

From “Last Battle” to the Next War: Using Operation ICEBERG to Inform Multi-Domain Battle in the Indo-Asia Pacific

A Monograph

by

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Abstract

From “Last Battle” to the Next War: Using Operation ICEBERG to Inform Multi-Domain Battle in the Indo-Asia Pacific, by MAJ Jonathan C. Leiter, US Army, 53 pages.

This monograph examines Operation ICEBERG, the 1945 campaign to invade the Japanese-held Ryukyu Islands, most notably Okinawa, to inform how the US Army could employ its land combat forces in Multi-Domain Battle in the Indo-Asia Pacific region. The monograph reviews the Multi-Domain Battle Concept, then employs historical case study to describe the campaign, focusing on elements reflected in both. The investigation reveals examples of cross-domain maneuver in support of operations in the maritime domain, land forces enabling long-range fires, and strategic, operational, and tactical convergence creating a “window of advantage” for ground maneuver. It also identifies a situation where the failure to employ cross-domain maneuver likely prolonged the campaign. It then offers informed recommendations for the development of Multi-Domain Battle in the Indo-Asian Pacific and posits questions for further study.

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Acronyms

A2/AD	Anti-Access and Area Denial
AAF	Army Air Forces
AO	Area of Operations
AUSA	Association of the United States Army
BCT	Brigade Combat Team
BLT	Battalion Landing Team
CATF	Commander of the Amphibious Task Force
CinCPOA	Commander in Chief, Pacific Ocean Areas
CLF	Commander of the Landing Force
IJA	Imperial Japanese Army
IJN	Imperial Japanese Navy
JCS	Joint Chiefs of Staff
JOA	Joint Operations Area
JTF	Joint Task Force
LTG	Lieutenant General
MDB	Multi-Domain Battle
PACOM	United States Pacific Command
TF	Task Force
TRADOC	United States Army Training and Doctrine Command
USARPAC	United States Army Pacific

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Introduction

Historical examples clarify everything and also provide the best kind of proof in the empirical sciences. This is particularly true of the art of war.

-Clausewitz, *On War*

In his Eisenhower Luncheon remarks at the 2016 Association of the United States Army (AUSA) Conference, General Mark Milley, the 39th Chief of Staff of the United States Army, predicted that fundamental changes to the global order and emerging trends and technologies threaten to erode the US military's overmatch and will likely "result in the most significant and profound change in the character of war we have witnessed throughout all of recorded history."¹ Milley believes that future enemy anti-access and area denial (A2/AD) weapons will be of sufficient quantity and capability to contest the air and sea superiority US forces have become dependent upon. The 2018 National Defense Strategy (NDS) reinforces his assessment, observing that "today, every domain is contested- air, land, sea, space, and cyberspace."² These ominous predictions appear corroborated by observing Russian units in Ukraine in 2014 and recent Chinese military actions in the South and East China Seas. If true, they challenge the foundational assumptions which underlie the last twenty-five years of land warfare theory, and US Army doctrine and force structure development. General David Perkins, the Commander of United States Army Training and Doctrine Command (TRADOC) observed that "During most of our

¹ Mark A. Milley, "State of the Army Address" (speech, Association of the United States Army 2016 Annual Meeting and Exposition, Walter E. Washington Convention Center, Washington, DC, October, 2016).

² 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: Office of the Secretary of Defense, 2018), 3.

recent history, the only domain that has been truly contested has been the land domain.”³ Left unaddressed, these developments threaten to leave the United States with an army “not sufficiently trained, organized, equipped, nor postured to deter or defeat highly capable peer enemies to win in future war.”⁴

To counter these threats, the United States Army, Marine Corps, and Air Force have cooperated since 2015 to develop a new operational concept for the employment of future land forces; *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century*.⁵ Multi-Domain Battle (MDB) is “an operational concept with strategic and tactical implications.”⁶ Using the Army and Marine Corps operating concepts as starting points, the MDB concept seeks to describe how future land forces, as a component of the Joint Force, should be employed short of war, turn denied spaces into contested spaces, defeat adversary campaigns, and consolidate their gains.⁷

To accomplish these objectives, an MDB approach employs three interrelated components; calibrated force posture, resilient formations, and converging capabilities. An expanded operational framework visualizes the convergence of capabilities spatially, temporally, and across domains to produce “windows of advantage that enable freedom of maneuver to defeat enemy systems and achieve friendly objectives outright.”⁸

³ David G. Perkins, "Multi-Domain Battle: Joint Combined Arms Concept for the 21st Century," AUSA.org, November 14, 2016, accessed 21 October 2017, <https://www.ausa.org/articles/multi-domain-battle-joint-combined-arms-concept-21st-century>.

⁴ "Multi-Domain Battle White Paper," www.tradoc.army.mil, February 24, 2017, 3, accessed 27 August 2017, www.tradoc.army.mil/multidomainbattle/docs/MDB_WhitePaper.pdf.

⁵ Kelly McCoy, “The Road to Multi-Domain Battle: An Origin Story,” Modern War Institute, 27 October 2017, accessed 16 November 2017, <https://mwi.usma.edu/road-multi-domain-battle-origin-story>.

⁶ US Army, *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century* (Fort Eustis, VA: US Army Training and Doctrine Command, 2017), 1.

⁷ Ibid., 2-3; McCoy, <https://mwi.usma.edu/road-multi-domain-battle-origin-story>.

⁸ *Multi-Domain Battle*, 4.

The concept currently remains developmental with version 1.0 just released in December 2017. Its eventual character and utility is the subject of ongoing debate in various online forums and military professional journals. Despite its early stage of development, elements of the concept are already beginning to appear in core US Army doctrine, for example, the 2017 version of FM 3-0: *Operations*.⁹ Further exploration of the concept is the focus of several major Army and joint force exercises in 2018 and 2019, notably US Army Training and Doctrine Command's (TRADOC) Unified Quest 18, US Army Europe's (USAREUR) Swift Response and United States Pacific Command's (PACOM) Rim of the Pacific (RIMPAC).¹⁰

The Problem

The recently-released 2018 National Defense Strategy declares that “we are emerging from a period of strategic atrophy” into a world where “Inter-state strategic competition, not terrorism, is now the primary concern in US national security.”¹¹ The strategy specifically identifies two primary peer competitors who have emerged as threats to the established world order; Russia, and China. The revisionist Russia depicted in the strategy, while cleverly exploiting new methods and technologies to pursue its strategic aims, does so within a familiar and established context where the United States can draw upon a wealth of its own and partners recent experience.

⁹ US Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Department of the Army, October 2017), 1-77.

¹⁰ Megan Eckstein, "Army Set to Sink Ship in 2018 as PACOM Operationalizes Multi-Domain Battle Concept," USNI.org, May 30, 2017, 3, accessed 11 December 2017, <https://news.usni.org/2017/05/30/pacom-integrating-multi-domain-battle-into-exercises-ahead-of-2018-rimpac-army-sinkex>; Tom Greenwood and Jim Greer, "Experimentation: The Road to Discovery," Thestrategybridge.org, March 01, 2018, accessed 03 March 2018, <https://thestrategybridge.org/the-bridge/2018/3/1/experimentation-the-road-to-discovery>.

¹¹ 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: OSD, 2018), 1.

In marked contrast, when the United States “pivoted” back toward the Pacific region in 2012, it was to a region where the US military had not faced a peer enemy in major combat operations since 1953. The strategic dilemma presented by China’s rise is historically familiar, that of the established power confronted by a rising regional challenger. However, China’s military strategy leverages advancements in sensors and long-range strike capability to deny critical access and basing. This strategy, in concert with the immutable geography of the Pacific Ocean, threatens to prevent the United States from projecting expeditionary combat power into the region. The neutralization of US military power, the keystone of our economic and diplomatic influence in the region, leaves our allies and partners susceptible to ongoing Chinese diplomatic, informational, and economic pressure. If competing strategically in the region with China is a principal priority of our national defense then we must re-learn how to fight in the Pacific.¹²

The US Army has historically assumed a supporting role in the Indo-Asia Pacific, which since the conclusion of World War 2 has been largely a maritime and air realm. This status is exemplified by the default nomination of a Navy Admiral as the Commander of United States Pacific Command since its creation in 1947. Since the Obama administration’s pivot to the Pacific in 2012, the Army has struggled to discern new roles for its land forces in contemporary and future Pacific conflicts. Early efforts like Regional Alignment of Forces (RAF) and US Army Pacific’s (USARPAC) Pacific Pathways program focused on building individual regional familiarity and identifying and overcoming the logistical challenges of deploying personnel and equipment to support recurring security cooperation exercises in the theater.¹³ However, deploying and employing land combat forces collectively in the region successfully will be much more complex than these efforts, or our recent experiences elsewhere suggest.

¹²*National Defense Strategy of The United States*, 4.

¹³ AUSA, “The U.S. Army in Motion in the Pacific,” April 6, 2015, 2, accessed 20 January 2017, <https://www.ausa.org/publications/us-army-motion-pacific>.

In light of the current doctrinal thrust toward Multi-Domain Battle, Admiral Harry Harris, the PACOM Commander, envisioned how a multi-domain approach could be employed in the Indo-Asia Pacific in his April 2017 testimony before the House Armed Services Committee (HASC). Harris described “ground, space, electromagnetic spectrum, and cyber forces operating across archipelagic regions to augment sea and air forces to create temporal pockets of dominance that can be exploited to gain a tactical and operational advantage.”¹⁴ Thus far, in accordance with Harris’s vision, US Army MDB efforts in the Indo-Asia Pacific have concentrated on re-packaging existing land-based Army missile and artillery systems to deliver “cross-domain fires” against enemy ships.¹⁵ The Army hopes to validate the concept during the summer 2018 Rim of the Pacific (RIMPAC) exercise by sinking a ship, dubbed a “SINKEX.”¹⁶ To coordinate and employ these capabilities, as well as to provide air, cyber, and space effects to the joint force, the Army is developing an experimental Multi-Domain Task Force (MDTF). The MDTF will be a 1500-soldier organization which will be more agile and self-contained than the 4,000-soldier Brigade Combat Teams (BCT’s) which are the modular building blocks of the current force.

While providing capabilities and effects across domains in support of the joint force is an important element of Multi-Domain Battle, this narrow focus denies the near-certainty that the land domain itself is, as General Perkins noted, likely to be just as heavily contested and will need to be physically occupied before Army cross-domain forces are emplaced there. This task is likely to fall to Army or Marine Corps land forces who have, thus far, received limited

¹⁴ *United States Pacific Command Posture*, 115th Cong., 19 (2017) (testimony of Admiral Harry B. Harris Jr.), accessed 02 November 2017, https://www.armedservices.senate.gov/imo/media/doc/Harris_04-27-17.pdf

¹⁵ Adm. Harry Harris, "The View from the Indo-Asia-Pacific" (speech, WEST 2017 Conference, San Diego Convention Center, San Diego, February 21, 2017), accessed 22 October 2017, <http://www.pacom.mil/Media/Speeches-Testimony/Article/1089966/afcea-west-2017-keynote-the-view-from-the-indo-asia-pacific/>

¹⁶ Eckstein, accessed 11 December 2017, <https://news.usni.org/2017/05/30/pacom-integrating-multi-domain-battle-into-exercises-ahead-of-2018-rimpac-army-sinkex>.

consideration in the development of the Multi-Domain Battle Concept. It is toward examining how these forces have fought successfully in the past and informing how they should be employed in the near-future that this study is directed.

The Research Question

The United States Army's mission remains "to fight and win our Nation's wars by providing prompt, sustained land dominance across the full range of military operations and spectrum of conflict in support of combatant commanders."¹⁷ How then should the Army employ its land combat forces, informed by the Multi-Domain Battle Concept, to fight and win future conflicts in the Indo-Asia Pacific region?

Secondary Questions

To answer the primary research question, it is also necessary to consider these secondary questions:

1. Using historical case study methodology, what campaigns can we examine from recent US Army land combat in the Indo-Asia Pacific which approximate the conditions expected in the Multi-Domain Battle environment?
2. What will a future Multi-Domain Battle campaign in the Indo-Asia Pacific against a near-peer enemy look like?
3. What elements of a Multi-Domain Battle approach have been employed before in the Indo-Asia Pacific; and what lessons can we derive from them to inform the further development of Multi-Domain Battle?

¹⁷ US Army, "Mission," www.army.mil, September 18, 2017, accessed 05 November 2017, <https://www.army.mil/info/organization/>.

Assumptions

This thesis and its recommendations necessarily assume the continuing validity of the following assumptions:

1. The United States will desire to maintain the position of regional leadership it has enjoyed in the Indo-Asia Pacific since the conclusion of World War 2.
2. The United States will continue to routinely pursue its political ends using military means. There will be no drastic ideological shift away from military force.
3. Both the United States and its likely adversaries in the Indo-Asia Pacific will continue to choose to contest militarily at least partially in the land domain. Conceptual or doctrinal trends which favor other domains will not obsolete land power.
4. The presence of humans will remain “the distinguishing characteristic of the land domain.”¹⁸ Potential US or adversary technological developments in robotics or artificial intelligence will not obviate this fact in the near-future (2020-2035).¹⁹
5. The United States will continue to maintain a distinct, organized Army to “fight and win the Nation’s wars through *prompt* and *sustained* land combat.”²⁰ Prompt is interpreted as “required to provide combat-ready forces immediately.”²¹

If all these assumptions are correct, how best can the United States Army visualize the role of land power in Multi-Domain Battle in the near-future Indo-Asia Pacific?

¹⁸ US Army, Army Doctrine Publication (ADP) 1, *The Army* (Washington, DC: Department of the Army, September 2012), 1-1.

¹⁹ Elsa B. Kania, "Artificial Intelligence and Chinese Power," *Foreign Affairs*, December 15, 2017, accessed 05 March 2018, <https://www.foreignaffairs.com/articles/china/2017-12-05/artificial-intelligence-and-chinese-power>.

