. Overall, the amount of aviation appears very minimal considering the immense size of the maritime environment of the Western Pacific if a conflict with China were to occur.

While US air forces in the Western Pacific are comprised of some of the most capable aircraft in the US military's inventory, they all operate from bases vulnerable to the growing anti-access, area denial (A2AD) capabilities of the PLA.¹⁴⁰ The PLA Navy operates more ships in the Western Pacific than the US Navy operates to support global operations.¹⁴¹ The PLA Air Force and Navy operate around 4,000 aircraft in the region, possess capable fourth and fifth generation aircraft, and operate an extensive integrated air defense system.¹⁴² The PLA Rocket Force underwrites the PLA air, land and sea capabilities with long-range precision fire systems that can strike land and maritime targets as far out as the second island chain.¹⁴³ Finally, the PLA as a collective operates an extensive intelligence, surveillance, and reconnaissance (ISR) network augmented by capabilities of the PLA Strategic Support Force to find, fix, track, and target US military forces in the region.¹⁴⁴ Combined, the conventional capabilities of the PLA negate any distinct conventional military advantage the United States has in the Western Pacific.

Recommendations

1. Basing: Basing remains a critical consideration for aviation operations. Given the increased A2AD threat in the Western Pacific, large, permanent airfields that support most of the US military's regional air power are too vulnerable to attack in a conventional conflict against China. Thus, the Joint Force needs to employ a more expeditionary basing concept for the region that can support the distribution of aviation assets to enhance survivability and conserve lethality.

¹⁴⁰ US DoD, "Military and Security Developments Involving the People's Republic of China, 2020: Annual Report to Congress" (Washington, DC: Government Printing Officer, 2020), 72-81.

¹⁴¹ Ibid., 165. See also IISS, *The Military Balance 2020*, 49-50.

¹⁴² Ibid., 166. See also IISS, *The Military Balance 2020*, 259-268.

¹⁴³ IISS, *The Military Balance 2020*, 231-239, 259-268.

¹⁴⁴ Ibid.

The US Air Force, Navy, and Marine Corps should all cooperate to support further development of the Navy's Distributed Maritime Operations concept and the US Marine Corps' Expeditionary Advanced Base Operations concept. Each service stands to benefit from cooperation on those endeavors if they can develop a distributed network of expeditionary airfields, forward arming and refueling points, and permanent bases throughout the first and second island chains capable of mutual support.

2. Multinational Partnership: The United States needs to explore additional options to partner with South East Asian (SEA) nations in military-to-military engagements with the goal of increasing regional access and establishing shared facilities that can support US military aviation. The intent is to decrease operating costs of independently operated overseas US bases, and increase regional deterrence by complicating China's ability to target US bases without provoking additional SEA nations to open conflict against China.

3. Ground Fires: Complementing air-based fires with increased ground-based fires is important. If the allocation of air assets in the Western Pacific remains limited, the ability to deliver concentrated fires via air power may decrease due the expansive operating area and potential inadequate reach of available aircraft. Thus, the US Army and Marine Corps need to explore options to increase rocket launched precision fires systems that use multi-role munitions capable of striking land and sea targets, and integrate with the Joint Force's overarching fires kill chain. Both services should seek opportunities to distribute this capability throughout the region.

4. Information Related Capabilities (IRCs): The importance of space, cyber, electromagnetic spectrum, and information operations has increased. Conventional land, air, and maritime operations for most modern militaries now rely on extensive ISR networks supported by these IRCs. Moreover, IRCs also provide new opportunities to degrade, disrupt, deny, and destroy an adversary's conventional and information capabilities. Thus, if aircraft in the region remain limited, the ability to coordinate IRCs with offensive air operations may prove beneficial to defeating PLA threat systems, and maximizing the effectiveness of available Joint Force air

power. The Joint Force needs explore options to integrate each service's IRC and concepts to better support conventional military operations in the region.

Overall, a distributed network of mutually supporting, expeditionary and permanent bases will provide multiple LOOs for the Joint Force to exploit while increasing the PLA's difficulties to defend each possible avenue of attack. The ability to reposition air power between various bases in a dynamic environment will degrade the PLA's ability to find, fix, track, target, and engage US military forces. Furthermore, a distributed network of bases provides the Joint Force with various LOOs to project air power from and through; a similar capability that benefited X Corps in 1950 when 1st MAW repositioned squadrons between K-27 and escort carriers.

A distributed network of bases can protect and expand the Joint Force's operational reach. By distributing basing options throughout the region, the PLA's ability to destroy the Joint Force's ability to project air power through a few concentrated attacks diminishes. This enhances the protective posture of the Joint Force which is a key aspect of maintaining effective operational reach. Moreover, distributed basing throughout the region expands potential coverage area of aircraft, and decreases response time to potential targets as they appear.

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Appendix A: Aviation Tables & Figures

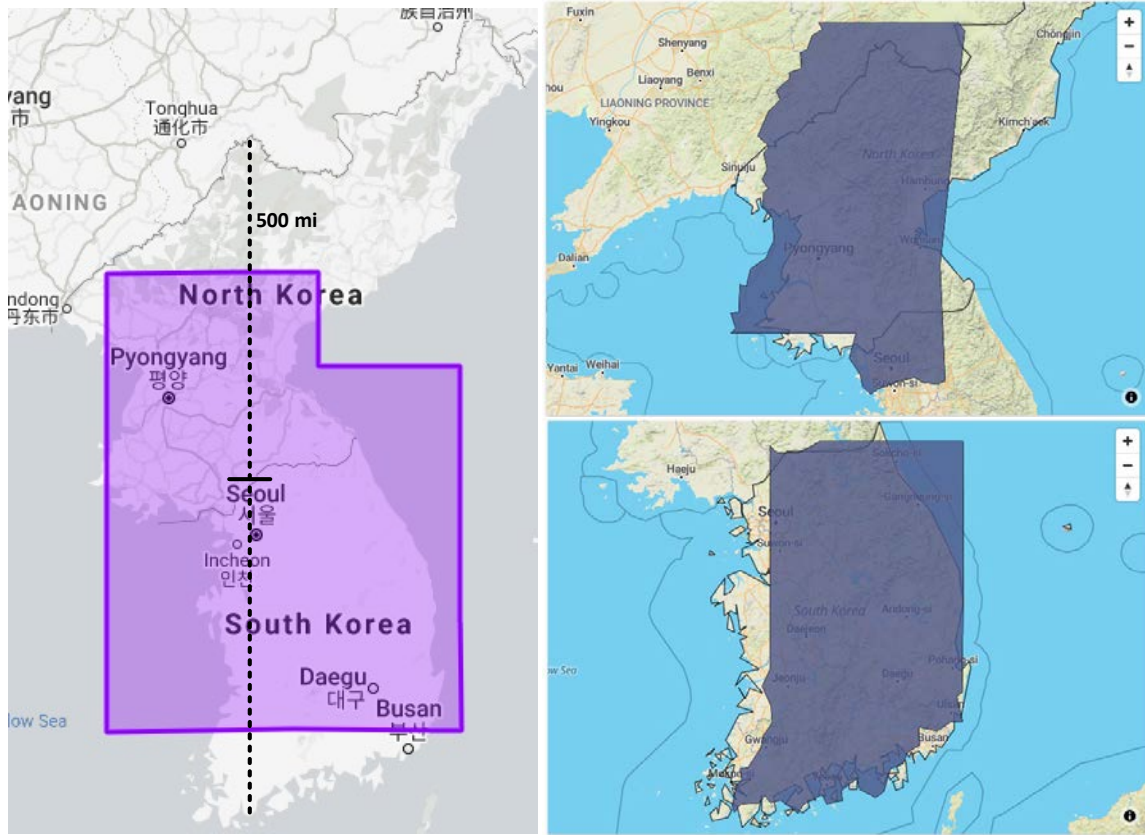


Figure 8. Comparison of the size of North and South Korea to US States (in square miles). Created by author. The Korean Peninsula (85,232 mi²) is approximately the size of the state of Utah (84,899 mi²). Additionally, a 500 mile centerline runs from the mid-peak of North Korea to the southern tip of South Korea, and is bisected approximately at the international border of the two countries. North Korea (46,541 mi²) is approximately the size of the state of Mississippi (48,430 mi²). South Korea (38,691 mi²) is approximately the size of the state of Indiana (36,418 mi²). Size approximations collected through standard searches on <https://www.google.com/>. Map overlays created through <https://thetruesize.com/> and <https://www.mylifeelsewhere.com/>.