²⁰ *The Army*, 1-8.

²¹ *Ibid.*

Operation ICEBERG: Proto-Multi-Domain Battle in the Indo-Asia Pacific

Perhaps the most appropriate historical example to inform Multi-Domain Battle in the Indo-Asia Pacific region is Operation ICEBERG, the April 1945 campaign to invade the Japanese-held Ryukyu Islands, notably Okinawa. Operation ICEBERG is considered “the culmination of the experience of all previous operations in the Pacific war.”²² As such, it was planned as the penultimate step in the allied “Island-Hopping” strategy to successively isolate and invade the Japanese home islands and embodied “the lessons learned in the long course of the battle against the Japanese outposts in the Pacific.”²³ Chief amongst these were the lessons of “cooperation and combined striking power of the services.”²⁴ To prevent the parochial distractions which had plagued earlier island campaigns in the Pacific, Operation ICEBERG was deliberately planned and directed by a multi-service precursor to the modern Joint Task Force (JTF) structure, the Central Pacific Task Forces under the command of Admiral Raymond Spruance.²⁵ US Army Lieutenant General Simon Bolivar Buckner, commander of the expeditionary troops, understood the opportunities of the organically-joint nature of his organization, and sought to enable it by incorporating Navy and Marine Corps officers throughout his staff.²⁶ His approach produced an example of convergence, recently introduced as an essential component of Multi-Domain Battle.

As the final major offensive campaign of World War 2, Operation ICEBERG was also the last American expeditionary amphibious assault of an island conducted in the Indo-Asia

²² Roy Edgar Appleman et al., *Okinawa: The Last Battle* (Washington, DC: Center of Military History, US Army, 2005), 17.

²³ Ibid., 17.

²⁴ Ibid., 23.

²⁵ Ibid., 22.

²⁶ Ibid., 27.

Pacific region. A still-capable peer enemy attempted to deny and then contest American access in all three existing domains; sea, air, and land. It was only through a systematic and coordinated integration of capabilities in and across domains that the United States was able to negate these efforts by the Japanese forces holding the Ryukyus. Because of these similarities in environment and approach, a historical analysis of the campaign can provide insights to assist Army and joint forces preparing to execute similar operations under future conditions.

Scope and Limitations and Delimitations

The scope of this investigation is defined geographically by the Indo-Asia Pacific region, today the PACOM area of responsibility. The study will temporally encompass and compares two periods. The historical case study examines the years of American conflict in the Pacific Theater during World War 2 from 1944 to 1945. The period of comparison is the period of near-future conflict posited in the Multi-Domain Battle Concept, 2025-2040.²⁷

This investigation is limited by the technological inaccessibility of two of the five domains incorporated into the Multi-Domain Battle Concept, space and cyberspace. It is limited to existing primary sources. It is also limited by the developmental nature of the Multi-Domain Battle Concept and the inability to predict the conditions of a future operating environment with absolute clarity.

This investigation is deliberately delimited by excluding discussion of a future conflict on the Korean Peninsula from the comparison as it presents distinctly different environmental conditions and challenges from those generally present throughout the rest of the Indo-Asia Pacific. As such, it also avoids contrasting the character of World War 2 amphibious operations in the Pacific with the more recent, but considerably smaller examples executed during the Korean War. The investigation relies exclusively upon the case study of Operation ICEBERG

²⁷ *Multi-Domain Battle*, 1.

because it represents the final maturation of joint forcible entry theory and practice evolved during the Pacific Theater “Island Hopping” campaign and is thus assumed to incorporate prior advances. It also represents the most recent US operation of this type and the largest in scale ever undertaken.

Multi-Domain Battle

Introduction

Multi-Domain Battle: *The Evolution of Combined Arms for the 21st Century* is an emerging operational concept developed by the United States Army, with the cooperation of the United States Marine Corps and Air Force, which describes how Army forces will compete with, and when necessary, defeat peer adversaries in the near future (2025-2050).²⁸ The inspiration for Multi-Domain Battle lies in Deputy Defense Secretary Robert Work's April 2015 speech at the Army War College Strategy Conference which discussed the changing character of warfare brought about by the diffusion of precision-guided munitions, advanced sensors, and "informationalized" warfare techniques.²⁹ The conditions of Work's future operating environment mirror the operational context of the Multi-Domain Battle Concept; characterized by all the domains being contested, increased lethality and complexity throughout the operational area, and challenged deterrence and deployment of US forces.³⁰

Work offered elements of a possible solution, which he termed "AirLand Battle 2.0" and challenged the Army to further develop and refine his concept, in his words to "figure it out."³¹ The Army's Training and Doctrine Command (TRADOC) looked to three sources of inspiration to address these challenges; the Capstone Concept for Joint Operations (CCJO), the Army Operating Concept (AOC), and the Marine Corps Operating Concept (MOC).³² The CCJO

²⁸ *Multi-Domain Battle*, 1.

²⁹ McCoy, <https://mwi.usma.edu/road-multi-domain-battle-origin-story>; Bob Work, "Deputy Secretary of Defense Speech" (speech, Army War College Strategy Conference, US Army War College, Carlisle, PA, April 8, 2015), April 8, 2015, accessed 05 March 2018, <https://www.defense.gov/News/Speeches/Speech-View/Article/606661/army-war-college-strategy-conference/>.

³⁰ *Multi-Domain Battle*, 4-6.

³¹ Work, "Deputy Secretary of Defense Speech"

³² McCoy, "The Road to Multi-Domain Battle: An Origin Story"

establishes the necessity for achieving cross-domain synergy. The AOC specifies that the Army should see itself as a contributor to the joint force. The MOC highlights the danger of enemy operations prior to and below the level of open conflict. The resultant white paper, *Multi-Domain Battle: Combined Arms for the 21st Century*, was released in February 2017.

In light of these imminent changes in the character of warfare, the Multi-Domain Battle Concept defines a central military problem that must be solved; “How will Army forces, as part of the Joint Force and with partners, deter and defeat increasingly capable peer adversaries intent on fracturing allied and Joint Force cohesion in competition and armed conflict?”³³ It answers this problem by proposing a central idea, and several components which together comprise the underlying theory of Multi-Domain Battle:

“Army forces, as part of the Joint Force, conduct Multi-Domain Battle to deter and defeat increasingly capable adversaries in competition, armed conflict, and a return to competition by calibrating force posture; by employing resilient, cross-domain capable formations that can maneuver on the expanded battlespace; and by converging capabilities across multiple domains, environments, and functions to create windows of advantage that enable maneuver.”³⁴

This central idea highlights the numerous elements which the Army is attempting to incorporate into the Multi-Domain Battle Concept. These elements are competition vs. armed conflict, an expanded battlespace visualized in a new operational framework, calibrating force posture, employing resilient formations, and converging capabilities.³⁵

Competition vs. Armed Conflict

Multi-Domain Battle proposes an enhanced understanding of the spectrum of conflict in which opposed actors exist in a state of continuous, ongoing competition, transition to armed conflict to achieve their discrete strategic objectives, and then return to competition. During

³³ *Multi-Domain Battle*, 21.

³⁴ *Ibid.*

³⁵ *Ibid.*, 2-4.

competition, adversaries seek to achieve their strategic objectives without escalation or to posture their forces to support escalation should it become desirable or necessary. Adversaries may employ reconnaissance, unconventional warfare, information warfare, or conventional forces. The Joint Force and its partners seek to counter these actions by proactively stabilizing while opposing destabilization campaigns, deterring escalation, and preparing to defeat adversaries should they transition to armed conflict.

If an adversary chooses to escalate to armed conflict, the Joint Force and its partners seek to prevent them from achieving a *fait accompli*, a thing accomplished and presumably irreversible, at the outset.³⁶ They do this by conducting counter-reconnaissance, reconnaissance, and operational preparation of the environment; contesting the enemy immediately in all domains; disrupting the enemy's main effort or attack, and deploying forces rapidly to defeat the enemy and achieve a desirable outcome.³⁷ The goal of armed conflict is to set conditions for a negotiated outcome which enables the Joint Force and its partners to return to competition on favorable terms.

At the conclusion of a Multi-Domain Battle campaign, the Joint Force and its still-capable adversary return to competition, but with the Joint Force retaining the initiative to consolidate a “sustainable position of relative advantage.”³⁸ The adversary remains capable of pursuing its objectives through subversion and other methods short of armed conflict but is deterred from re-engaging in open hostilities and is prevented from achieving its objectives or further destabilizing the regional security environment.

³⁶ *Multi-Domain Battle*, 2.

³⁷ *Ibid.*, 22.

³⁸ *Ibid.*

The Expanded Battlespace

The second major element of Multi-Domain Battle is the introduction of an expanded physical battlespace. This expanded battlespace is necessitated by both the Joint Force and its peer adversaries' ability to contest and deny all domains at extended distances. This expanded battlespace is captured and visualized in the Multi-Domain Battle Operational Framework.

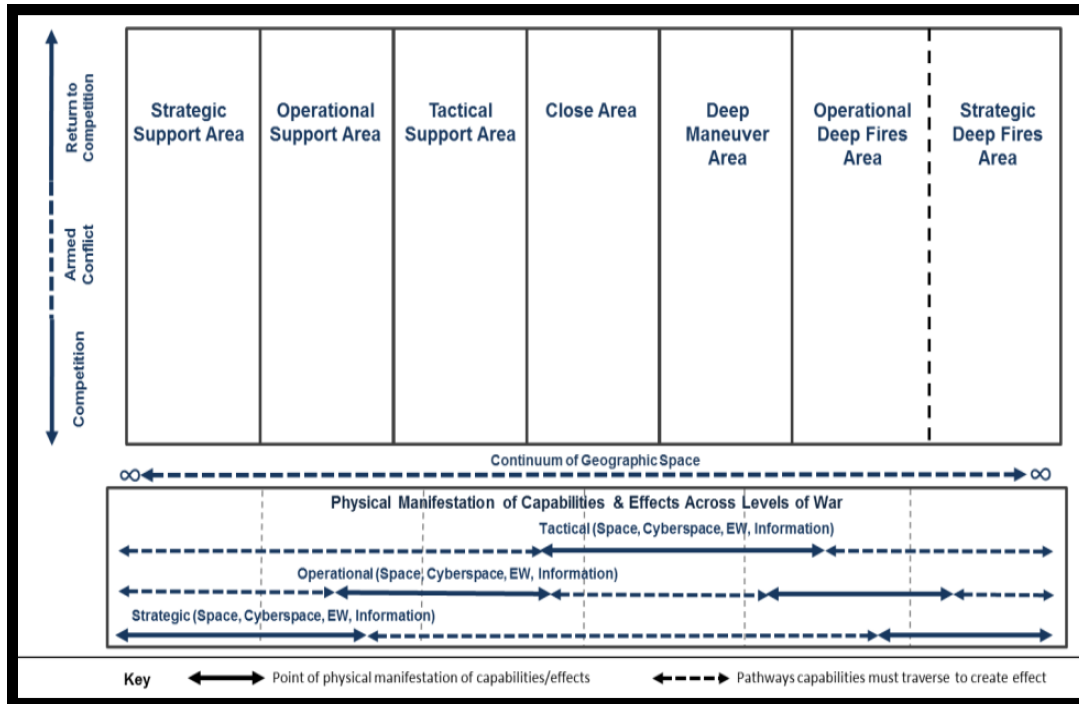


Figure 1. The Multi-Domain Battle Operational Framework

Source: *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century* (Fort Eustis, VA: US Army Training and Doctrine Command, 2017), 9.

The Multi-Domain Battle Operational Framework depicts the possible range of friendly and enemy activities and capabilities using physical areas within the expanded battlespace. The Strategic and Operational Deep Fires Areas are areas which, due to distance or restriction, are beyond the reach of conventional maneuver forces.³⁹ These areas are the purview of special

³⁹ *Multi-Domain Battle*, 9.

operations forces, joint fires, information operations, or virtual capabilities and effects here are often transitory. The Deep Maneuver Area is the area where conventional maneuver is possible but requires support from multi-domain capabilities to access, enable, and sustain. In a typical campaign, many of the operational objectives would lie in the Deep Maneuver Area. Effects here are more persistent but still require significant enabling support. The Close Area is where friendly and enemy forces physically meet and “contest for control of physical space in support of campaign objectives.”⁴⁰ The Support Areas - Tactical, Operational, and Strategic - represent the areas where various capabilities that support the Joint Force reside. Due to the increasing range of both enemy and friendly capabilities, all levels of the support area are at risk of attack, even if only from cyberspace or information operations.

Calibrate Force Posture:

The first component of Multi-Domain Battle is force posture. Force posture is “the positioning of capabilities to achieve a purpose.”⁴¹ In Multi-Domain Battle, forward presence forces and partner forces are arrayed during competition to counter adversary activities and prevent potential *fait accompli* campaigns from succeeding. In the event of an escalation to armed conflict, these forces will contest the enemies’ A2/AD efforts. They will be reinforced as rapidly as possible by expeditionary forces capable of maneuvering directly from the homeland, or from elsewhere within the theater.

Employ Resilient Formations:

The second component of Multi-Domain Battle is resilient formations. Resilient formations “remain effective despite multiple forms of enemy contact and are cross-domain

⁴⁰ *Multi-Domain Battle*, 3.

⁴¹ *Ibid.*

capable.”⁴² They are designed to avoid adversary long-range precision strike assets by disaggregating and maneuvering semi-independently without secured flanks, lines of communication, or continuous assured communications with their higher headquarters.⁴³ They are capable of cross-domain maneuver, either organically or when supported by other organizations, and can conduct noncontiguous operations when necessary.⁴⁴

Converge Capabilities:

The third component of Multi-Domain Battle is convergence. Convergence is “the integration of capabilities across domains, environments, and functions in time and physical space to achieve a purpose.”⁴⁵ It is “the act of applying a combination of capabilities (lethal and non-lethal, whether within a domain or cross-domain) in time and space for a single purpose.”⁴⁶ The convergence of effects or capabilities is the major evolutionary departure from previous additive concepts like combined arms or joint operations. The goal of convergence is the creation of Windows of Advantage that “enable the Joint Force to maneuver and achieve objectives, exploit opportunities, or create dilemmas for the enemy.”⁴⁷

Incorporating all these elements, the Multi-Domain Battle Concept offers a proposed definition of Multi-Domain Battle; the “convergence of capabilities to create windows of advantage (often temporary) across multiple domains and contested areas throughout the depth of the battlespace to seize, retain, and exploit the initiative; defeat enemies; and achieve military objectives.”⁴⁸ The following analysis of Operation ICEBERG will adopt this definition.

⁴² *Multi-Domain Battle*, 3.

⁴³ *Ibid.*

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*, 2.

⁴⁸ *Ibid.*, 77.

Case Study

Operation ICEBERG

Operation ICEBERG, the allied campaign to invade the Ryukyu Islands, began on 3 October 1944 with receipt of Joint Chiefs of Staff (JCS) Directive 713/19 directing Fleet Admiral Chester Nimitz, Commander in Chief, Pacific Ocean Areas (CinCPOA), to “occupy one or more positions in the Ryukyu Islands by 1 March 1945.”⁴⁹ The specified landing date, L-Day or “Love Day,” later moved to 1 April 1945.⁵⁰ The preparatory convergence of naval and air capabilities to isolate the Ryukyus and create a window of advantage for the ground invasion commenced on 10 October 1944 and continued through 19 March 1945.⁵¹ Subsidiary landings in the nearby Kerama Retto and on Keise Shima to establish positions to support the main landing began on 26 March 1945 and were completed on 31 March 1945.⁵² The main force landed on Okinawa precisely at its pre-determined H-Hour, 0830 on 1 April 1945. The period of large-scale land combat lasted 83 days, ending on 22 June 1945 with the ritual suicide of the 32d Army Commander and capture of his final redoubt on Hill 89. A period of consolidation followed to eliminate remaining resistance and secure abandoned arms and positions. This period ended on 30 June 1945 and Operation ICEBERG was declared complete on 2 July 1945.

The Joint Operations Area (JOA)

The Joint Operations Area for Operation ICEBERG encompassed the Ryukyu Islands, the *Nansei Shoto*, and their surrounding sea and airspace. The Ryukyus, part of the Japanese

⁴⁹ Appleman, et al., 4.

⁵⁰ U.S. Tenth Army, *Report of Operations in Ryukyus Campaign, 26 March 1945 to 30 June 1945*, TENTH ARMY ACTION REPORT (Okinawa, JP: HQ, Tenth Army, 1945), 3-0-9.

⁵¹ Appleman, et al., 50.

⁵² Ibid., 51-56.

Archipelago, lies between the East China Sea and the Pacific Ocean. Approximately 200 miles to the north is the southernmost Japanese home island of Kyushu. Approximately 450 miles to the west is mainland China. 550 miles to the southwest is Formosa, present-day Taiwan. The Philippine island of Luzon is approximately 650 miles to the south. The JOA lies approximately 6,000 miles from the west coast of the United States and 4,100 miles from the nearest major naval staging base at Pearl Harbor, Oahu, Hawaii.

Inside the JOA, the approximately 140 Ryukyu Islands form a 790-mile-long archipelago extending from Kyushu to Taiwan along the tectonic plate boundary where the Philippine Sea Plate subducts the Eurasian Plate.⁵³ This feature forces the seafloor above the surface of the ocean and produces to the characteristic rocky limestone hills pocked with natural caves which are common throughout the Ryukyus but held special significance for both the defenders and attackers of Okinawa. The islands have a wet, subtropical climate and are predominately covered by dense, uniform evergreen broadleaf forest except in areas of extreme elevation or extensive agricultural activity.⁵⁴

At the center of the Ryukyus, at approximately 26° North latitude lies Okinawa Gunto, or “Okinawa Island Group.” This cluster of approximately fifty islands was the area of operations (AO) for Task Force (TF) 56, the expeditionary force assigned to execute the decisive operation, the invasion of Okinawa proper. The AO also encompasses shaping operations in support of the main landing on the Kerama Islands and Keise Island to the southwest of Okinawa, and Ie Shima to the northwest.

⁵³ Appleman, et al., 7.

⁵⁴ Kazuhiko Fujita et al., *Nature in the Ryukyu Archipelago: Coral Reefs, Biodiversity, and the Natural Environment* (Nishihara-machi (Okinawa-ken), JP: International Research Hub Project for Climate Change and Coral Reef/Island Dynamics Faculty of Science, University of the Ryukyus, 2015), 52-54.

Okinawa, the largest island, runs northeast to southwest for 67 miles, narrowing in the middle to two miles from its maximum width of eighteen miles, and having a total land area of 485 square miles.⁵⁵ The northern half of the island is sparsely-populated and covered by a dense, unbroken forest called the Yanbaru. On the northwestern shore, the Motobu Peninsula extends westward into the East China Sea toward Ie-Shima. To the south, Okinawa narrows to a neck, then widens at Zampa Point. Extending south from Zampa Point and bisected by the Bishi River are the Hogushi Beaches, the landing site for the invasion. Finally, in the sparsely-vegetated and more populated south are the port of Naha, the largest city, and Shuri, the ancient capital of the Ryukyu Kingdom. This southern area is where the major land battles were fought between the defending Imperial Japanese Army (IJA) 32d Army and the ground combat elements of TF 56 organized around the Tenth US Army.

⁵⁵ Appleman, et al., 7-8.

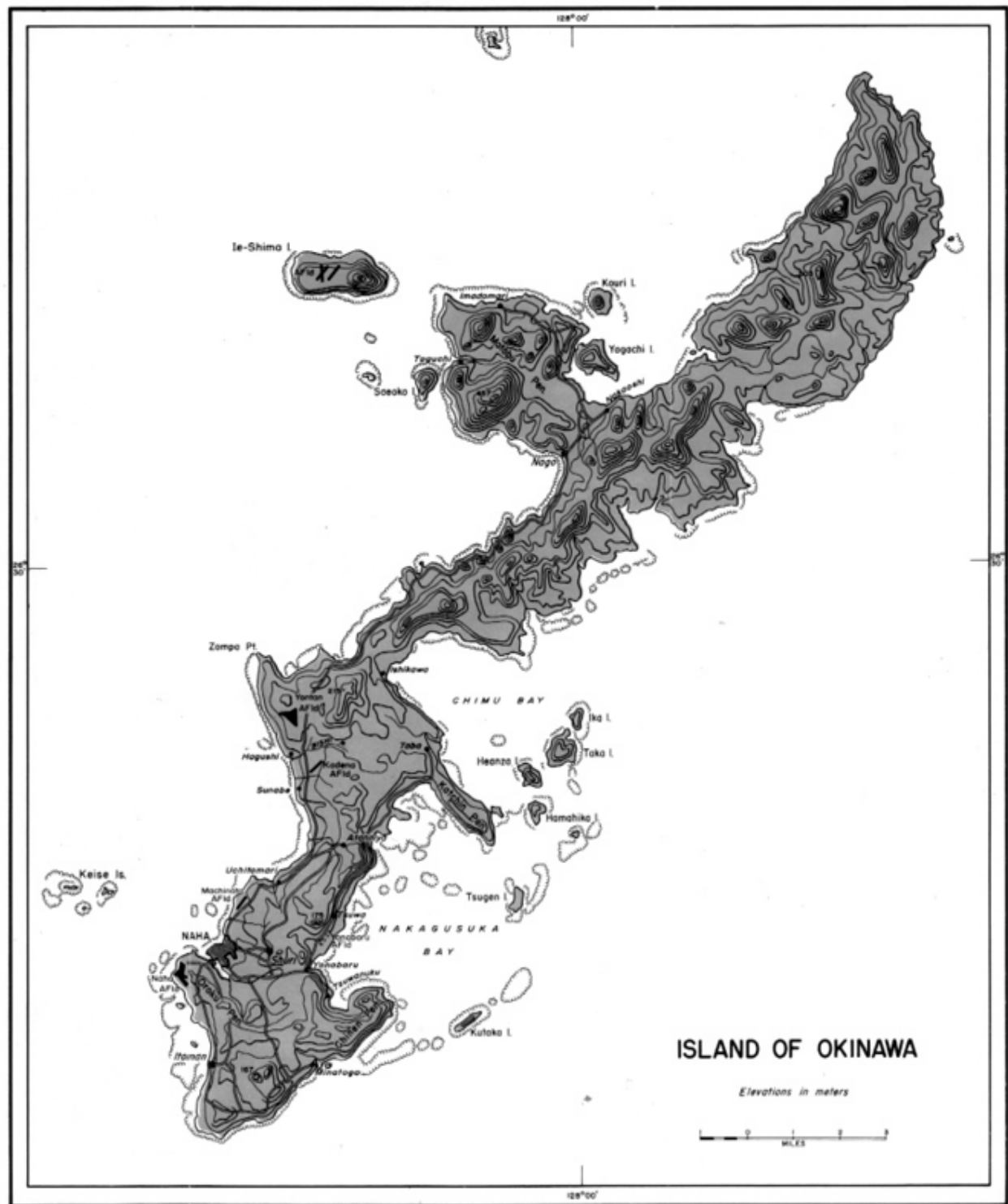


Figure 2. The Island of Okinawa

Source: *Okinawa: The Last Battle* (Washington, DC: US Army Center of Military History, 2005), MAP NO. II.

The Belligerents

The Japanese 32d Army was activated at Naha on 1 April 1944 by Lieutenant General Masao Watanabe to consolidate the existing garrison forces on Okinawa and to plan and lead the defense of the island. In August 1944, Lieutenant General Mitsuru Ushijima replaced Watanabe. Ushijima brought an entirely new staff and led the 32d Army until its defeat and his suicide in June 1945.

Three distinct units comprised 32d Army. The 24th Division, a triangular division, was organized for combined-arms maneuver against the modern, mechanized Soviet Army shortly after the Nomonhon incident. 24th Division's strength prior to the invasion was 14,360.⁵⁶ The 62d Division was a pentagonal light division organized for counterinsurgency in China. 62d Division's strength prior to the invasion was 11,623.⁵⁷ The 44th Independent Mixed Brigade (IMB) united two independent regiments, the 2nd and 15th. 44th IMB's strength prior to the invasion was 4,485.⁵⁸ There was also a centralized artillery command and the 27th Tank Regiment with fourteen medium tanks and thirteen light tanks.⁵⁹ Altogether 32d Army contained about 67,000 IJA personnel. It also controlled 9,000 Imperial Japanese Navy personnel, mainly construction and Naval Base Force personnel, and as many as 24,000 mobilized native Okinawans or *Boetai* with varying degrees of loyalty.⁶⁰

⁵⁶ Thomas M. Huber, *Japan's Battle of Okinawa: April-June 1945*, vol. 18, Leavenworth Papers (Fort Leavenworth, KS: Combat Studies Institute Press, 1990), 14-19.

⁵⁷ Ibid.

⁵⁸ Ibid.

⁵⁹ Ibid., 19.

⁶⁰ Ibid.

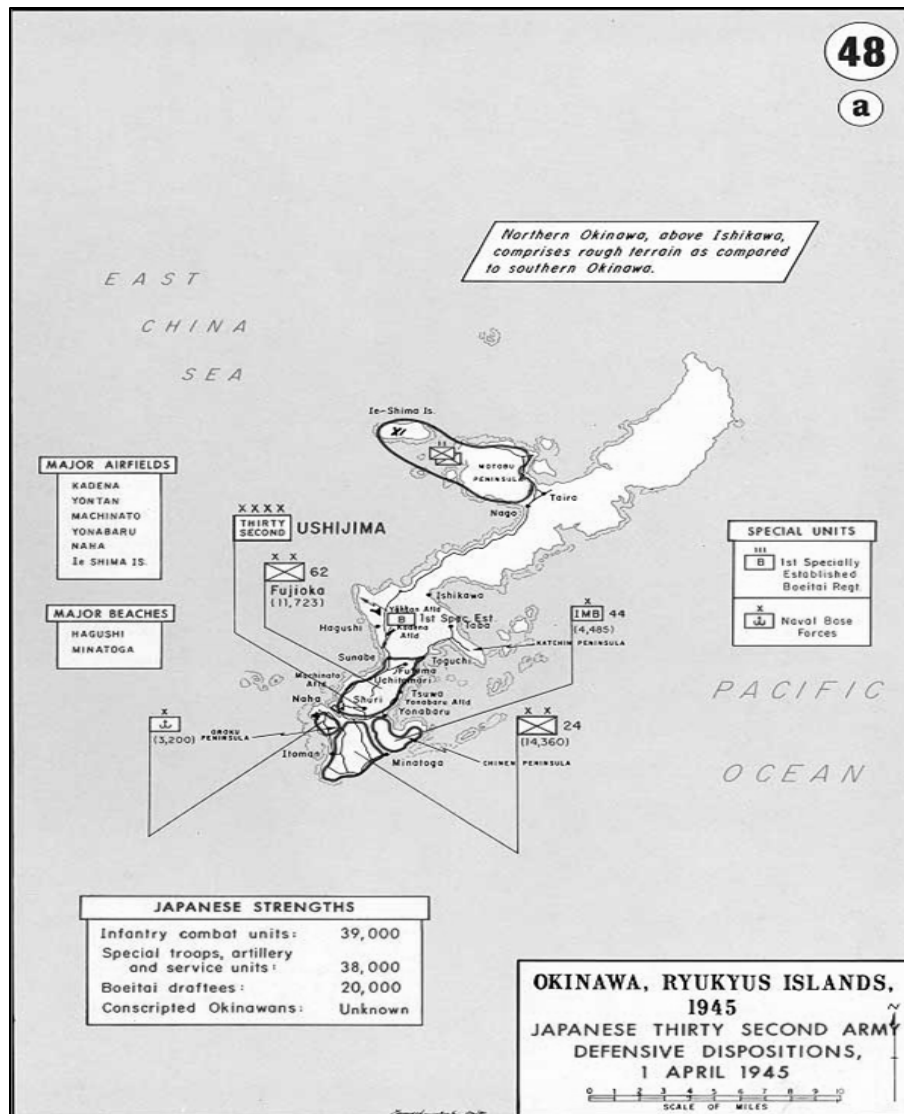


Figure 3. Japanese Thirty Second Army Defensive Dispositions, 1 April 1945

Source: US Military Academy, West Point, Department of History, accessed 09 April 2018, <https://www.westpoint.edu/history/SiteAssets/SitePages/World%20War%20II%20Pacific/ww2%20asia%20map%2048.jpg>.