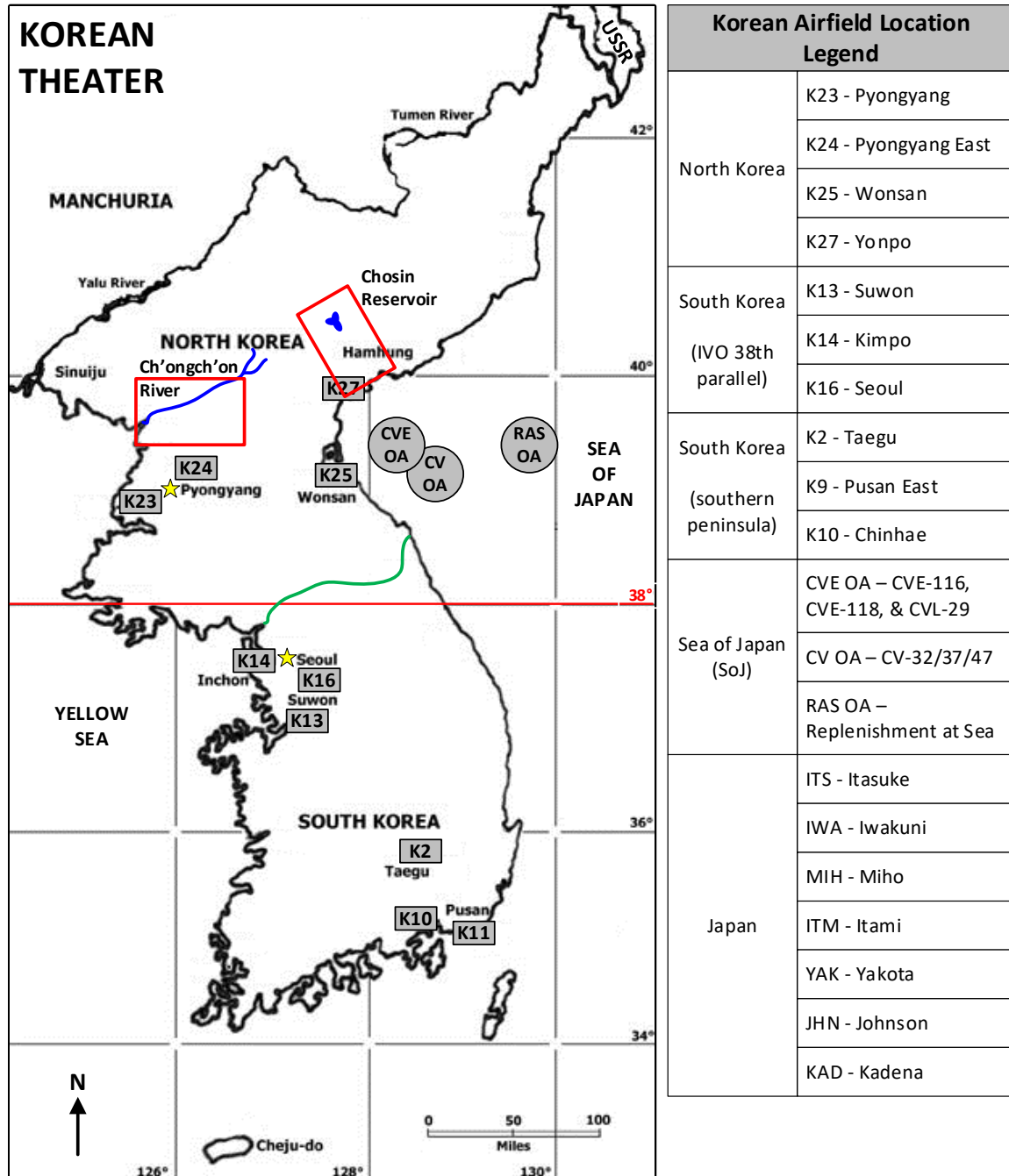


Figure 9. Modified by author for focus and clarity. The 38th parallel (red line) and present international border between North and South Korea (green line) are highlighted. Capitals of each country identified with a yellow star. Select air base locations afloat and ashore identified in gray boxes; original source shows all airfields. Finally, general areas of operations for battles at Ch'ongch'on River and Chosin Reservoir boxed in red. Source available at <https://www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Display/Article/196394/k-bases-in-korea/>.

Table 1. Distance (air miles) from UNC airfields / carriers to objective areas.

DISTANCE (AIR MILES) FROM UNC AIRFIELDS / CARRIERS TO OBJECTIVE AREAS		Korean War: 24 November 1950 – 25 December 1950														
		Battle of Ch'ongch'on River – Key Locations							Chosin Reservoir – Key Locations							
		2d Infantry Division							1st Marine Division							
Korean Airfield Location Legend	Kujang-dong	Tokchon	Kunu-ri	Yongwon (S. Gaun'ng)	Anju	Sunchon	Yudam-ni	Toktong Pass	Hagaru-ri	Koto-ri	Funchilli n Pass	Chinhun g-ni	Hungnam	"The Inlet"	RCT-31 / "TF Faith"	
North Korea	K23 - Pyongyang	60	57	45	37	40	28	123	120	122	119	116	112	113	128	125
	K24 - Pyongyang East	60	57	45	37	40	28	123	120	122	119	116	112	113	128	125
	K25 - Wonsan	90	74	90	89	100	83	93	87	85	78	75	61	47	92	88
	K27 - Yonpo	76	62	84	86	97	85	53	48	45	37	35	20	9	51	48
South Korea (100 38th parallel)	K13 - Suwon	190	178	180	173	179	162	223	218	217	210	208	195	182	224	220
	K14 - Kimpo	165	154	155	148	155	138	202	197	196	190	187	175	163	203	200
	K16 - Seoul	178	167	169	163	170	152	210	205	203	197	194	181	168	210	207
	K2 - Taegu	310	296	301	296	304	285	327	321	319	311	309	294	277	325	321
South Korea (southern peninsula)	K9 - Pusan East	366	353	359	353	361	343	383	377	374	367	364	349	332	380	377
	K10 - Chinhae	355	342	347	341	349	331	377	371	369	362	359	344	328	375	372
	Sol - CVE/CVL Sea Op Area	109	94	114	115	126	112	83	77	73	66	64	50	31	78	75
	Sol - TF77 Op Area	136	121	142	141	152	136	110	105	100	93	92	77	60	105	102
Japan	ITS - Itasuke	497	484	491	485	494	474	510	504	501	494	491	476	458	507	503
	IWA - Iwakuni	522	507	518	514	524	504	520	514	510	503	501	486	468	515	512
	MIH - Miho	495	480	495	492	502	483	478	473	469	462	461	446	428	472	470
	ITM - Itami	624	608	624	622	632	613	601	596	591	585	584	570	552	594	592
	YAK - Yakota	779	764	783	782	793	776	740	736	731	726	725	714	699	732	731
	JHN - Johnson	779	764	783	782	793	776	739	735	730	725	725	714	698	731	703
KAD - Kadena	939	930	927	920	924	909	976	971	969	962	960	946	931	976	972	

Source: Created by author.

See US Department of the Air Force, Air Force Historical Research Agency (AFHRA), "The USAF in Korea: Campaigns, Units, and Stations – 1950-1953," ed. Judy G. Endicott (Washington, DC: Government Printing Office, 2001), 45-76, 113-115; US Department of the Air Force, AFHRA, Fifth Air Force, "Fifth Air Force Review: A Command Reference Book, November 1950," IRIS Number 101135814, Reel 49781 (Source available via Ms. Tammy Horton, tammy.horton@us.af.mil); James Field, *History of United States Naval Operations: Korea* (Washington, DC: US Government Printing Office, 1962), Online edition, Chapter 9; Lynn Montross and Nicholas A. Canzona, *US Marine Operations in Korea 1950-1953, Volume 3: The Chosin Reservoir Campaign* (Washington, DC: Government Printing Office, 1957); Roy E. Appleman, *East of Chosin: Entrapment and Breakout in Korea, 1950* (College Station, TX: Texas A&M University Press, 1987); Roy E. Appleman, *Disaster in Korea, the Chinese Confront MacArthur* (College Station, TX: Texas A&M University Press, 1989); Lynn Montross and Nicholas A. Canzona, *US Marine Operations in Korea 1950-1953, Volume 3: The Chosin Reservoir Campaign* (Washington, DC: Government Printing Office, 1957).