To prevent the US Navy and Army Air Forces (AAF) from supporting a landing, the Japanese formulated a comprehensive A2/AD plan to contest the air and maritime domains. An invasion of the Ryukyus would be met by a swarm of 1,500 land-based aircraft originating from

Kyushu, Formosa, and the Chinese mainland.⁶¹ These consisted of a mix of conventional aircraft and those of the IJN “Special Attack Units,” the infamous *Kamikaze* suicide aircraft. They were to be augmented with an additional 300 suicide aircraft under 32d Army on Okinawa itself, though these never materialized.⁶² The IJN also based seven Sea Raiding Squadrons in the neighboring Kerama island group. These maritime analogs to the *Kamikaze* pilots crewed small wooden speedboats rigged with depth charges whose purpose was to attack enemy ships as they attempted to put their troops and cargo ashore.⁶³ IJHQ believed that these combined air and sea attacks would be sufficient to effectively defeat the US landing force, leaving the 32d Army responsible for securing the facilities on the island and destroying any remnants that managed to effect a landing with their mobile reserve force.⁶⁴

The principal allied belligerent in Operation ICEBERG was the Central Pacific Task Forces, a predecessor to the modern joint task force construct, commanded by Admiral Raymond Spruance. Admiral Spruance maintained direct control of the two carrier task forces assigned to the Ryukyus operation, TF 58, the US Fast Carrier Force, and TF 57, the British Carrier Force. These forces contained sixteen and ten carriers respectively, as well as numerous battleships, cruisers, and supporting vessels.⁶⁵ The carrier forces were responsible for preventing Japanese maritime and air interference against the amphibious force (AF) as it entered the JOA, protecting the landing, and neutralizing enemy defensive positions before and during the landing.

⁶¹ Huber, 4.

⁶² Ibid., 25.

⁶³ Appleman, et al., 60.

⁶⁴ Huber, 4.

⁶⁵ Appleman, et al., 49, 97.

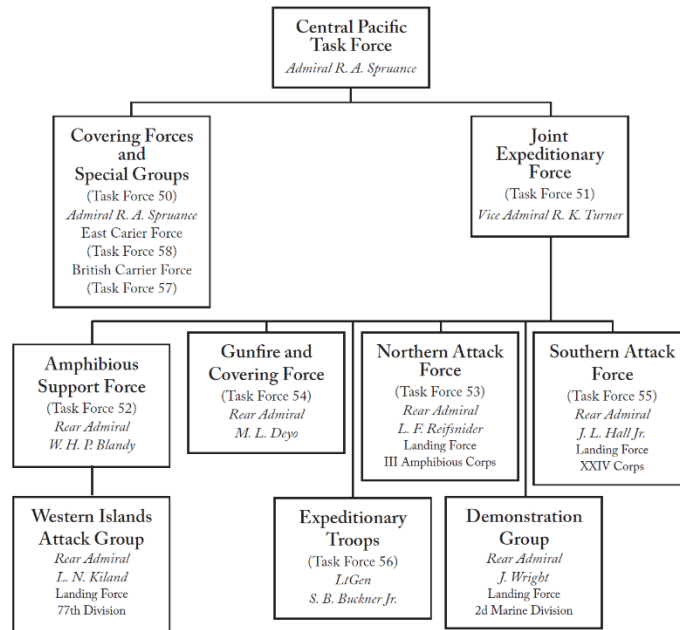


Figure 4. Organization of Central Pacific Task Force

Source: *III MEF Staff Ride Battle Book: Battle of Okinawa* (Quantico, VI: US Marine Corps History Division, 2015).

The designated amphibious task force (ATF), the “Navy task organization formed to conduct amphibious operations,” was TF 51, coined the “Joint Expeditionary Force.”⁶⁶ TF 51, commanded by Vice Admiral Richmond K. Turner, was responsible for securing and developing positions in the Ryukyu group. Modern joint amphibious operations doctrine would describe Turner as commander, amphibious task force, or “CATF.”⁶⁷ At Turner’s disposal were Army, Navy, and Marine Corps forces organized into five subordinate task forces and two groups. In an improvement upon previous amphibious operations in the “island-hopping” campaign, Spruance designated that Turner’s command would last only through the amphibious phase of the

⁶⁶ Joint Chiefs of Staff, Joint Publication (JP) 3-02, *Amphibious Operations* (Washington, DC: Joint Chiefs of Staff, July 2014), GL-7.

⁶⁷ *Ibid.*, GL-10.

operation, thereafter shifting to the commander of the landing force (CLF), Lieutenant General (LTG) Simon Bolivar Buckner, Jr.⁶⁸

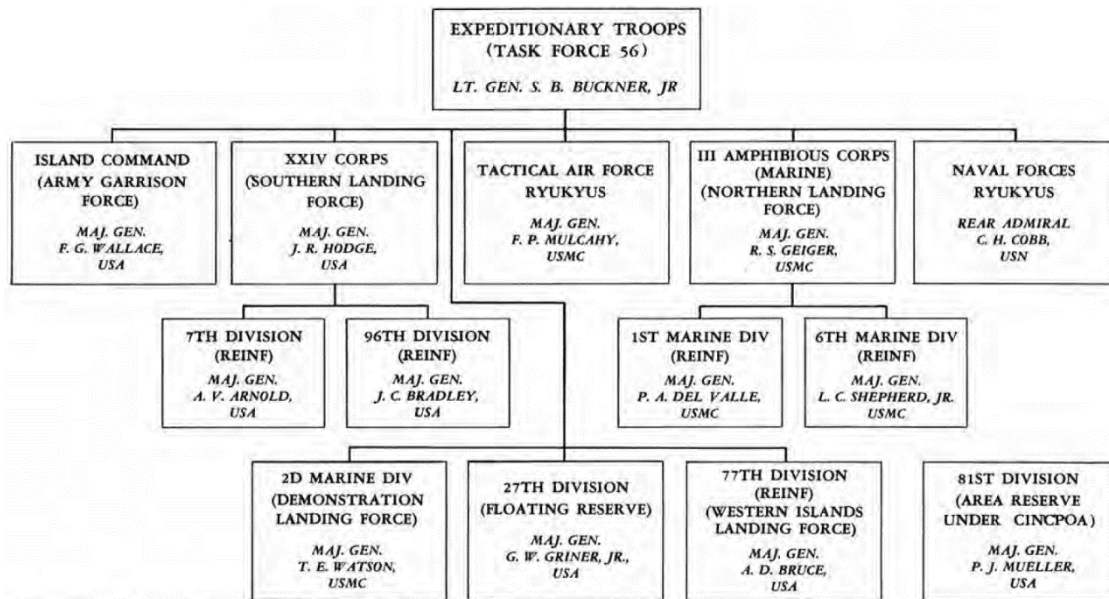


Figure 5. Organization of Expeditionary Troops for the Ryukyu Campaign, January 1945

Source: *Okinawa: The Last Battle* (Washington, DC: US Army Center of Military History, 2005), CHART III.

General Buckner commanded TF 56, the expeditionary “Landing Force” for Operation ICEBERG. TF 56 was organized around a pre-existing field army, the US Tenth Army, which was originally established for Operation CAUSEWAY, the superseded attack to seize Formosa. For Operation ICEBERG, Tenth Army contained dedicated Navy and AAF elements, an Island Command to garrison and administer Okinawa, and two landing forces organized around the Army XXIV Corps in southern Okinawa and the Marine III Amphibious Corps in the north. Each corps contained two reinforced divisions. There were also separate Western Island and Demonstration forces, and floating and area reserves.

⁶⁸ *Amphibious Operations*, GL-10; Appleman, et al., 23.

Outside of the forces allocated to the Central Pacific Task Forces, an extensive bombing effort conducted primarily by the land-based heavy bombers of the United States Army Air Forces preceded and supported Operation ICEBERG. Initial control of the air and sea having been determined to be essential for the subsequent landings, B-29 Superfortresses of the XX and XXI Bomber Commands based in India and the Mariana Islands struck military targets on Formosa, Kyushu, and Okinawa itself prior to L-day.⁶⁹ These were augmented by diverting aircraft supporting the capture of Luzon to attack targets on Formosa and utilizing the Fourteenth Air Force in mainland China to conduct search and rescue and attack targets in Hong Kong.⁷⁰ All told, Admiral Spruance's assigned and supporting forces represented "the greatest concentration of land, sea, and air forces ever used in the Pacific."⁷¹

Immediate Military Objectives of Operation ICEBERG

The Joint War Plans Committee (JWPC) "Plan for the Seizure of the Ryukyus" directed five military objectives for Operation ICEBERG; establishment of airfields, establishment of advanced naval anchorages, tightening of the sea and air blockade of Japan, acquisition of bases permitting amphibious assaults against Kyushu and Japanese possessions in China, and the denial of the islands to the Japanese.⁷²

Planning and Preparation; 10 August 1944 to 10 October 1944

Planning for Operation ICEBERG began in 1944 with a different military objective; seize the Japanese-held island of Formosa, present-day Taiwan. The 1943 SEXTANT conference in Cairo, attended by US President Franklin Roosevelt, British Prime Minister Winston Churchill,

⁶⁹ *Report of Operations in Ryukyus Campaign*, 7-1-3; Appleman, et al., 21.

⁷⁰ Appleman, et al., 21.

⁷¹ *Ibid.*, 19.

⁷² Joint War Plans Committee (JWPC), *Plan for Seizure of the Ryukyus*, (Washington, DC: Joint War Plans Committee, 1944), 20.

and Republic of China Chairman Chiang Kai-shek, agreed upon a strategy for the eventual isolation and bombardment of the Japanese home islands. The strategy directed a series of amphibious attacks to seize key island positions along two general axes; General Douglas MacArthur's South West Pacific Area (SWPA) forces would advance along the New Guinea-Philippine axis, and Admiral Chester Nimitz's Pacific Ocean Area (POA) forces would advance through and capture the Mandated Islands. These converging attacks aimed to progressively isolate and provide a base for major amphibious assaults to seize key terrain in the Formosa-Luzon-China area in spring 1945. Once secured, the bases would enable the allies to blockade, bomb, and if necessary, invade Japan.⁷³

On 10 August 1944, Nimitz directed his task force commanders; Spruance, Turner, and Buckner, to plan and execute Operation CAUSEWAY, the invasion of Formosa.⁷⁴ However, invading Formosa proved controversial and a projected shortfall in forces available prior to defeating Germany resulted in a reevaluation of strategic objectives and the indefinite postponement of Operation CAUSEWAY on 3 October 1944.⁷⁵ In its place, the Joint Chiefs of Staff concurred with a recommendation by Admiral Ernest King, the Commander in Chief, United States Fleet (COMINCH) to redirect MacArthur to seize Luzon in December 1944; then Nimitz would seize Iwo Jima in January 1945, and invade the Ryukyus on 1 March 1945.⁷⁶ Nimitz notified his staff of their new mission on 5 October 1944.

⁷³ Minutes of the Sextant Conference, November-December 1943, 255, Accessed April 11, 2018. <http://cgsc.contentdm.oclc.org/cdm/ref/collection/p4013coll8/id/3691>

⁷⁴ Benis M. Frank and Henry I. Shaw, Jr., *Victory and Occupation*, vol. 5, History of U.S. Marine Corps Operations in World War 2 (Washington, DC: Headquarters, US Marine Corps, 1968), 6.

⁷⁵ Ibid., 12; Richard Zee, "Operational Perspectives of the Okinawa Campaign (Operation ICEBERG)" (research paper, Newport, RI: US Naval War College, Operations Department, 1994), 10-11.

⁷⁶ Benis M. Frank and Henry I. Shaw, Jr., *Victory and Occupation*, 13.

Tenth Army's planning for Operation ICEBERG began when they received advance notification of the change in objective from CINCPOA on 9 October 1944. A formal directive designating LTG Buckner as the commander of TF 56, the expeditionary troops, arrived the next day.⁷⁷ Another directive from CINCPOA on 25 October 1944 provided further planning guidance. CINCPOA's immediate task was to "capture, occupy, defend, and develop Okinawa Island and establish control of the sea and air in the Nansi Shoto area" and to eventually "extend control of the Nansei Shoto by capturing, occupying, defending, and developing additional positions."⁷⁸ The purpose was to establish bases from which to:

- (1) Attack the main islands of JAPAN and their sea approaches with naval and air forces.
- (2) Support further operations in the regions bordering on the EAST CHINA SEA.
- (3) Sever Japanese sea and air communications between the EMPIRE and the mainland of ASIA, FORMOSA, MALAYA, and the NETHERLANDS EAST INDIES.
- (4) To establish secure sea and air communications through the EAST CHINA SEA to the coast of CHINA and the YANGTZE VALLEY.
- (5) To maintain unremitting military pressure against JAPAN.⁷⁹

From this information, Tenth Army derived its mission:

The Tenth Army, as Expeditionary Troops, initially under the command of the Commander Joint Expeditionary Force, will assist in the capture, occupation, defense, and development of OKINAWA ISLAND and establishment of control of the sea and air in the NANSEI SHOTO (RYUKYU) Area; with the eventual aim of extending control of the NANSEI SHOTO by capturing, defending, and developing additional positions.⁸⁰

⁷⁷ *Report of Operations in Ryukyus Campaign*, 3-0-1.