Table 2. Korean War: Location of UNC air forces (USAF, USN, USMC)

KOREAN WAR: LOCATION OF UNC AIR FORCES (USAF, USN, USMC)			November 1950												December 1950											
			24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
BOM COM	19 Bmb Grp (M)	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD			
	98 Bmb Grp (M)	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK	YAK			
	307 Bmb Grp (M)	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD	KAD			
FEAF	8 FBG	K14	K23	K23	K23	K23	K23	K23	K23	K23	K16	K16	K16	K16	K16	K16	K16	K16	ITS	ITS	ITS	ITS	ITS			
	18 FBG	K24	K24	K24	K24	K24	K24	K24	K13	K13	K13	K13	K13	K13	K13	K13	K10	K10	K10	K10	K10	K10	K10			
	49 FBG	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2	K2			
	35 FIG	K27	K27	K27	K27	K27	K27	K27	K27	K27	K9	K9	K9	K9	K9	K9	K9	K9	K9	K9	K9	K9	K9			
	51 FIG	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14	K14			
	452 Bmb Grp (L)	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS	ITS			
1 MAW	3 Bmb Grp (L)	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA	IWA			
	VMF-214	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K27	K27	K27	K27	K27	CVE-118	CVE-118	CVE-118	CVE-118	CVE-118			
	VMF-312	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27			
	VMF(N)-513	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K25	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27			
	VMF-212	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27			
	VMF-311																									
MAG- 33	VMF-323	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116	CVE-116			
	VMF(N)-542	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27	K27			
	CVG-3	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol			
TF77	CVG-19																									
	CVG-11	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol	Sol			
	CV-47																									
NOTES:																										
1. Escort carriers (CVE) and light carriers (CVL) in support of 1 MAW operate in the east Sea of Japan approximately 30 - 40 miles off the east coast of Korea southeast from Hungnam.																										
2. TF 77 carriers (CV) operate in the East Sea of Japan approximately 60 - 80 miles off the east coast of Korea southeast from Hungnam.																										
Itasuke, Iwakuni, Kadena, Yakota, Miho, Itami and Johnson are all air bases in the Japanese Islands.																										

Source: Created by author.

See US Department of the Air Force, Air Force Historical Research Agency (AFHRA), “The USAF in Korea: Campaigns, Units, and Stations – 1950-1953,” ed. Judy G. Endicott (Washington, DC: Government Printing Office, 2001), 45-76, 113-115; US Department of the Air Force, AFHRA, Fifth Air Force, “Fifth Air Force Review: A Command Reference Book, November 1950,” IRIS Number 101135814, Reel 4978 (Source available via Ms. Tammy Horton, tammy.horton@us.af.mil); US Department of the Navy, Naval History & Heritage Command, “USS LEYTE (CV-32): Narrative Report of Action for the period 5 November through 30 November 1950,” “USS LEYTE (CV-32): Narrative Report of Action for the period 1 December through 26 December 1950,” and “USS PHILIPPINE SEA (CV-47): Action Report for the period 1 November through 31 December 1950” (Sources available via <https://www.history.navy.mil/research/archives/digital-exhibits-highlights/action-reports/korean-war-carrier-combat.html>); US Department of the Navy, United States Marine Corps History Division, “1st Marine Air Wing, Historical Diary: November 1950” (Source available https://www.koreanwar2.org/kwp2/usmc/003/M003_CD1_HISTORICAL_DIARY_DECEMBER_1950.pdf); James Field, *History of United States Naval Operations: Korea* (Washington, DC: US Government Printing Office, 1962), Online edition, Chapter 9; Lynn Montross and Nicholas A. Canzona, *US Marine Operations in Korea 1950-1953, Volume 3: The Chosin Reservoir Campaign* (Washington, DC: Government Printing Office, 1957), 376-378.

Table 3. Korean War: Approximate UNC aircraft on-hand (24 Nov – 15 Dec).