⁷⁸ Commander in Chief, U.S. Pacific Fleet and Pacific Ocean Areas, *Joint Staff Study: ICEBERG* (Pearl Harbor, HI: HQ, US Pacific Fleet, 1944), 2.

⁷⁹ *Ibid.*

⁸⁰ *Report of Operations in Ryukyus Campaign*, 1-0-1.

The amphibious invasion, preceded by an extensive naval and air campaign to isolate and prepare the JOA would occur in three phases.⁸¹ Phase I, beginning six days before the main landings, entailed subsidiary landings on the adjacent islands of the Kerama Retto and Keise. These landings would eliminate land-based artillery batteries and a suspected Japanese naval base, establish a protected anchorage and seaplane base for the Navy, and emplace Army long-range artillery to support the main landing. Phase I concluded with the main landings on the western Hagushi beaches and a diversionary feint in the south on L-day. Phase II directed the seizure of Ie Shima and the occupation of northern Okinawa. Phase III directed the seizure of several adjacent islands. In execution, Japanese ceding of the landing area and much of the northern portion of Okinawa resulted in unanticipated success during Phase I and early accomplishment or cancellation of most the Phase II and Phase III objectives.

On 25 October 1944 Tenth Army received notification of the forces allocated to it for Operation ICEBERG.⁸² Tenth Army received assigned two corps; an Army corps, the XXIV Corps, consisting of the 7th, 77th, and 96th Infantry Divisions, and a Marine Amphibious Corps, the III Amphibious Corps, consisting of the 1st, 2d, and 6th Marine Infantry Divisions. The 27th Infantry Division and an additional unnamed Army division would act as an area reserve. Simultaneously, the Tenth Army staff conducted a bottom-up analysis of the troops required to execute their preferred version of the invasion plan, known as “Plan Fox.” The requirements they generated contained a substantial increase in non-divisional support and logistics troops, some 70,000 more than envisioned by the Joint Staff Study.⁸³ This discrepancy was resolved in a series of conferences examining ongoing operations in the Pacific theater to prioritize the available

⁸¹ *Report of Operations in Ryukyus Campaign*, 1-0-2.

⁸² *Ibid.*, 3-0-8.

⁸³ *Ibid.*

forces for future operations. The conferences produced a finalized task organization which satisfied most of Tenth Army's requirements.

The allocated forces presented a challenge with regards to force posture; they were scattered throughout the Pacific, in most cases at the division and below level. The III Marine Amphibious Corps had divisions on the Russell Islands, Saipan, and Guadalcanal. The XXIV Corps with its subordinate divisions, the 7th, 77th, and 96th Infantry Divisions, was engaged in active combat in Leyte until February 1945.⁸⁴ The 27th Infantry Division, the floating reserve, was at Espiritu Santo recovering from the Battle of Saipan the previous summer. Tenth Army Headquarters and staff, along with much of its support and naval augmentation was located at or passing through Oahu.⁸⁵

Preliminary Operations; 10 October 1944 to 31 March 1945

Preliminary operations to “inflict heavy losses upon Japanese air forces and reduce the potential threat to our expeditionary forces” commenced on 10 October 1944. The Navy Fast Carrier Task Force composed of nine carriers, five battleships, and dozens of support ships struck the port of Naha, and major airbases and naval support facilities throughout the Ryukyus.⁸⁶ They also photographed the islands. 1,356 carrier airstrikes destroyed 111 aircraft, sunk at least 70 various naval vessels, and destroyed 80 percent of Naha, the capital city of Okinawa Prefecture.⁸⁷

The Fast Carrier Task Force returned twice more in January 1945; first on 3 January to destroy enemy aircraft and bases in Formosa, and again on 22 January to photograph areas of interest for the invasion. Both raids also targeted naval, ground, and air facilities.⁸⁸

⁸⁴ *Report of Operations in Ryukyus Campaign*, 4-0-3.

⁸⁵ *Ibid.*, 5-0-8.

⁸⁶ *Joint Staff Study: ICEBERG*, 2.

⁸⁷ Appleman, et al., 44-45; *Joint Staff Study: ICEBERG*, 3.

⁸⁸ Appleman, et al., 45.

During February 1945 the Fast Carrier Task Force, now designated TF 58, supported Admiral Nimitz's amphibious invasion of Iwo Jima, Operation DETACHMENT. TF 58 struck targets in the Tokyo area on 16 February and 25 February 1945. On their return they again attacked targets throughout the Ryukyus, sinking more than 50 ships, and destroying 41 aircraft. Also, during this time, Navy and Army search and patrol aircraft, and Navy submarines interdicted the sea lines of communication between the Japanese home islands and the Ryukyus resulting in the effective isolation of the Ryukyus from Formosa and mainland Japan by mid-February.⁸⁹

Finally, TF 58 visited the southern home islands a final time on 14 March 1945 with sixteen carriers, eight battleships, and sixteen cruisers; this time to neutralize naval and air bases on Kyushu, Shikoku, and Honshu. American aircraft savaged the airbases on 17 and 18 March, shooting down 102 Japanese aircraft and destroying an additional 275 on the ground. However, the Japanese aircraft responded on 18 March, damaging the carriers *Yorktown* and *Enterprise*. TF 58 shifted its focus to warships and facilities on 19 March 1945. The attacks damaged the battleship *Yamato* and an escort carrier, as well as sinking some merchant shipping. Japanese aircraft again counterattacked, damaging the carriers *Franklin*, *Wasp*, and *Intrepid*. The task force withdrew, covered by a final attack against air bases and aircraft. The strikes on 19 March cost the Japanese an additional 322 aircraft damaged or destroyed. Japanese aircraft pursued TF 58 south, launching ineffective attacks on 20 March and 21 March. Finally, on 22 March 1945, the task force rendezvoused with its resupply ships, reorganized, and prepared to bombard targets on Okinawa to cover the approach of the Joint Expeditionary Force, TF 51.⁹⁰

⁸⁹ *Victory and Occupation*, 37; Appleman, et al., 46.

⁹⁰ Charles Sidney Nichols, Jr. and Henry I. Shaw, Jr., *Okinawa: Victory in the Pacific* (Washington, DC: Headquarters, US Marine Corps, 1955), 37-38; Appleman, et al., 49-50; *Joint Staff Study: ICEBERG*, 3.

Also, in March, land-based United States Army Air Force (USAAF) bombers from outside the Pacific Ocean Areas supported the isolation and preparation of the Ryukyus. 20th Bomber Command B-29's operating from China struck from 1 March to 16 March, while 21st Bomber Command B-29's operating from the Marianas attacked Okinawa and then shifted their attacks to Kyushu.⁹¹ Aircraft from the Fourteenth Air Force in China struck Hong Kong, and the Southwest Pacific Air Forces conducted searches and attacked Formosa.⁹²

While other forces prepared the JOA, Tenth Army began loading and embarking its forces. Shipping was divided into two categories; Assault shipping for expeditionary troops and equipment, and Garrison shipping for garrison troops and remaining expeditionary troops.⁹³ The Tenth Army commander was responsible for overseeing the assault shipping, though subordinate corps and division commanders supervised the embarkation of their respective elements, guided by the Transport Quartermaster Teams and the Navy Transport Squadron (TransRon) commanders.⁹⁴ Each division was allocated a TransRon of fifteen amphibious transports (APA's) and six attack cargo ships (AKA's) with associated landing ship, tanks (LST's) and landing ship mediums (LSM's).⁹⁵ The mounting points for III Amphibious Corps were at the Russell Islands, Saipan, and Guadalcanal, while XXIV Corps mounted at Leyte.⁹⁶ The headquarters and support units mounted at Oahu.⁹⁷ The first assault troops, 77th Infantry Division Battalion Landing Teams

⁹¹ *Report of Operations in Ryukyus Campaign*, 7-I-3.

⁹² *Ibid.*; Appleman, et al., 21.

⁹³ *Report of Operations in Ryukyus Campaign*, 5-0-1.

⁹⁴ Appleman, et al., 41; *Report of Operations in Ryukyus Campaign*, 5-0-1.

⁹⁵ Appleman, et al., 41.

⁹⁶ *Report of Operations in Ryukyus Campaign*, 5-0-5.

⁹⁷ *Ibid.*

(BLT's) tasked to secure positions in the Kerama Retto, began their movement northeast by north on 18 March 1945.⁹⁸

As the invasion flotilla approached, TF 58 positioned themselves to the north and east of Okinawa to isolate the Ryukyus and cover the Joint Expeditionary Force. They were soon joined by the arriving Amphibious Support Force, TF 52, responsible for assisting in the isolation, minesweeping, underwater demolition, and air and naval preparation of Okinawa.⁹⁹ TF 52 initiated its naval bombardment of Okinawa on 25 March 1945, first at long range, then incrementally closer as the mine clearance progressed until finally reaching its optimum effectiveness on 30 March.¹⁰⁰ At the same time, TF 58 initiated air attacks against Okinawan targets, prioritizing enemy aircraft and suicide boats. They destroyed 80 enemy aircraft on the ground, as well as sinking several small enemy craft and demolishing eight submarine pens.¹⁰¹ Concurrently, the British Carrier Force, TF 57, neutralized enemy aircraft on Formosa, the Pescadores, and Sakishima.¹⁰² The Japanese managed only 50 attacks from 26 March to 31 March 1945, most suicide attacks. Nevertheless, ten American ships were damaged, including the battleship *Nevada*, and 74 sailors killed.¹⁰³ As the Joint Expeditionary Task Force approached Okinawa on 31 March 1945, Rear Admiral W.H.P Blandy, the commander of TF 52, reported that "the preparation was sufficient."¹⁰⁴

⁹⁸ Appleman, et al., 43.

⁹⁹ Ibid., 63.

¹⁰⁰ Ibid., 64-65.

¹⁰¹ Ibid.

¹⁰² *Report of Operations in Ryukyus Campaign*, 7-I-3; Appleman, et al., 66.

¹⁰³ Ibid., 67; Nichols and Shaw, Jr., *Okinawa: Victory in the Pacific*, 45.

¹⁰⁴ Appleman, et al., 64.

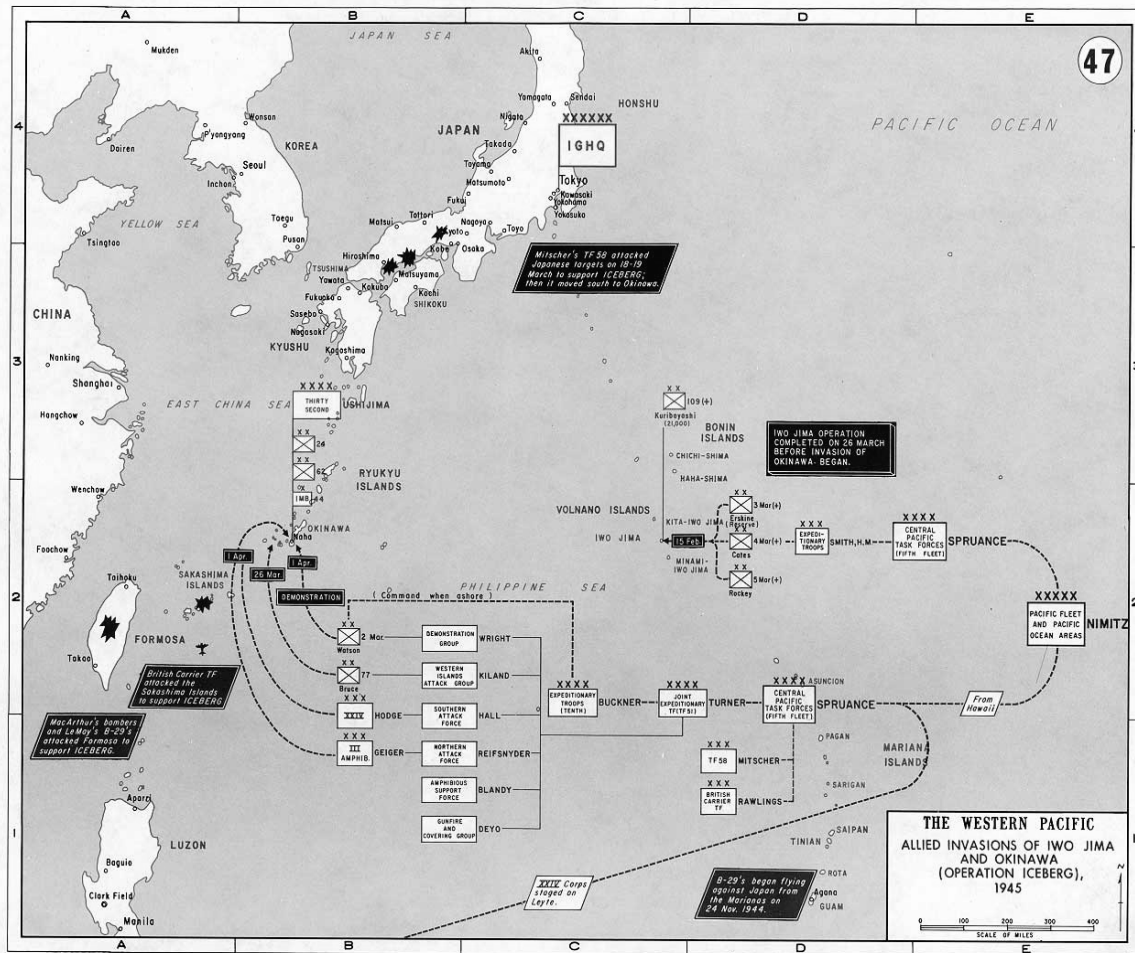


Figure 6. Allied Invasions of Iwo Jima and Okinawa

Source: US Military Academy, West Point, Department of History, accessed 09 April 2018, <https://www.usma.edu/history/SiteAssets/SitePages/World%20War%20II%20Pacific/ww2%20asia%20map%2047.jpg>.

Preliminary Landings; 26 March 1945 to 31 March 1945

The first assault troops began landing on 26 March 1945. The 77th Infantry Division, commanded by Major General Andrew D. Bruce, was responsible for securing positions in the Kerama Retto and on Keise Shima before the main landing.

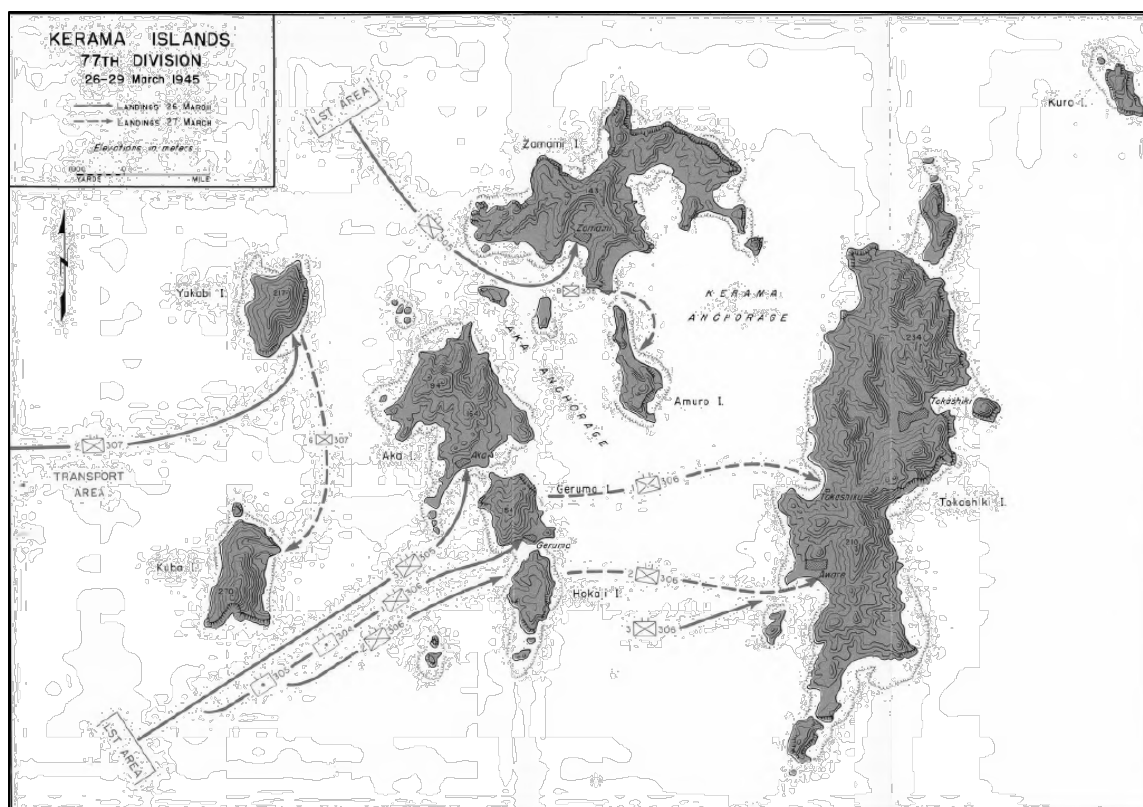


Figure 7. Kerama Islands

Source: *Okinawa: The Last Battle* (Washington, DC: US Army Center of Military History, 2005), MAP NO. IV.

The Navy required the Kerama Retto, a group of 22 islands about fifteen miles west of Okinawa, for a seaplane base and protected boat anchorage.¹⁰⁵ Awaiting the invaders were 975 sailors of the Imperial Japanese Navy Sea Raiding Battalion, as well as another 700 Koreans from the 103rd Sea Duty Company.¹⁰⁶ However, the real value of Kerama Retto in the defense of the Ryukyus was the 350 explosive-rigged suicide boats dispersed and hidden throughout the islands.

Preceded by mine clearance and underwater demolition support, four Battalion Landing Teams of the 77th Infantry landed on Geruma, Hokaji, Aka, Yakabi, and Zamai Shimas around

¹⁰⁵ *Report of Operations in Ryukyus Campaign*, 3-0-11.

¹⁰⁶ Nichols and Shaw, Jr., *Okinawa: Victory in the Pacific*, 38.

0930 on 26 March 1945. Geruma, Yakabi, and Hokaji were secured quickly, and two battalions of 105mm Howitzers were emplaced on Geruma to support subsequent operations in the group. Resistance proved stiffer on Aka and Zamai, but secure lodgments existed on both islands by nightfall. Overnight, the enemy mounted counterattacks supported by mortar fire on both islands, which 77th Division easily defeated.

The next day, 27 March 1945, saw the elimination of organized resistance on Aka and Zamai, and the subsequent invasion of the largest island, Tokashiki Shima. Progress was quick on Tokashiki Shima, and the division transitioned to patrolling operations and began reembarking by 28 March. On 29 March 1945, MG Bruce declared the Kerama Retto secure. The islands cost 77th Infantry Division 35 men killed and 67 wounded in exchange for approximately 390 Japanese killed, 99 prisoners captured, and over 250 suicide boats destroyed.¹⁰⁷ Unbeknownst to either side, securing the Kerama Retto compromised a significant portion of the Japanese A2/AD plan and cost them any hope of maintaining sea control or preempting the main landing.

The second preliminary objective for 77th Infantry Division was Keise Shima, eleven miles southwest of the main invasion beach. 77th Infantry Division was directed to secure Keise Shima and emplace two battalions of M1 155mm guns from the 420th Field Artillery Group to support the main landings the next day. The Fleet Marine Force Reconnaissance Battalion reconnoitered Keise Shima on 26 March and encountered no enemy activity. A 77th Infantry Division BLT landed unopposed on Keise Shima at 0755 on 31 March 1945 and reported the islands secure at 1015. Next came the 24 guns, 12 of which were in position and ready to fire by 1600.¹⁰⁸ The Japanese 32d Army commander, General Ushijima ordered the American guns “wiped out,” but shelling throughout the night proved ineffective.

¹⁰⁷ *Report of Operations in Ryukyus Campaign*, 7-II-2.

¹⁰⁸ *Ibid.*

With the Ryukyus isolated, air and sea superiority effectively established within the JOA, and the guns on Keise Shima ready to protect the landing area and interdict reinforcements; the preliminary conditions were set and the “window of advantage” was open for Tenth Army to land on L-Day, 1 April 1945.

The Battle of Okinawa; 1 April 1945 to 23 June 1945

At 0406 on Easter Sunday, 1 April 1945, Admiral Turner, the Commander of TF 51, and the Commander, Amphibious Task Force, gave the order to “land the landing force.” The 1,300 American ships assembled off the coast of Okinawa sprang to life, disgorging their vehicular and human cargo. At 0530, ten battleships, nine cruisers, twenty-three destroyers, and one hundred and seventy-seven gunboats initiated “the heaviest concentration of naval gunfire ever to support a landing of troops.”¹⁰⁹ At 0745 carrier aircraft from TF 58 added their bombs and napalm against known troop positions. A wave of amphibian tanks, followed by five to seven waves of assault troops crawled slowly toward the Hagushi beaches.¹¹⁰ H-Hour was 0830, and the first wave was on-time.

Both corps landed 16,000 assault troops in the first hour on Hagushi Beach astride the Bishi River; III Amphibious Corps with the 6th and 1st Marine Divisions on the north side, XXIV Corps with the 7th and 96th Infantry Divisions on the south.¹¹¹ There was little organized enemy resistance to the landing. Far to the south, 2nd Marine Division, still embarked, executed a successful feint near Minatoga. The landing units assembled quickly, moved inland, and captured

¹⁰⁹ Appleman, et al., 69.

¹¹⁰ Ibid., 69-70.

¹¹¹ Ibid., 72.

both Kadena and Yontan airfields by 1130. By nightfall on 1 April, a substantial lodgment had been established, and 60,000 were ashore.¹¹²

Both corps advanced quickly against light enemy resistance and by 4 April 1945 had bisected the island and completed their Phase I objectives. Both major airfields were operational for emergency landings, and Tenth Army occupied a consolidated central position 15 miles long and 3 to 10 miles wide, and was prepared to turn the attack north and southward.¹¹³

At dawn on 6 April 1945, 400 aircraft from Kyushu attempted to respond to the invasion but were intercepted by TF 58. Damage to the fleet and the invasion force was relatively light, but the Japanese lost 300 aircraft. That night, the Imperial Japanese Navy sortied much of its remaining surface fleet, including the super battleship *Yamato*, in a suicidal attempt to drive off the American invasion force. The movement was detected by an American submarine and aircraft easily located the approaching fleet. The ensuing attacks sank *Yamato*, a cruiser, and four destroyers at the cost of cost of ten US aircraft.¹¹⁴ Japanese forces continued their air and surface suicide attacks against the American fleet during the remainder of April, costing over 1,100 aircraft and much of their remaining surface force.¹¹⁵ The US Navy lost 4,500 sailors, killed, missing or wounded.¹¹⁶ Despite periodic raids throughout the rest of the campaign, the Japanese defensive plan to drive off the fleet and destroy the invasion force was thwarted, and US air and sea superiority held.

¹¹² Appleman, et al., 75.

¹¹³ Ibid., 83.

¹¹⁴ Ibid., 99.

¹¹⁵ Ibid., 102.

¹¹⁶ Ibid.

As the III Amphibious Corps began its Phase II attack to the north on 3 April 1945, the 6th and 1st Marine Divisions found most of their resistance was from the terrain.¹¹⁷ They reached Nago on 7 April, cleared the Motobu Peninsula, and isolated and defeated the enemy base in the Yae-Take on 19 April 1945. Occupying northern Okinawa cost III Amphibious Corps 236 killed and 1,061 wounded in exchange for over 2,500 Japanese killed.¹¹⁸

Tenth Army's decisive operation was the XXIV Corps attack to defeat 32d Army and secure southern Okinawa. Attacking south, divisions abreast, XXIV Corps encountered and defeated the outposts which protected the First Shuri Defensive Ring by 8 April. From 9 April to 12 April the divisions attempted to penetrate the ring itself, losing 451 soldiers killed in the initial attacks.¹¹⁹

On 12 April 32d Army elements, primarily the 62d Division with the attached 22d Regiment launched a counterattack preceded by a preparatory barrage. The counterattack faltered and had failed by dawn on 14 April. XXIV Corps spent the next five days mopping up, integrating 27th Infantry Division on their western flank, and preparing for a coordinated attack against the Shuri Line on 19 April 1945.

Following the greatest artillery concentration ever employed in the Pacific and coordinated strikes from 650 Navy and Marine aircraft, XXIV Corps attacked south in zone, three divisions abreast to seize the town of Shuri and the Yonabaru-Naha Highway on 19 April 1945.¹²⁰ The attack broke against the prepared defensive positions and local attacks to reduce them

¹¹⁷ Appleman, et al., 138.

¹¹⁸ Ibid., 148.

¹¹⁹ Ibid., 129.

¹²⁰ Ibid., 194.

continued for several days until 32d Army conducted a coordinated withdrawal on 23 April 1945.¹²¹ The First Shuri Defensive Ring had collapsed.

Sometime between 17 April and 22 April, LTG Buckner made a consequential series of decisions which prescribed the form of the rest of the operation and remains the most controversial aspect of Operation ICEBERG.¹²² The failure of the 19 April general offensive dashed any hope of avoiding an attritional slog through southern Okinawa. However, the availability of the 77th Infantry Division on 21 April offered an alternative option. 77th Infantry Division had successfully conducted cross-domain maneuver on Leyte, a tactical amphibious landing in the rear of the Japanese 26th Division defending Ormoc.¹²³ MG Bruce believed his division could repeat the maneuver, this time near Minatoga on the southeast coast of Okinawa, positionally dislocating 32d Army in their directional defensive positions.¹²⁴ LTG Buckner disagreed, judging the operation impracticable and unsustainable, and instead chose to use 77th Infantry Division to relieve 96th Infantry Division on the battle line.

An opportunity again presented itself on 26 April 1945 when III Amphibious Corps was released from other obligations for use on Okinawa. Despite strong support for the plan from his staff, Buckner again declined, and 1st Marine Division also entered the line. Thus, LTG Buckner recommitted Tenth Army to their attritional frontal attacks against the second Shuri Line. This decision remains his most controversial.¹²⁵

¹²¹ Appleman, et al., 247.

¹²² Ibid., 262.

¹²³ Ibid., 258.

¹²⁴ Robert Leckie, *Okinawa: The Last Battle of World War II* (New York, NY: Penguin Books, 1996), 156.

¹²⁵ Ibid., 158.

Tenth Army integrated the fresh III Amphibious Corps and 77th Infantry Division and prepared to continue its advance south against the Second Shuri Defensive Ring. The attack was preempted by 32d Army's final counterattack on 4 May 1945. An extensive artillery barrage and *kamikaze* attacks against allied shipping preceded the attack. The plan also included amphibious envelopments of the Tenth Army line on the east and west. The *kamikaze* attacks began after nightfall on 3 May and sank or damaged 17 ships.¹²⁶ The amphibious envelopments by the IJN 26th Shipping Engineer Regiment failed miserably costing them almost all their landing craft and at least 500 men.¹²⁷ The attack failed and cost 32d Army 5,000 troops.¹²⁸ General Ushijima realized this fact and announced to his command that henceforth "the battle plan in the Shuri area sector will be an attrition of enemy strength until he has lost his endurance."¹²⁹

After the failed counterattack, General Buckner notified his command that the next phase in the campaign, "a continuation of the type of attack we have been employing to date," would commence on 11 May 1945 with Shuri as its objective.¹³⁰ The attack began on 11 May and true to General Buckner's pronouncement was more of the same. Progress was slow, ridgeline-by-ridgeline, and the advance was interrupted by foul weather from 22 May to 29 May which hampered ground movement and close air support. The Japanese seized upon the weather to renew their air attacks against the air and naval forces protecting Okinawa. Of note, 69 Japanese airborne soldiers attempted an air assault against Yontan Airfield using low-flying bombers on 24 May 1945. Though only ten soldiers penetrated the bases air defenses, those they damaged or

¹²⁶ Appleman, et al., 296.