KOREAN WAR: APPROXIMATE AIRCRAFT ON-HAND (24 Nov – 15 Dec)		F4F	F7F	F9F	AD	F51	F80	F82	B26	B29
		Corsair	Tigercat	Panther	Skyraider	Mustang	Shooting Star	Twin Mustang	Marauder	Superfortress
BOMCOM	19 Bmb Grp (M)	---	---	---	---	---	---	---	---	27
	98 Bmb Grp (M)	---	---	---	---	---	---	---	---	30
	307 Bmb Grp (M)	---	---	---	---	---	---	---	---	30
5TH AIR FORCE	8 FBG	---	---	---	---	40	---	---	---	---
	18 FBG	---	---	---	---	38	---	---	---	---
	49 FBG	---	---	---	---	---	81	---	---	---
	35 FIG	---	---	---	---	43	---	---	---	---
	51 FIG	---	---	---	---	---	70	4	---	2
	452 Bmb Grp (L)	---	---	---	---	---	---	---	49	---
	3 Bmb Grp (L)	---	---	---	---	---	---	---	54	---
1 MAW	VMF-212	20	---	26/CVL-29	---	---	---	---	---	---
	VMF-214	25	---	---	---	---	---	---	---	---
	VMF-311	---	---	17	---	---	---	---	---	---
	VMF-312	22	---	---	---	---	---	---	---	---
	VMF-323	24	---	---	---	---	---	---	---	---
	VMF(N)-513	19	---	---	---	---	---	---	---	---
	VMF(N)-542	---	14	---	---	---	---	---	---	---
TF77	CV-32 / CVG-3	40	---	16	26	---	---	---	---	---
	CV-37 / CVG-19	E - 24	---	E - 34	E - 24	---	---	---	---	---
	CV-47 / CVG-11	47	---	24	34	---	---	---	---	---
TOTALS:		221	14	117	84	121	151	4	103	89
		436				276			192	

Source: Created by author.

For USAF aircraft estimates see sources from the Air Force Historical Research Agency in bibliography. Documents inventory available at <http://airforcehistoryindex.org/>.

For USN aircraft estimates see sources from the Naval History & Heritage Command in bibliography. Documents available at <https://www.history.navy.mil/research/archives/digital-exhibits-highlights/action-reports/korean-war-carrier-combat.html>.

For USMC aircraft estimates see sources from the Korean War Project (online) in bibliography. Documents available at <https://www.koreanwar.org/html/usmc-korean-war-records.html>.

Table 4. Sorties flown by organization (USAF, USN, USMC)

Korean War: Sorties Flown By Organization		November 1950												December 1950											
		24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
FEAF (Overall, all sortie types)		3,949 (19 - 25 Nov)												3,197											
BOMBER CWD		37	32	34	23	25	22	26	22	23	25	18	24	24	25	24	2	44	24	24	25	28	24		
19 Bmb Grp (M)		12	11	9	9	0	0	24	0	0	24	0	0	23	0	12	0	12	12	12	0	12	12		
98 Bmb Grp (M)		10	9	13	2	25	0	2	22	4	1	18	0	0	25	0	2	20	0	0	25	4	0		
307 Bmb Grp (M)		15	12	12	12	0	22	0	0	19	0	0	24	1	0	12	0	12	12	12	0	12	12		
5TH AIR FORCE		8,077 (Nov total, all sortie types)																							
8 FBG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
35 FB5		544 (Nov total)												155 (Dec total)											
36 FB5		---	---	---	---	---	---	---	14/10	---	3/3	11/4	10/10	15/15	15/8	20/12	---	---	---	---	---	---			
18 FBG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
2 SAAF		---	---	---	---	---	---	---	75	---	---	---	---	---	---	---	---	---	---	---	---	---			
12 FB5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
67 FB5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
49 FBG		80	95	61	31	85	31	85	102	99	70	71	90	84	48	65	67	81	72	77	69	73			
49 FBG		25	29	21	12	30	12	27	E - 30	---	21	23	28	31	16	17	26	26	24	28	23	21			
8 FB5		24	33	19	11	28	8	27	36	---	27	21	31	31	12	20	20	29	28	24	24	28			
8 FB5		31	34	22	8	31	11	33	36	---	23	27	31	25	20	28	18	26	20	26	22	25			
35 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
35 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
79 BAAF		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
35 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
40 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
51 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
16 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
51 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
25 FIG		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
80 FB5		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
452 Bg(L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
452 Bmb Grp (L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
728 B5(L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
729 B5(L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
730 B5(L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
3 Bmb Grp (L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
3 Bmb Grp (L)		---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---			
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