¹²⁷ Ibid., 289.

¹²⁸ Ibid., 302.

¹²⁹ Ibid.

¹³⁰ Ibid., 312.

destroyed 33 aircraft on the ground, ignited 140,000 gallons of gasoline, and shut down the airstrip until the following day.¹³¹ Kamikaze attacks against naval vessels also intensified, damaging 21 ships.¹³²

The principal commanders of the 32d Army met at Shuri on 22 May 1945 to consider the course of future operations.¹³³ After discussion, General Ushijima resolved to withdraw and make his final stand in the south. The movement began immediately and occurred largely unbeknownst to Tenth Army; only a three-battalion holding force remained at Shuri.

The defeat of the holding force and occupation of Shuri began on 29 May, and by 31 May 1945, the hub of the Shuri defensive perimeter was finally in Tenth Army hands. As May ended, Tenth Army's losses totaled 26,044 killed, wounded, or missing while 32d Army units reported 62,548 killed.¹³⁴ Tellingly, only 218 Japanese soldiers were taken alive.¹³⁵

Having taken Shuri largely unopposed, the first order of business was to prevent 32d Army from escaping. "It's all over now but cleaning up pockets of resistance," declared General Buckner.¹³⁶ However, as usual on Okinawa, the weather intervened, and 32d Army escaped to form a new defensive ring centered on its headquarters at Hill 89 near Mabuni.

When the rains ceased on 5 June 1945, XXIV Corps faced a massive defended escarpment anchored by defended positions on the east and west coast and in the center by the Yaeju-Dake and Yuza-Dake peaks. Beyond the escarpment lay a tableland, 11,000 Japanese infantrymen, and the sea.¹³⁷ XXIV Corps attacked this line against stiff resistance on 6 June 1945.

¹³¹ Appleman, et al., 361-362; Nichols and Shaw, Jr., *Okinawa: Victory in the Pacific*, 200.

¹³² Ibid., 362.

¹³³ Nichols and Shaw, Jr., *Okinawa: Victory in the Pacific*, 207-208.

¹³⁴ Appleman, et al., 383-384.

¹³⁵ Ibid., 384.

¹³⁶ Ibid., 422.

¹³⁷ Ibid., 436.

As the XXIV Corps and III Amphibious Corps attacks proceeded, they perceived a weakening of resistance.

The final phase began in the XXIV Corps sector on 13 June 1945. Infantrymen of the 7th and 96th Infantry Divisions in concert with flame tanks of the 713th Armored Flame Thrower Battalion cooperated to great effect. On 18 June 1945, the remnants of 32d Army began to collapse. General Ushijima ordered his remaining soldiers to infiltrate north and begin a campaign of guerrilla warfare. Hundreds took him up on this offer; others surrendered en masse. LTG Buckner was killed by Japanese artillery on 18 June while observing the fighting and was replaced first by Marine Major General Roy Geiger, then by General Joseph Stilwell.

As Tenth Army converged on Hill 89, they reduced the remaining enemy positions. On 21 June 1945, the U.S. 32d Infantry Regiment began its assault on Hill 89 itself. That night, General Ushijima, 32d Army Commander, and his Chief of Staff committed ritual suicide.¹³⁸ The next day, 22 June 1945, the last pocket of organized resistance fell.

On 23 June 1945, Tenth Army began mopping-up the disorganized stragglers persisting in their rear area. The corps turned and cleared back northward, killing 8,975 Japanese soldiers before halting on 30 June 1945.¹³⁹ The campaign ended on 2 July 1945. Operation ICEBERG cost the United States 12,520 killed, and 36,631 wounded.¹⁴⁰ Slowing US progress toward the Home Islands for 83 days cost Japan approximately 110,000 lives.¹⁴¹

¹³⁸ Nichols and Shaw, Jr., *Okinawa: Victory in the Pacific*, 258.

¹³⁹ Appleman, et al., 473.

¹⁴⁰ Ibid., 473.

¹⁴¹ Ibid., 473-474.

Analysis and Recommendations

In *Multi-Domain Battle: A Perspective on the Salient Features of an Emerging Operational Doctrine*, Major Amos Fox describes the characteristics of the peer adversaries likely to be faced by the United States in the near future as having “layers to their force, much like the layers of an onion obfuscate each subsequent layer.”¹⁴² Fox proposes that to defeat this type of enemy, US forces must first “debride” the outer layers of long-range and cross-domain forces to access and defeat the main fighting force inside.¹⁴³ The Multi-Domain Battle Concept introduces convergence as the mechanism to affect this “debridement,” describing it as follows:

Convergence is the integration of capabilities across domains, environments, and functions in time and physical space to achieve a purpose. Converging capabilities is a new idea introduced in Multi-Domain Battle as an evolution of combined arms. Convergence is the act of applying a combination of capabilities (lethal and nonlethal, whether within a domain or cross-domain) in time and space for a single purpose...Although the ideas within convergence are an evolution of combined arms principles and practices, the Joint Force requires significantly new doctrine, organizations, and capabilities to integrate the full range of capabilities across time and space to create windows of advantage that enable maneuver in contested spaces.¹⁴⁴

The layered anti-access/area denial strategy employed by the Japanese defending the Ryukyus mirrors Fox’s onion analogy. Like the enemy envisioned in the Multi-Domain Battle Concept, the Japanese forces defending Okinawa remained more than capable of contesting US access in the three accessible domains; maritime, air, and land. To create the windows of advantage needed for Tenth Army to land, maneuver, and defeat the 32d Army and secure the necessary air and sea bases to press the attack against the Japanese home islands, the planners of Operation ICEBERG deliberately converged strategic, operational, and tactical capabilities, often

¹⁴² Amos C. Fox, "Multi-Domain Battle: A Perspective on the Salient Features of an Emerging Operational Doctrine," *Small Wars Journal*, May 21, 2017, 2, accessed 06 October 2017, <http://smallwarsjournal.com/jrnl/art/multi-domain-battle-a-perspective-on-the-salient-features-of-an-emerging-operational-doctri>.

¹⁴³ Ibid.

¹⁴⁴ *Multi-Domain Battle*, 3.

across domains. The resulting concentric “debridement” of Okinawa’s air and sea defenses provides a theoretical model for visualizing how a near-future joint force can create windows of advantage to enable maneuver in the archipelagic environment typical in the Indo-Asia Pacific.

Convergence in Operation ICEBERG

The plan for Operation ICEBERG employed convergence of strategic, operational, and tactical capabilities, often across domains, to defeat Japan’s A2/AD strategy, and enable ground maneuver in a contested space. Admiral Chester Nimitz, the CINCPAC, recognized that as the allied noose tightened around the home islands, Japan’s remaining air and sea forces would become further concentrated.¹⁴⁵ This allowed them to offer progressively stronger resistance as American forces approached the southernmost Japanese island of Kyushu. Nimitz appreciated this threat and his Concept of the Operation, described in the Joint Staff Study for ICEBERG, makes establishing “undisputed control of the sea and air in the area of operations” essential to its success.¹⁴⁶

¹⁴⁵ Appleman, et al., 19-21.

¹⁴⁶ *Joint Staff Study: ICEBERG*, 2-3.

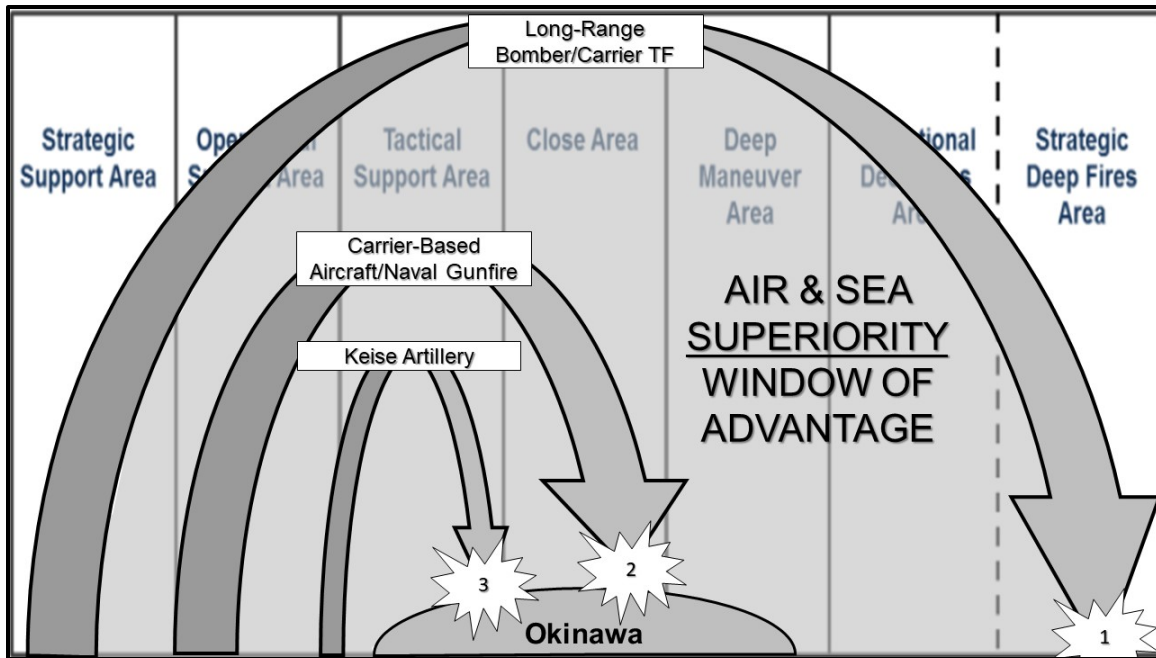


Figure 9. Converging Capabilities in Operation ICEBERG

Source: Created by the author from *Multi-Domain Battle: Evolution of Combined Arms for the 21st Century* (Fort Eustis, VA: US Army Training and Doctrine Command, 2017), 9.

Air and sea control were accomplished by neutralizing Japanese air and naval forces and installations, then isolating the JOA. Before the amphibious task force entered the Ryukyus, the raiding Fast Carrier Tasks Force and long-range strategic bombers operating from China, the Marianas, and Luzon destroyed major Japanese air bases in the southern home islands, Formosa, Amoy, and the Pescadores.¹⁴⁷ Submarine and surface attacks against Japanese shipping severed Okinawa's sea lines of communication. The objective of this preparatory phase was to isolate Okinawa.¹⁴⁸

As the amphibious task force prepared to enter the Ryukyus, preceded by minesweepers, strategic bombers and carrier aircraft continued their attacks against Japanese facilities

¹⁴⁷ *Joint Staff Study: ICEBERG*, 3.

¹⁴⁸ Appleman, et al., 21.

throughout the theater, striking targets in Hong Kong, Formosa, Kyushu, the Pescadores, and Sakishima.¹⁴⁹ Preparatory air and surface strikes against air bases and naval facilities within the Ryukyus commenced on 17 March 1945. The coordinated converging effect of these strategic and operational capabilities established “a sphere of air and sea superiority in the Okinawa Gunto;” effectively a window of advantage.¹⁵⁰

Of note during this period were two subsidiary landings conducted by the 77th Infantry Division in the Kerama Retto beginning on 26 March 1945, and on Keise Shima on 31 March 1945. The amphibious invasion of the Kerama Retto is significant because it demonstrates the value of land forces conducting “semi-independent, cross-domain maneuver” to enable capabilities in adjacent contested domains.¹⁵¹ Initially intended to secure a protected fleet anchorage and seaplane base for the naval forces supporting the main landing, physically occupying the Kerama Retto contributed enormously to establishing sea superiority in an unanticipated way. Dispersed and concealed throughout the islands were more than 350 explosive-laden suicide boats belonging to the IJN Sea Raiding Squadrons.¹⁵² These boats were a critical component of the Japanese plan to contest the allied landing by destroying the US troop transports as they approached the landing beaches. The unexpected introduction of land forces to systematically clear the Kerama Retto led to the neutralization of a critical enemy A2/AD capability which had remained largely unaffected by naval and air bombardment alone. The 77th Infantry Division had completely frustrated the Japanese defensive plan.¹⁵³ This ability to

¹⁴⁹ *Report of Operations in Ryukyus Campaign*, 7-I-3.

¹⁵⁰ *Ibid.*, 7-I-1.

¹⁵¹ *Multi-Domain Battle*, 23.

¹⁵² Appleman, et al., 60.

¹⁵³ *Ibid.*, 60.

decisively defeat enemy forces and clear terrain proved essential to the success of Operation ICEBERG and remains the exclusive domain of land power.

The second subsidiary landing undertaken by 77th Infantry Division prior to L-Day was the unopposed landing of a Battalion Landing Team (BLT) and twenty-four M1 155mm howitzers from the 420th Field Artillery Group on Keise Shima on 31 March 1945 to provide persistent counterbattery, interdiction, and harassing fires against the Hagushi beaches and most of southern Okinawa.¹⁵⁴ The Japanese, belatedly realizing the value of the position, attempted to dislodge the guns throughout the night but were unsuccessful. Though the Japanese also failed to drive off the fire support ships accompanying the main landing force, the firing battalions on Keise Shima still provided invaluable counterbattery and interdiction fires to isolate the beachhead. The 77th Infantry Division Battalion Landing Team demonstrates the necessity of incorporating a land combat force to enable and protect the employment of long-range fires platforms.

The final, tactical component of the capabilities converging to create the window of advantage for Tenth Army to maneuver was the initial landing forces themselves. A factor in selecting the Hagushi beaches as the primary landing site was their proximity to the major Japanese airfields at Kadena and Yontan. US forces captured both airfields within four hours of the arrival of the initial wave, and both were operational for emergency landings by the end of L-Day.¹⁵⁵ Land-based fighter aircraft were operating at both locations by 9 April 1945, further solidifying allied air superiority in the Ryukyus.¹⁵⁶

The massive strategic, operational, and tactical convergence of allied capabilities proved overwhelmingly successful in establishing air and sea superiority in the Ryukyus. The main

¹⁵⁴ Appleman, et al., 57.

¹⁵⁵ Ibid., 81.

¹⁵⁶ Ibid., 83.

landings on 1 April 1945 were relatively unmolested by Japanese air and sea forces. No substantial Japanese response materialized until 6 April 1945 when a massive 400-plane raid staged from Kyushu managed to damage Kadena and sink several ships, including two destroyers.¹⁵⁷ These raids continued periodically throughout April and May, proving costly but never seriously jeopardizing Tenth Army's operations. This historical example of convergence successfully producing a window of advantage to enable maneuver is the primary contribution of Operation ICEBERG to future Multi-Domain Battle in the Indo-Asia Pacific; demonstrating the practicability of the concepts of convergence and windows of advantage and providing a theoretical model for their visualization.

Recommendations

Tenth Army's activities during Operation ICEBERG inform possible adaptations to the training, preparation, and employment of Army forces in future Multi-Domain Battle in the Indo-Asia Pacific.

Tenth Army was a joint organization composed of an Army Corps, a Marine Amphibious Corps, an Army Garrison Force, a Tactical Air Force, and an assigned Naval Force. LTG Buckner's efforts to enhance interservice coordination at the headquarters-level during planning and execution are well documented.¹⁵⁸ However, several organizational adaptations occurred at the subordinate unit-level which challenge the contemporary "federated" vision of joint operations synchronized primarily at the JTF-level. Some examples, such as the attachment of modified M-4 Sherman flame tanks from the Army 713th Armored Flamethrower Battalion to the Marine Divisions to reduce defensive positions using "blowtorch and corkscrew" tactics would

¹⁵⁷ Appleman, et al., 99.

¹⁵⁸ *Report of Operations in Ryukyus Campaign*, 3-0-3; Appleman, et al., 27.

not be unfamiliar in contemporary operations.¹⁵⁹ Others like the assignment of Navy fire support ships in direct support of Army and Marine regiments and divisions would be unlikely in a modern JTF.¹⁶⁰ The Tenth Army vision of joint operations, from the Army headquarters to the tank-infantry teams, should become a central organizing principle for land combat forces assigned to the Indo-Asia Pacific. They should train jointly to build familiarity and be employed jointly during competition, and in the event of armed conflict.

The forces assigned to Tenth Army for Operation ICEBERG presented substantial challenges with regards to force posture. Due to a shortage of available troops, those assigned were scattered throughout the Pacific, in most cases at the division and below-level. The III Marine Amphibious Corps had divisions on the Russell Islands, Saipan, and Guadalcanal. The XXIV Corps with its subordinate divisions, the 7th, 77th, and 96th Infantry Divisions, was engaged in active combat in Leyte until February 1945.¹⁶¹ The 27th Infantry Division, the floating reserve, was at Espiritu Santo recovering from the Battle of Saipan the previous summer. Tenth Army Headquarters and staff, along with many of its supporting units and naval augmentation loaded out at or passed through Oahu.¹⁶²

This disposition approximates the calibrated forward presence likely to be encountered by Army land combat forces scattered throughout the Indo-Asia Pacific executing military competition activities. In the event of an escalation to armed conflict, the Multi-Domain Battle Concept states that these forward presence forces “must have the expeditionary capacity,

¹⁵⁹ Appleman, et al., 256; Nichols and Shaw, Jr., *Okinawa: Victory in the Pacific*, 272.

¹⁶⁰ Ibid., 253.

¹⁶¹ *Report of Operations in Ryukyus Campaign*, 4-0-3.

¹⁶² Ibid., 5-0-8.

including strategic lift, to maneuver directly from home station or other theaters of operation into battle.”¹⁶³

Coordinating this strategic and operational maneuver for the dispersed forces assigned to Tenth Army consumed much of the staff’s planning effort in the months preceding the invasion. Transport Quartermasters at the various headquarters developed and published a system of procedures governing the process. Responsibility for loading-out and embarkation then devolved to the assigned unit headquarters and local Transport Quartermaster Teams attached for this purpose.¹⁶⁴ Though not specifically recorded, much of the success of this process was probably still dependent on prior individual experience in similar operations. Regardless of the means employed for strategic or operational maneuver, if dispersed forward presence forces are expected to rapidly aggregate in contested spaces, they should be familiarized with established procedures and provided the necessary personnel or training to accomplish this before assuming their forward presence. The historical example of Operation ICEBERG provides a conceptual model for anticipating and developing these requirements.

Questions for Further Study

To further explore the preparation and employment of Army land combat forces in future Multi-Domain Battle in the Indo-Asia Pacific, the following questions are proposed for further study:

1. What is an appropriate standing headquarters to coordinate regional forward presence forces during competition and employ them during anticipated near-future armed conflict in the Indo-Asia Pacific?

¹⁶³ *Multi-Domain Battle*, 23.

¹⁶⁴ *Report of Operations in Ryukyus Campaign*, 5-0-6.

2. Can this headquarters be constituted as a standing joint headquarters?
3. How do forward-positioned forces and reinforcing rapidly deployable formations effectively execute expeditionary maneuver within the denied or contested environments posited by Multi-Domain Battle given the nature of the Indo-Asia Pacific region?

Conclusion

In *Preparing for the Fight Tonight*, General David Perkins observes that “the most egregious doctrinal void had been the lack of principles for multi-domain capabilities in large-scale combat operations.”¹⁶⁵ He adds that “The Army and the other services must be able to converge capabilities across multiple domains in an integrated fashion to gain and then exploit the initiative.” Sharing the geography of the Pacific and an enemy capable of denying or contesting US dominance in all the domains, Operation ICEBERG provides a successful contemporary example of strategic, operational, and tactical convergence of joint and cross-domain capabilities to inform the development of Multi-Domain Battle in the Indo-Asian Pacific. If Operation ICEBERG is the culmination of all our experiences fighting our last major war against a peer competitor in the Indo-Asia Pacific, we would be foolish to prepare for the next war without heeding the lessons of the “Last Battle.”

¹⁶⁵ David G. Perkins, "Preparing for the Fight Tonight: Multi-Domain Battle and Field Manual 3.0," *Military Review*, September 2017, 11, accessed 08 October 2017, www.armyupress.army.mil/Portals/7/military-review/Archives/English/PERKINS_II_Preparing_for_the_Fight_Tonight.pdf

Bibliography

Print Sources

- Burns, James M., Russell A. Gugeler, and John Stevens. *Okinawa: The Last Battle*. Edited by Roy Edgar Appleman. United States Army in World War II. Washington, DC: US Army Center of Military History, 2005.
- Cunningham, Paul E. "Command and Control of the U.S. Tenth Army During the Battle of Okinawa." Thesis, US Army Command and General Staff College, 2009.
- Diana, Gabriel L. "Risk in the Ryukyu Islands: Joint Planning for Okinawa." Monograph, School of Advanced Military Studies, 2017.
- Fix, Robert G. "Tenth Army in the Okinawa Campaign: An Analysis From the Operational Perspective." Thesis, US Army Command and General Staff College, 1992.
- Frank, Benis M., and Henry I. Shaw, Jr. *Victory and Occupation*. Vol. 5. History of U.S. Marine Corps Operations in World War 2. Washington, DC: Headquarters, US Marine Corps, 1968.
- Fujita, Kazuhiko, Takemitsu Arakaki, Tetsuo Denda, Michio Hidaka, Euichi Hirose, and James Davis Reimer. *Nature in the Ryukyu Archipelago: Coral Reefs, Biodiversity, and the Natural Environment*. Nishihara-machi (Okinawa-ken), JP: International Research Hub Project for Climate Change and Coral Reef/Island Dynamics Faculty of Science, University of the Ryukyus, 2015.
- Gompert, David C., Astrid Stuth Cevallos, and Cristina L. Garafola. *War with China: Thinking Through the Unthinkable*. Santa Monica, CA: RAND Corporation, 2016.
- Holmes, James R., and Toshi Yoshihara. *Chinese Naval Strategy in the 21st Century: The Turn to Mahan*. London: Routledge, 2008.
- Huber, Thomas M. *Japan's Battle of Okinawa: April-June 1945*. Vol. 18. Leavenworth Papers. Fort Leavenworth, KS: Combat Studies Institute Press, 1990.
- Joint Chiefs of Staff. Joint Publication (JP) 3-0, *Joint Operations*. Washington, DC: Joint Chiefs of Staff, 2017.
- Leckie, Robert. *Okinawa: The Last Battle of World War II*. New York, NY: Penguin Books, 1996.
- Morton, Louis. *Strategy and Command: The First Two Years*. United States Army in World War II. Washington, DC: US Army Center of Military History, 1962.
- Nichols, Chas S., and Henry I. Shaw, Jr. *Okinawa: Victory in the Pacific*. Washington, DC: Headquarters, United States Marine Corps, 1955.

- Paine, S.C.M. *The Sino-Japanese War of 1894-1895: Perceptions, Power, and Primacy*. New York: Cambridge University Press, 2006.
- Thucydides. *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War*. Edited by Robert B. Strassler. Translated by Richard Crawley. New York: Free Press, 2008.
- US Tenth Army. *Report of Operations in Ryukyus Campaign, 26 March 1945 to 30 June 1945*. TENTH ARMY ACTION REPORT. Okinawa, JP: HQ, Tenth Army, 1945.
- United States Army, and United States Marine Corps. *DRAFT: U.S. Army and U.S. Marine Corps Concept for Multi-Domain Battle: Evolution of Combined Arms for the 21st Century*. Fort Eustis, VA: US Army Training and Doctrine Command, 2017.
- United States Pacific Command Posture*, 115th Cong., 19 (2017) (testimony of Admiral Harry B. Harris Jr.).
- Zee, Richard. "Operational Perspectives of the Okinawa Campaign (Operation ICEBERG)." Research Paper, Newport, RI: US Naval War College, Operations Department, 1994.

Online Sources

- Brown, Gen. Robert B. "The Indo-Asia Pacific and the Multi-Domain Battle Concept." *Military Review*, March 14, 2017. Accessed March 16, 2017.
<http://www.armyupress.army.mil/Journals/Military-Review/Online-Exclusive/2017-Online-Exclusive-Articles/The-Indo-Asia-Pacific-and-the-Multi-Domain-Battle-Concept/>.
- Duffy, Michael. "Anglo-Japanese Alliance, 30 January 1902." Primary Documents. August 22, 2009. Accessed December 31, 2017.
<http://www.firstworldwar.com/source/anglojapanesealliance1902.htm>.
- Eckstein, Megan. "Army Set to Sink Ship in 2018 as PACOM Operationalizes Multi-Domain Battle Concept." USNI.org. May 30, 2017. Accessed December 11, 2017.
<https://news.usni.org/2017/05/30/pacom-integrating-multi-domain-battle-into-exercises-ahead-of-2018-rimpac-army-sinkex>.
- Fox, Amos C. "Multi-Domain Battle: A Perspective on the Salient Features of an Emerging Operational Doctrine." *Small Wars Journal*. May 21, 2017. Accessed October 6, 2017.
<http://smallwarsjournal.com/jrnl/art/multi-domain-battle-a-perspective-on-the-salient-features-of-an-emerging-operational-doctri>
- Greenwood, Tom, and Jim Greer. "Experimentation: The Road to Discovery." *Thestrategybridge.org*. March 01, 2018. Accessed March 3, 2018.
<https://thestrategybridge.org/the-bridge/2018/3/1/experimentation-the-road-to-discovery>.
- Kania, Elsa B. "Artificial Intelligence and Chinese Power." *Foreign Affairs*. December 15, 2017. Accessed March 5, 2018. <https://www.foreignaffairs.com/articles/china/2017-12-05/artificial-intelligence-and-chinese-power>.

- Mattis, James N. "Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge." [Www.defense.gov](https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf). January 19, 2018. Accessed February 8, 2018. <https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>.
- Minutes. Sextant Conference, November-December 1943. In *Papers and Minutes of Meetings: Sextant and Eureka Conferences*. Accessed April 11, 2018. <http://cgsc.contentdm.oclc.org/cd/m/ref/collection/p4013coll8/id/3691>
- Regional Alignment of Forces*. PPT. Washington, DC: Department of the Army Headquarters G-3/5/7, June 10, 2014.
- The United States of America, and The Empire of Japan. *Rights in Former German Islands in Pacific*. PDF. Washington, DC: US Library of Congress, July 13, 1922.
- US Army. "The U.S. Army in Motion in the Pacific." AUSA Homepage. April 6, 2015. Accessed January 20, 2017. <https://www.ausa.org/publications/us-army-motion-pacific>.
- US Army Pacific *Readiness and the Strategic Rebalance: Pacific Pathways 2016*. PDF. Fort Shafter, HI: United States Army Pacific, October 22, 2015.
- Work, Bob. "Deputy Secretary of Defense Speech." Speech, Army War College Strategy Conference, US Army War College, Carlisle, PA, April 8, 2015. April 8, 2015. Accessed March 5, 2018. <https://www.defense.gov/News/Speeches/Speech-View/Article/606661/army-war-college-strategy-conference/>.

Academic Publications

- Krepinevich, Andrew F., Jr. *Archipelagic Defense: The Japan-U.S. Alliance and Preserving Peace and Stability in the Western Pacific*. Tokyo, JP: The Sasakawa Peace Foundation, 2017.
- Yoshihara, Toshi. "China's Vision of Its Seascape: The First Island Chain and Chinese Seapower." *Asian Politics and Policy* 4, no. 3 (July 1, 2012): 293-314.
- Zee, Richard. "Operational Perspectives of the Okinawa Campaign (Operation ICEBERG)." Research Paper, Newport, RI: US Naval War College, Operations Department, 1994.